

**Tuberculosis**  
**in the Russian Federation**  
**2006**

An analytical review of the main tuberculosis statistical indicators  
used in the Russian Federation

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## List of abbreviations

AIDS	Acquired Immune Deficiency Syndrome
CC	Correctional colony
CFR	Central Federal Region
CTRI	Central TB Research Institute, Russian Academy of Medical Sciences
DFG	Dispensary Follow Up Group (follow up groups of TB patients, see Annex)
DRG	Dispensary Registered Group (groups of individuals with residual effects of tuberculosis and TB risk groups, see Annex)
DST	Drug susceptibility test
FCTB	Fibro-Cavernous Tuberculosis
FCTC-HIV	Federal Center of TB Care for HIV-infected Patients
FEFR	Far-Eastern Federal Region
FPHI	Federal Public Health Institute (Central Research Institute for Management and Information Services in Health Care)
FR	Federal Region
FSIN	Federal Penitentiary Service
FSSS	Federal Service of State Statistics of the Russian Federation
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GHC	General Health Care
HIV	Human Immunodeficiency Virus
IBRD	International Bank of Reconstruction and Development
MbT	<i>Mycobacteria tuberculosis</i>
MbT+	Bacteriological positive TB
MDR	Multidrug-resistant tuberculosis
MoH	Ministry of Health
MoH&SD	Ministry of Health and Social Development
MoJ	Ministry of Justice
NTRI	Novosibirsk TB Research Institute
NWFR	Northwestern Federal Region
PFR	Povolzhsky Federal Region
PHC	Primary Healthcare Facilities
RF	Russian Federation
RI	Research Institute

RIPP	Research Institute of Phthisiopulmonology of the Sechenov Moscow Medical Academy
SbFR	Siberian Federal Region
SFR	Southern Federal Region
SIZO	Pre-trial detention center
SSTM	State System of TB Monitoring
St-PRIPP	St. Petersburg Research Institute of Phthisiopulmonology
TB	Tuberculosis
UIS	Penal Enforcement System
URIPP	Urals Research Institute of Phthisiopulmonology
WHO	World Health Organization
WHO RF	WHO TB Control Program in the Russian Federation

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## Introduction

This analytical review is the collective work product of the Ministry of Health and Social Development of the Russian Federation (MoH&SD), the WHO TB Control Program in the Russian Federation (WHO RF), the Central Research Institute for Management and Information Services in Health Care (a.k.a. Federal Public Health Institute, FPHI), the Research Institute of Phthisiopulmonology of the Sechenov Moscow Medical Academy (RIPP), the Federal Penitentiary Service (FSIN), and the Federal Agency for Health Care and Social Development.

This review presents an analysis of TB indicators based on state statistical reporting data and their use in the evaluation of the epidemiological situation and the quality of TB control activities in the Russian Federation (RF) in 2005-2006. The review also examines trends in the indicators over the past 10-15 years.

Special attention has been paid in this review to methodological issues in the use and interpretation of varying TB indicators used in the Russian Federation and abroad for the assessment of TB control effectiveness.

The analysis performed in this review has confirmed the following:

- The information available from statistical reporting forms on TB in the RF is sufficient for the general analysis of developments in the country's TB situation.
- The indicators used to assess trends in TB epidemiology were adequate to meet the analysis's objectives and, for the most part, are compatible with internationally-accepted indicators.
- Significant variation in indicator rates exists across the territories of the RF, requiring a differentiated analysis of data to be performed by territory, by groups of territories and by region.
- For conducting data analysis using evidence-based principles, it is necessary to use data from the State System of TB Monitoring (SSTM), which is being further developed in the country on the basis of territorial case-based computerized TB surveillance registries.
- The data obtained confirm the stabilization of the TB epidemiological situation in the RF. However, the level of the main nationwide indicators and the unfavorable trends observed in some territories are evidence of the continuing complicated TB situation in the country.
- For the most part, the stabilization of the epidemiological situation is due to the increased effectiveness of TB activities in correctional facilities, which in part has compensated for unfavorable changes in TB indicator rates among the civilian population at MoH&SD facilities.

This publication is intended for public health leaders in the territories of the Russian Federation, heads of general health care and TB facilities, and TB specialists and epidemiologists.

In preparing the current edition, the following information was used:

- national aggregated TB reporting forms (MoHSD statistics)

- demographic and socio-economic data obtained from:

  - Form No. 1 - populations of the territories of the Russian Federation (oblasts, republics, krais, okrugs, cities) and of the Russian Federation as a whole for the calculation of rates before year 2006

  - Form No. 4 - populations of the territories of the Russian Federation and of the Russian Federation as a whole for the calculation of rates in year 2006

Official data of the Federal Service of State Statistics of the RF (FSSS)

Notes: Before 2006, rates including TB notification and mortality were calculated using the annual average population of the reporting year<sup>1</sup>, and TB prevalence - using the population as of January 1 of the following year. The rates provided in the review for year 2006 are preliminary, and are calculated using population data from form #4 as of January 1, 2006. The values of these rates will be adjusted after obtaining the final population data of the RF and territories as of January 1, 2007.

- the results of processed and analyzed data from the SSTM, performed by RIPP and WHO

- data from scientific publications

The annex contains tables of the main epidemiological indicators characterizing TB control activities in Russia in 2004-2006.

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<sup>1</sup> The annual average population was calculated as the average of the population of the reporting year as of January 1 and the population of the following year as of January 1

## 1. TB surveillance and the system of statistical reporting in the RF

The TB epidemiological situation in the RF is quite complex. A number of factors, reflected to varying degrees in the commonly used indicators, have an impact on the process of the spread of TB (1). Factors influencing the spread of TB include:

- regional characteristics (demographic, social, economical, standards of living, education, migration, etc.)
- political and economic effects (crises, conflicts)
- the degree of impact of the elevated TB prevalence in the penitentiary system on the civilian population

And finally:

- the effectiveness of TB control activities (management of prophylactic activities, timely detection activities, high-quality TB detection activities performed by laboratory and radiology services, effective treatment, etc., performed by both specialized and PHC facilities).

The registered rates, which reflect the TB situation, to a large degree are also affected by factors not related to the direct results of TB prophylactic, detection and treatment activities. Such influencing factors include:

- The statistical system in use (recording and reporting forms, data flow, agencies responsible for the collection and processing of statistical information)
- The qualifications of the staff responsible for collecting and processing the information, as well as technical support for this process (communications infrastructure, computerization, software)
- The interests of both federal and regional institutions

Unfortunately, the limited volume of the current edition and the properties of the available statistical data do not allow for a complete assessment of the aforementioned factors' impacts on the results received. Nevertheless, several of these factors will be examined during the process of data analysis and interpretation.

The monitoring and evaluation of changes in epidemiological rates and indicators, reflecting the effectiveness of TB activities, should be based upon data both from officially approved forms and from results of special studies. It is important for the statistical reporting system to permit the collection of reliable data from regional and federal levels, using evidence-based principles, and in the end, for appropriate directive decisions to be made using this information.

Therefore, along with reviewing the traditional TB rates and indicators, the current edition considers ways to improve upon the reporting forms and the calculation of rates that are most suitable for TB control.

At present, the information used to assess the TB situation is contained in almost 15 reporting forms.

The main reporting forms today on TB are the following:

- Form #33 “TB patients’ information”, filled in for cases registered and followed up at MoH&SD facilities (so called “permanent residents”).

- Form #8 “Information on active TB case registrations” filled in for all new and relapse TB cases registered in a given administrative unit (the so called “territorial” form). The form includes information about cases registered at MoH&SD facilities and other institutions with jurisdiction over provision of TB services (including the Federal Penitentiary Service, FSIN), as well as about cases diagnosed postmortem and among foreigners and persons from other territories.

- Form #07-TB “Information on new and relapse cases of tuberculosis” contains data on detection and registration of patients for treatment.

- Form #08-TB “Information on chemotherapy outcomes of pulmonary TB patients” reflects the results of TB treatment monitoring.

- Form #4-TB is filled in for patients registered and followed up at FSIN correctional facilities (inmates or individuals accused or suspected of crimes).

The indicators reviewed in the survey are based first of all on information obtained from the above-mentioned forms.

Further, used in the survey are the results of processed and analyzed data from SSTM databases, which receive information on the basis of approved MoH&SD TB reporting forms.

## **2. TB case notification in the RF**

Along with mortality and prevalence, the TB case notification rate (hereinafter, “notification rate”) is one of the most important epidemiological rates characterizing the TB situation in the country.

However, the TB notification rate has both an epidemiological and an “organizational” component (2). The latter reflects the capacity of TB services and primary healthcare facilities to detect TB patients.

A separate section of this review is devoted to the current methods for estimation of real incidence.

The current chapter contains the following:

- epidemiological data on the spread of TB in the RF overall, as well as TB notification rates in the territories of the RF<sup>2</sup>, in the federal regions (“okrugs”) and other strata and population groups
- evaluation of the structure (forms, sites) of detected TB cases
- review of the indicators characterizing case-finding management (ways, channels and methods of TB detection and confirmation of diagnosis)
- comparison of TB notification rates in the RF with data from other former Soviet Union countries and selected countries of the world
- information on methods to estimate actual TB incidence

## **2.1 Trends and socio-demographic structure of the TB notification rate**

Over the last 20-25 years in the RF, significant changes have been observed in the overall TB notification rate (2), as seen in figure 2.1. A gradual decrease in the rate in the 1970-80's, reaching a low of 34.0<sup>3</sup>, was replaced by a significant increase from 1991 to 2000, rising to 90.7 (an increase of 2.7 times). The rate fell back slightly during the first years of the new century. For the last four years, changes in the notification rate have been statistically insignificant, with the rate varying between 82 and 84 per 100,000 population (84.0 in 2005 and 82.4 in 2006, the latter equaling 117,646 new TB cases<sup>4</sup>).

The decrease in the TB notification rate during the final years of the Soviet Union could arguably be considered a reflection of the relative stability in society and the systematic TB control activities in place, including the administrative methods in use. Those years were characterized by significant state spending on TB control and the effective registration and follow up of cases by TB services. The high quality of diagnosing TB cases among the civilian population ensured a relatively low level of hidden incidence (about 12-15%), basing such a calculation on the number of cases with postmortem diagnosis, cases with spontaneous recovery and severe late-detected TB forms (3, 4).

The accelerated pace of the decrease in the notification rate in 1988-1990 may be related to the socio-economic crisis at the end of the 80's and beginning of the 90's. This entailed problems with completeness of registrations and referrals of new TB case notifications for data entry into the reporting documents in the territories.

The rapid increase in the notification rate after 1991 reflects changes in the socio-economic environment in the RF. Significant increases in the notification rate were recorded

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<sup>2</sup> Administratively, the RF is divided into 85 territories with varying autonomy from the federal government: 47 oblasts, 21 republics, 6 autonomous okrugs, 8 krais, 2 federal cities, and 1 autonomous oblast

<sup>3</sup> Hereinafter, notification and mortality rates are calculated per 100,000 of the annual average population of the country, region or reviewed population group

<sup>4</sup> According to Form # 8

after the economic crises in 1991, 1994 and 1998 (with respective increases of 19.8%, 20.4% and 12.1%) (4). During these years, the SSTM patient data show a significant growth in the percentage of new TB cases that were unemployed (5). Today this percentage is about 50%, while the official unemployment rate in the country does not exceed 5%<sup>5</sup> (see figure 2.2). This proves the well-known thesis that TB is a socially significant disease (1, 5, 6).

According to SSTM data, while the nationwide TB notification rate was 84.0 in 2005, the notification rate among the unemployed was as high as approximately 750 per 100,000 unemployed individuals; among those who work, the notification rate was approximately 45 per 100 000 employed individuals<sup>6</sup>.

The data registered by federal region demonstrate the impact of socio-economic factors and, most of all, the quality of life of the population. The latter can be measured by such rates as the percentage of the population with an income lower than the living wage (Figure 2.3) and the unemployment rate (Figure 2.4).

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<sup>5</sup> Based on information from population sampling by occupation. Persons are considered unemployed if they are of productive age and either do not have a job (gainful employment), are searching for a job, or are ready to start working at the moment of evaluation (7).

<sup>6</sup> The results are obtained on the basis of data from 27 territories, where among 38,855 new cases detected in 2005, there were 18,314 unemployed, 11,096 employed and 2,246 disabled individuals. According to FSSS data, there were 2,428,000 unemployed and 24,834,000 employed individuals in those territories.

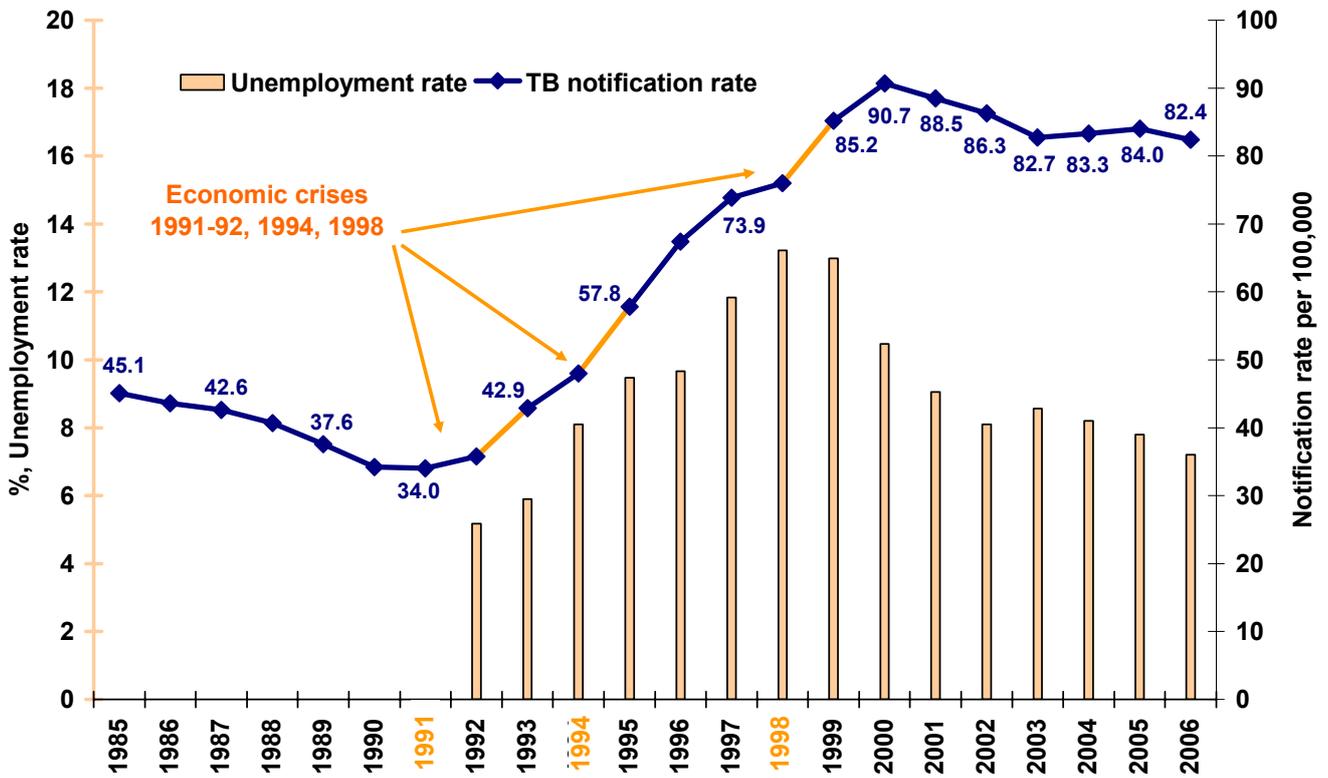


Figure 2.1. The notification rate and the unemployment rate in the RF, 1985–2006, all jurisdictional entities (source: number of new TB cases – statistical form # 8, population and unemployment rate – FSSS data (7))

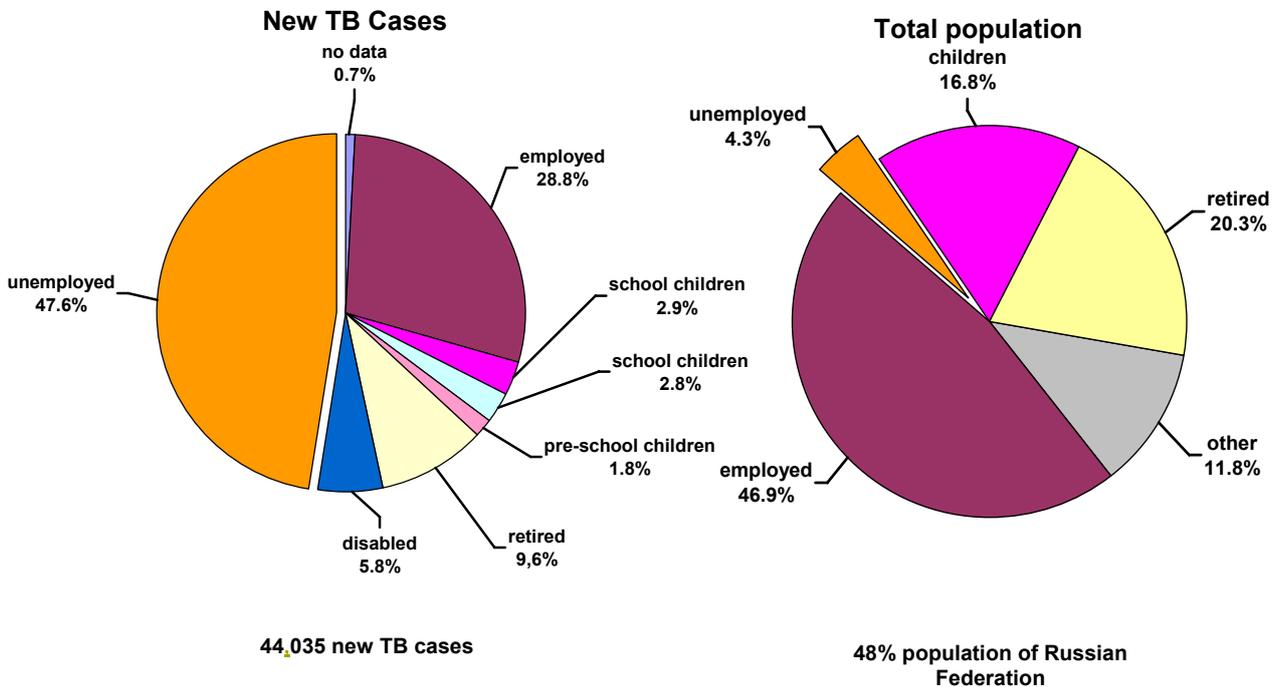


Figure 2.2. Socio-economic status of new TB cases and of the general population, 2005 (source: SSTM and FSSS data (7) in 29 regions)

In comparing federal regions, the percentage of a region's population with an income lower than the living-wage correlates with notification rates in all federal regions but the UFR (Figure 2.3).

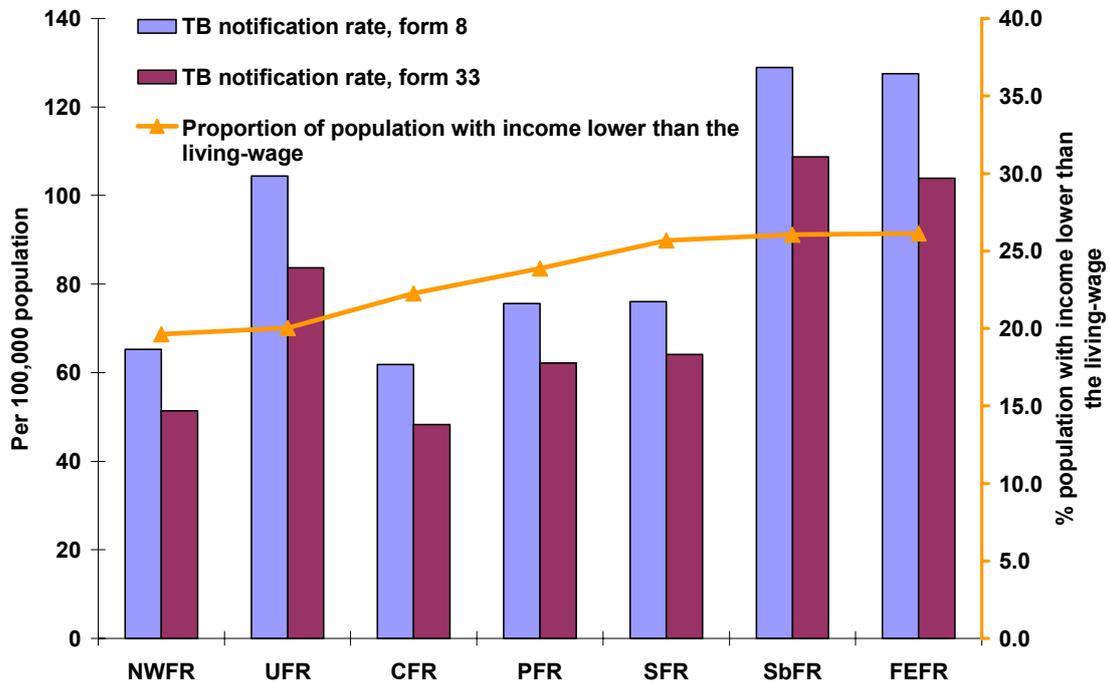


Figure 2.3. Percentage of the federal region population with an income lower than the living-wage, and TB notification rates by federal region, 2004. Regions are ordered by increasing percentage of population with an income lower than the living-wage (source: forms #8 and # 33, FSSS (7))

With the exception of the UFR and SFR<sup>7</sup>, the unemployment rate also generally correlates with notification rate data in the federal regions (Figure 2.4).

<sup>7</sup> The SFR data was withdrawn from the unemployment rate diagram of figure 2.4, because the overall value of the rate for this district is determined mainly by the high level of unemployment in the republics of Ingushetia (46.3%) and Chechnya (75.5%), due to the Chechen crisis. This is also the reason for the likely significant underestimation of notification rates in those republics.

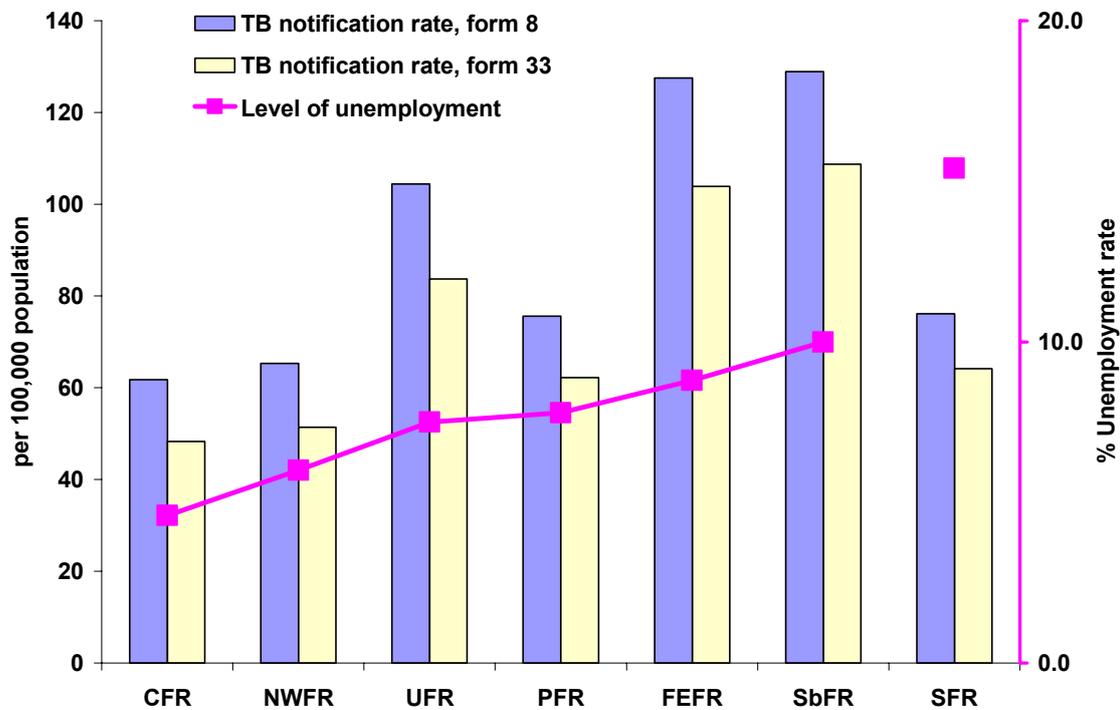


Figure 2.4. Unemployment and TB notification rates by federal region, 2004. Regions are ordered by increasing unemployment rate (sources: forms # 8 and #33, FSSS data (7))

The available data on the social status of TB patients make evident the need to develop social support programs for TB patients in Russia (8). The active participants of such programs are the MoH&SD, WHO, and Russian and International Red Cross Societies.

The aggregated value of any country-wide indicator does not adequately reflect the situation in each of the country's territories. This is especially true in Russia, the largest country in the world in terms of total area, and which includes regions vastly different in geography, demographic profile, social-economic level and population. Aggregated country-wide rates do not serve as an adequate base for administrative decision-making on the management of TB control activities in a specific territory of the Russian Federation.

Therefore, along with country-wide rates, it is necessary to consider trends in notification rates by region and by specific population group.

The main TB notification rate indicator from Reporting Form #8 reflects the number of new TB cases registered from various jurisdictional entities (e.g., MoHS&D, FSIN, Ministry of Defense, etc.) among different categories of the population: civilian population (hereinafter "permanent residents"), inmates and those accused or suspected of crimes (hereinafter "FSIN population"), military personnel, etc. (in total, 117,646 new TB cases in 2006, see table 2.1). The main contributor to the TB notification rate (about 85%) is TB cases detected among the permanent resident population, including deceased cases previously not registered (85.8% in 2006). According to Form #33, 82.3% of all detected TB cases were registered in the MoH&SD

facilities (96,867 new cases, 2006). Cases detected in medical facilities under other jurisdictions (Ministry of Justice, Ministry of Internal Affairs, Ministry of Defense, etc., hereinafter referred to as “other institutions”) account for 13.8% (16,180 patients, 2006). Among new TB cases in 2006, there were 554 foreign citizens, comprising only 0.5% of all cases detected.

Table 2.1. New TB cases registered in 2005-2006, according to forms 8 and 33

	Source (statistical form)	2005		2006	
		#	%	#	%
New TB cases, total	form 8	119,226	100,0	117,646	100,0
New TB cases, among permanent residents	form 8	101,732	85,3	100,912	85,8
- registered by MoHSD	form 33	96,646	81,1	96,867	82,3
New TB cases, among foreigners	form 8	896	0,8	554	0,5
New TB cases registered by “other institutions”	form 8	16,598	13,9	16,180	13,8
- registered by MoJ (FSIN)	form 8	14,898	12,5	14,283	12,1

Cases detected among the FSIN population not only accounted for a significant percentage of cases registered under the category “other institutions”, but they also have an impact on the overall notification rate in the country. In 2006, the percentage of all TB cases detected in FSIN facilities was 12.1% (14,283 cases, form# 8). Over the last eight years (1999-2006), due to major efforts to improve the effectiveness of TB activities in the penitentiary system, the TB notification rate has decreased from 4,347 to 1,387 per 100,000 FSIN population (see chapter 6 “TB in the penitentiary system”). Meanwhile, the notification rate registered among permanent residents by MoH&SD facilities (see Figure 2.5) significantly increased up until 2004, and has since essentially stabilized (2006: 67.9 per 100,000 population, 96,867 cases).

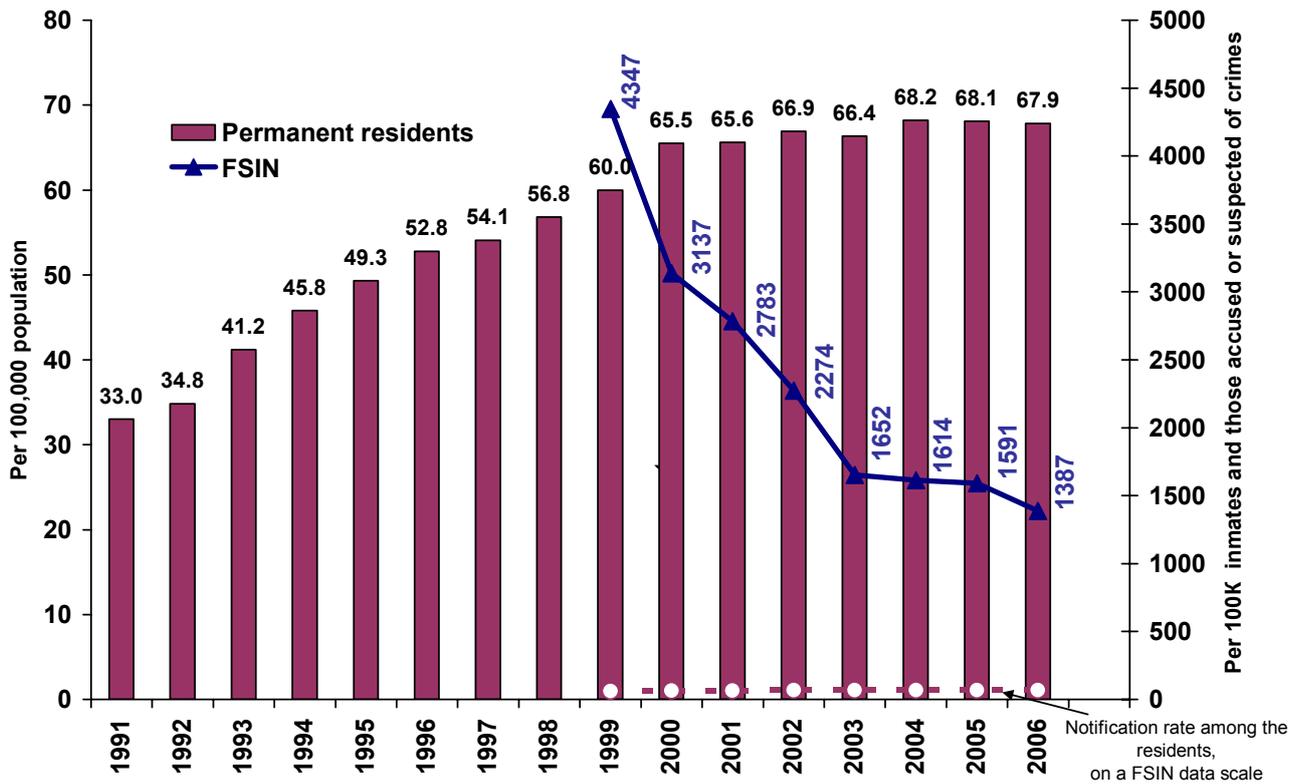


Figure 2.5. TB notification rates among residents and the FSIN population, 1991-2006. The dotted line and circles at the bottom right denote notification rates among residents included in FSIN data (Source: Form #8, population – forms 1 and 4, FSIN population)

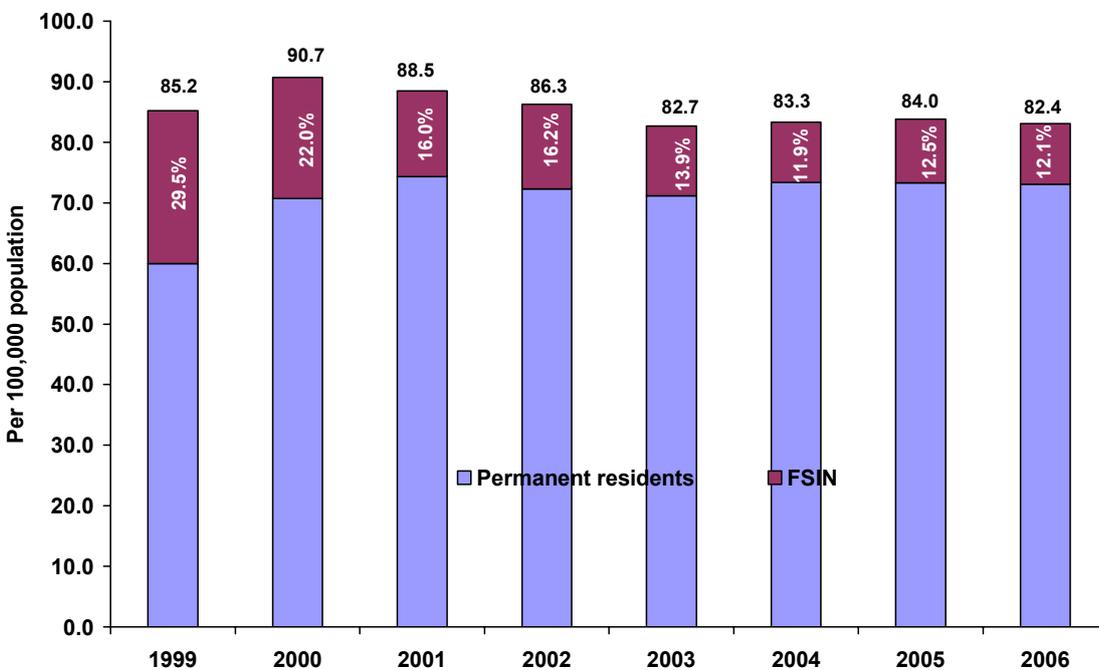
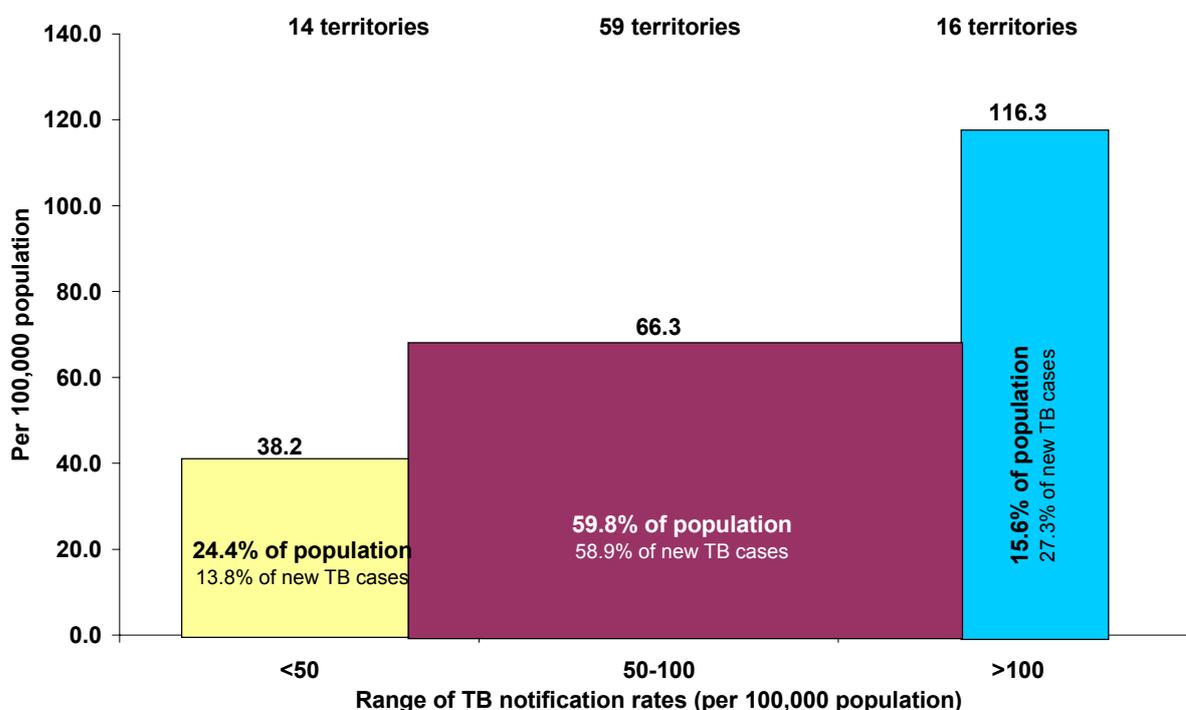


Figure 2.6. Percentage of the overall TB notification rate contributed by the FSIN population, 1999-2006. Black labels above the bars indicate the overall TB notification rate in the RF, including data from all jurisdictional entities. (Sources: Form #8, population: Forms #1 and #4, FSIN population)

Therefore, over the last few years, the trend of the TB notification rate has been affected by two separate processes: an increase in the number of cases registered among the civilian population (from 87,258 in 1999 to 96,867 cases in 2006, according to Form # 33) and a decrease in the percentage of registered cases from the penitentiary system – from more than a quarter (29%) in 1999 to 12.1% in 2006 (see Figure 2.6). It should be noted however that the notification rate among the FSIN population remains high (1,387 per 100,000).

The notification rate is of a relative nature. It reflects the risk of disease (for example, for the FSIN population, it is almost 1,400 per 100,000; the notification rate among civilians is only 67.9), and not the percentage of the absolute number of cases in the country (for example, the FSIN TB population accounts for 12% of all TB cases, while the civilian population accounts for 85.8%). It is therefore very important to know the absolute number of patients for planning the resources needed for targeted TB activities.

The notification rate differs significantly from territory to territory in the Russian Federation. The highest territorial rates in the RF are steadily reported in a number of territories in the SbFR and FEFR (data from Form #33, 2006)<sup>8</sup>: in the Republic of Tyva– 206.5 per 100,000 population, Republic of Buryatia -143.8, Primorskiy krai – 135.8, and Kemerovo oblast. – 128.6. The lowest rates are mainly in the central and northern territories: in the cities of Moscow – 28.0 and St. Petersburg – 34.4, Vologda oblast – 37.8, Kostroma oblast – 37.9, Murmansk oblast – 43.5, and Moscow oblast – 44.1.



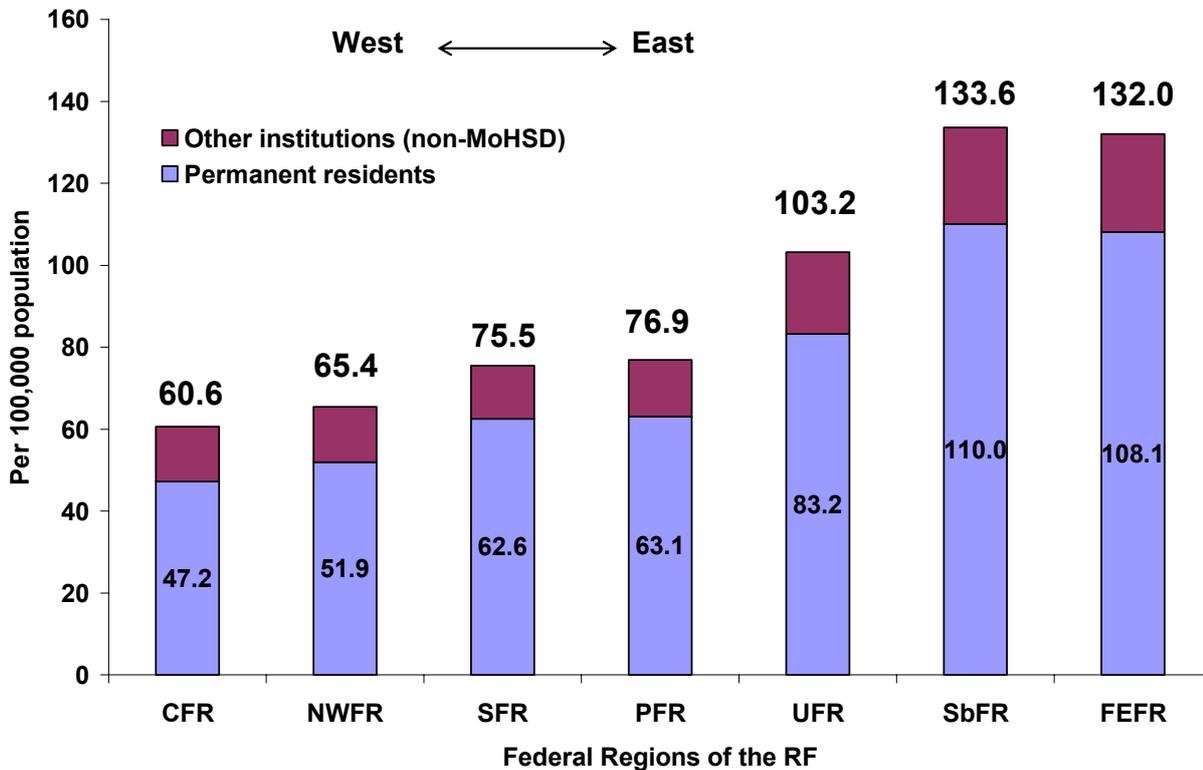
<sup>8</sup> Hereinafter, comparisons of notification rates take into consideration only territories with populations over 300,000.

Figure 2.7. Distribution of the population and RF territories by the level of TB notification rate, 2005. Territories are divided into 3 range groups: with a notification rate higher than 100, from 50 to 100, and lower than 50 per 100,000 population. The width of the rectangle represents the relative population covered by those territories (source: Form #33, population, Forms 1 and 4)

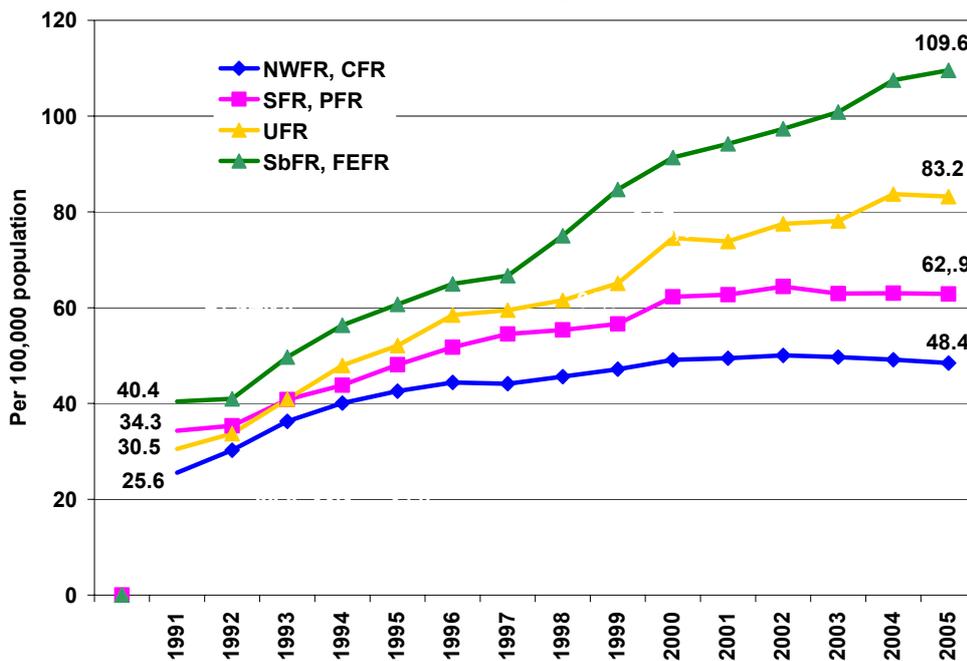
In 16 territories, accounting for 15.6% of the nationwide population (see Figure. 2.7), the notification rate was over 100 per 100,000 population (the aggregated notification rate in such territories was 116.3). Over a quarter of new cases detected in Russia were registered in these territories (27.3%). Relatively high notification rates- from 50 to 100 per 100,000 population- were also registered in 59 additional territories (the aggregated notification rate in such territories was 66.3). Almost 60% of cases registered in Russia were registered in these regions, which have 60% of the country's population. Only a quarter of the RF population lives in the 14 territories with relatively low notification rates - less than 50 per 100,000 population (the aggregated notification rate for such territories was 38.2).

A strong relationship between territorial notification rates and geographic location of territories can be observed. With the exception of Kaliningrad oblast, which is isolated to the west of mainland Russia, notification rates gradually increase from the west to the east (see Figure 2.8A, 2005) – from 60.6 and 65.4 in the CFR and NWFR, respectively, to 132.0 and 133.6 in the FEFR and SbFR, respectively).

In the eastern regions of the country, steeper increases in notification rates have been observed over the past 15 years. In the territories in the country's eastern federal regions (SbFR and FEFR) and in the Urals (UFR), the notification rate increased by 2.7 times from 1991 to 2005, while in the west, it increased by 1.8-1.9 times (see Figure 2.8B). As can be seen in Figure 2.8B, the notification rates from the three eastern regions (UFR, SbFR and FEFR) have had an increasing effect on the overall TB notification rate among the permanent resident population of Russia. However, changes in the notification rates in the more populated European part of Russia (CFR, NWFR, SFR and PFR) have restrained the increase in the overall notification rate in the country and have determined the process of rate stabilization.



A) Notification rate distribution by federal region



B) Trends of the notification rate in four groups of federal regions, 1991-2005, Form 33, MoH&SD facilities

Figure 2.8. Geographic distribution of TB notification rates by federal region and trends by groups of regions, 1991-2005. (Sources: Form #33 MoH&SD facilities and #8 data from all departments, population – State Statistics Committee).

### 2.1.1 TB notification rates in different sex and age groups

In the RF, TB is more common in males: in 2006, the notification rate among males was 2.7 times higher than that among females (126.2 and 45.9, respectively; see Figure 2.9). From 2002 to 2006, this ratio decreased from 3.2 to 2.7. A decrease in the notification rate was observed among males (from 136.2 to 126.2), and an increase was observed among females (from 41.9 to 45.9). The decline in the notification rate among males is due to the decrease in the number of new cases among individuals in the FSIN system (inmates and individuals accused or suspected of crimes). The rate for males from the civilian population practically did not change over these years (in the range of 105-107).

Among the permanent resident population, the percentage of new cases that were male was 67.5%. This percentage increases from almost 50% (48.7%) among children of 0-14 years old to almost 80% (76.7%) among those 45-54 years old, and declines back down to about 60% (61.5%) among the oldest age group (Figure 2.10). It should be noted that the percentage of the overall Russian population that is male drops from 51% among children to 32% among individuals over 65 years old.

Different age groups have different susceptibilities to TB infection, and therefore notification rates by age group differ considerably. The relationship is further complicated by the fact that rates differ substantially in males and females (See Figure 2.11A), making it necessary to examine notification rates by age group for each sex.



Figure 2.9. TB notification rates among males and females, 2002-2006. Permanent resident population and FSIN population. Notification rates for men and women from Form #8 are indicated above the bars; notification rates for men in the permanent resident population are indicated inside the bars (Sources: Form #8, population: Form #1)

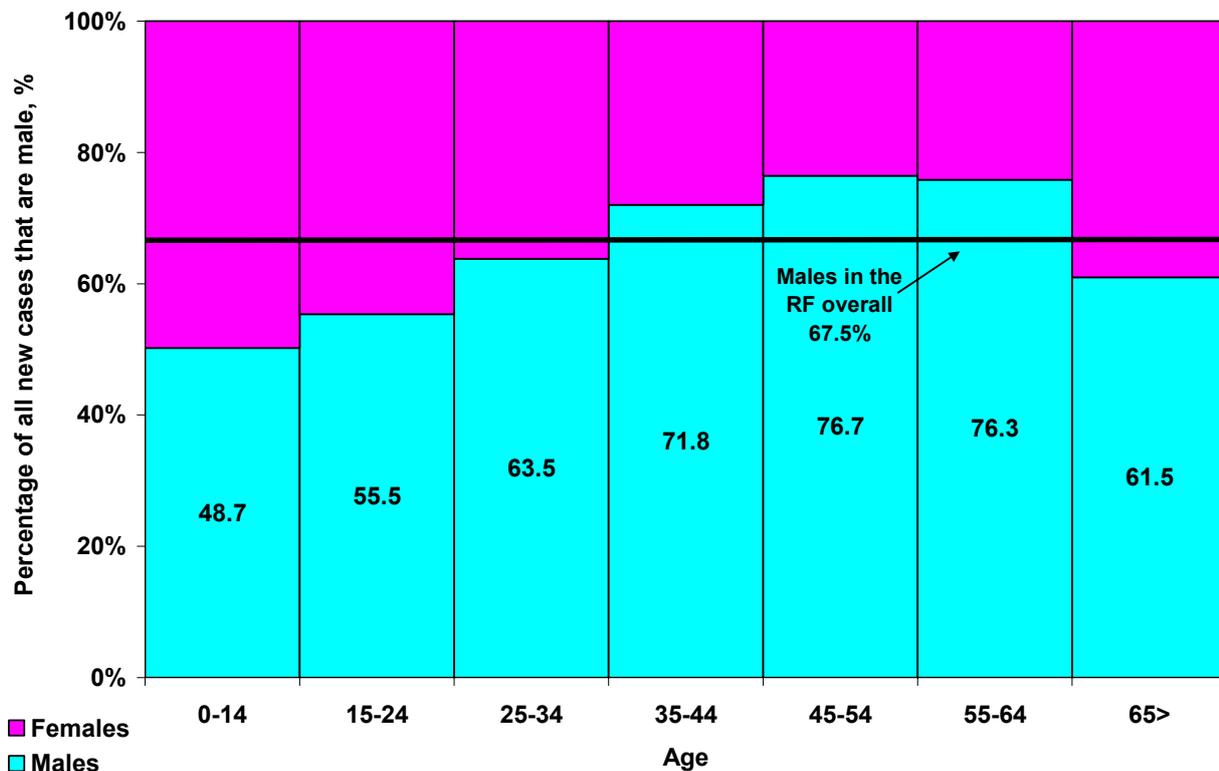


Figure 2.10. The percentage of males and females among new TB cases from the permanent resident population (without the FSIN population and populations from other territories), 2005 (source: Form 8)

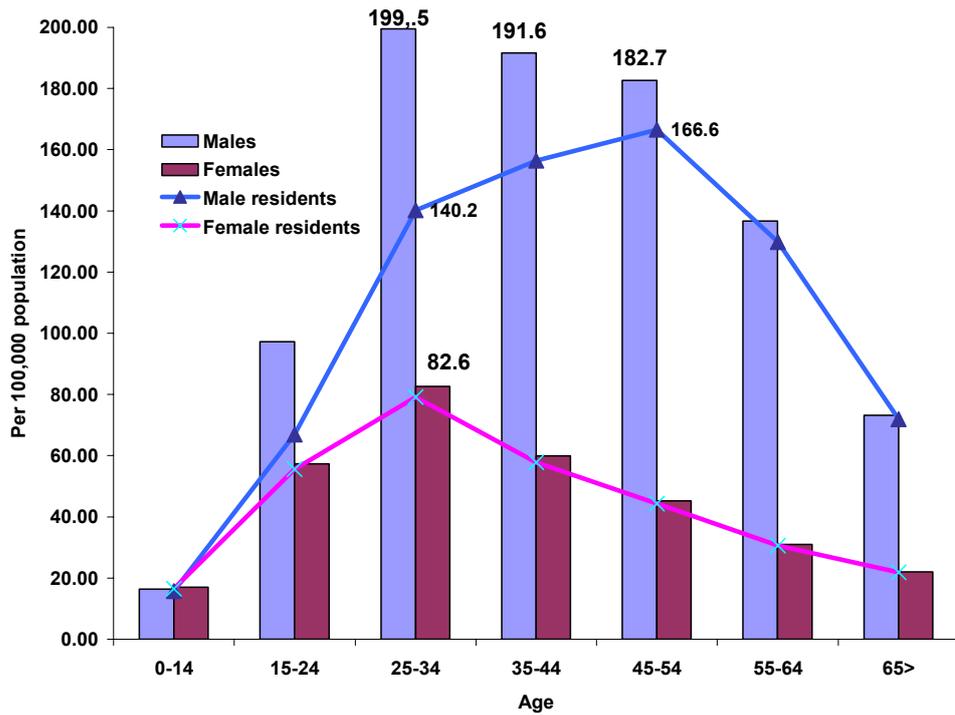
Among the male population of the RF, the highest risk of TB is among 25-34 year olds (199.5 per 100,000 population in 2005). However, the notification rate among the FSIN population makes a considerable contribution to the overall rate for this sex and age group - almost 30%. When considering notification rate data for permanent resident males<sup>9</sup> only, the highest rate falls at an older age group - 45-54 year olds (166.6 per 100,000 population, 2005). The notification rate among 25-34 year old males from the resident population only is considerably lower than the rate among all 25-34 year old males, and equals 140.2 per 100,000 population.

Using SSTM data, the analysis of smaller 5-year age intervals for the resident population (excluding FSIN population) allows for the identification of defined peaks in TB notification rates among males of the age groups of 26-30 and 41-45 years old (Figure 2.12). Furthermore, the peak in the 26-30 years old age group is more specific for the territories of the SbFR and FEFR.

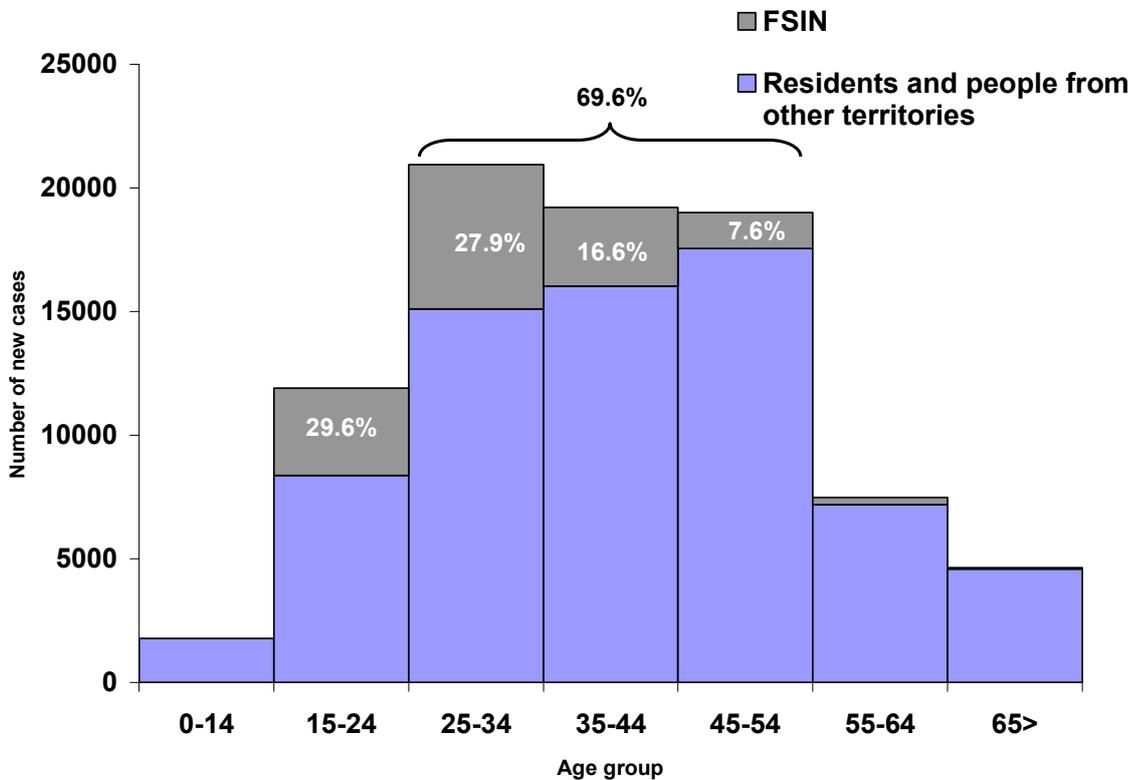
The socio-economic costs of TB can be estimated on the basis of the absolute number of cases in defined population age groups (Figure 2.11B). Almost 70% of new cases among

<sup>9</sup> Data from Form 8, 2005, excluding TB patients registered in FSIN (14,343 cases) and residents of other territories (1,311 cases)

males occur during the most productive years, between 25-54 years old, accounting for almost 60,000 TB cases a year.



A) TB notification rates for different age and sex groups of the entire population and of the permanent resident population of the RF (excluding FSIN and permanent residents of other territories)



B)

Structure of registered new TB cases among males of different age groups. Cases from FSIN, permanent residents of the RF and from other territories.

Figure 2.11. TB notification rates in different sex and age groups, 2005. The entire population, FSIN and permanent resident population of RF (Sources: Form #8, population – the FSSS)

The highest notification rates among females fall at the child-bearing age of 25-34 years old (82.6 per 100,000 population in 2005, Figure 2.11A). The notification rate in this age group has been increasing every year. From 1999 to 2006, the rate increased from 70.6 to 86.3 per 100,000 population (Figure 2.13), and the percentage of TB cases registered in this age group among all female cases increased from 23% to 26%.

Overall, the presence of peaks in the notification rate among the younger and more productive age groups in both males (25-34 and 45-54 years old) and females (25-34 years old) indicates an unfavorable TB epidemiological situation in the country. Furthermore, it suggests that a high level of TB dissemination will be retained into the nearest future.

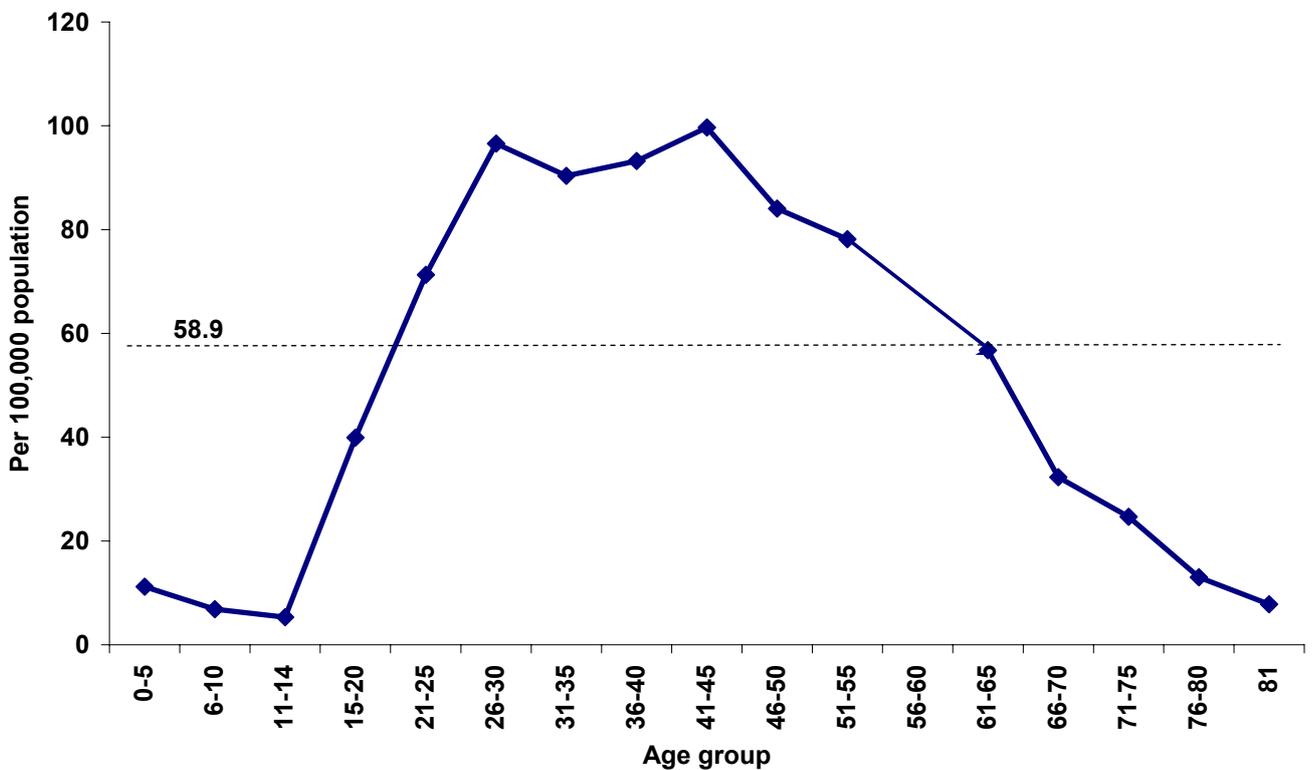


Figure 2.12. The TB notification rate among males of different age groups, 2005; 28 RF territories with a combined population of 52.2 million, 30,762 new TB cases detected among males. The overall notification rate of males – 58.9 per 100,000 population (source: SSTM)

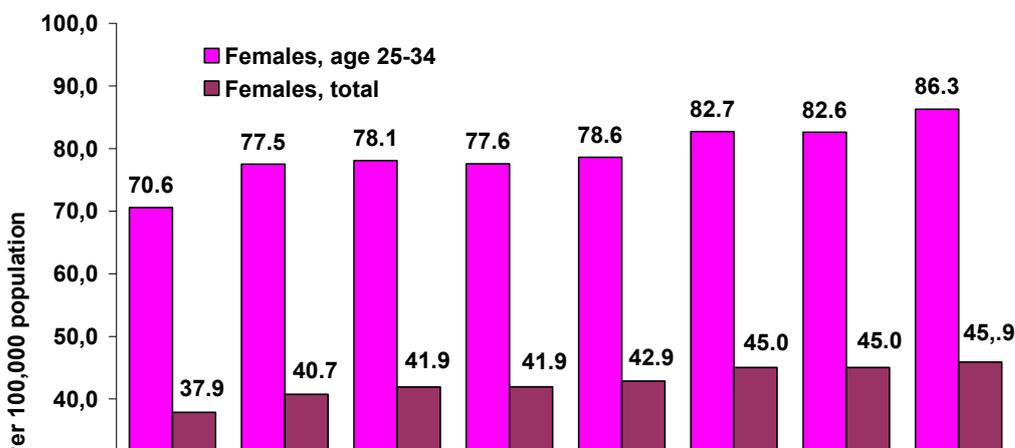


Figure 2.13. The notification rate among females, all ages and the subset of 25-34 year olds. (Sources: Form #8, population: Forms #1 and # 4)

Another important prognostic indicator based on epidemiological and demographic data is the TB notification rate among children. Although this parameter depends to a large degree on TB case finding and registration management among this age group (0-14 year olds), its high level requires special managerial decision-making and implementation of targeted activities.

Overall in the RF, from 1992 to 2001, the TB notification rate among children increased almost two-fold (from 9.4 to 19.1 per 100,000 children, Figure 2.14). Over the last four years, the rate has not substantially changed (16.1 per 100,000 children in 2006), with some minor fluctuations within the limits of expected statistical error in calculating both the number of cases and the base number of children. This may provide evidence to the theory that the epidemic has entered a phase of stabilization.

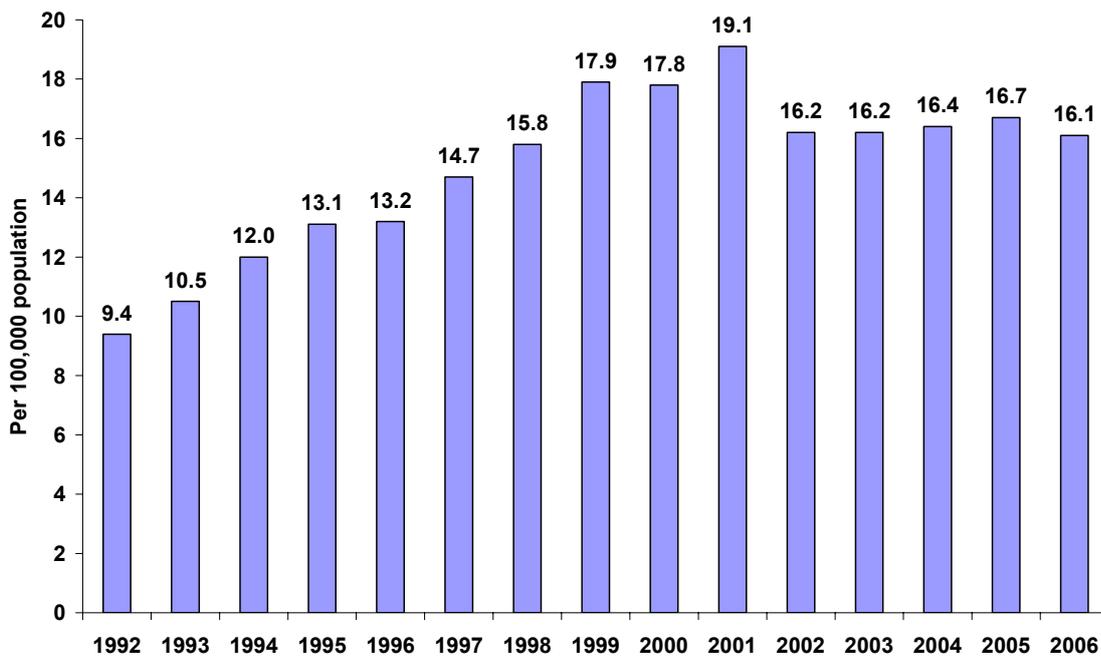


Figure 2.14. The TB notification rate among children, 1992-2006, RF (Sources: Form #8, annual average population: Form #1)



Figure 2.15. Territorial notification rates among children in the RF; aggregated data for the 5-year period of 2002-2006. (Sources: Form #8, population: Form #1)

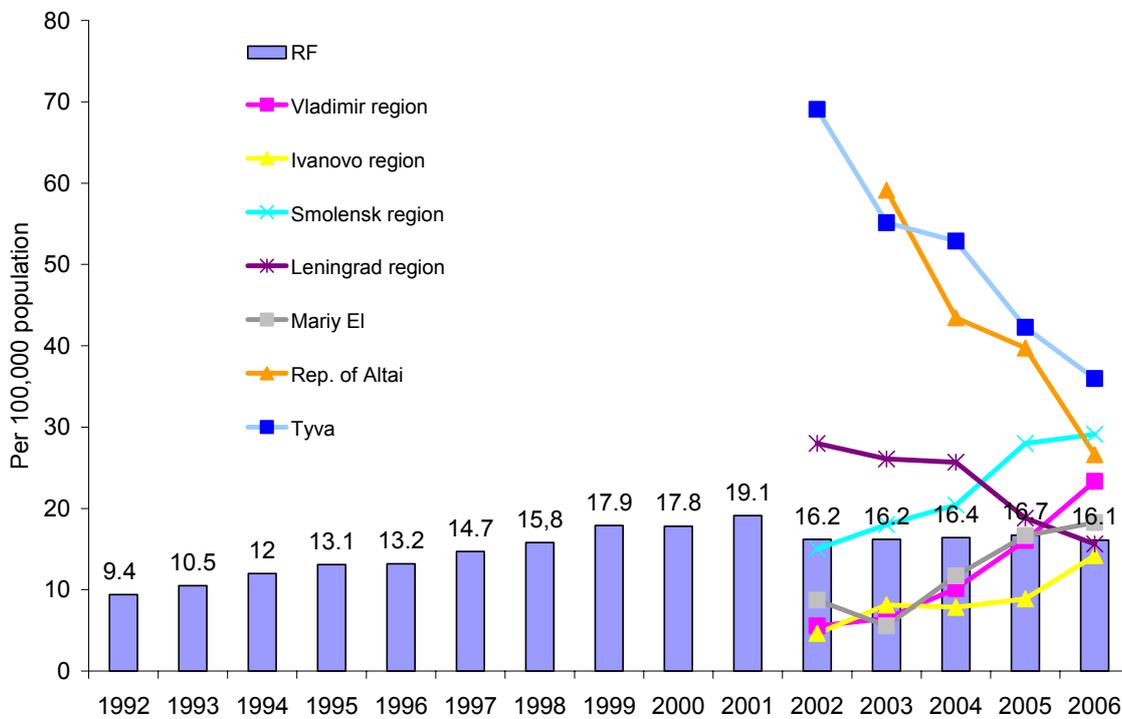


Figure 2.16. TB notification rates by year among children overall in Russia, and in select territories, 1992-2006 (Sources: Form #8, population: Form #1).

Figure 2.17 depicts TB notification rates among children in the federal regions. In the eastern part of the country, in the SbFR and FEFR, notification rates are almost 2 times higher than in the Urals and in the Central, Southern and Western<sup>12</sup> regions of the RF.

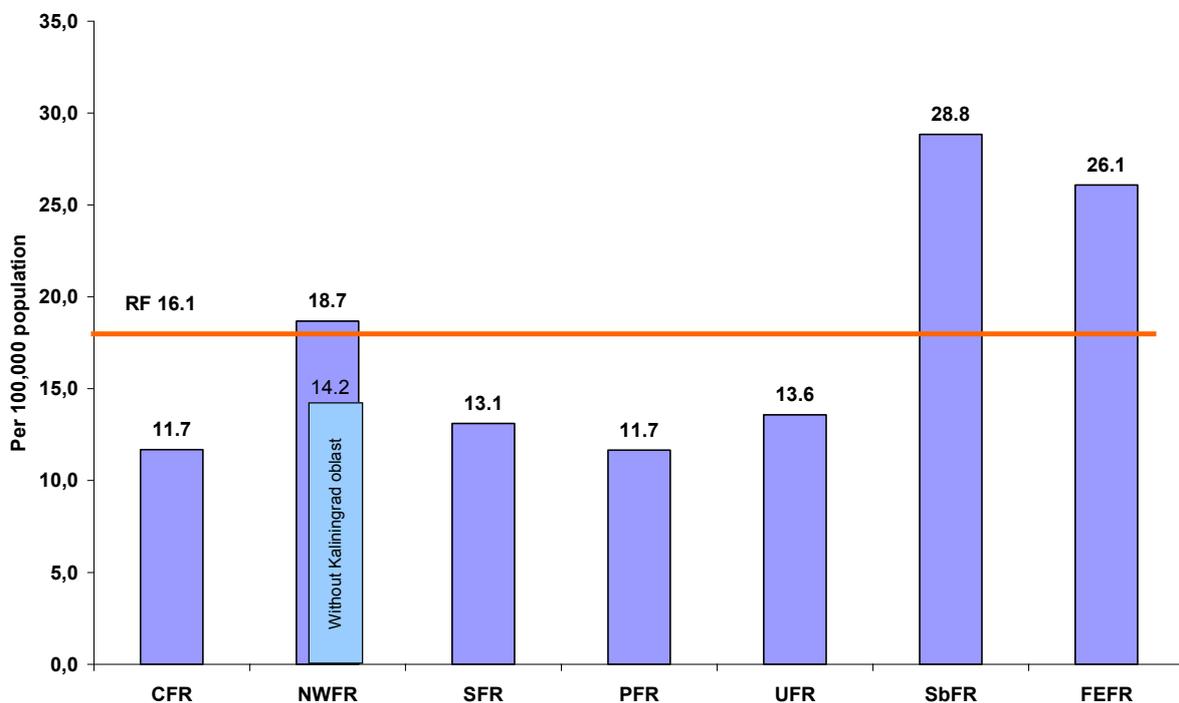


Figure 2.17. TB notification rates among children in the federal regions of the RF, 2006. Data for the NWFR are given for the entire region, excluding Kaliningrad oblast. (Sources: Form #8, population as of the end of the corresponding year: Form #1).

<sup>12</sup> The rate for the NWFR here excludes the Kaliningrad oblast, which is isolated from the other territories in the district, and has a high TB notification rate among children.

These numbers prove once again the fact that the TB epidemiological situation in the eastern part of Russia is much more severe than in the western part.

## **2.2 Detected forms and sites of TB**

Pulmonary TB is traditionally recognized as the epidemiologically most dangerous form of the disease.

Among all new cases registered at TB services, 88.6% are pulmonary TB. This percentage varies quite broadly by territory (Figure 2.18): from 70-75% (the Republics of North Osetiya and Sakha, and the city of St. Petersburg) to 93-95% (Republic of Chuvashiya, Khabarovsk krai, Pskov oblast). At the present time, this percentage depends to a large degree on the capacity of a territory to detect TB of the extrapulmonary organs: both of respiratory sites<sup>13</sup> (TB of the upper respiratory tract and bronchi, intrathoracic nodes and pleura) and of extrapulmonary sites (TB of the bones and joints, urogenital organs, CNS, etc.), which are registered in Russia separately. This capacity depends on the presence of necessary experts and their qualifications, as well as the presence of adequate primary knowledge about extrapulmonary TB among PHC staff, urologists, gynecologists and physicians of other fields of expertise.

The notification rate of extrapulmonary (extrapulmonary) TB is relatively low. The rate remained stable in the period of 1992-2002, at about 3.3 per 100,000 population, and by 2006, declined slightly to 2.9 (Figure 2.19). The percentage of such cases among all new cases in the RF decreased substantially from 10.2% in 1992 to 3.5% in 2006; as a result, the notification rate of extrapulmonary TB in recent years has not had much of an impact on the trend in the overall TB notification rate in the country. It could be possible that this rate is underestimated due to registration specifics of the combined pathology of pulmonary TB and TB of other organs. Unfortunately, reporting documents available at the present time only record the major pathology, which in most cases is pulmonary TB. Furthermore, a considerable number of cases with extrapulmonary TB also remain undetected due to GPC physicians not knowing about early detection methods, and at times, due to the problem being ignored.

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<sup>13</sup> Without lung parenchyma lesion

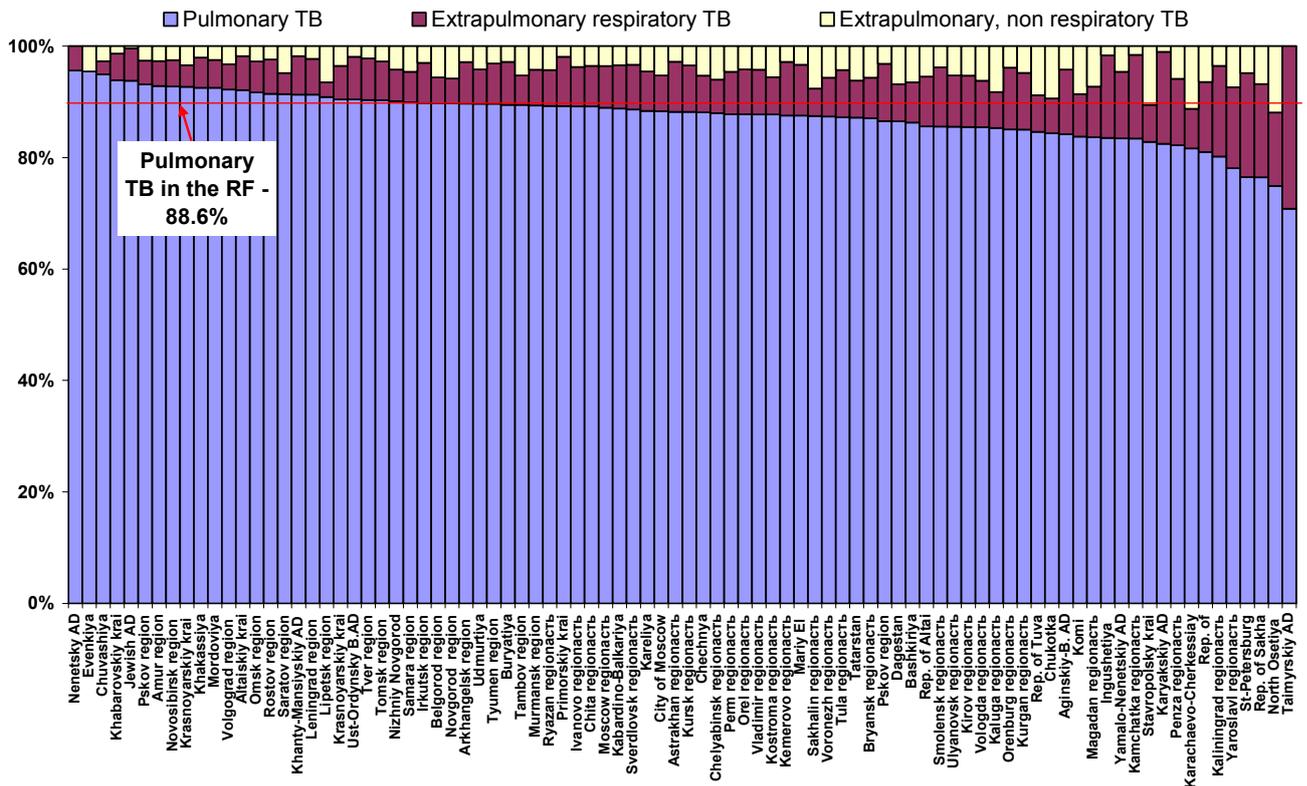


Figure 2.18. TB site among new cases, by territory, 2006. Pulmonary TB, respiratory TB of extrapulmonary sites and extrapulmonary (non-respiratory) TB (see text). (Source: Form #33).

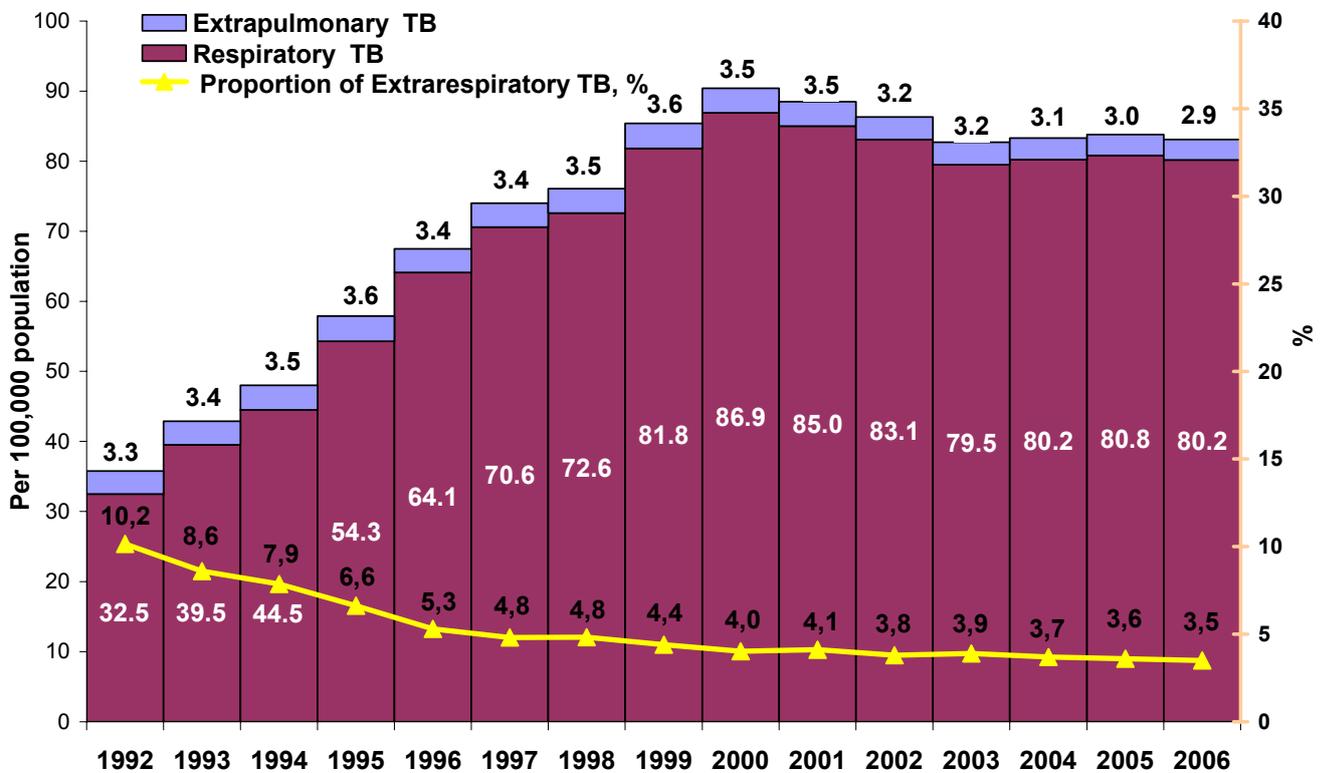


Figure 2.19. Notification rates of respiratory and extrarespiratory TB, and the percentage of extrarespiratory TB among all cases, 1992-2006 (Sources: Form #8, population: Form #1).

It appears necessary to introduce the concept of combined site cases into the TB recording and reporting forms. This would allow for an accurate calculation of the prevalence of extrapulmonary (extrarespiratory) TB in the country. Such a measure is important for defining the need for extrapulmonary TB specialists in the regions, and then conducting training courses on the issue of extrapulmonary TB diagnostics for physicians of all fields of expertise.

The timely detection of extrapulmonary (extrapulmonary) TB is also critical due to the high level of disability in such patients (9).

Among sites of new extrapulmonary TB cases (Figure 2.20), urogenital TB is the most common (38.9%), with other common forms being TB of the bones and joints (25.7%), TB of the peripheral lymphatic nodes (16.7%) and ocular TB (7.8%).

The clinical structure of new extrapulmonary cases is different in males and females. Males more often than females have TB of the bones and joints. Females more frequently have urogenital TB. Among children with extrapulmonary TB, TB of the peripheral lymphatic nodes is the most common.

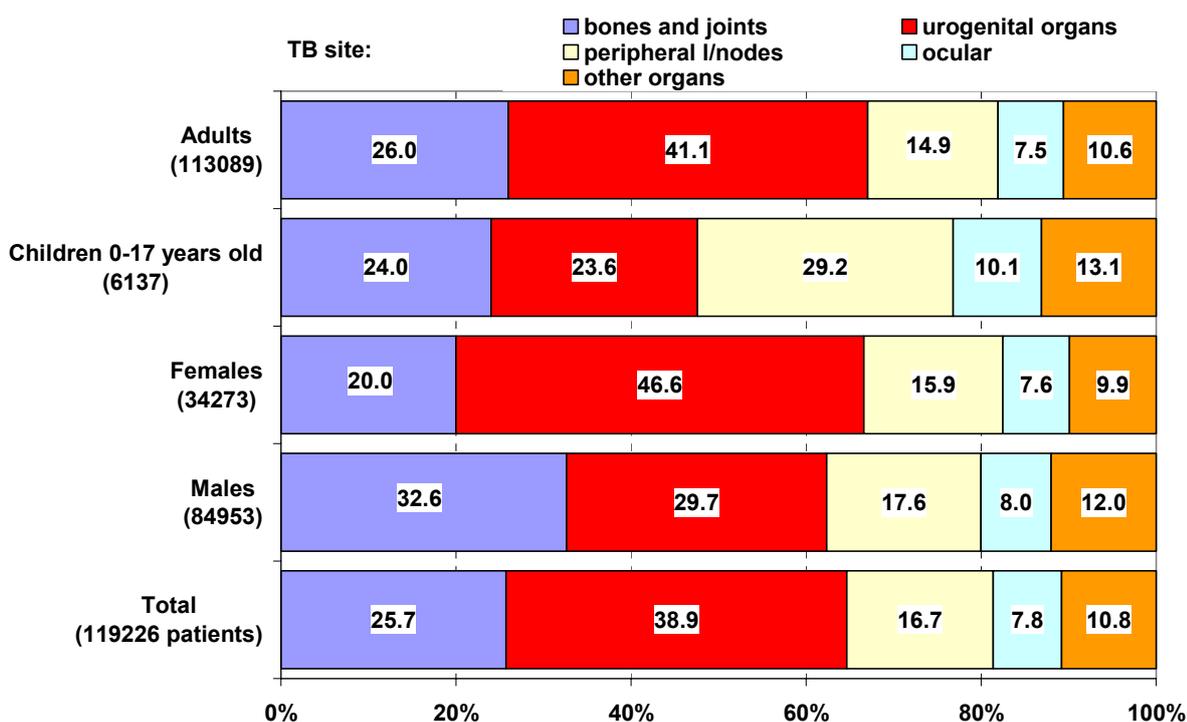


Figure 2.20. Clinical structure (sites) of new extrapulmonary cases in the RF, year 2005. (Source: Form #8).

The effectiveness of TB detection activities is reflected in the proportion of severe pulmonary TB forms among new cases.

TB cases with pulmonary tissue destruction and fibro-cavernous TB<sup>14</sup> are registered in TB reporting forms. Special attention is paid to the most epidemiologically dangerous cases – bacteriological positive TB cases which are laboratory confirmed.

The percentage of destructive forms of pulmonary TB among new cases in Russia overall has practically not changed over the last 9 years. It remains at the level of 50-52% (50.3% in 2006).

At the same time, this rate differs substantially by territory (Figure 2.21). A high rate of destructive forms of pulmonary TB can be partly accounted for by late detection of TB. On the other hand, a low rate may reflect either successful early detection activities, or low effectiveness or limited use of x-ray diagnostics when evaluating TB patients.

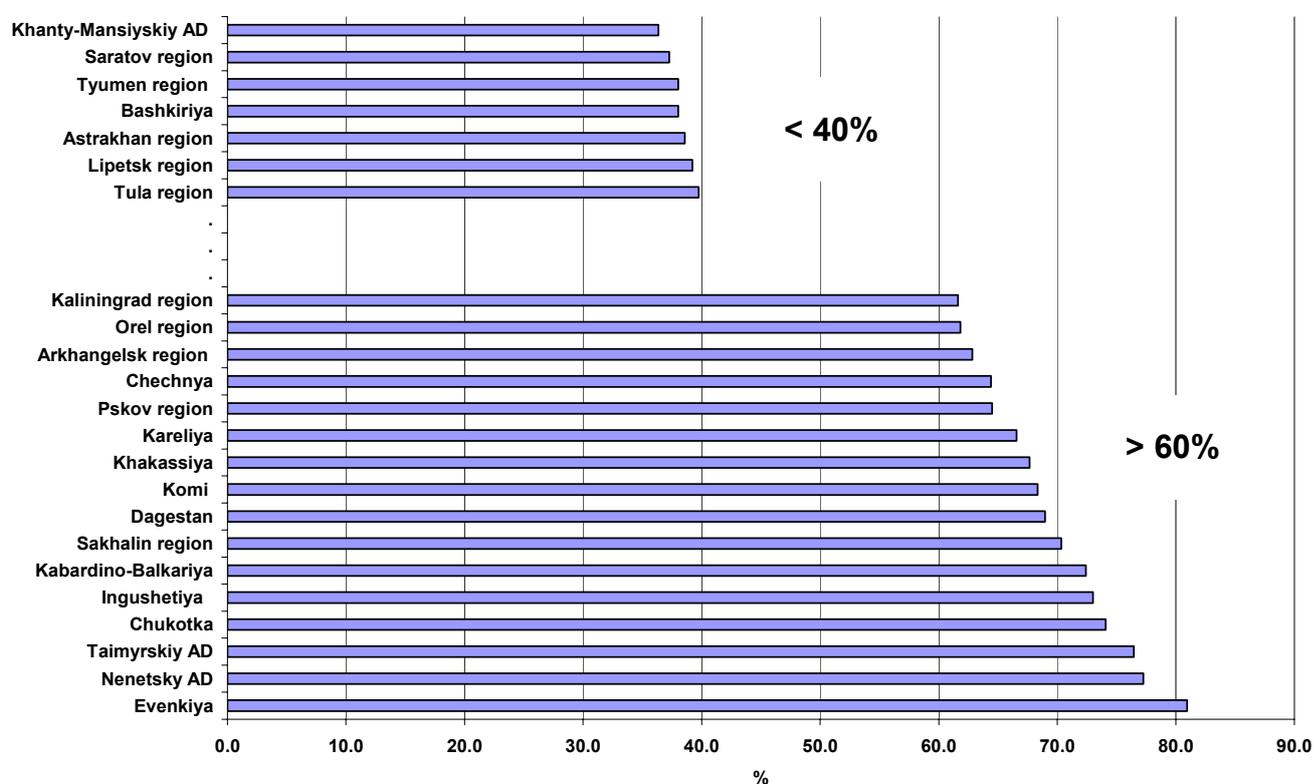


Figure 2.21. The percentage of new pulmonary TB cases with destruction of pulmonary tissues in the RF, 2006. Only territories with rates < 40% and > 60% are shown. (Source: Form 33)

An important indicator which reflects late detection is the percentage of fibro-cavernous TB cases among all detected TB cases (Figure 2.22). After an increase in the percentage of such cases starting at the end of the 80's, a steady decline in the percentage of this extremely severe form of pulmonary TB has been observed since 1999. In recent years, the percentage of fibro-cavernous TB has decreased from 3% in 2002 to 2.2% in 2006, which may be the result of improved effectiveness of TB detection activities performed by TB services.

<sup>14</sup> These are the most severe pulmonary TB forms registered in statistical reports. “Fibro-cavernous” is defined as chronic TB with extended lung cavitations and fibrosis

As observed with destructive forms, the proportion of fibro-cavernous TB varies considerably by territory of the RF. While increases of over 7% have been observed in some territories of the SbFR and FEFR (Kamchatka oblast – 11.4%, Primorskiy krai and Sakhalin oblast – 7.7%, Omsk oblast – 7.2%), in other regions this form of pulmonary TB has either not been registered at all (Novgorod and Pskov oblasts, which could be the result of either successful activities or diagnostic weaknesses), or does not exceed 0.5% (Vologda, Rostov and Orenburg oblasts– 0.3%)

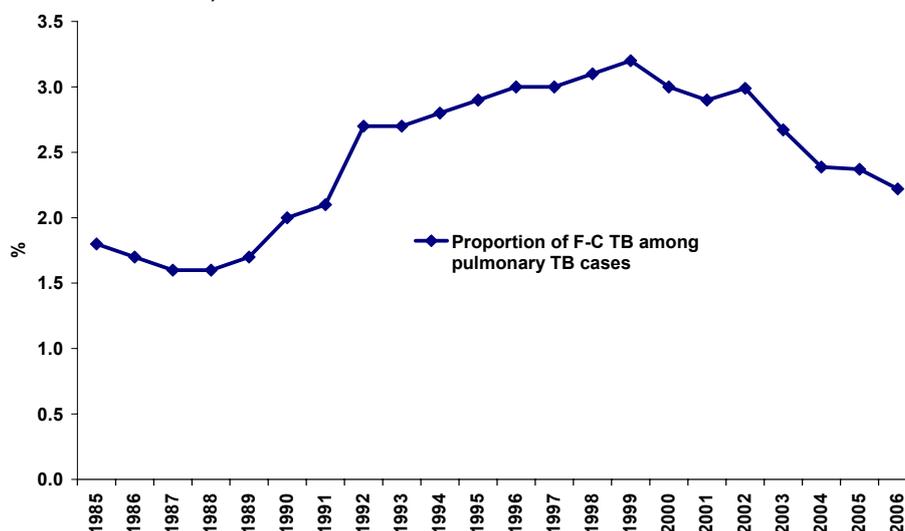
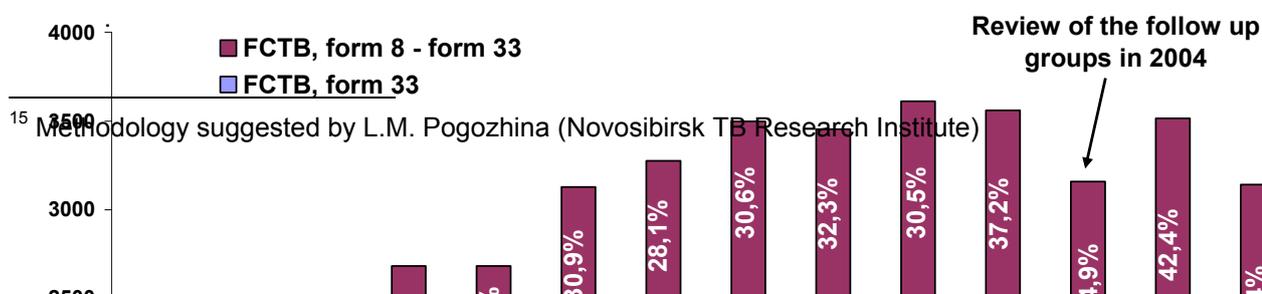


Figure 2.22. The percentage of new cases with fibro-cavernous forms of pulmonary TB (“F-C TB”) among all cases registered at MoH&SD facilities (source: Form #33).

At the same time, when comparing the absolute number of new cases of fibro-cavernous TB registered in Forms #33 (at the MoH&SD facilities) and #8 (data from all jurisdictional entities, and including TB cases detected postmortem)<sup>15</sup>, in recent years an increase in the percentage of fibro-cavernous TB cases detected outside of MoH&SD facilities has been observed. Over the last four years, almost 40% of cases of fibro-cavernous TB have been detected among cases not registered at MoH&SD facilities. Generally, these are homeless individuals and cases with postmortem TB diagnosis. The decrease in the percentage of fibro-cavernous pulmonary TB cases over the last few years may not indicate an improvement in detection activities, but rather a “redistribution” of cases with late detection to other categories.

When assessing the TB epidemiological situation, special attention is paid to detection of bacteriologically confirmed TB cases (TB patients with confirmed bacterial excretion). The key measurements are the notification rate of bacteriological positive TB cases and the percentage of bacteriological positive TB cases among all new cases.



<sup>15</sup> Methodology suggested by L.M. Pogozhina (Novosibirsk TB Research Institute)

Figure 2.23. New cases of fibro-cavernous forms (FCTB) of pulmonary TB registered at the MoH&SD facilities (form #33) compared to cases detected under the jurisdiction of other entities or not on MoH&SD records (i.e., the difference between data from Form 8 and Form 33, an indicator of L.M. Pogozhewa, NTRI)

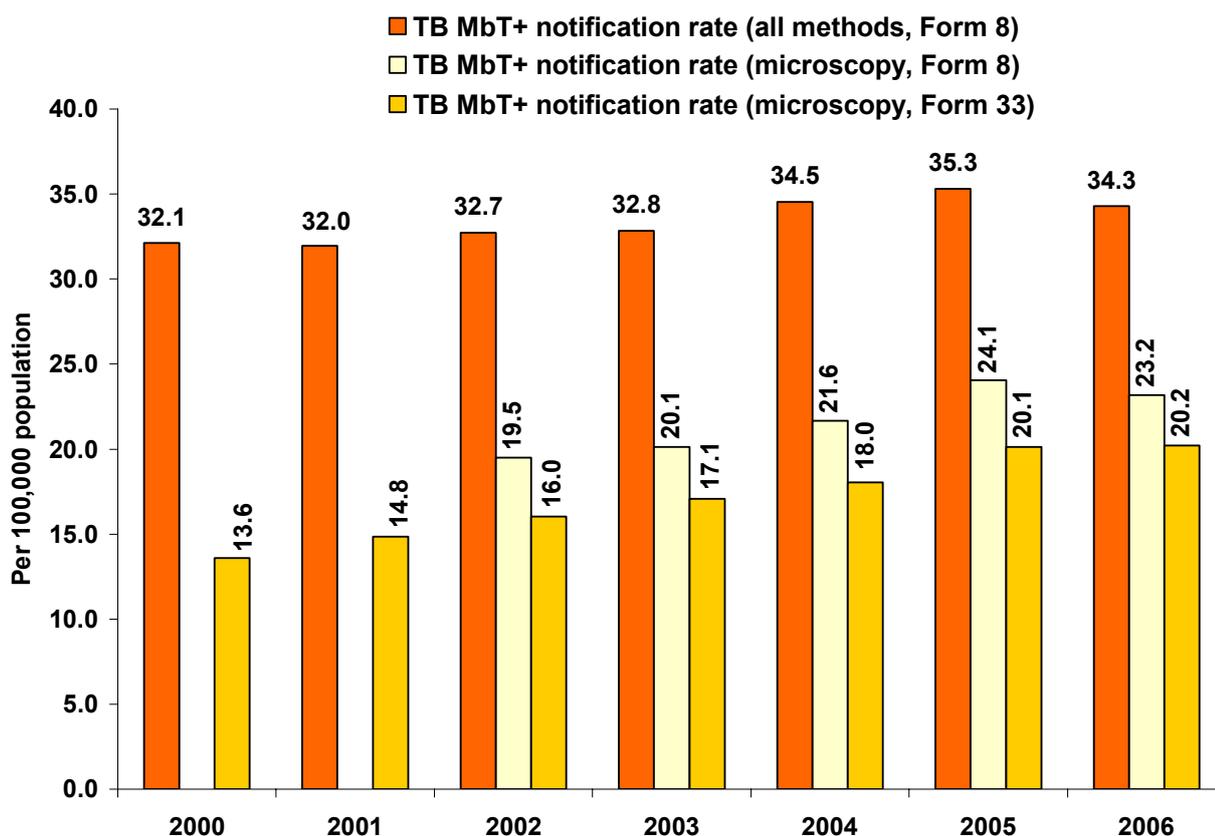


Figure 2.24. Notification rates of MbT+ cases, confirmed by any method (Form 8), and by microscopy, for the entire population and for the permanent resident population only, registered at MoH&SD facilities (Sources: Forms 8 and 33; for population: Forms 1 and 4)

Over the past seven years, an increase has been observed in the notification rate of MbT+ cases confirmed by all methods (from 32.1 to 34.3 per 100,000 population), and by microscopy methods (from 13.6 to 20.2 in the MoH&SD facilities). See Figure 2.24. The latter could be indicative not only of an increase in the number of epidemiologically dangerous cases, but of an improvement in laboratory TB diagnostics. This is related to major efforts under way in the RF to equip clinical and bacteriology laboratories and to train staff within the framework of the IBRD and GFATM projects.

As a result of this, the observed increase in number of bacteriological positive cases might be the result of improved bacteriological TB diagnostics.

There are several approaches to calculating the percentage of bacteriological positive cases among new cases. They vary depending on the reported segment of population (i.e., the reporting form used), the site of the detected TB, and the method of bacteriological confirmation.

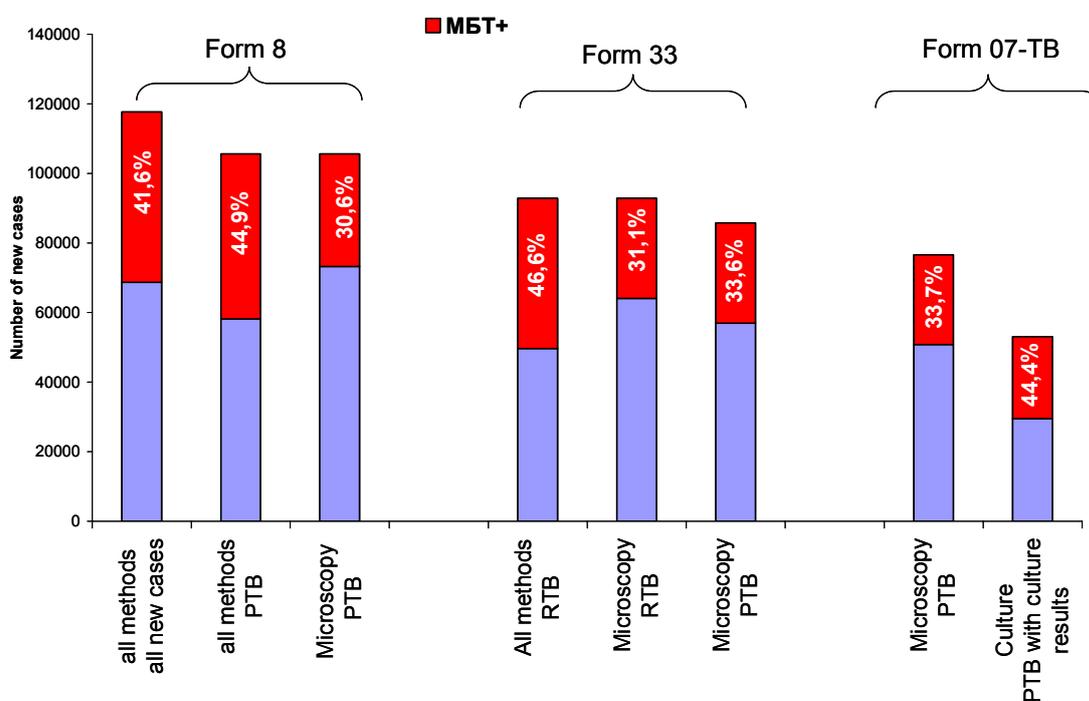


Figure 2.25. The percentage of bacteriological positive cases confirmed by different methods among new cases of respiratory TB (RTB) and pulmonary TB (PTB), year 2006 Sources: Forms 8, 33 and 07-TB.

Figure 2.25 presents the most commonly used approaches. The use of reporting form #8 allows for the calculation of the percentage of new bacteriological positive cases confirmed by any method among all new cases (41.6%)<sup>16</sup>. Of special interest is the percentage of bacteriological positive TB cases among pulmonary TB cases (44.9%); 30.6% were confirmed by microscopy. Form #33 allows for the calculation of the value of the given indicator for the permanent resident population (i.e., cases registered at MoH&SD facilities). Of key interest is

<sup>16</sup> All percentage values of MbT+ patients in the description of Figure 25 are specific for 2006 .

the percentage of bacteriological positive cases confirmed by microscopy (33.6%) among pulmonary TB cases, and by all methods among respiratory TB cases (46.6%).

Form # 07-TB, approved by MoH Executive Order #50 of 13.02.04, allows for the separate calculation of the percentage of smear- and culture-positive cases among new pulmonary TB cases (44.4% and 33.7%, respectively).

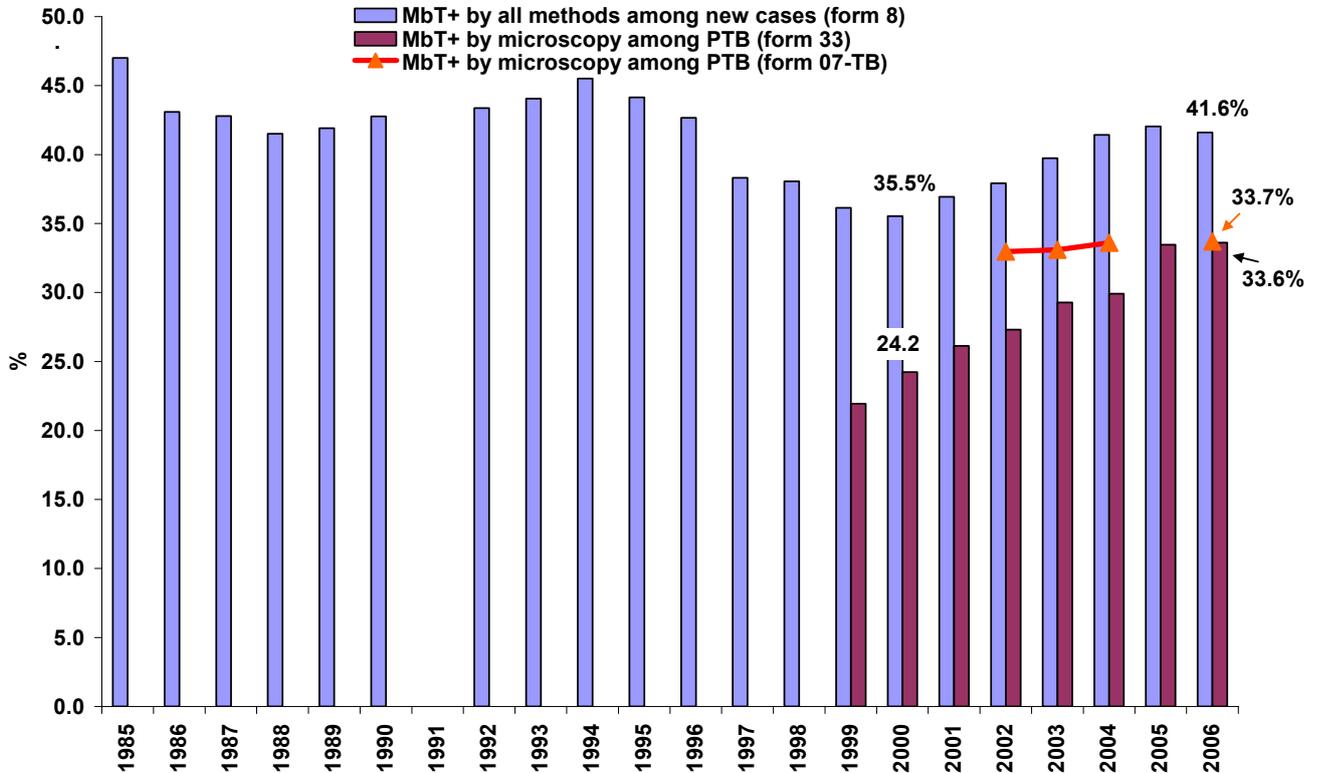
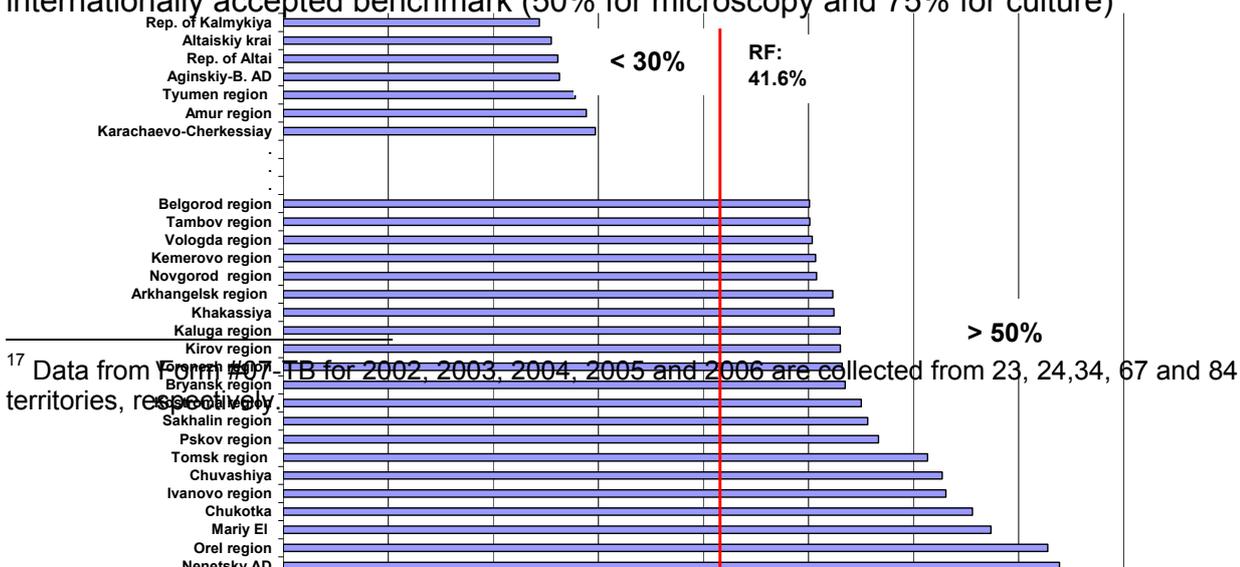


Figure 2.26. The percentage of bacteriological positive new pulmonary TB cases in the RF in 2006. From data on bacteriological positive cases confirmed by any method among all new TB cases (Form 8) and confirmed by microscopy among new pulmonary TB cases (Forms #33 and #07-TB<sup>17</sup>)

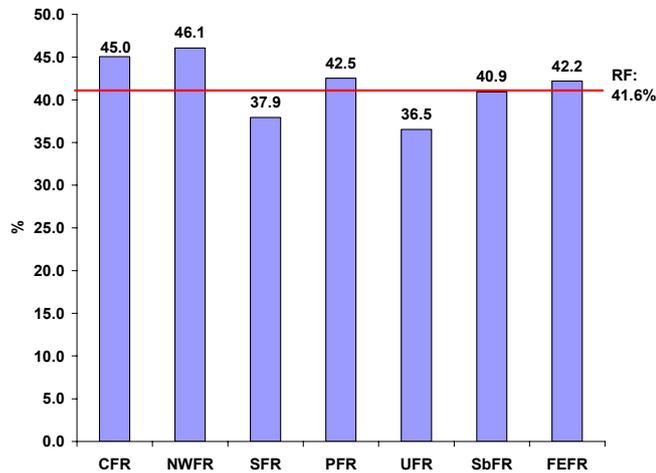
Figure 2.26 also shows that starting in 2000, there has been a gradual increase in the percentage of bacteriological positive cases among new cases. Under certain stabilization of the epidemiological process, this could indicate an improvement of laboratory services' performance in TB detection.

At the same time, the percentage is still not high enough. It is much lower than the internationally accepted benchmark (50% for microscopy and 75% for culture)



<sup>17</sup> Data from Form #07-TB for 2002, 2003, 2004, 2005 and 2006 are collected from 23, 24, 34, 67 and 84 territories, respectively.

A) Territories with the lowest (< 30%) and highest (>50%) percentages



B) By federal region

Figure 2.27. The percentage of new bacteriological positive TB cases confirmed by any method, RF, 2006 (source: Form 8)

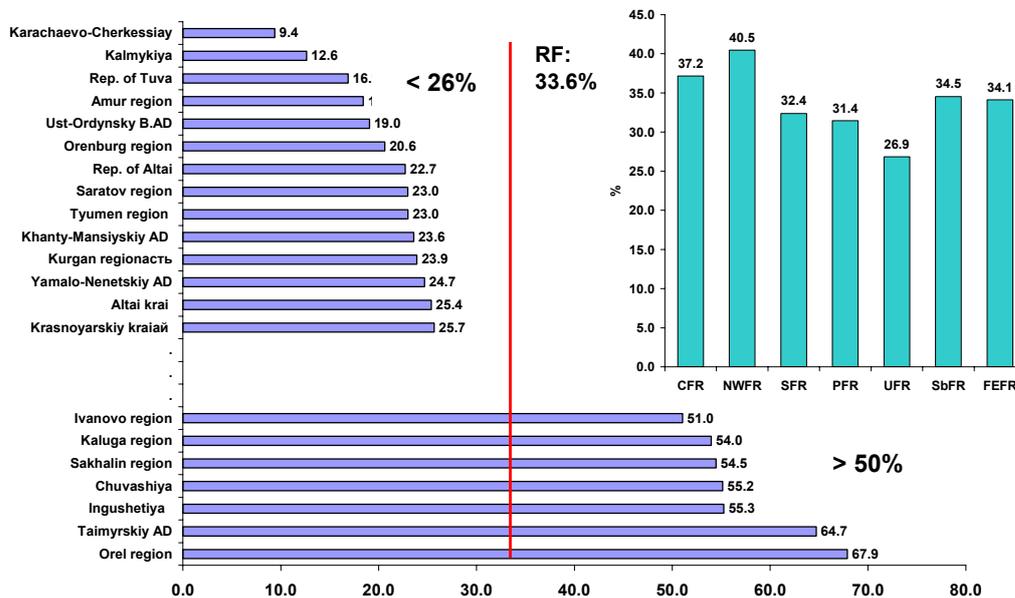


Figure 2.28. The percentage of smear-positive new pulmonary TB cases, 2006, in territories with rates <26% and >50%, and by federal region (source: Form #33)

Only in 21 territories (Figure 2.27 and 2.28) was the percentage of new bacteriological positive cases confirmed by any method over 50%; in seven territories, it did not exceed 30%. When calculating the percentage of smear-positive cases (microscopy confirmation only), the number of such territories is 7 and 14, respectively. This speaks of the necessity for further

improvement of laboratory services performance, especially in the Southern and Urals federal regions.

In recent years, a considerable positive trend has been observed in many territories in the rate of detection of smear-positive TB cases (Figure 2.29). In such territories, the percentage of such cases has increased by 1.5-5 times over a 5 year period.

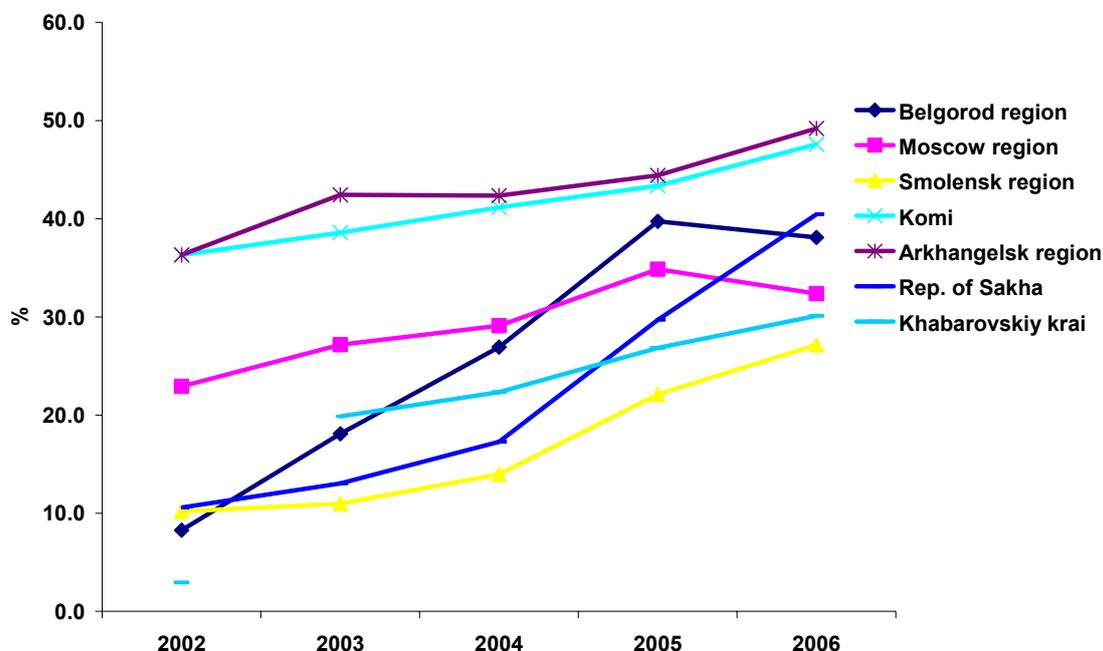


Figure 2.29 Russian territories in which an increase in registration of new smear-positive pulmonary TB cases has been observed (i.e., percentage of smear-positive TB cases among new pulmonary TB cases). (Source: Form #33)

An important indicator that reflects the performance of bacteriology services is the relationship of the number of MbT+ cases to the number of cases with destructive pulmonary TB (among new cases). This represents how often bacterial excretion is being diagnosed in especially severe forms of pulmonary TB.

From Figure 2.30, it is seen that over the last three years the value of this indicator in the RF overall has reached or even slightly exceeded 100%. However, in 10 territories, it was lower than 70% (47-69%), providing evidence that laboratories are not performing effectively enough. In 12 territories, the rate exceeded 125%, which may indicate high-quality laboratory performance and/or problems with x-ray diagnostics.

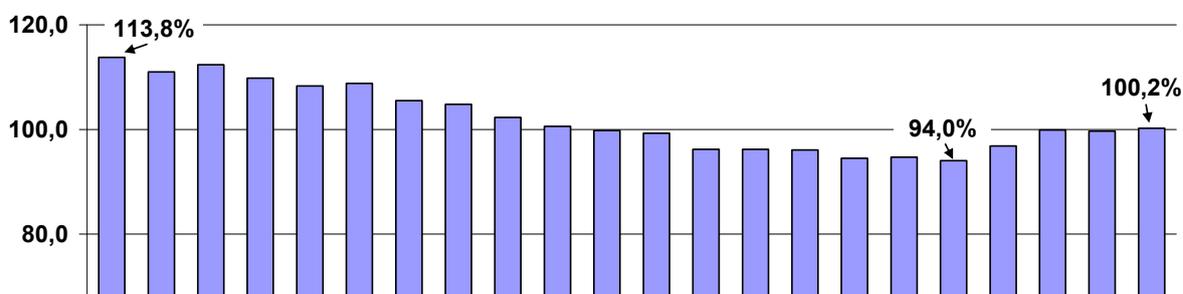


Figure 2.30. The relationship of MbT+ cases to destructive pulmonary TB cases among respiratory TB cases registered at MoH&SD facilities (Source: Form #33).

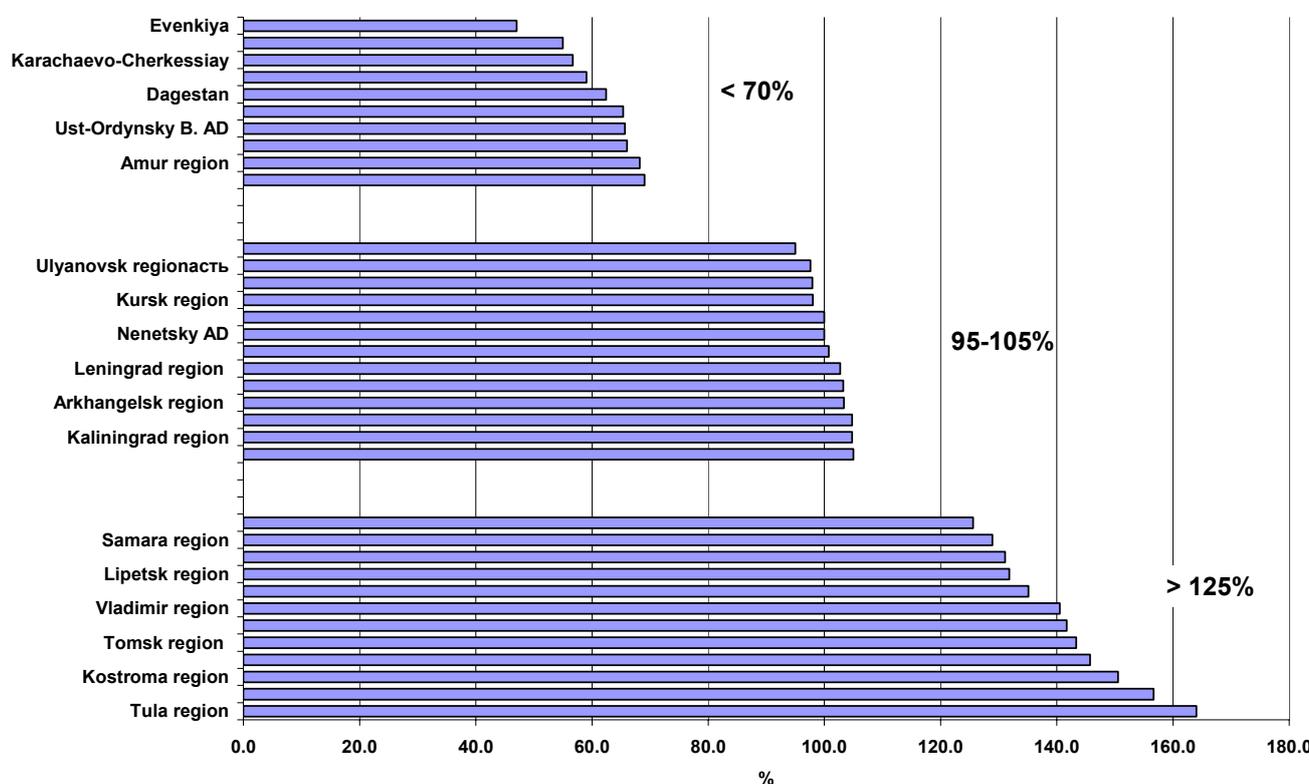


Figure 2.31. The relationship of MbT+ cases to destructive pulmonary TB cases among respiratory TB cases registered at MoH&SD facilities at the territory level, 2006. Three groups of territories are shown: with low, middle and high percentages. (Source: Form #33).

### 2.3. Detection of MDR TB cases

In recent years, serious attention has been directed towards the issue of TB with multi-drug resistance (MDR), i.e., when TB mycobacteria (*M. tuberculosis*) are resistant to at least isoniazid and rifampicin. MDR TB has a major impact on the spread of TB due to a reduction in treatment effectiveness. Noteworthy is an increase observed in so-called primary MDR<sup>18</sup>, defined as the percentage of new MbT+ cases that have MDR TB.

According to Form 33 data, from 1999 to 2005 in the RF there was a reported increase in respiratory TB cases with primary resistance to isoniazid and rifampicin among the number of new respiratory MbT+ cases (from 6.7% to 9.4-9.5%; 4,056 new MDR TB cases were registered in 2006). This could be the result of improved laboratory performance, i.e., improved detection of MDR TB cases (Figure 2.32). It should be noted that drug susceptibility testing (DST) is performed only on MbT+ cases confirmed by culture (and at times, even not on all of them). Since the percentage of MbT+ cases with a positive culture test undergoing DST is far from 100%, the true MDR TB numbers are likely much higher than those seen in the figure.

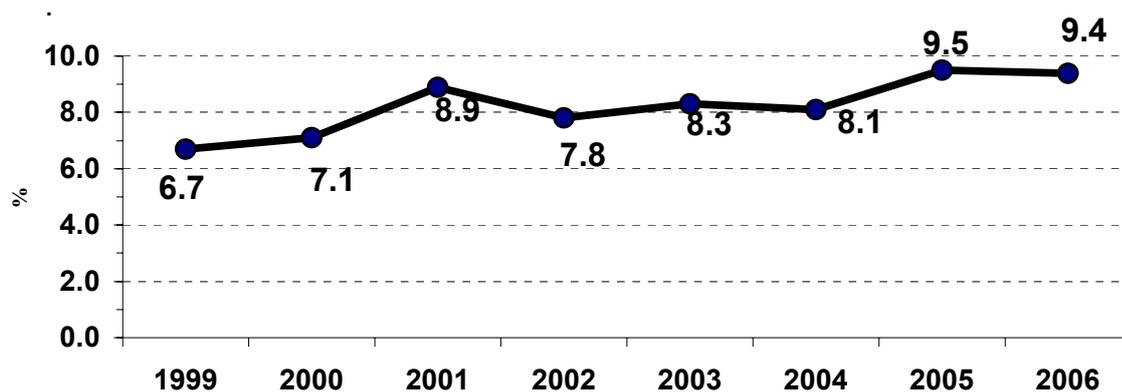


Figure 2.32. MDR TB prevalence among new MbT+ cases: RF, 1999-2005

The registration process in state reporting forms for new MDR TB cases is not fully developed, and therefore the quality of data from Forms #33 and #07-TB is not sufficient. According to the results of some studies, the MDR TB prevalence in some territories exceeds that given in the reporting forms, and equals 13.7% of new MbT+ cases in Tomsk oblast (2002 (10)) and 20% (2005) in Samara oblast (11). This may indicate that efforts are needed to improve the performance of TB laboratories and the MDR data collection system in RF territories.

<sup>18</sup> Primary resistance to TB drugs is defined as resistance detected in cases that have never been treated previously or have been undergoing treatment for less than 1 month

## 2.4. TB notification rates among contacts

Form 33 contains a very important piece of information: the number of TB patients having had contact with MbT+ patients and MbT- patients. Up to the beginning of the 21st century, the TB notification rate among individuals who were exposed to MbT+ patients exceeded 800 per 100,000 annual average number of contacts. It has remained approximately at that level up until the present time: 805.6 (2,297 TB cases out of 285,232 annual average number of contacts in 2006). The TB notification rate among exposed (contact) children for the last decade has been approximately at the level of 500-600 per 100,000 contacts (588.3<sup>19</sup> in 2006). The level of this indicator is quite high, as it exceeds the TB notification rate among the permanent resident population by 11.8 times (2006). Among children, the TB notification rate of contacts exceeds the notification rate among children overall in Russia by 36.5 times. Among adolescents, the difference is 30.9 times.

The data also indicates that the notification rate among children and adolescents exposed to MbT+ patients (731.4 per 100,000 annual average number of contacts) is 5.1 times higher than the same rate for contacts with MbT- patients (143.1 per 100,000 annual average number of contacts). This finding makes evident once again the need to focus efforts on MbT+ patients - the most epidemiologically dangerous group of TB patients.

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<sup>19</sup> 481 TB cases among exposed children out of approximately 78,000 annual average number of contacts

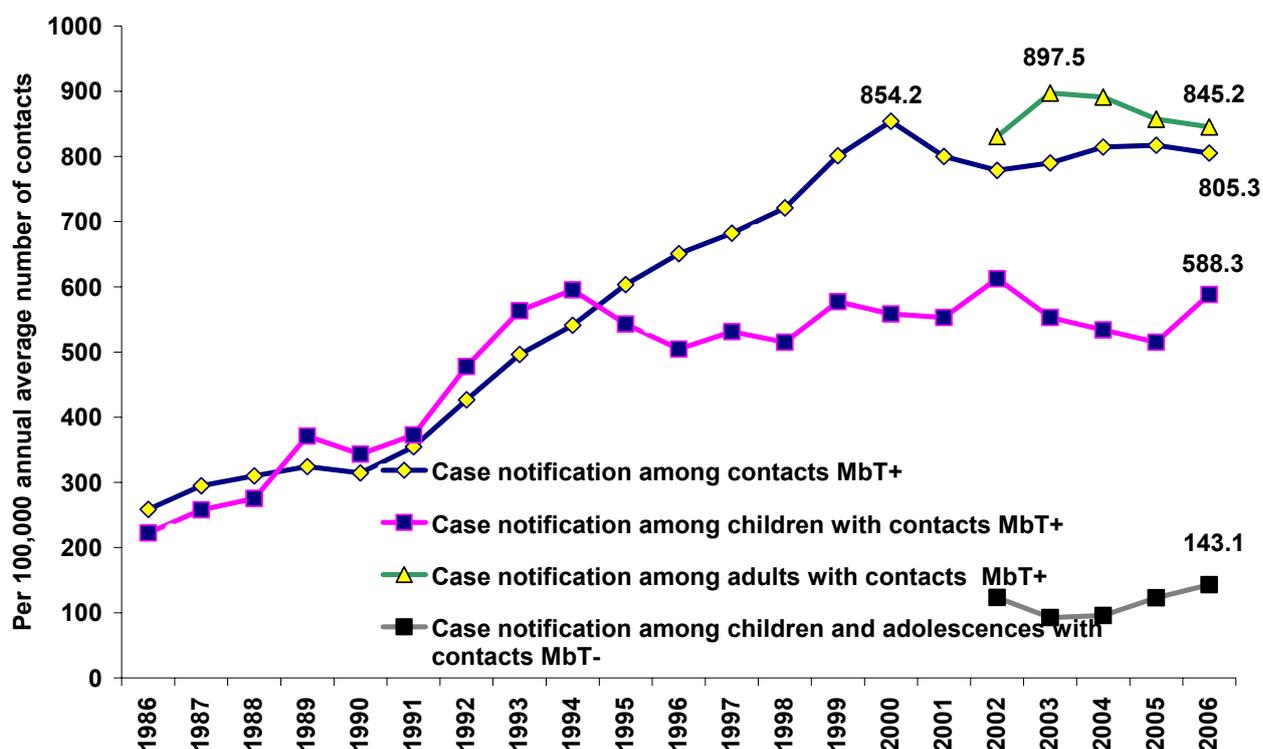


Figure 2.33. TB notification rates among adults, adolescents and children exposed to MbT+ and MbT- patients in the RF (Source: Form 33)

## 2.5. TB case detection management

The level of TB notification rates and the diagnosed TB forms in a region to a large degree depend upon case-finding management.

In the RF at present, the main method of TB detection is radiological. In 1985-1987, the highest coverage of the population by TB screening was achieved, reaching 75% of the population. During the first post-soviet years, the situation changed dramatically: the planned and the actual scope of screening activities decreased, and less than half of the population subject to evaluation was screened. In recent years, the population coverage by active screening has increased slightly and has become stable in the range of 57-59% (57.8%, 2006). Meanwhile, the percentage of TB cases detected during screening among all new cases does not exceed 55% (Figure 2.34). In 2005, in 13 RF territories, this rate was lower than 45% (4): the city of Moscow and Vladimir, Ivanovo, Moscow, Orel, Smolensk, Tula, Archangelsk, Murmansk and Irkutsk oblasts, and the Republics of Adygeya, Kabardino-Balkaria and Khakasia. In 2004, there were more such territories – 16, and in 2003 – 18.

According to Form 33 data (MoH&SD, 2006) and including cases of postmortem TB diagnosis, 54.1% of new cases were detected by active screening, 43.2% were “passively” detected when they sought medical assistance with complaints and 2.8% were diagnosed post-mortem (2,745 cases). Data from the territorial Form 8 for 2006 indicate 2,773 TB cases diagnosed post-mortem.<sup>20</sup>

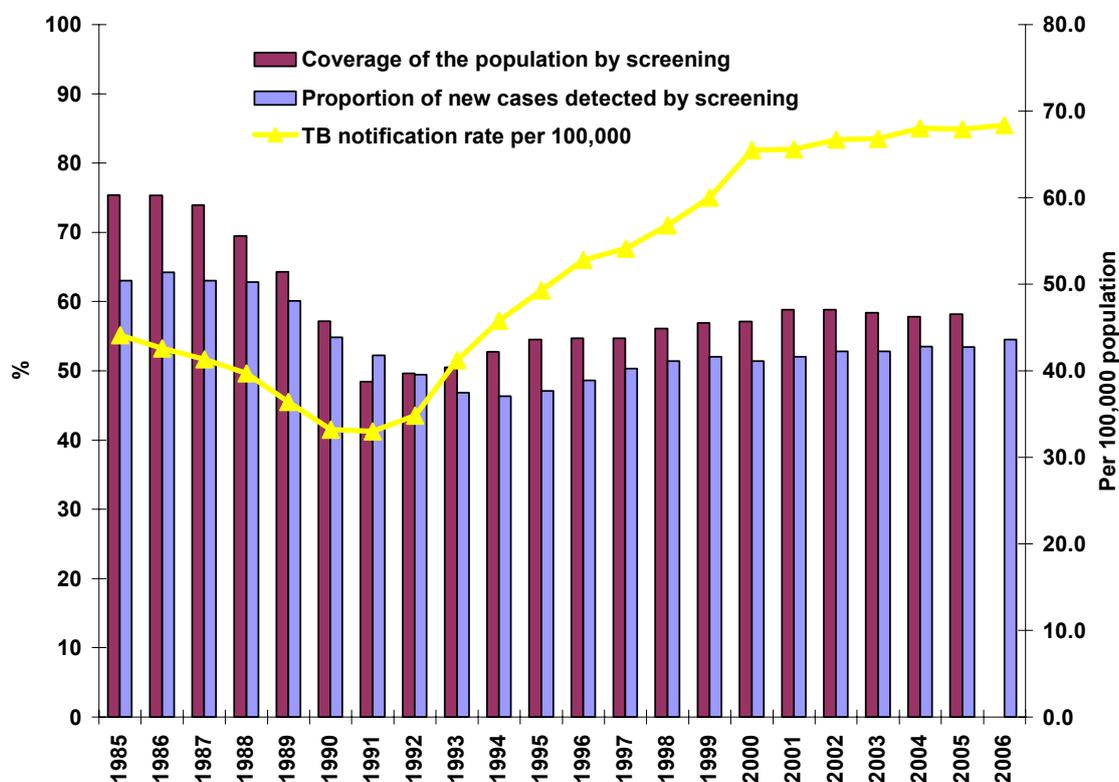


Figure 2.34. Active TB screening in the RF. Coverage by occupational screening, percentage of new cases detected by active screening<sup>21</sup>, TB notification rates from Form 33 (Source: Form 33, (4)).

## 2.6. TB relapse cases

There are two ways to define “relapse” in the RF. The first way is based on dispensary follow up (Executive Order #109 (15)). In this way, a relapse case is a re-registered (anew) case of active TB in a person who has had a history of being followed up in a dispensary group with active TB. That is, an “appearance of new evidence of active TB in a person with a previous history of TB and cured; such a patient is from follow up group no. III or had been purged from the registry due to cure”.

<sup>20</sup> The contribution of FSIN to this number is not large - about 16%. In 2006, 173 TB cases were detected postmortem in the penitentiary system, equating to 1.1% of all new cases detected in the penitentiary system. See chapter 6.

<sup>21</sup> From the line of Form 33 “detected patients with TB diagnoses for the first time in their lives, out of the number of persons screened for TB”

The second Russian definition of “relapse” is based on treatment history (Executive Order #50 (16), see Annex). According to this Order, a relapse is defined as a “new episode of disease in patients with a previous effective course of chemotherapy, and new evidence of active TB in the form of positive results of sputum microscopy or culture tests and/or clear clinical-radiological evidence of TB”.

Both definitions include references to a previous cure or successful course of chemotherapy during previous TB illness. Therefore, in the reduction of duration of follow up after therapy in group I (according to Executive Order #109), both definitions of relapses have become effectively identical. Therefore, the number of relapses registered in the forms based on dispensary follow up (Form 33) and in the forms of treatment monitoring (#07-TB and #08-TB) should concur after 2004. The level of relapses is an important indicator of problems in dispensary activities and treatment management.

Two types of relapses are considered in the dispensary follow up system: early – those in dispensary follow up group III at the time of new TB diagnosis; and late – relapses among individuals previously purged from a dispensary follow up group<sup>22</sup>.

Figure 2.35 demonstrates an increase in relapses observed after the revision of dispensary follow up patient groups I and II performed in 2004 (see chapter 4 on TB prevalence).

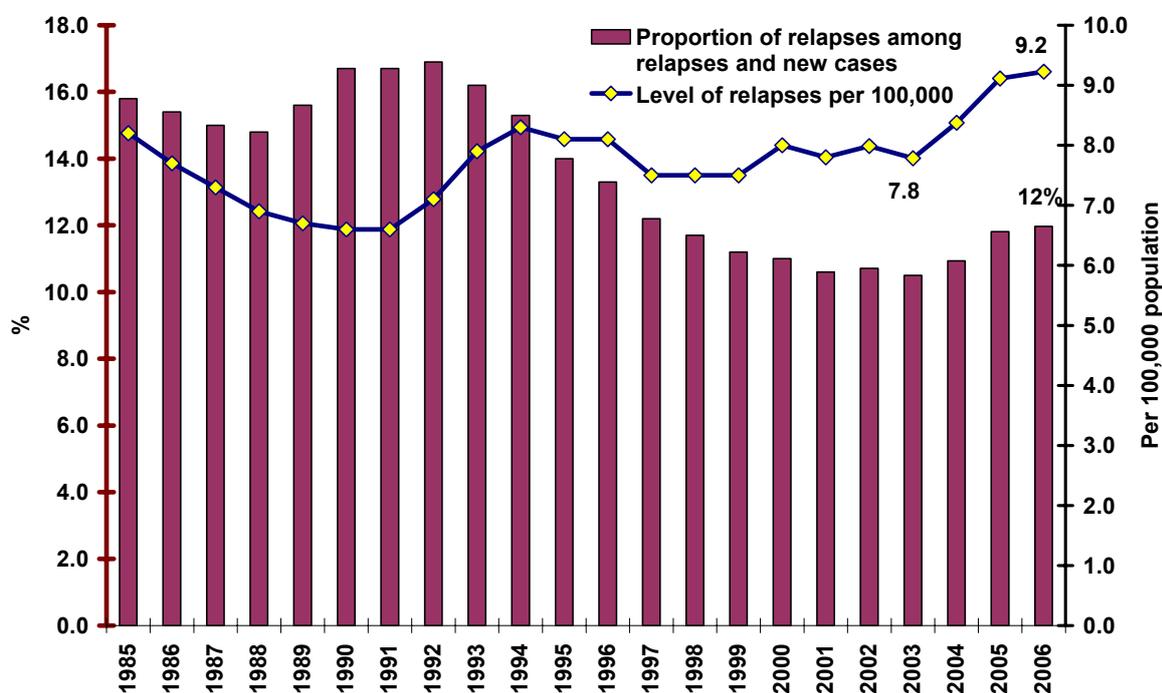


Figure 2.35. TB relapse cases. The percentage of relapses among combined relapse and new cases; the relapse rate per 100,000, RF (Source: Form 33).

In 2006, the relapse rate reached 9.2 per 100,000 population (13,171 cases).

<sup>22</sup> Until 2004, late relapse cases also included relapse cases from the follow up group VIIA, including persons with residual effects of TB

By reviewing early and late relapse cases separately (Figure 2.36), it is apparent that the increase was caused by an increase in the number of early relapses (from dispensary follow up group III). This may be the result not only of failed treatment, but also of defects in forming follow up group III when the follow up groups were revised in 2004.

An increase from 2003 in the number of early relapses has been observed in 75 territories of the RF. The highest increase was reported in the Republic of Kalmykia (by a factor of 3.8 times), Khabarovsk krai (by 3.7), Republic of Kareliya (by 3.5), Chelyabinsk oblast (by 3.4) and in the Republic of Altai (by 3.1). In 9 territories, there was a reported decrease in the number of early relapses, most strongly in Belgorod, Tambov and Orel oblasts and the Republic of Tyva.

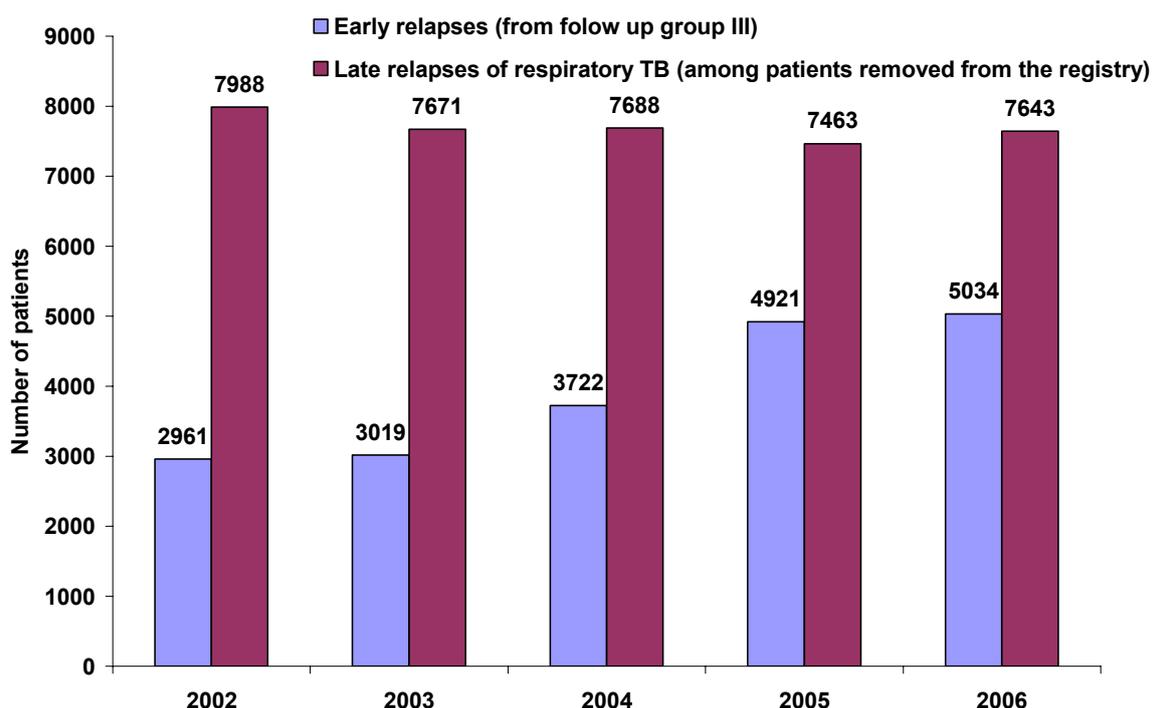


Figure 2.36. Number of early and late relapse cases of respiratory TB, RF (Source: Form 33)

## 2.7. Estimations of actual TB incidence

Actual TB incidence may differ substantially from the notification rate. This difference depends first of all on the effectiveness of the work performed by healthcare facilities in TB detection, which varies significantly by RF territory.

Various techniques exist for estimating the actual TB incidence (Figure 2.37).

According to the available data (3, 4), the proportion of non-detected cases may be estimated on the basis of data on spontaneously cured TB cases (follow up group IIIA for children and adolescents and VIIB until 2004 for adults), on cases of TB diagnosis post-mortem, and on the percentage of fibro-cavernous TB, as indicators of delayed detection.

Based mainly on the first component, it was estimated that 12-15% of TB cases do not get registered in the RF.

Another approach (13) is based on the relationship established in 1987 between incidence and mortality, which is believed to most precisely reflect the real statistical relationship between the indicators. Using this approach, the estimated incidence is calculated on the basis of the annual data on mortality and the relationship of mortality and incidence rates for 1987. Using the baseline relationship, and assuming that an observed mortality rate is more likely to be nearer to the true value than a notification rate, the estimation of the incidence level is performed for other years. The results calculated using this technique show that in 2006 the notification rate was 25% lower than the actual incidence.

When estimating the incidence in different countries, it is especially important to take into consideration the differences in conditions of detection and the procedures for registration of new cases that are specific to the country. The WHO (14) has developed a system for evaluating the real values of the main indicators (incidence, smear-positive incidence, mortality and prevalence), on the basis of which the estimated TB data is published in its annual reports. Therefore, when comparing countries, in addition to the “case notification rate”, the estimated value of the TB incidence is used in international publications, and in WHO publications in particular.

Since the main WHO methods of estimation of real incidence are not applicable in the RF (they are based on a number of indicators which are impossible to obtain in Russia, for example, a so-called “annual risk of infection”), the following simplified method is used (presentation of C. Dye at a workshop in Moscow, 2006).

First, as estimated by Russian experts (academician A. M. Khomenko), it can be assumed that in 1997, about 25% of TB cases were not detected. For other years, recalculation of the notification rate can be performed by multiplying this factor by the average notification rate for the current three years (including relapse cases).

Based on the obtained estimates, with the help of more complicated algorithms, the incidence of TB with MbT+, TB prevalence and mortality can be estimated.

Data obtained this way are published in WHO reports in a section on estimated incidence, including relapse cases.

Figure 2.37 displays the obtained results, which show the estimated true incidence values higher than the notification rate values by approximately one quarter.

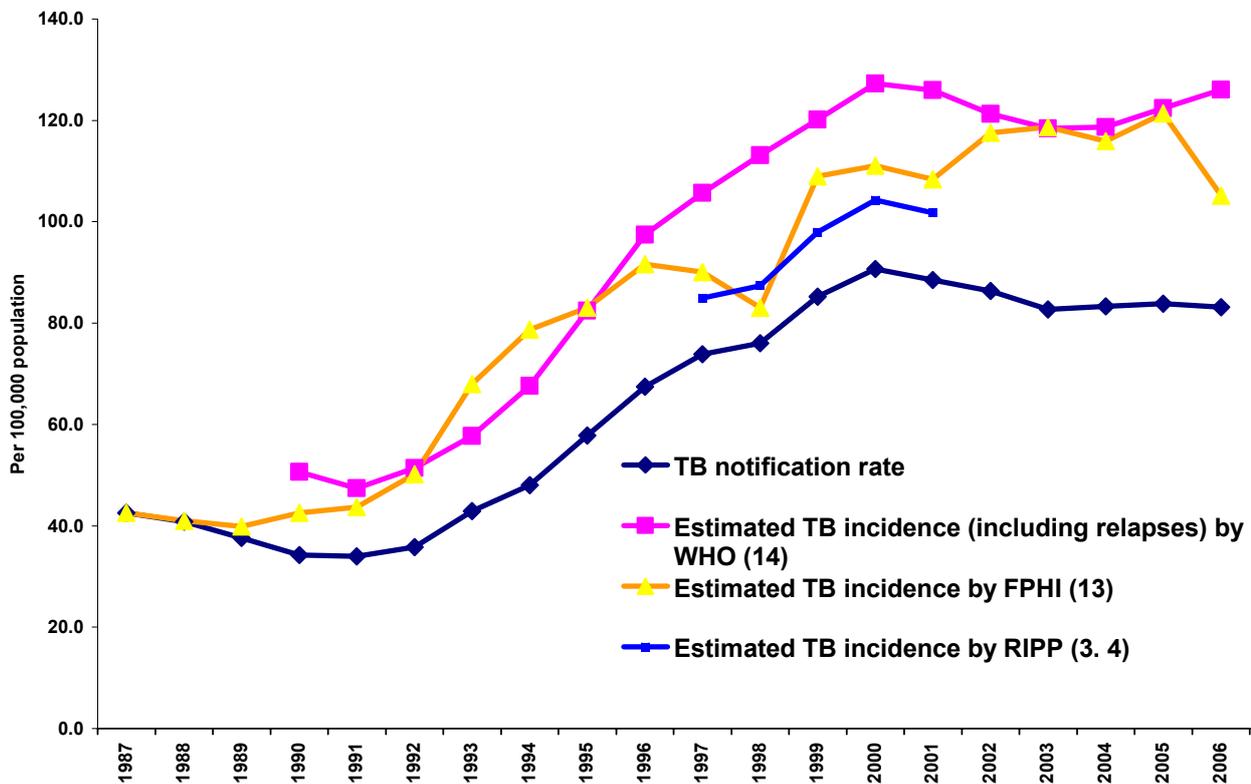


Figure 2.37. TB notification rates in the RF and estimated incidence by RIPP (3,4), FPHI (13) and WHO (14). The last estimate also includes relapses.

Of course, all these approaches are approximate. However, more precise methods of estimation have not yet been developed, and in the meantime it is essential to have at least an approximate estimation of the real incidence.

## 2.8. Comparison of the TB notification rate in the RF with other countries of the WHO European region and around the world

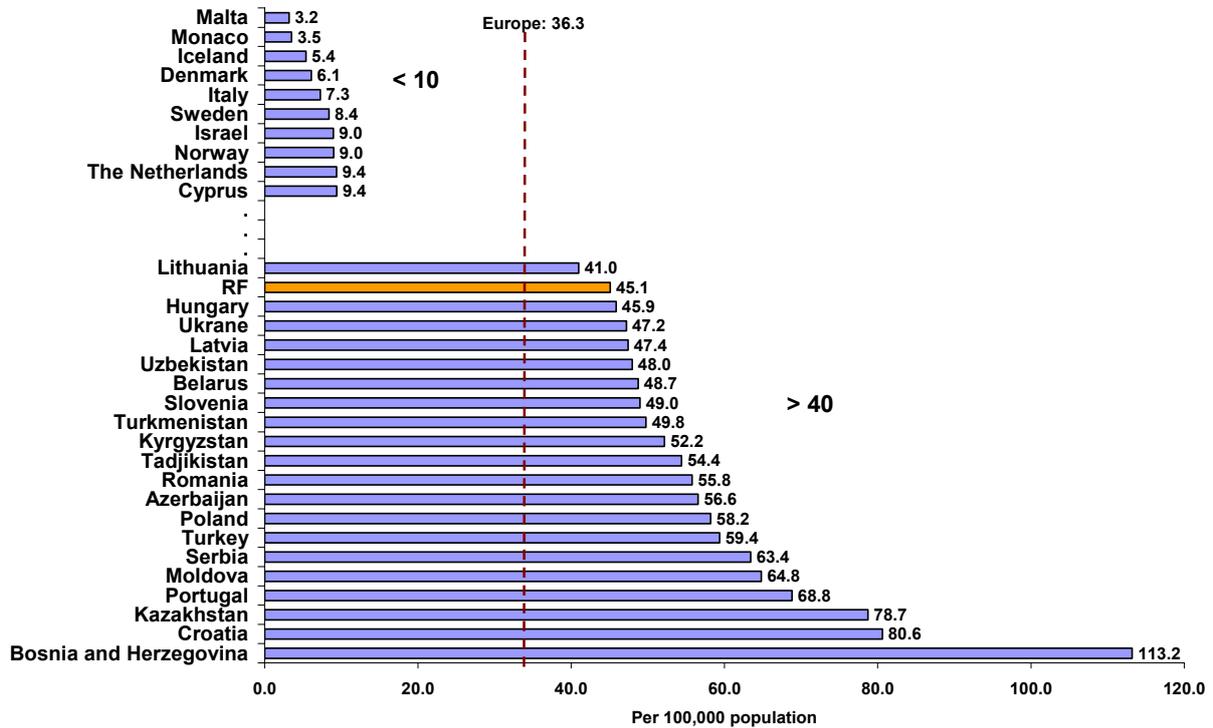
The Russian Federation is among the 22 countries with the highest TB burdens (14).

Our country has been included in this list every year due to the large number of new cases and relapses registered. At the same time, when considering the country's population size together with the notification rate, the result is not among the highest in the world. Russia's contribution to the total number of TB cases in the 22 high-burden countries is not great (2005) – only 3.1%; and among all detected cases in the world, it is 2.5%.

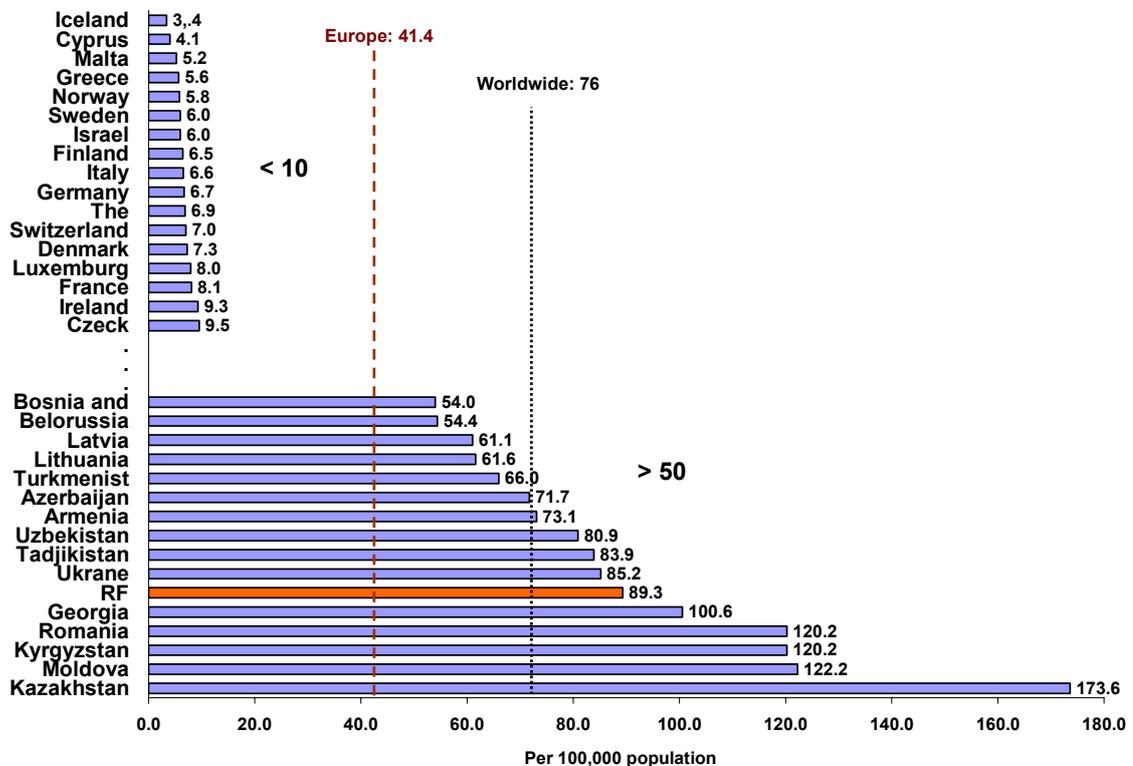
However, in comparing notification rates in the countries of the WHO European region (17), Russia's contribution to the general level of TB dissemination at present is quite substantial (Figure 2.36B).

Russia does not only detect 35% of all new TB cases in the region, but it holds the sixth highest position (2005) in terms of notification rates (including relapses), after Kazakhstan

(173.6), Moldova (122.2), Kyrgyzstan (120.2), Romania (120.2) and Georgia (100.6). Noteworthy is that of the 16 countries with the highest notification rates, 14 are former Soviet Union (FSU) republics. In 1985, in terms of notification rates, Russia was only in the 20<sup>th</sup> position (Figure 2.36A).



A) 1985



B) 2005

Figure 2.36. TB notification rates in the countries of the WHO European region in 1985 and 2005. Rates include new TB cases and TB relapses. Countries are sorted by rate. Countries with the lowest notification rates (< 10) and the highest notification rates (>40 in 1985, and >50 in 2005) are indicated. Source: (17)

Trends in notification rates over the last 20 years demonstrate that in almost all of the FSU republics, there has been a substantial increase in the rates – by almost 2-2.5 times (Figure 2.37). At the same time, in all non-FSU countries of the former Warsaw Pact, with the exception of Romania and Bulgaria, there has been a considerable decrease in TB notification rates over the same time period – by 1.5-2 times<sup>23</sup>.

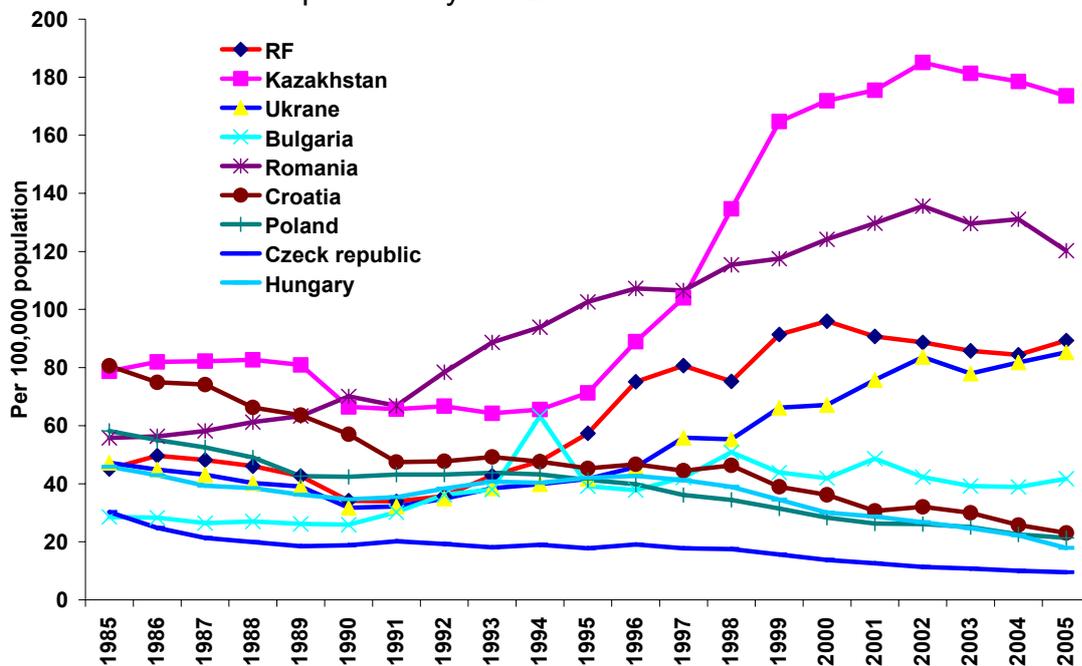


Figure 2.37 Changes in notification rates in select countries of the WHO European region, 1985-2005

(Source: (17))

<sup>23</sup> The definitions of a TB case in the FSU countries and the non-FSU Warsaw Pact countries do not differ substantially. However, changes that have occurred in the quality of new TB case registration over the years may have had an impact on the trends in TB notification rates.

### **3. TB mortality in the RF**

#### **3.1. General information. Recent trends and territorial differences**

Information on patients who have died of TB is contained in three forms: Form 5 (the summary annual reporting form on deaths from all causes), and Forms 33 and 8.

Form 5 contains data on all deaths, with indication of the cause of death. This form contains information essential for TB services on the persons who have died of TB. The data on each death is copied by the regional dispensaries in order to generate territory-wide TB mortality rates. This very number serves as the basis for the calculation of the nationwide TB mortality rate in the RF.

Form 8 contains information only on TB patients with a post-mortem diagnosis, regardless of whether the patient was from the permanent resident population or under another jurisdictional entity with its own TB service (FSIN, Ministry of Internal Affairs, etc.)

Form 33 contains information on all TB patients who have died of TB, registered at MoH&SD facilities in the territory. The data in this form are separate for patients who have died of TB and those of other causes. This form allows for the calculation of the TB mortality rate for the resident population and the mortality rate of TB patients from other causes of death. In addition, the form contains information on patients who died of TB and were not registered at MoH&SD facilities.

Since these forms are filled out in various ways and by different facilities, the resulting data may differ to some extent.

Thus, in 2005, from Form 5, there were 32,292 registered cases of death caused by TB (18); and from Form 33 – 27,494 cases.

For a complete analysis, TB patients who died of TB and of other causes should both be considered. The overall TB patient mortality rate (i.e. deaths from any cause) can be used in some cases for assessing the effectiveness of activities. This indicator is significant for controlling the number of infectious TB cases in the region. At the same time, the cause of death is not always registered correctly, which leads to the re-distribution of cases between groups of patients who died of TB and of other causes.

According to Form 33, in 2006, 41% of TB patients registered at MoH&SD facilities died of other causes (non-TB diseases and external factors). Over the last decade, this rate has been rather constant, in the range of 38-41%. According to 2005 data, the mortality rate of non-TB diseases and external factors among TB cases (53.0 per 1,000 registered TB cases at MoH&SD facilities, 15,832 cases) exceeds the overall mortality rate of the general population

in the RF by approximately 3.3 times<sup>24</sup> (16.1 per 1,000 population). This shows that TB patients are in a high risk group of death not only from TB, but from other causes; it is essential to pay special attention to studying and resolving this problem.

However, the intensity of the epidemiological situation of TB is determined to a large degree by the level of mortality due specifically to TB (i.e. the TB mortality rate). Compared to the notification rate, this rate depends less on the quality of recording; though the validity of obtained data should of course always be considered.

In 2005 and 2006, the TB mortality rate was 2.5 times higher than in 1991, at 22.5 and 19.5 per 100,000 population, respectively (Figure 3.1). During the first years of the 21<sup>st</sup> century, a certain stabilization of this rate was observed. While prior to 1991 the decrease in the TB mortality rate was occurring against the background of an increase of general mortality rates, in the 90's and at the beginning of the 21<sup>st</sup> century, the trends of both rates became similar, reflecting the economic crises and general socio-economic environment in the country.

The level and the structure of the TB mortality rate in the RF once again prove the need to pay special attention to this disease. TB is the leading cause of death among infectious diseases in the RF, accounting for 83% of deaths from "several infectious and parasitic diseases" (A00-B99 by IDC 10, reviewed in the reporting forms (18)<sup>25</sup>.

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<sup>24</sup> A more correct value of this parameter can be obtained by comparing the mortality rates among the general population and among TB patients, which are standardized by sex and age. It is not possible to do this simply on the basis of existing reporting forms; a special analysis is required. However, in general, such a modification will not change the conclusion on the high mortality rate among TB patients who die of non-TB causes, compared to the overall mortality rate among the general population.

<sup>25</sup> Further on the list of infectious diseases are: septicemia -4.1%, viral hepatitis -2.8%, diseases caused by the human immunodeficiency virus (HIV) – 3.9%, intestinal infections -1.7% of those who died of the given class of diseases, and etc.

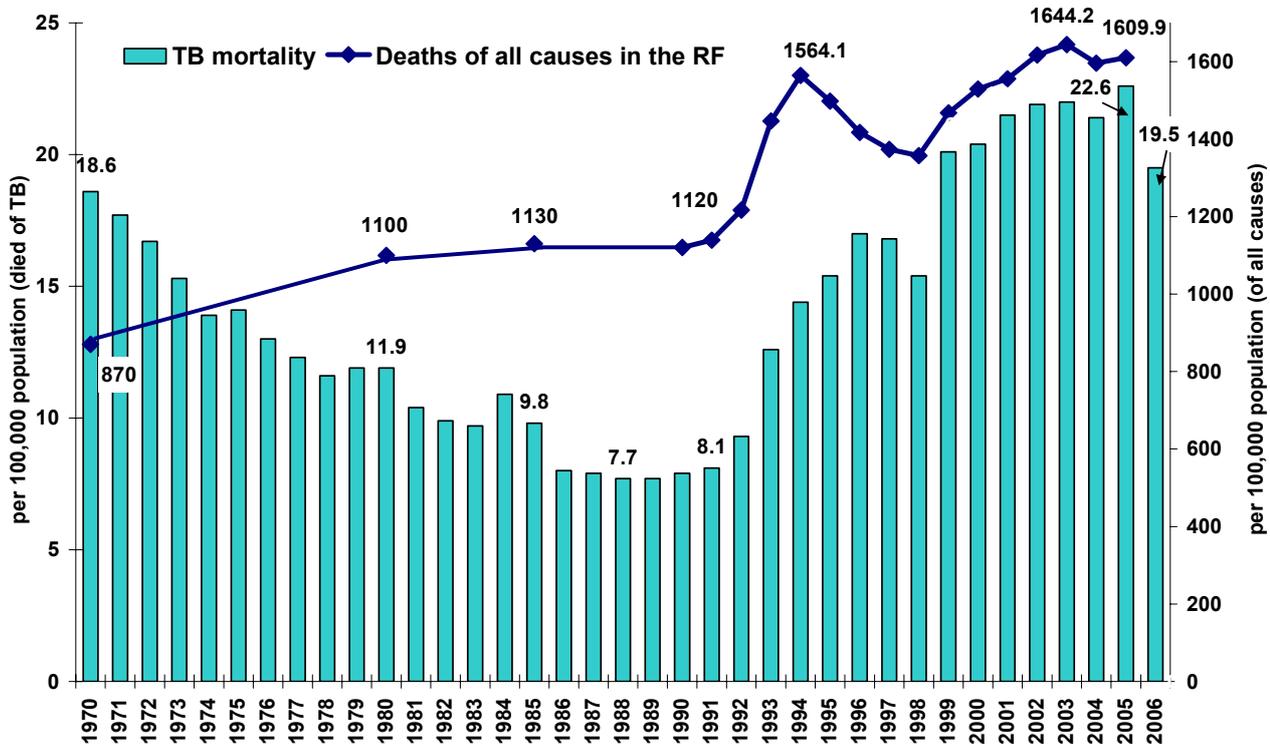


Figure 3.1. Mortality rates from TB and other causes in the RF (Source: Form 5 and (18))

Mostly persons of productive (working) age die of TB (67.3% in 2005, Figure 3.2). In all other registered classes of diseases which cause fatal outcome, on the other hand, the majority of patients who die (over 70%) are older persons. The exception is death from viral hepatitis and external causes of death<sup>26</sup> (in which 50% and 56.2% are among people of productive age, respectively). The peak of the TB mortality rate falls in the 45-54 years old age group: about 47 per 100,000 population of the given age (Figure 3.3.) The average age is approximately 44, while for the other groups of diseases indicated in Figure 3.2, the average age is almost always over or equal to 60 (except for death from external causes - 44.8 years old). Once again, this fact demonstrates that TB is not only a socio-medical problem, but also an economic one, as it affects the most economically active segment of the population.

Like the TB notification rate, the TB mortality rate gradually increases from the west to the east (from 15.7 to 33-37 per 100,000 population, Figure 3.4A). This does not correspond to the distribution of mortality rates for all causes of death, which is at its highest in the Central and Northwestern federal districts (over 17 per 1,000 population). Indirectly, it means that if in recent years, socio-economic factors (see above) have been responsible for the overall TB mortality trend in the RF, then the interregional differences primarily depend on the effectiveness of TB control activities in the respective territories. To a lesser degree is the rate dependent on the socio-economic level of the territory, which defines the general health level

<sup>26</sup> Most external causes of death (63%) are poisonings (including alcohol poisoning), suicide, accidental injuries and transport accidents

and, therefore, the mortality rate from deaths of all causes.

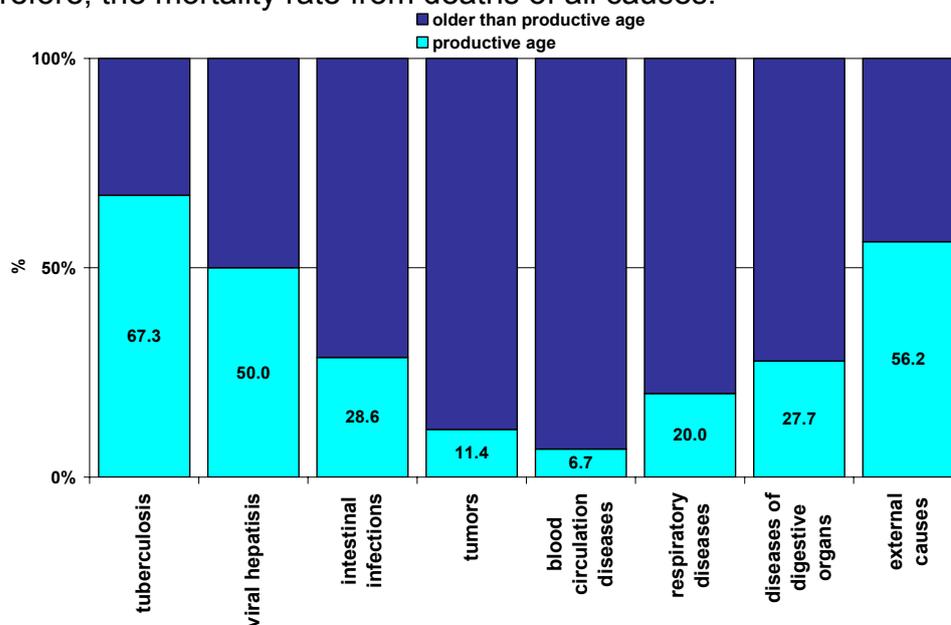


Figure 3.2. The percentage of persons who died at productive age<sup>27</sup> by the main classes of cause of death, RF, 2005 (Source: (18))

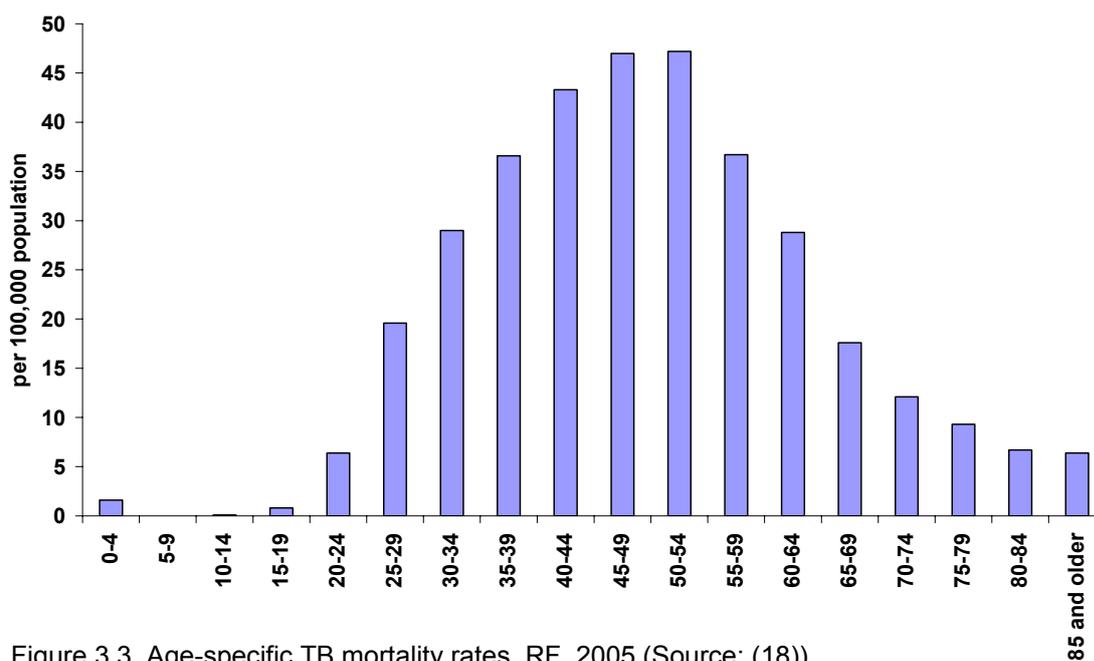
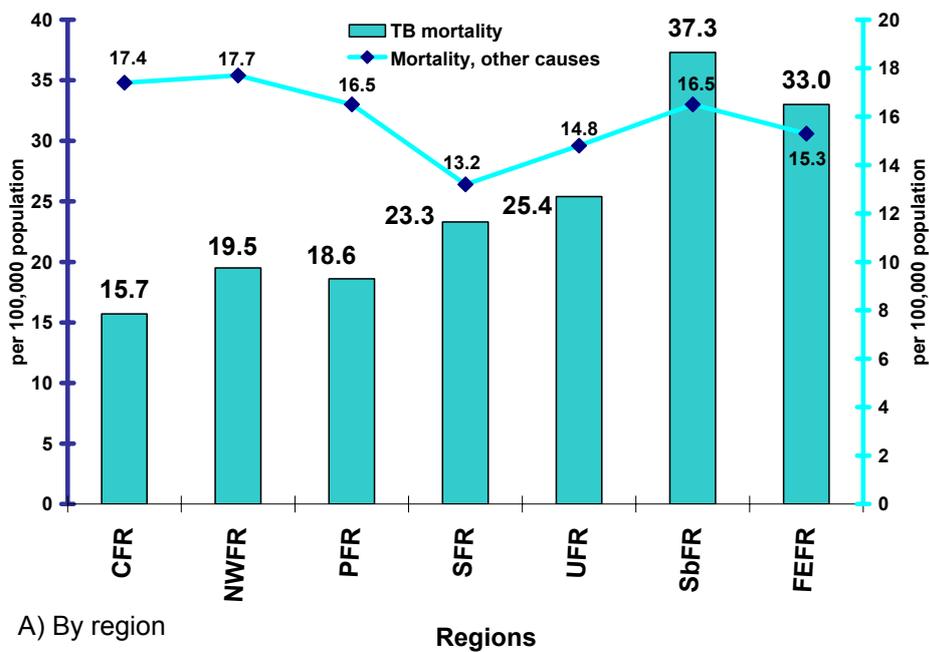
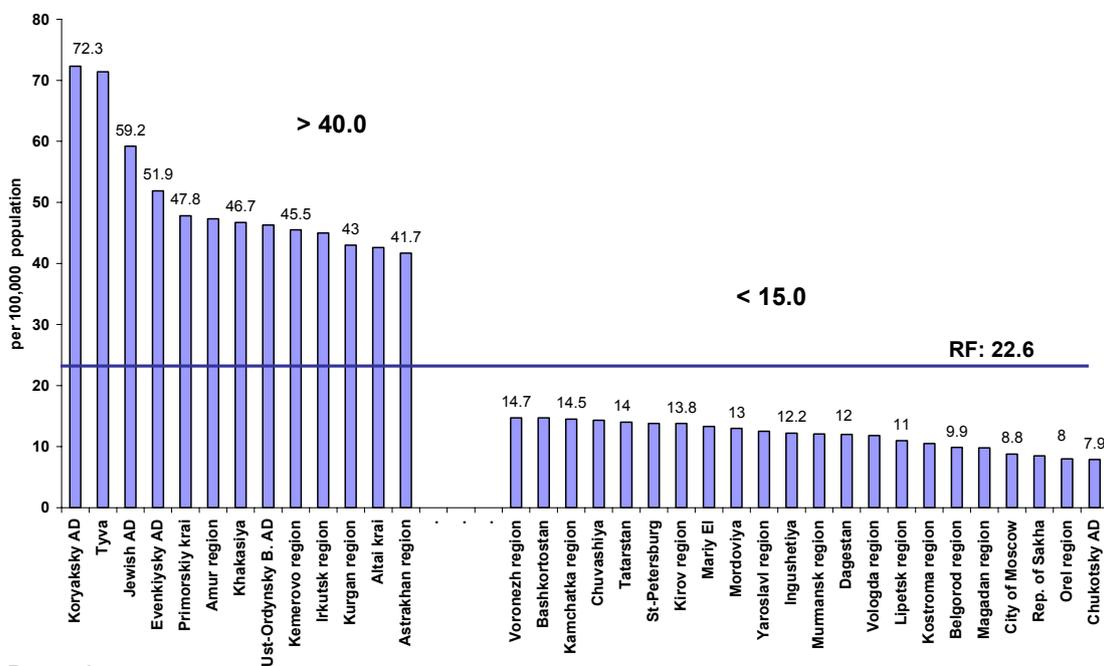


Figure 3.3. Age-specific TB mortality rates, RF, 2005 (Source: (18))

<sup>27</sup> Productive age: males - from 16 to 59, females – from 16 to 54



A) By region



B) By territory

Figure 3.4. The distribution of TB mortality rates by federal region and by territory with rates > 40 and < 15 per 100,000 population, 2005. (Source: (18))

The variance of registered TB mortality rates in the territories of the RF is large: the rates vary by a factor of 7-9 times between territories with low mortality rates (Orel oblast – 8.0; Republic of Sakha-Yakutiya – 8.5; the city of Moscow – 8.8; Magadan oblast – 9.8; Belgorod oblast – 9.9) and territories with high mortality rates (Republic of Tyva – 71.4, Primorskiy krai – 47.8, Amur oblast – 47.3, Kemerovo oblast – 45.5). Such variance in rates may reflect the real and consistent pattern of TB mortality, as well as certain defects in the registration of causes of death in the SbFR and FEFR.

The next two figures compare relationships between TB mortality rates in the federal regions and other factors which have an effect on mortality, including prevalence of HIV infection among new TB cases, the percentage of patients who died within the first year after registration, and the MDR prevalence among new cases (Figure 3.5. and 3.6).

The figures demonstrate the lack of an apparent link between the prevalence of HIV infection and TB mortality rates. At the same time, there is a clearly consistent correlation between the prevalence of primary MDR and mortality within the first year after registration, which may indirectly reflect the presence of MDR impact on treatment effectiveness.

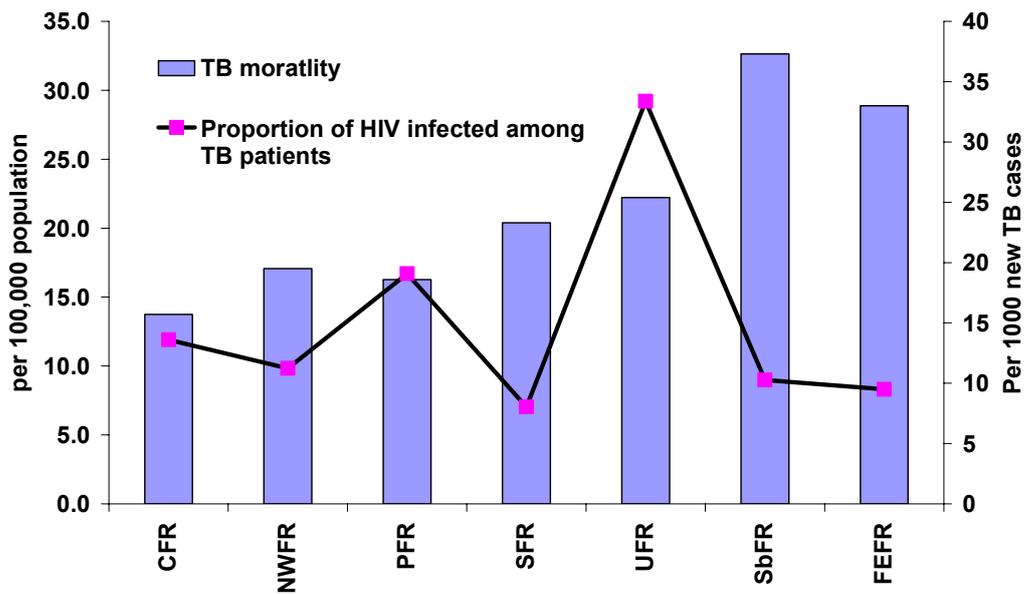


Figure 3.5. The comparison of TB mortality rate and the prevalence of HIV infection among new TB cases, by federal region, 2005 (Sources: (18) and Form #33).

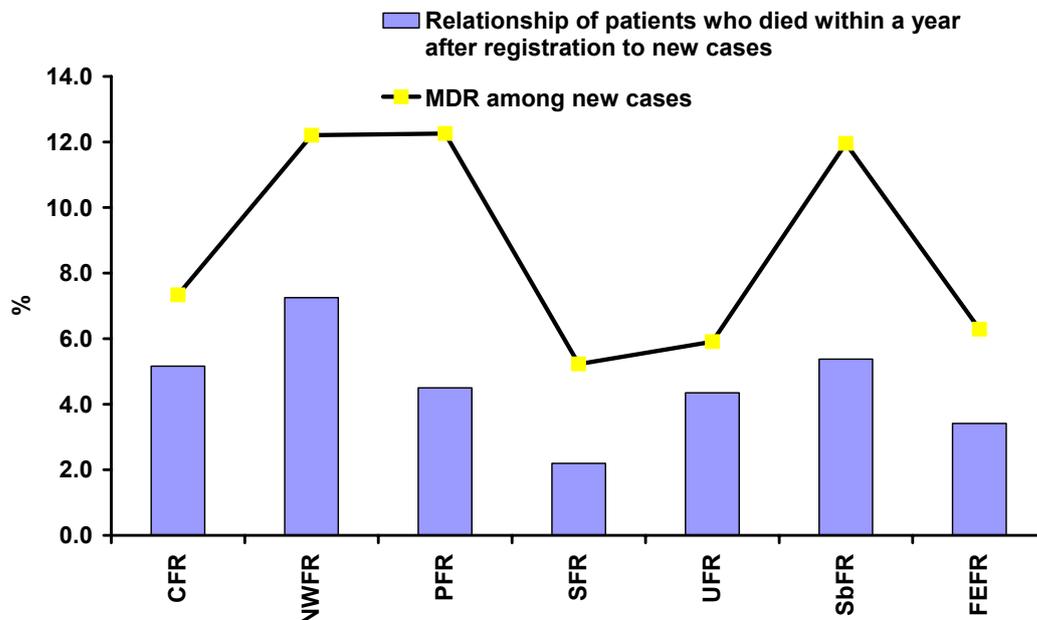


Figure 3.6. The comparison of the percentage of patients who died within the first year after registration and the MDR prevalence among new smear-positive cases, by federal region, 2006 (Source: Form 33).

### 3.2. Structure of mortality rates (by TB form and timeliness of detection)

When analyzing TB mortality and determining strategies to decrease the rate, it is essential to consider the structure of this rate. TB mortality has three main components: 1 – patients with post-mortem diagnosis (previously not registered), 2 - patients who have died within the first year after registration and 3 – the remainder (Figure 3.7). Various factors affect each of the components.

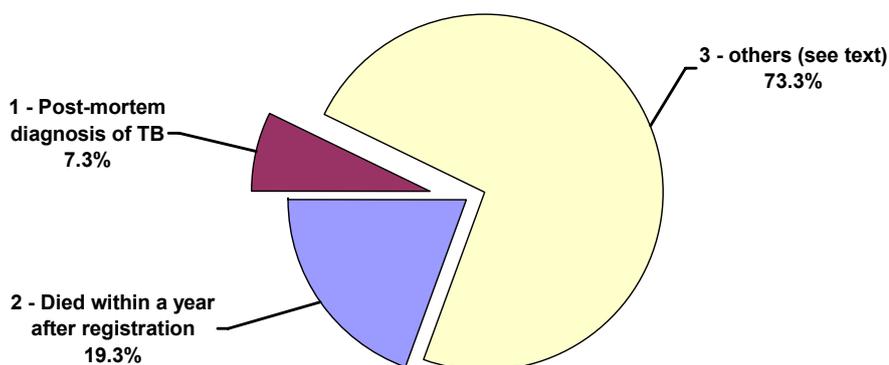


Figure 3.7. Components of the TB mortality rate among the permanent resident population. RF. 2006.

(Source: Form 33)

The number of TB patients with postmortem diagnosis depends on timely detection and indicates possible problems with detection and diagnosis of TB in a region, and in particular – problems in the quality of activities at PHC facilities, effectiveness of educational activities among the general public, and other factors. In 2006, among permanent residents, 7.3% of all TB cases that died had a post-mortem TB diagnosis (from Form 33).

The number of patients who have died within a year following registration indirectly reflects the effectiveness of activities in detection management and treatment of new cases. The percentage of such deaths among all patients who have died of TB at MoH&SD facilities is slightly below 20% (19.3% in 2006).

And finally, the percentage of remaining patients who have died of TB (about 70%) depends on the effectiveness of treatment activities performed for relapse cases, re-treatment cases and chronic cases, as well as on the quality of dispensary work and prophylactic activities.

It should be noted that indicators calculated as a percentage of different patient groups that have died of TB can be used as a source of information for defining different managerial activities in order to decrease the general mortality level. They can be used to define targeted resources to allocate to timely detection and adequate treatment activities (i.e. these indicators are of managerial and economical importance).

However, it is incorrect to use the percentage of cases with post-mortem diagnosis and the percentage of cases that have died within the first year following registration (as a fraction of all TB death cases) for the comparison of territories and for the analysis of trends, as is often mentioned in publications. This is due to the fact that an increase in the percentage of one of the mortality components could occur either when the absolute number of this category of patients is increased or when the number of patients from another category is decreased.

The change in the mortality structure that occurred between 2003 and 2004 in Orel oblast can be used as an example. During those years, a considerable decrease in the number of patients who died from TB was reported in the oblast: from 40 to 26 persons. This happened due to a decrease in the third component – deaths among re-treatment cases and patients with chronic TB. So although the number of those who died within the first year following registration decreased from 15 to 13, and their proportion to the number of new cases also decreased from 3.4% to 3.0%, the percentage of deaths within the first year following registration (among all TB deaths) increased from 37.5% to 50%. Also, the percentage of patients with port-mortem TB diagnosis among those who died of TB increased

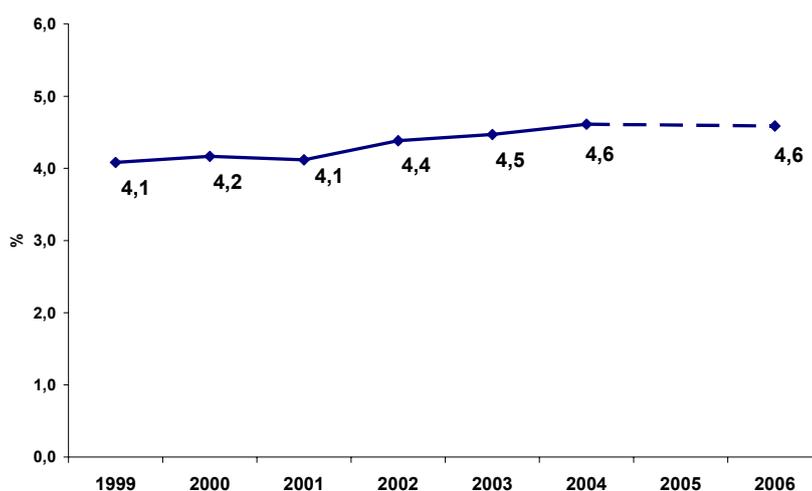
sharply (from 17.5% to 34.6%), yet the number of such patients did not greatly increase: from 7 to 9 (within statistical error of measurement).

In order to compare territories by the number of cases who died within the first year following registration and the number of cases of post-mortem TB diagnosis, we review the relationship of these categories of deceased patients to the number of new cases registered the same year.

The ratio indicator of number of cases who died of TB within the first year following registration to the number of new cases (See Figure 3.8) among permanent residents (from Form 33)<sup>28</sup> increased in the RF from 4.1% in 1999 to 4.6% in 2004-2006. A high level of this rate is observed in Vologda oblast (11.6%), Arkhangelsk oblast (9.8%), Leningrad oblast (9.5%), Tver oblast (9.1%), Murmansk oblast (8.2%), Kostroma oblast (8.2%), Bryansk oblast (8.1%) and the Republic of Karelia (9.3%).

A low rate of this ratio indicator in a territory may indicate successful treatment monitoring, as well as low quality of registration of number of patients who died within the first year following registration.

A more precise value of this parameter can be obtained with the help of cohort analysis. This approach, implemented using reporting Form #08-TB, allows for the calculation of the percentage of patients who died from the fixed cohort of new cases rather than the calculation of an abstract relationship of patients who died within the first year following registration to the number of new cases (which are not directly related to each other). So, for example, the results of processed data on the cohort of new pulmonary smear-positive TB cases detected in 2005 show that death from TB occurred in 9.9% of cases for the given group of patients<sup>29</sup> (see Chapter 5).



<sup>28</sup> See the value of the given rate for the correctional facilities in Chapter 6

<sup>29</sup> Data from 67 territories, cohort size – 23,039 patients

Figure 3.8. The ratio indicator of number of patients who died of TB within the first year following registration to number of new cases. RF residents. Data for 2005 are excluded from the figure due to the presence of error in the forms (Source: Form 33)

Lately, there has been an increase in the percentage of cases with post-mortem diagnosis among new cases: from 2.2% in 1999 to 2.8% in 2002-2005 (Figure 3.9). Only in 2006 was a decrease observed in the overall rate in Russia, down to 2.4%. The rate decrease has been observed in 50 out of the 89 territories of the Federation.

Figure 3.10 presents the variability in the percentages of post-mortem TB cases by federal region. It can be hypothesized that the data for the Southern FR are underestimated due to the traditionally low percentage of post-mortem examination of patients in those regions. In addition, we should note a relatively high post-mortem percentage among the residents of the SbFR and a substantial, almost two-fold difference in the percentages of postmortem diagnosis between the permanent resident population and the entire population in the CFR and NWFR.

The data from Form 33 show a decrease in the percentage of patients who died of active TB in inpatient clinics (Figure 3.11). This may indicate defects in treatment management at the inpatient and outpatient stages as well as defects in defining the indications for hospitalization. In particular, it may be the result of an increase in the number of patients with an interrupted treatment course at the outpatient stage.

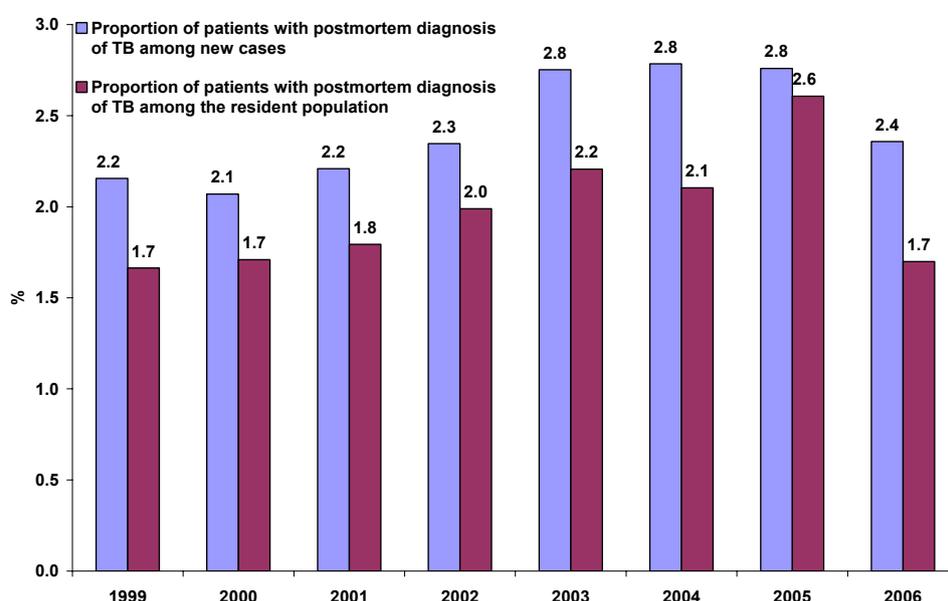


Figure 3.9. The percentage of patients with post-mortem diagnosis among new TB cases for the entire population (Form 8) and for the permanent resident population<sup>30</sup> (Source: Form 33)

<sup>30</sup> Data on the resident population for 2005 does not correspond with the general pattern of rate variability. This may be related to the introduction of the new reporting Form #33 in 2005. At that time, the instructions were not yet specified for filling out the lines which should contain the information on cases of death.

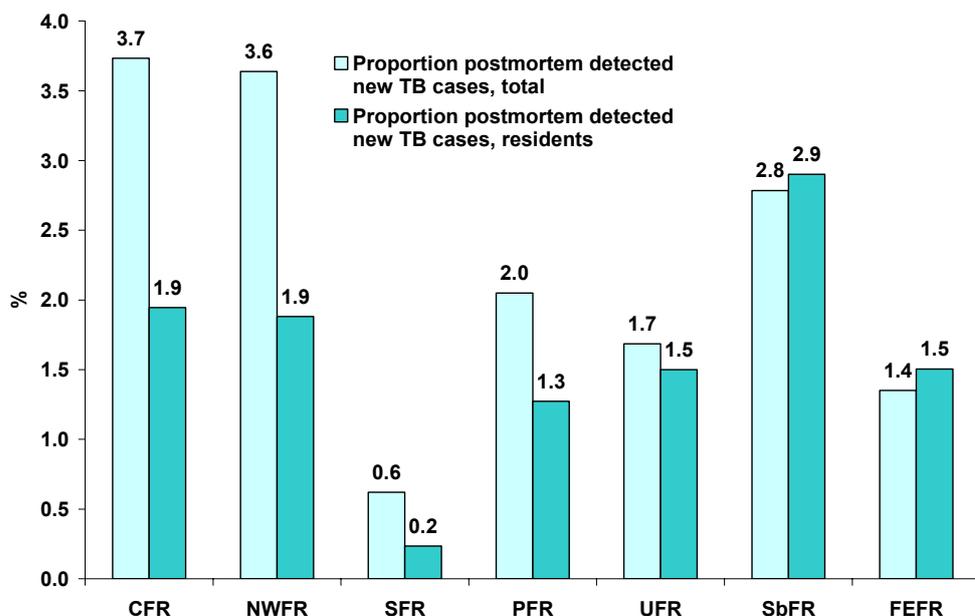


Figure 3.10. The percentage of patients with post-mortem diagnosis among new TB cases for the entire population (Form 8) and for the permanent resident population<sup>31</sup>, federal regions, 2006 (Source: Form 33)

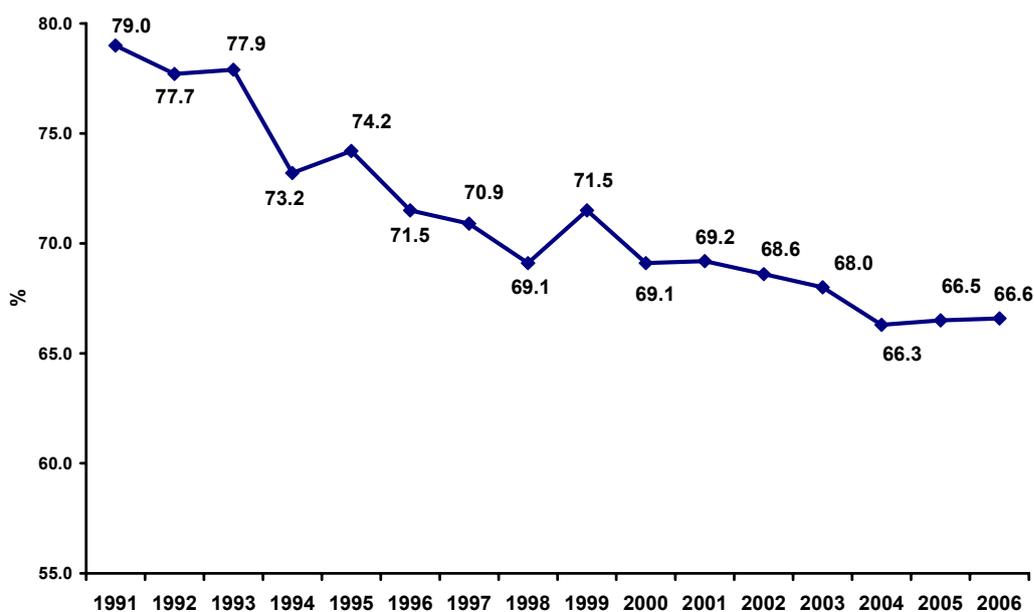


Figure 3.11. The percentage of patients who died in inpatient clinics among all deaths caused by TB in the permanent resident population (Source: Form 33)

Therefore, it is evident that particular components of the mortality rate, similar to the rate overall, can be effectively used for the purpose of TB control activities. The level of the rate proves that at the present time, TB is a major socio-medical and economic problem in the country.

<sup>31</sup> Data on the resident population for 2005 does not correspond with the general pattern of rate variability. This may be related to the introduction of the new reporting Form #33 in 2005. At that time, the instructions were not yet specified for filling out the lines which should contain the information on cases of death.

## 4. TB prevalence in the RF

### 4.1. General information. Structure of the indicator and recent trends

The prevalence of TB among the population is an important and integral indicator reflecting the effectiveness of treatment and follow up activities, as well as the accumulation of chronic patients.

In most countries of the world, data on TB prevalence are estimated as the number of cases who at the end of the year are still considered to be cases, per 100,000 population. In this case, individuals previously registered as TB cases and included in one of the cohorts for treatment are included. By the end of the year, such cases are not yet cured; they are still alive and have not been transferred out. The relationship of prevalence to incidence reflects the duration of the course of the disease and, to some extent, the duration of patient treatment. Due to the lack of a developed system of follow up for TB cases, in most foreign countries, this rate, as a rule, is estimated only by the means of calculations based on incidence data (14). The relationship of prevalence to incidence in the world has decreased over the last 15 years from 2-2.5 to 1.2-1.7, which demonstrates the global trend towards a decrease in disease duration and treatment course duration.

In Russia, which has a developed system of dispensary follow up of TB patients, the prevalence rate is calculated on the basis of the number of patients included in dispensary follow up groups I and II, which include TB patients with so called “active” forms of TB<sup>32</sup>.

Therefore, the prevalence rate depends entirely on the methodological approaches and rules to the formation of the follow up groups. The most recent major changes of the approaches to the formation of the follow up groups occurred in 2004, in line with MOH Order #109 (15).

Figure 4.1 provides data on TB prevalence in the RF based on patient numbers in those follow up groups which in the corresponding years included patients with “active forms” of TB.

Until 2004, TB prevalence was calculated on the basis of patient populations of the follow up groups I and II defined by the MOH orders issued prior to 2004. During these years, follow up group I included patients under the basic (for new cases) and relapse courses of treatment (IA) and patients with chronic forms of TB (IB). The second group included patients with so called “abating” TB, which is patients with a completed course of treatment and could

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<sup>32</sup>The calculation of TB prevalence does not involve follow up groups with persons at risk of TB or at risk of TB reactivation (III, VI, V, IV and «0»), see Annex

be seen as a group of individuals at risk of relapse. From the international perspective, those patients would not be considered as TB patients. In 2004, the “abating” TB patient group was abolished, and in line with the Executive Order #109 (15), a new system of dispensary grouping was introduced (see Annex). TB patients (with “active” TB forms) were distributed throughout the following groups: IA (new cases), IB (relapses), IC (patients with an interrupted course of treatment and evading evaluation) and lastly, group II – chronic TB.

The TB prevalence rate, calculated on the basis of follow up groups I and II as defined by MOH orders prior to 2004, decreased regularly until 1992, at which point it reached 172.1 per 100,000. The rate then began to increase sharply, and at the beginning of the 21<sup>st</sup> century it reached the level of 271.1 per 100,000 population, having returned to the level seen in 1979 (4).

Since 1999, the reporting forms have included a separate piece of information on the number of patients registered in follow up group I only – i.e., those under treatment. This allows for the calculation of the prevalence close to the definition accepted in other countries (see Figure 4.1). In 2003, the prevalence, calculated on the basis of follow up group I only, was 180.9 per 100,000 population.

After the revision of the follow up groups in 2004, the prevalence decreased to 218.3 per 100,000 population. That level had been calculated based on modified groups I and II, becoming closer to internationally-accepted definitions. By 2006, the TB prevalence rate was 202.5 per 100,000 population.

Data on the size of the follow up group patient populations (Figure 4.2) make evident several important issues regarding the formation over the last few years of the follow up group for “active” forms of TB. The group of “abating” TB cases, abolished in 2004, used to account for one third of the prevalence rate (33.3% in 2001). After it was abolished in line with MOH Order #109, patients from the former group I were divided into two new groups - I and II (taking into account the flow of patient populations – detection, transfers in and out, cures, etc.). At the same time, analysis of the reporting forms demonstrates that after the revision of the follow up groups in 2004, the number of registered TB patients substantially increased (for the sake of comparison, calculation of the number of active cases according to the definitions of Order #109 takes into consideration only group I before 2004, and both groups I and II after). In 2003, in follow up group I (i.e. active TB patients) there were 255,006 patients. After 2004, the number of active TB patients increased to 298,509 (follow up groups I and II in 2005). The phenomenon of the increase in the number of TB patients by almost 22% from 2003 to 2005 requires additional analysis and evaluation<sup>33</sup>.

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<sup>33</sup> In Figure 4.2, the size of TB patient populations in the follow up groups in and after 2004 are denoted by dark-violet columns

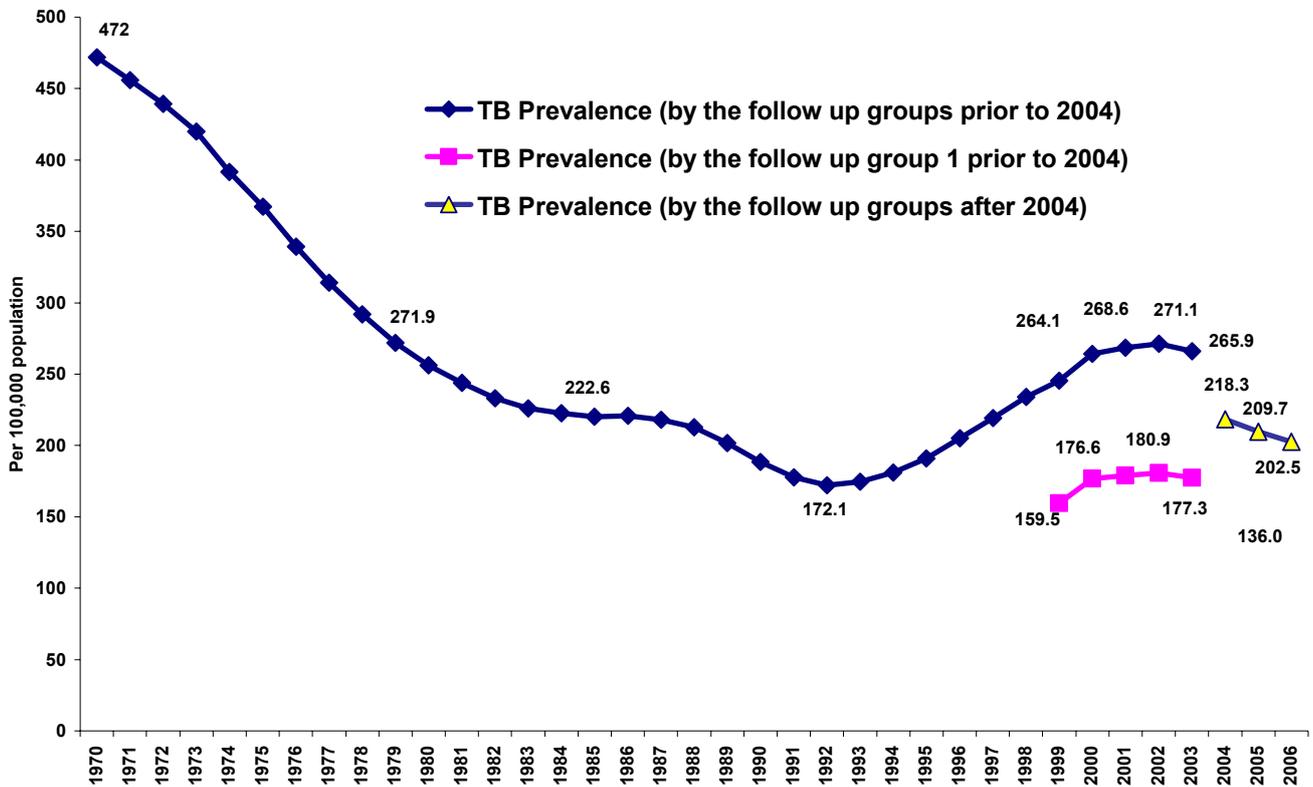


Figure 4.1. TB prevalence in the RF. Calculations are based on the size of all TB patient follow up groups (I and II), and only on follow up group I before the 2004 revision in the follow up groups (Source: Form 33)

Figure 4.3 shows the distribution of TB patients within the follow up groups in 2005-2006. As seen in these pie charts, a considerable percentage of patients are those with chronic TB (37.8% and 40.4% in 2005 and 2006, respectively), making evident the continuing complicated epidemiological situation with TB in the RF.

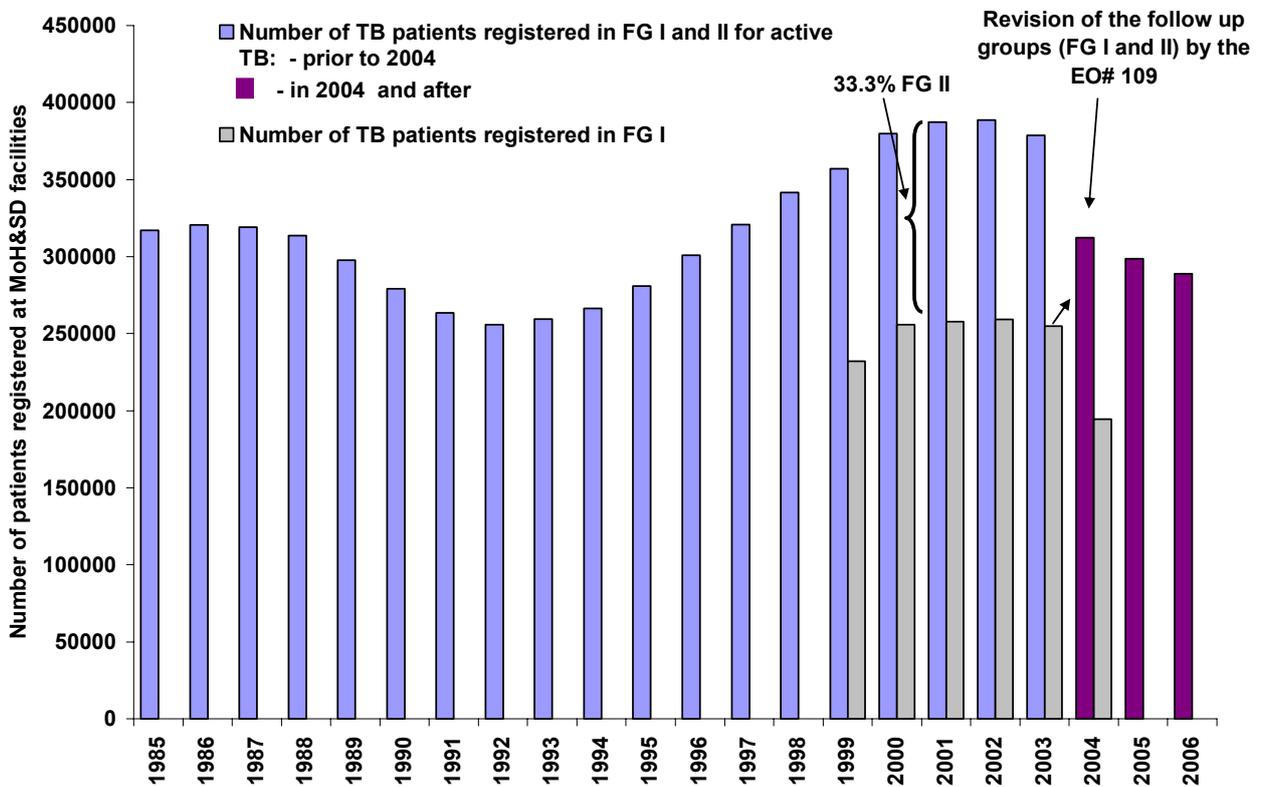


Figure 4.2. TB patient population size in the RF by select follow up groups, before and after the 2004 revision (see text). Abbreviations in the figure: FG – dispensary follow up group, EO – executive order (Source: Form 33).

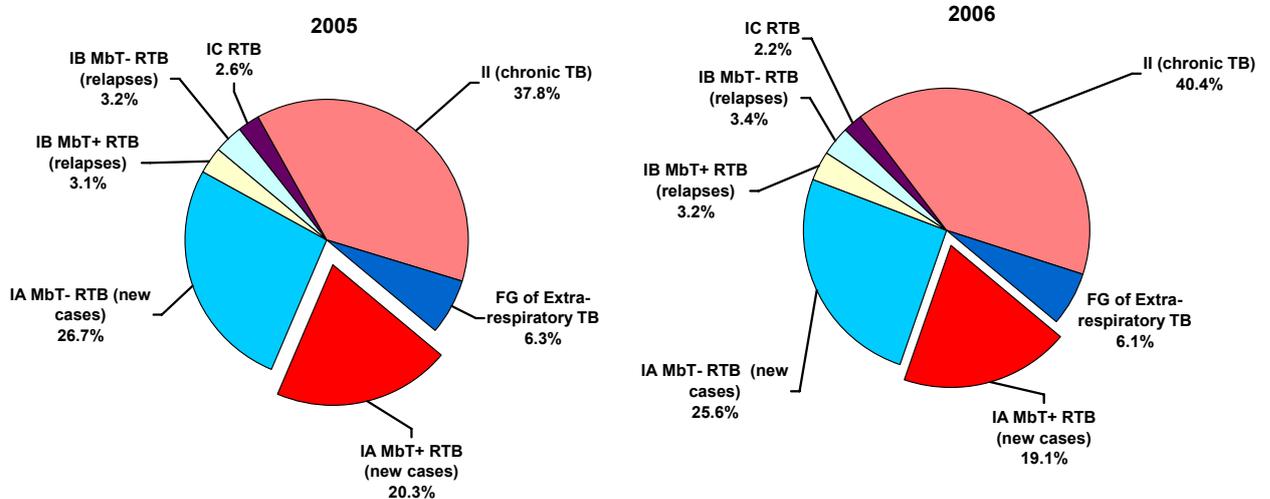


Figure 4.3. The distribution of TB patients within the follow up groups, RF, 2005-2006. Abbreviations in the figure: FG – dispensary follow up group (Source: Form 33)

The prevalence of bacteriological positive (MbT+) cases in the country is considerable (Figure 4.4). The revision of the follow up groups in fact did not have an impact on this rate, which has been declining since 2002 (89.2 per 100,000 population), and which reached the level of 83.9 per 100,000 population in 2006. The prevalence of MbT+ cases exceeds the notification rate of MbT+ cases by 2.4 times (and at the end of the 90's, by 2.7-2.8 times). Since the relationship of TB prevalence to TB notification rate should be about 1.5-2, then this

building of a so called “bacillary” core (registered MbT+ patients) indirectly demonstrates the insufficient effectiveness in treatment of MbT+ patients. Noteworthy is that in some areas, including Orel oblast and the Republic of Altai, for patients with respiratory TB, this relationship has decreased since 2002 from 2.4-3 to 1.2-1.5.

In addition, a very limited increase in the proportion of MbT+ patients among groups of patients with respiratory TB has been observed over the last three years: from 42.1% in 2004 to 43.7% in 2006.

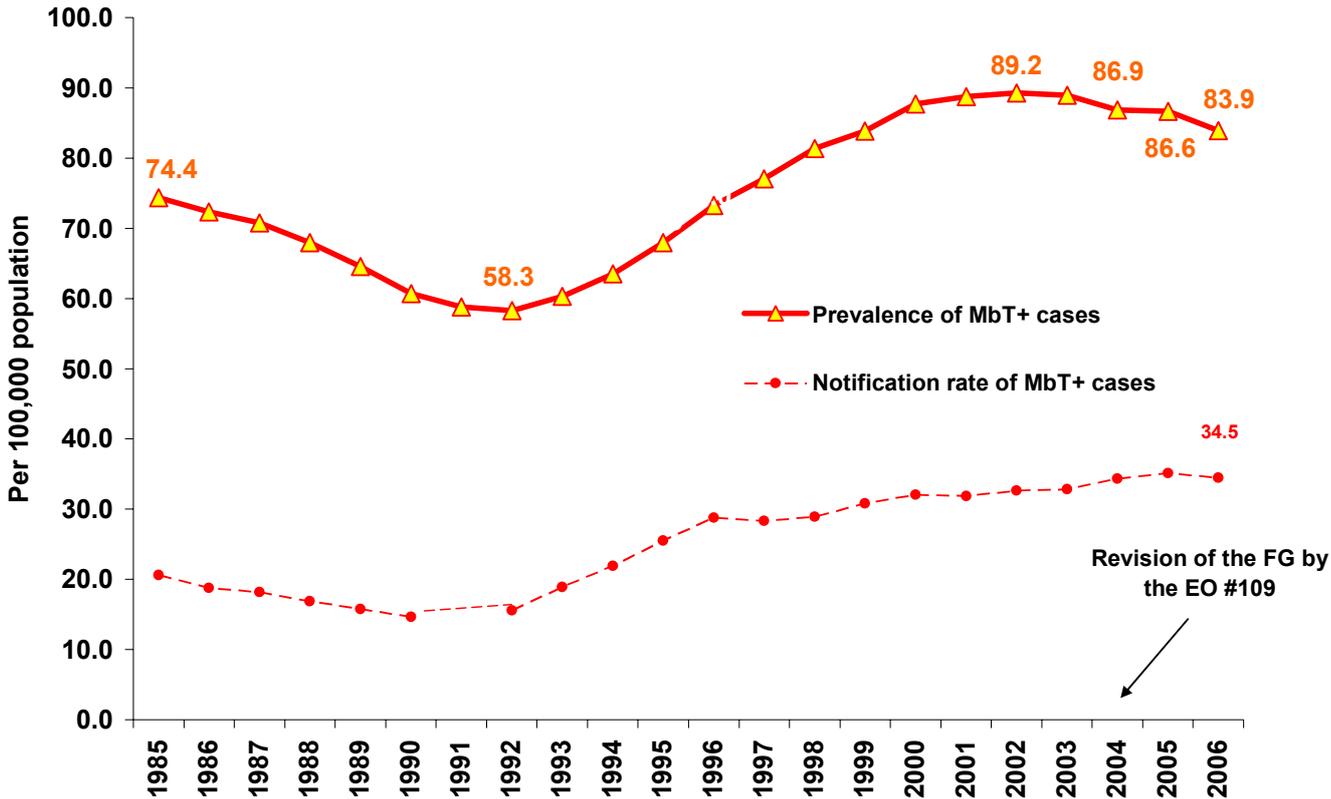


Figure 4.4. MbT+ prevalence and notification rate according to Form 8, RF. Abbreviations in the figure: FG – dispensary follow up group, EO – Executive Order (Source: Forms 33 and 8)

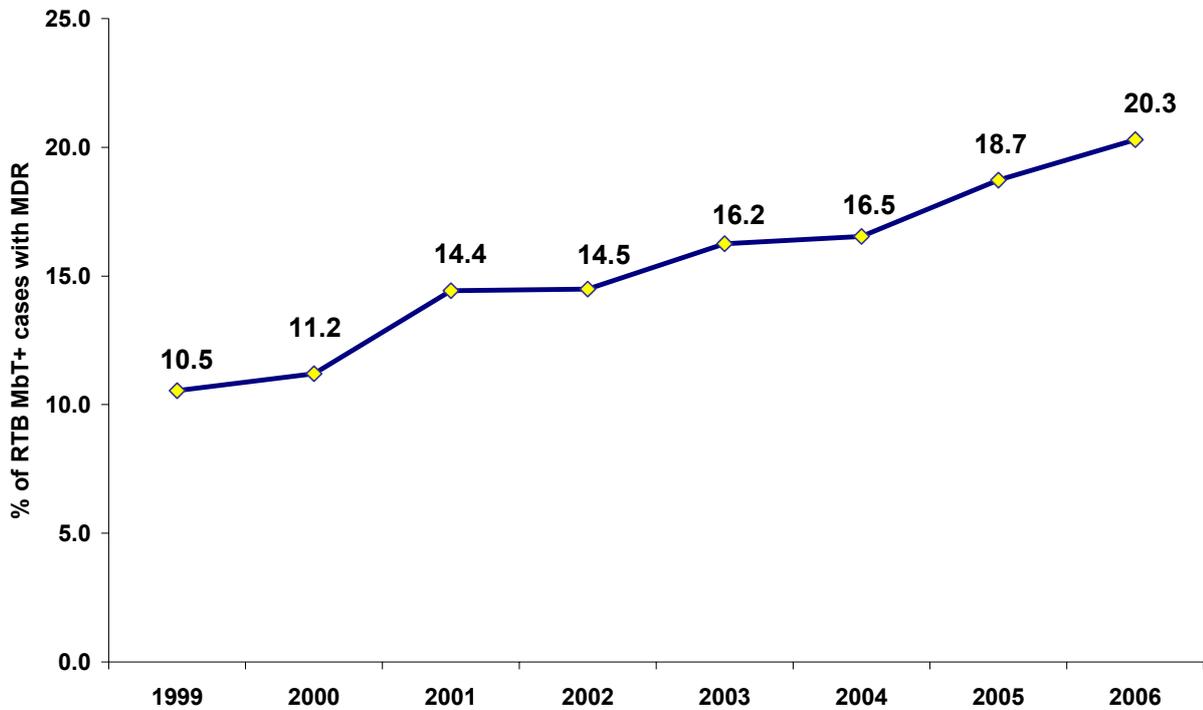


Figure 4.5. MDR TB among groups of MbT+ patients with respiratory TB, RF (Source: Form 33)

Of critical importance is the continuing growth observed in recent years in the proportion of MDR TB patients among smear-positive respiratory TB patients in the RF. The reporting of MDR TB in Form #33 was initiated in 1999 (Figure 4.5). The increase observed in MDR cases may to some extent be the result of improved quality in microbiology diagnostics and registration. However, the increase in the percentage of MDR TB from 2004 to 2006 alone (16.5% to 20.3%) gives strong indication that this dangerous form of the disease is continuing to spread.

A similar situation has been observed among patients with destructive TB forms

(Figure 4.6).

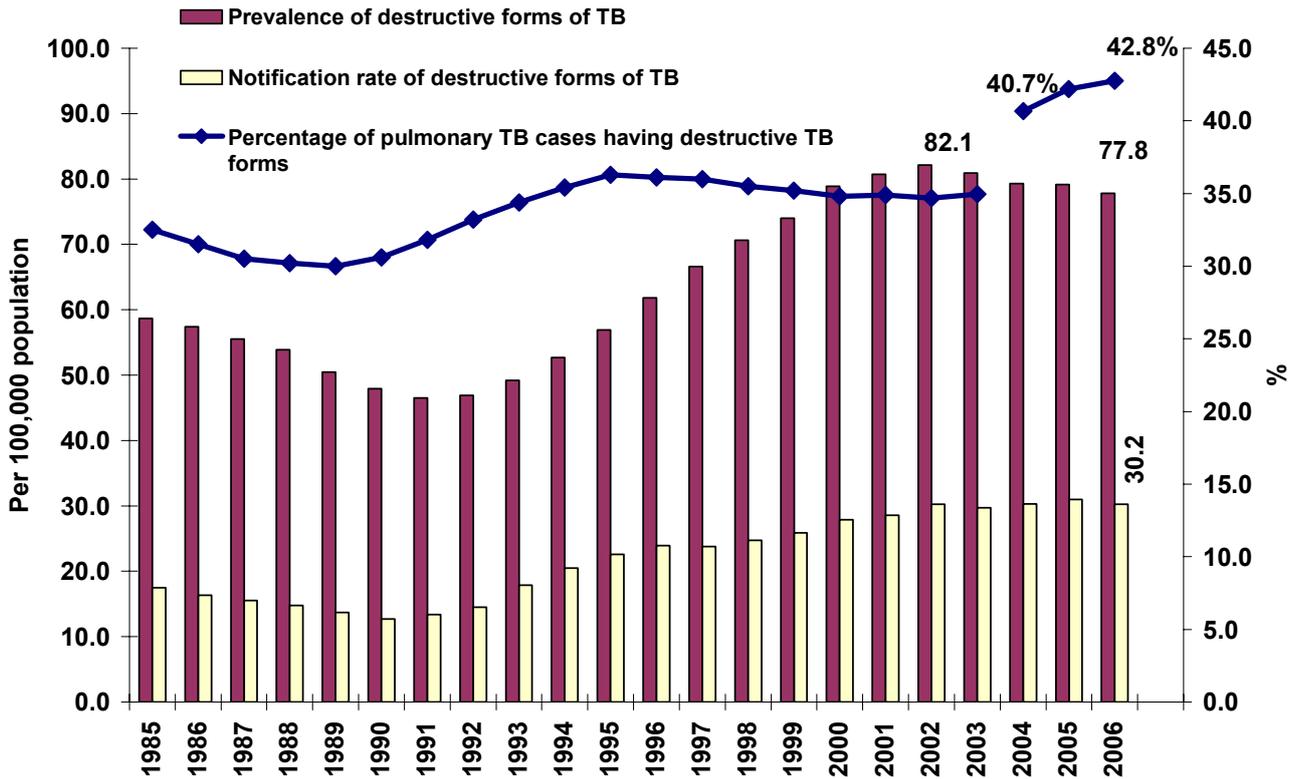


Figure 4.6. Prevalence and notification rates of destructive forms of pulmonary TB and their proportion among pulmonary TB patients, RF. Follow up groups were revised in 2004 in line with Executive Order #109. (Sources: Form 33, population – form 1)

Starting in 2002, when the highest prevalence of destructive pulmonary TB forms was reported (82.1 per 100,000 population), a decrease in the rate has been observed, reaching 77.8 per 100,000 population in 2006. This rate is 2.6 times higher than the notification rate for these forms of TB in the RF. This is an indication of an excessive accumulation of severe pulmonary TB forms in the patient population due to problems in treatment and insufficient follow up activities. This may also be the result of the fact that after the 2004 revision of patient follow up groups, an increase was observed in the percentage of pulmonary TB patients having destructive TB forms: from 40.7% to 42.8% in 2006.

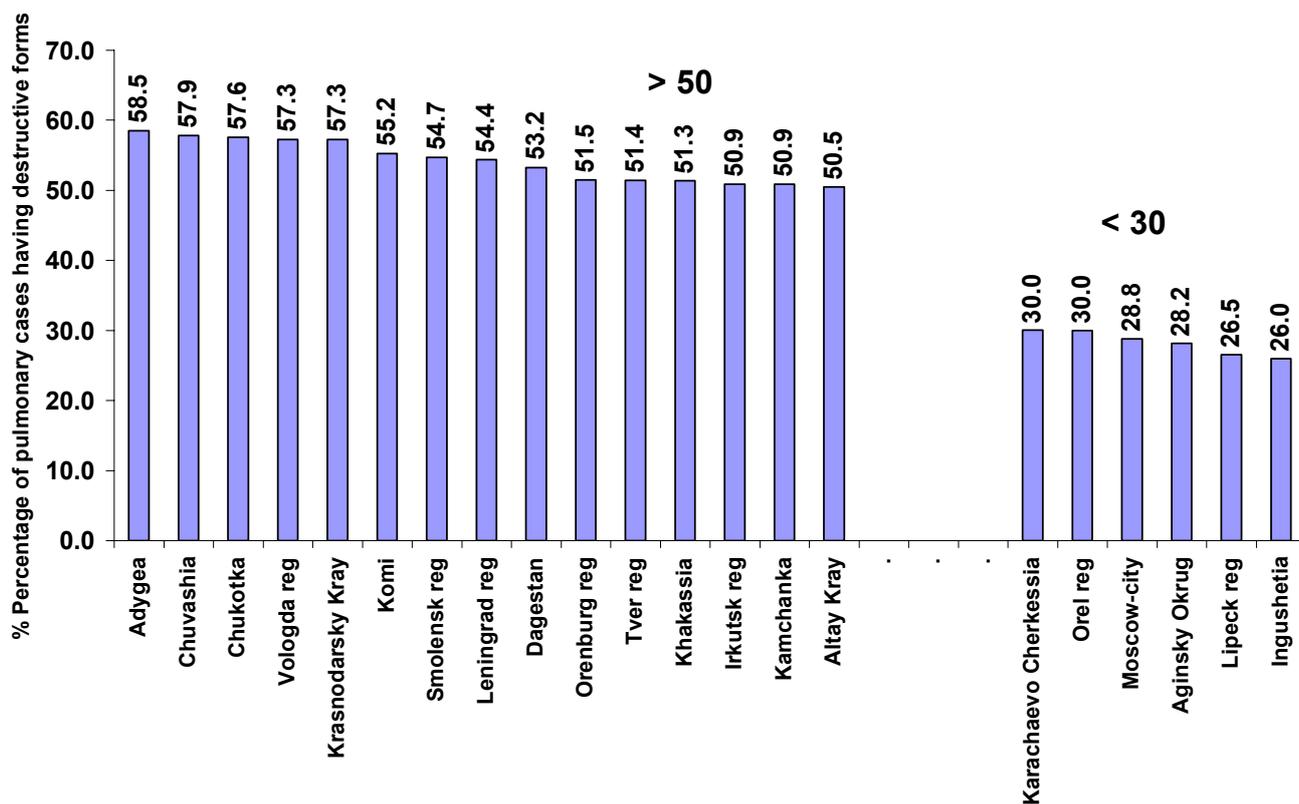


Figure 4.7. The percentage of pulmonary TB patients having destructive TB forms, in RF territories with rates > 50% and <30% (Source: Form 33)

The percentage of cases having destructive forms of pulmonary TB varies significantly by territory in the RF. The lowest rates are reported in the territories of UFR and CFR (35.1% and 37.8%, respectively), the highest – in NWFR (49.2%) and in the east of the country (SbFR -47.2%, FEFR- 47.9%). Figure 4.7 shows the territories with the highest and lowest values of the rate (>50% and <30%).

In 2004-2006, over 13% of pulmonary TB patients were reported to have fibro-cavernous TB (13.5% in 2006). This is much higher than the proportion of this TB form among new TB cases (2.2%) according to data from MoH&SD facilities<sup>34</sup>. As found in (4), a relatively large number of patients with fibro-cavernous TB (up to 70%) are formed in the time span of a year. In order to evaluate the problem of the accumulation of patients with severe TB forms in the process of treatment and follow up, Figure 4.7a shows the prevalence and notification rates of fibro-cavernous TB over the past two decades. In recent years, the number of cases with fibro-cavernous TB on the register during a year exceeds the number of newly registered cases of these forms by 16-18 times. An especially remarkable difference exists in this relationship in the Southern FR, where the number of fibro-cavernous TB patients on the register exceeds the number of new fibro-cavernous TB cases by 46 times. This difference

<sup>34</sup> Form 33

exceeds 50 times in Rostov oblast (111.6 times), Vologda oblast (75.0 times), Pskov oblast (over 80 times), Permsky krai (72.7 times), the Republic of Dagestan (78.6 times) Yamalo-Nenetskiy AD (67.5 times) and Krasnodarsky krai (66.5 times). A small difference between these numbers (< 8 times) was observed in such territories as Orel oblast (4.3 times), Kamchatka oblast (6.3 times), Kaluga oblast (6.7 times), Belgorod oblast (7 times), Tomsk oblast (7.8 times), the Republic of Komi (6.2 times) and Primorsky krai (6.9 times).

Even considering some possible misrepresentations made in the registration of fibro-cavernous TB at the time of TB diagnosis, these data indirectly make evident the “extremely low TB treatment effectiveness” in recent years (4) and the necessity to take additional measures to improve TB treatment effectiveness in a significant number of regions in Russia.

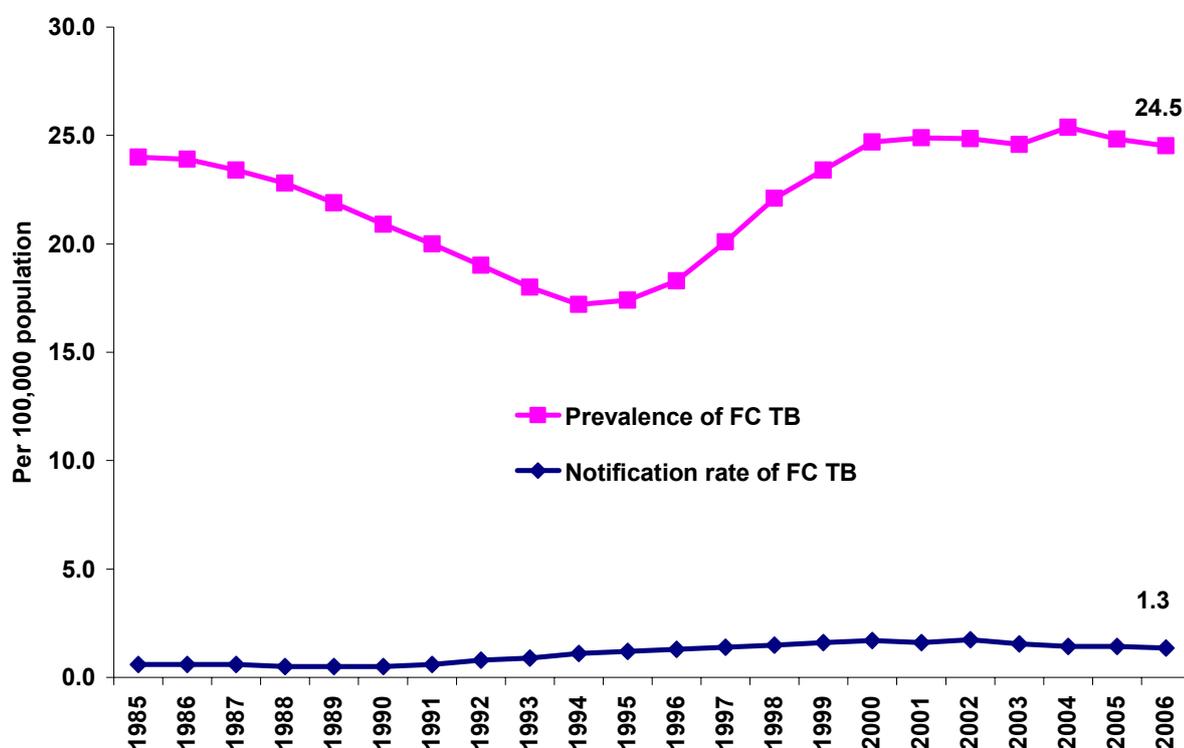


Figure 4.7a Prevalence and notification rates of fibro-cavernous TB among the permanent resident population of the RF. Abbreviations on the figure: FC - fibro-cavernous (Source: Form 33, population – Form 1)

The revision of the follow up groups I and II in 2004 had an impact on the TB prevalence among children. The rate dropped from 40.4 in 2002 and 35.8 in 2003 to 21.9 per 100,000 children in 2006.

The extrapulmonary TB prevalence after the revision of the follow up groups became less than 15 per 100,000 population; in 2006, it was 12.2. As a percentage of the size of the respiratory TB prevalence, the extrapulmonary TB prevalence has been declining for the last 15 years, and in 2006 it reached 6.5% (Figure 4.8). The prevalence of extrapulmonary TB was

4 times higher than its notification rate, demonstrating the accumulation of chronic forms of extrapulmonary TB due to problems in treatment management.

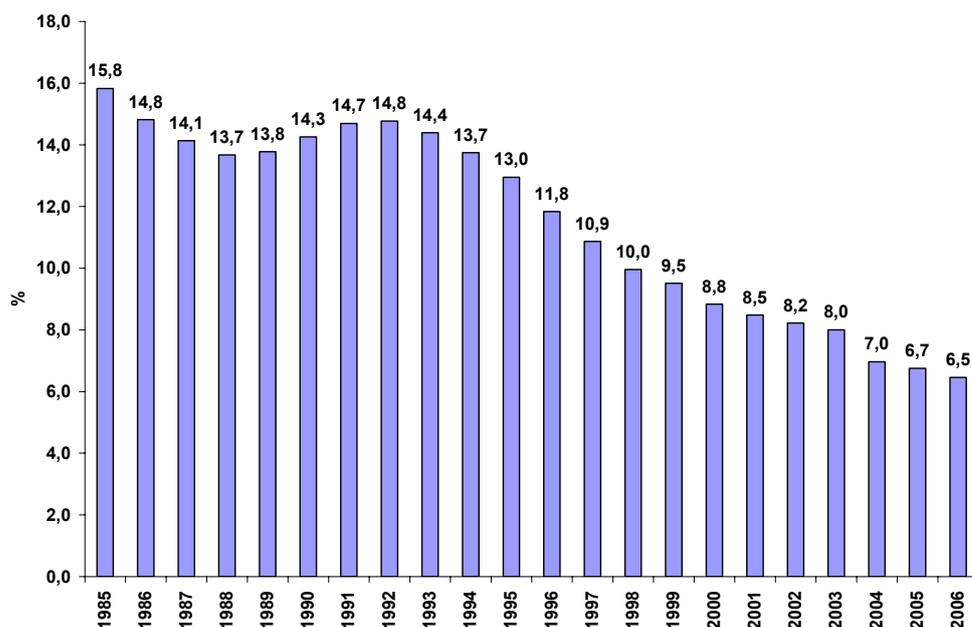


Figure 4.8. Extrapulmonary TB prevalence rates, in comparison to respiratory TB prevalence rates (expressed as a percentage), RF (Source: Form 33)

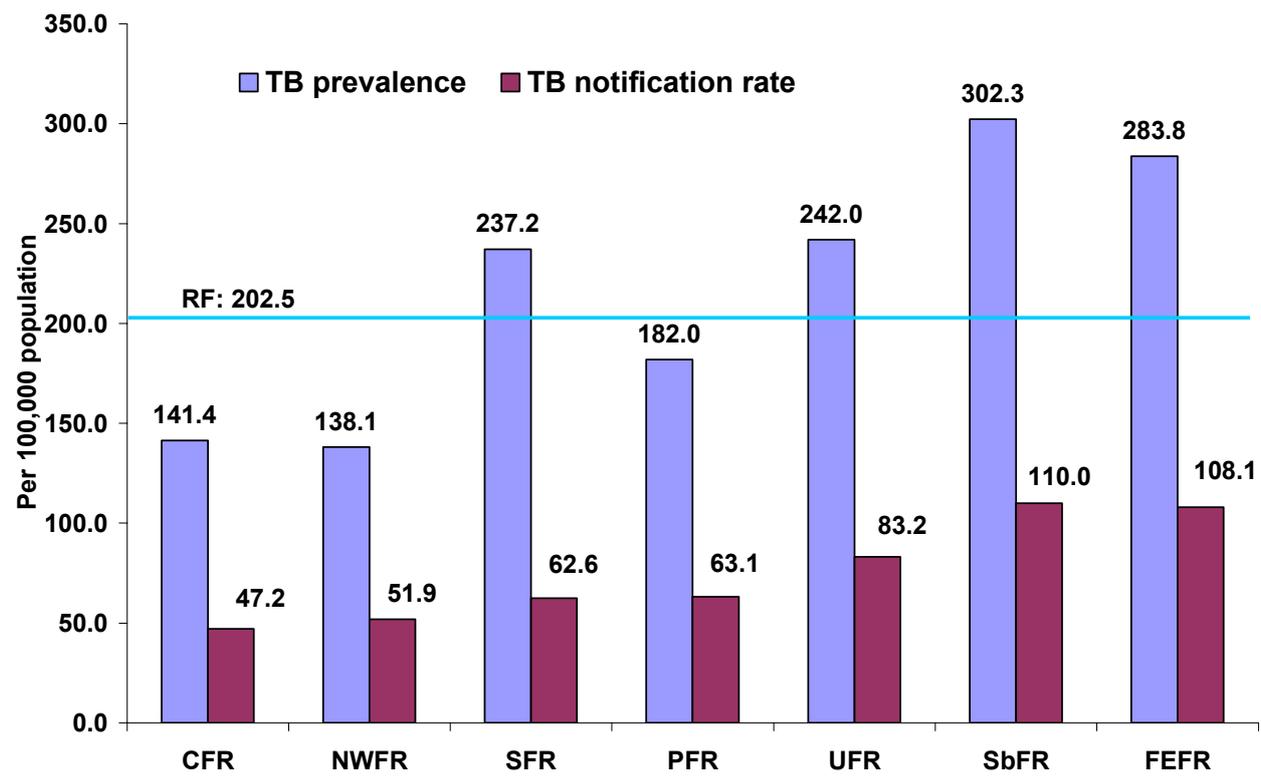
#### 4.2. TB prevalence in the RF territories

Similar to TB notification and mortality rates, TB prevalence rates also differ substantially by territory in the RF (Figure 4.9).

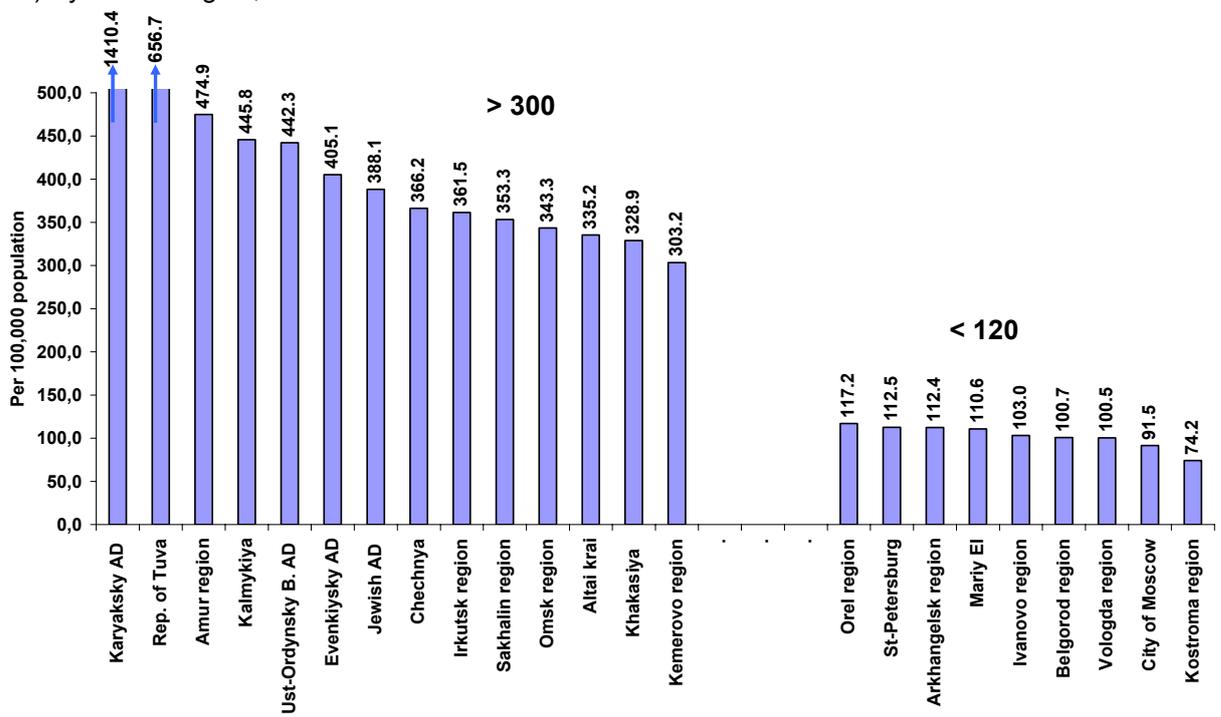
As seen with notification rates, prevalence rates in general increase from west to east across the country. In SbFR and FEFR, the rate reaches 302.3 and 283.8 per 100,000 population, respectively. At the same time, a high level of TB prevalence and its great elevation over TB notification rates were reported in the territories of the Southern federal region– 237.2 (with the TB notification rate at 62.6) per 100,000 population. In nine territories, a low prevalence was reported, not exceeding 120 per 100,000 population: in Orel, Ivanovo, Belgorod, Vologda and Kostroma oblasts, in the cities of St-Petersburg and Moscow and the Republic of Mari-El. At the same time, in 13 territories the prevalence exceeded 300 per 100,000 of population: Tuva, Kalmykiya, Irkutsk, Sakhalin, Omsk and Amur oblasts, Altai krai, the Republic of Khakasiya and others.

Substantial differences in prevalence rates are related to regional policies in the formation of follow up groups I and II. For example, in Kostroma, Yaroslavl and Vladimir oblasts- territories bordering one another- the rates in 2005 were 93.4, 122.2 and 145.1 per

100,000, respectively. Such variability in TB prevalence rates cannot be explained by epidemiological reasons only.



A) By federal region, 2006.



B) By territory, in territories with a prevalence < 300 or > 120 per 100,000 population

Figure 4.9. The TB prevalence in the federal regions and territories of the RF. Comparison of the prevalence and notification rates for the federal regions (Sources: Form 33, population – Form 1)

Data on prevalence indirectly proves the fact that treatment management activities are not effective enough in Russia. A high level of TB mortality, considerable accumulation of

MbT+ patients and patients with severe forms of TB (destructive and fibro-cavernous TB), and an increase in MDR TB patients have been observed in the territories.

Therefore, the prevalence, while considering the specifics of its calculation, can be effectively used for the purpose of TB control and the evaluation of the epidemiological situation in the territories and the effectiveness of implemented TB activities.

## 5. Monitoring of treatment effectiveness in the RF

### 5.1. General information on the indicators of treatment effectiveness

Treatment is one of the main components of TB control activities. Assessment of its effectiveness is based on a rather complicated system of indicators which can be divided into several classifications:

- indicators which reflect effectiveness of certain courses of treatment; in general, one patient may have several courses of treatment;
- indicators which reflect effectiveness of certain stages of treatment, including inpatient, out-patient and sanatorium;
- indicators which reflect effectiveness of the work with patients as a whole, from the moment of detection to completion of the follow up, which to a certain extent is the assessment of the dispensary work with the patients, and, finally,
- indicators of effectiveness of treatment facility performance (effectiveness of the work performed in inpatient clinics and sanatoriums).

In order to provide the necessary assessment of the treatment process and to make directive decisions, the indicators of treatment monitoring should express the following information.

- Data on the components of treatment management which are mainly responsible for the success of a course of chemotherapy.

- **Adequacy of chemotherapy (doses and regiments).** Indication of the necessary quantity of drugs and their doses according to the severity of the disease or patient group depending upon the previous treatment history (new case, relapse, etc.) is an important component of treatment success and the prevention of treatment failure and development of drug resistance. The introduction of standardized treatment regimens by Executive Order #109 (15) laid the foundation for a decrease in errors in drug indications and doses.

- **Control over drug administration.** Supervised drug administration guarantees compliance with the indications made by a physician. Therefore such a component needs to be evaluated.

- Data which makes evident problems in the implementation of an effective treatment course:

- **Coverage of TB patients.** One of the main problems is the initial refusal of a patient to undergo treatment, or the impossibility to perform treatment. The proportion of patients, especially new cases and relapses, not covered by treatment is an important prognostic indicator of the TB situation progress in a region.

- **Duration of treatment.** Completion of the indicated course of treatment (all doses at the intensive and continuation phases are taken) has been and remains a major problem of treatment management.

- **Uninterrupted treatment.** One of the most serious problems affecting treatment effectiveness is patient compliance to treatment (patient motivation to be cured) or compliance with the indications made by a physician. Evaluation of treatment interruptions during a course of therapy is an important element of treatment monitoring which requires constant control and evaluation.

- **Continuity of treatment.** As a rule, several types of facilities (inpatient and outpatient clinics, dispensaries and others) are involved in planning, implementation and monitoring of the treatment process. In addition, TB patients may get transferred to analogous facilities in other territories or between different jurisdictional entities (e.g. transfer from a treatment facility in the civilian sector to one in the penitentiary system, and vice versa). In such cases, it is very important to evaluate and monitor the actual treatment continuation and its continuity when changing treatment facilities.

- And lastly,

- **Intermediate and final evaluation of treatment outcomes.** The outcome of any particular treatment course should be evaluated and defined. The intermediate evaluation of treatment (e.g. smear conversion at the end of the intensive phase) is also important. This might be essential for the timely correction of a therapy course or approaches to treatment management in the region (at the facility level).

The indicators of treatment effectiveness used by Russian TB services before 2004 met only some of the above-mentioned objectives.

First of all, they did not reflect the effectiveness of a particular indicated course of treatment. Of all required information on treatment monitoring, they provided only intermediate (in part) and final evaluation, and also sometimes a cumulative evaluation of treatment effectiveness.

Four indicators have been examined: (see (20, 29))

1. Bacteriological conversion (based on culture information) among new TB cases (newly registered patients)
2. Closure of cavernous lesions among new cases
3. Clinical cure
4. Withdrawal of a bacteriological positive case from the follow up register group due to bacteriological conversion (see Annex)

The first two indicators reflect treatment effectiveness of new respiratory TB patients with bacillary excretion confirmed by culture (for the first indicator) and cavernous lesions (for

the second indicator), registered within a year prior to the reporting year. These indicators only partially use the cohort principle (annual cohort). For calculation, new TB patients transferred in from other territories are added into the cohort and some patients of the previous year (who died from causes other than TB, transferred out, etc.) are excluded from the cohort.

The indicators examined target the evaluation of treatment effectiveness of a new TB patient over 12-24 months of treatment, not taking into account the number of courses of chemotherapy (cases of treatment) provided over this period of time, bringing them closer to the indicators of dispensary (follow up) activities. And finally, these indicators are limited by the evaluation of treatment effectiveness only for new MbT+ cases and new cases with cavernous TB, leaving aside the evaluation of treatment effectiveness for other groups of patients, who account for almost 50-60% of new cases alone.

Indicators 3 and 4 cumulatively reflect the dispensary work effectiveness, which can show two types of results. The first one is clinical cure – i.e. transfer of a case from a follow up group with so called “active” forms of TB (follow up groups I and II, which include TB patients), to the follow up group which consists of TB risk groups (e.g., group III), which includes persons who have previous history of the disease. The second is bacteriological conversion – the removal of a patient from the registry of MbT+ cases a certain time after obtaining a number of negative laboratory test results<sup>35</sup>.

These rates, which do not have analogs in other countries, are convenient for the cumulative demonstration of effectiveness of dispensary treatment management for all groups of patients - new cases, relapses and chronic cases. They also help in controlling the pool of MbT+ cases, indirectly evaluating the timeliness of TB detection, evaluating the results of the complex treatment of some patients with respiratory TB, and observing the flow of patients in TB dispensaries.

However, these rates do not allow for separation of treatment effectiveness for particular groups of patients or evaluation of effectiveness of separately implemented therapy courses. Treatment monitoring performed on the basis of these indicators cannot be considered to be thorough (21).

Therefore, of the seven types of information essential for treatment monitoring defined in the beginning of section 5, the treatment indicators used prior to 2004 were able to provide data only on the final outcome of treatment and not for all patient groups, not showing the effectiveness of particular treatment courses.

Noteworthy is that until 2004, international indicators of treatment outcomes were not used in the RF. This made it difficult and at times impossible to compare the effectiveness of treatment management activities in the RF to the results achieved in other countries.

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<sup>35</sup> not automatically after a first negative laboratory result

Furthermore, it hampered the use in the RF of advanced expertise from abroad in the field. In particular, the lack of such indicators complicated rendering assistance to our country by foreign agencies (IBRD, GFATM, and others), since it was impossible to evaluate the effectiveness.

In principle, the organization of treatment monitoring and statistical reporting, adopted in the RF according to recent executive orders, correspond with fundamental WHO recommendations, supplemented upon substantially by the existing capacities of TB services. WHO recommendations are designed for all countries regardless of the presence or absence of developed TB services in a country. The system of treatment monitoring applied in RF, as compared to the basic WHO recommendations, includes also the assessment of effectiveness, which is performed on the basis of culture examination methods and clinical-radiological evidence. It performs a separate evaluation of cases who have died of TB and other causes and reviews cohorts of smear-negative relapses.

At the same time, statistical data reviewed in the previous sections on TB mortality and prevalence in the RF indirectly show that treatment effectiveness has not been particularly high: there has been a high level of TB mortality, a substantial accumulation of MbT+ cases and cases with severe forms of TB (with destructive and fibro-cavernous TB) among patients of follow up groups 1 and 2, and an increase in MDR TB cases.

Indicators in effect prior to 2004 do not allow for the complete analysis of the causes of the existing situation, nor for the full identification of strategies for the alleviation of the situation.

As a result of Executive Order #50 (16) issued in 2004, a system of new recording and reporting forms of TB detection and treatment monitoring was introduced. It was based on cohort analysis and evaluation of effectiveness of a particular course of treatment. As a result, the possibility arose to evaluate and monitor a large amount of the aforementioned information essential for effective treatment monitoring.

## **5.2. Evaluation of treatment effectiveness on the basis of indicators used prior to 2004**

Treatment effectiveness of new cases, as defined by the criteria of closure of cavernous lesions and bacteriological conversion (20), declined from 1992 to 2004 by 1.2 times. Closure of cavernous lesions was reported in 76.6% of cases in 1992 and in 63% of cases in 2004. Bacteriological conversion was reported in 86.8% of cases in 1992 and in 73.5% in 2004 (Figure 5.1.).

In 2005-2006, due to the introduction of new Reporting Form #33, it was not possible to evaluate bacteriological conversion and closure of cavernous lesions due to the lack of corresponding data. However, in order to ensure continuity of the rates, it is planned to resume collection of the indicated data starting in 2007.

The rates of clinical cure and conversion should be analyzed separately for the period of time prior to revision of the dispensary follow up group system in 2004 and for the period after it (see Figure 5.2). Prior to 2004, the conversion rate practically did not change, and the clinical cure rate of respiratory TB patients after some decrease in the beginning of the 1990's started increasing slowly after 1998. After 2004 (revision of the follow up groups), these rates indicate an increase in effectiveness of the work performed with patients from follow up groups I and II, as well as both MbT+ patients and TB patients with destructive process in the lungs. In 2006, 33.4% of patients from follow up groups I and II had bacteriological conversion, and 30.3% of respiratory TB patients were transferred to follow up group III (clinically cured TB patient group) during the year.

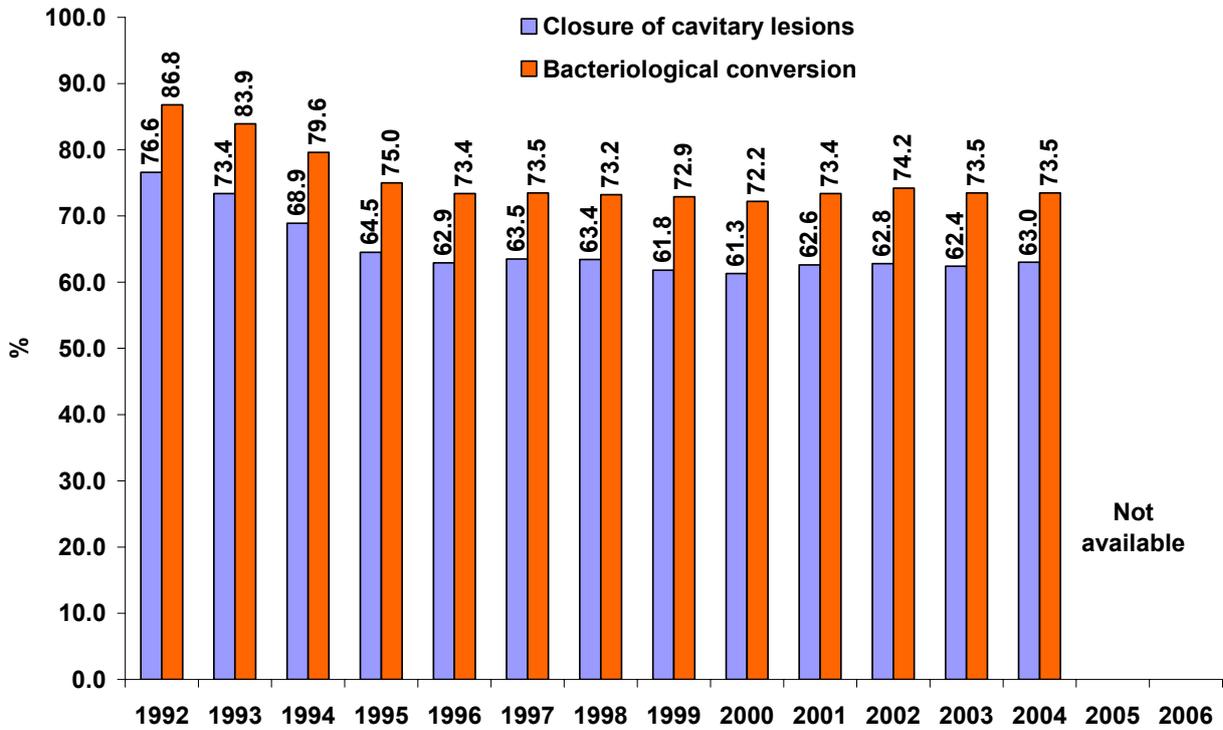


Figure 5.1. Treatment effectiveness of new respiratory TB patients, 1992-2004 (Source: Form 33).

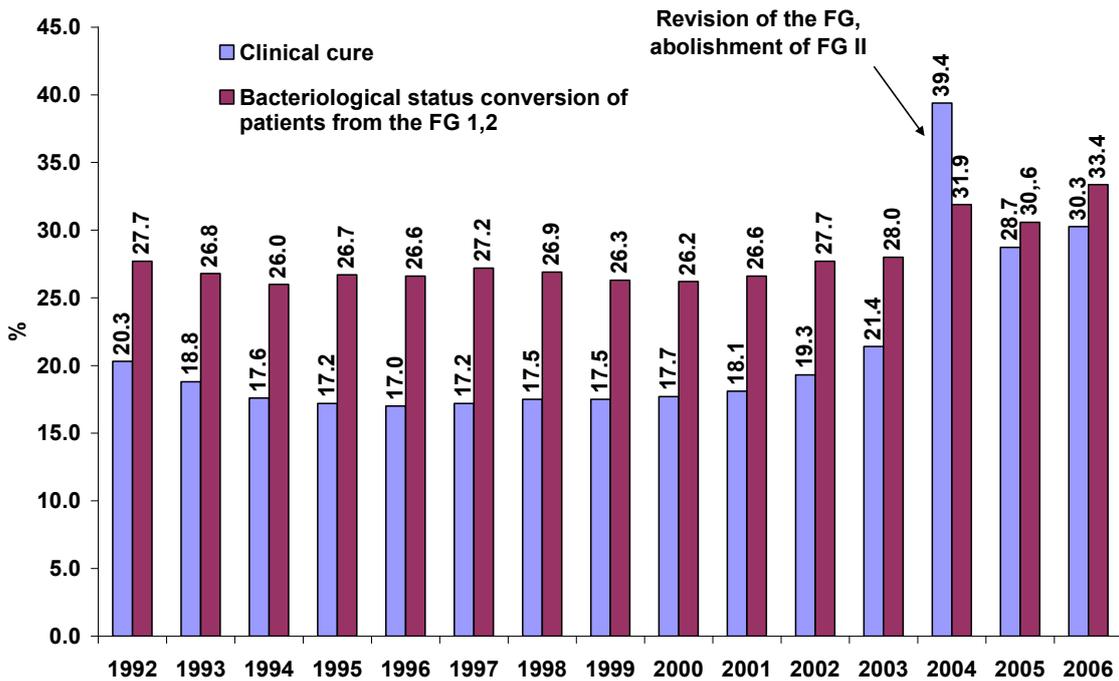


Figure 5.2. Clinical cure and bacteriological conversion of respiratory TB patients from follow up groups I and II, 1992-2006. Abbreviations: FG – follow up group (Source: Form 33)

### 5.3. Evaluation of surgical effectiveness

Data on surgical TB treatment present in the existing federal reporting forms allow only for the calculation of the coverage of patients receiving this type of treatment. Indicators that directly show the effectiveness of the given type of treatment are lacking in the MoH&SD forms.

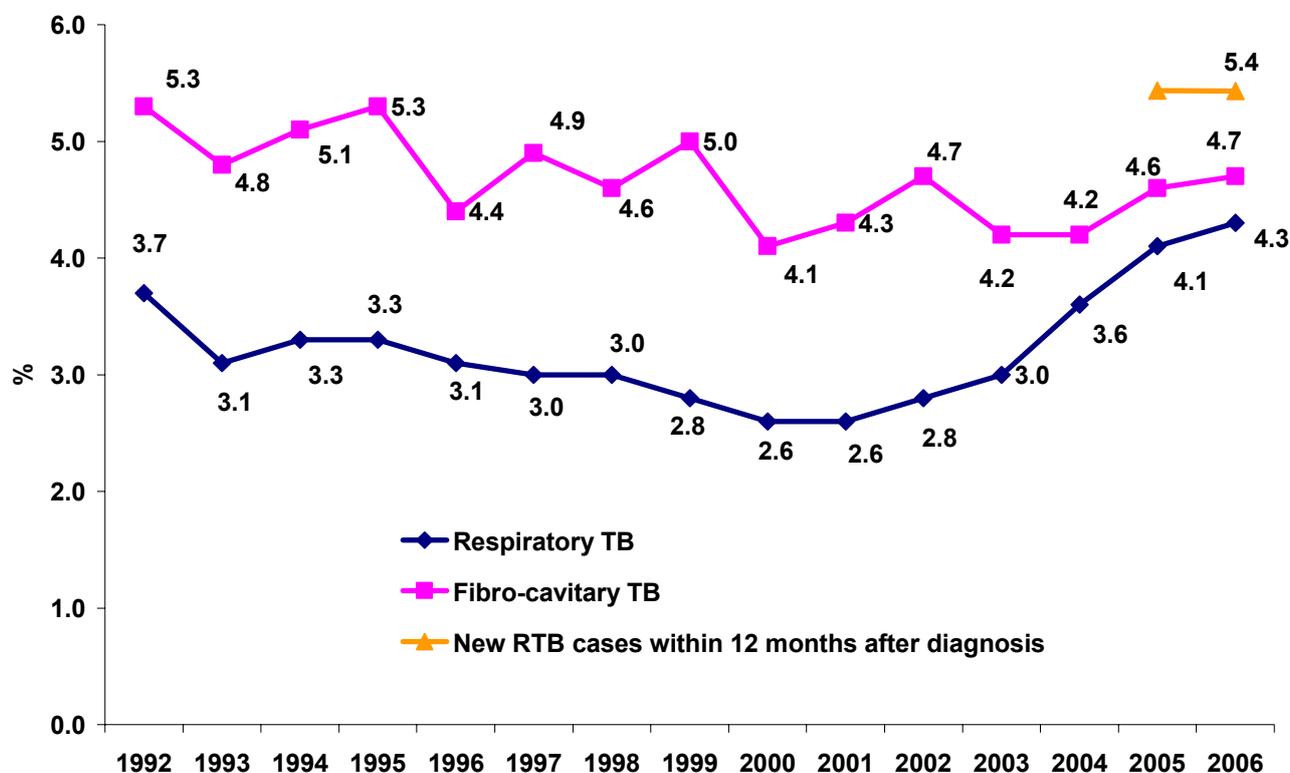


Figure 5.3. The percentage of cases with respiratory TB (RTB), fibro-cavernous TB, and new respiratory TB cases receiving surgical treatment within 12 months after diagnosis (Source: Form 33)

The data from Form 33 indicate an increase in the proportion of patients with respiratory TB treated surgically, from 2.6% in 2001 up to 4.3% in 2006 (Figure 5.3). An increase in the proportion of patients with fibro-cavernous TB treated surgically was observed starting in 2004 and continues— from 4.2% to 4.7% in 2006. The proportion of patients surgically treated remains high among patients with TB of the bones and joints (12.6%), urogenital TB (7.0%) and TB of the peripheral lymphatic nodes (26.2%)<sup>36</sup>.

Beginning in 2006, the reporting forms allow for the calculation of the percentage of patients who had surgical treatment within a year after diagnosis (5.4%).

It is advisable to develop and implement at the regional level indicators for sentinel monitoring (in separate selected territories) of surgical treatment effectiveness which should include the following basic evaluations:

<sup>36</sup> Form 33 for 2006.

- post-surgical mortality,
- level of post-surgical complications,
- effectiveness of surgical interventions as measured by indicators of bacteriological conversion and closure of cavernous lesions,
- descriptive indicators by the types of surgical interventions performed.

It would be rational to process these data applying the cohort principle (for quarterly or annual cohorts) and separately for different patient groups (new cases, relapses, etc.)

The analysis of such information from representative parts of RF regions will substantially increase the effectiveness of monitoring and evaluation of the surgical methods of TB treatment in the RF.

## 5.4. Evaluation of treatment effectiveness on the basis of cohort analysis in 2005- 2006

In 2005-2006, practically throughout the entire country<sup>37</sup>, a new methodology and statistical system of treatment monitoring based on cohort analysis was introduced (16).

Implementation of the new system of treatment monitoring has been controlled by the research institutes of phthisiopulmonology and tuberculosis (RIPP, NTRI, SPRIPP, CTRI RAMS, URIPP), and, within the framework of the IBRD and GFATM projects, FPHI. The WHO in the RF has provided consultative support to the implementation of the new system.

Table 5.1 presents the number of territories by supervisory zone (by TB research institute), from which data on treatment monitoring as of April 1, 2007 were collected and analyzed.

Table 5.1. Territories by supervisory zone, from which data on treatment outcomes were collected and analyzed (as of April 1 2007). Data from MoH&SD and FSIN facilities. Cohort composed of new smear-positive pulmonary cases, 2005.

Federal RI	Number of supervised territories	Number of territories which provided complete data on MoH&SD		Number of territories which provided complete data on FSIN		territories which did not provide data or data were not complete
		##	%	##	%	
RIPP	25	21	84.0	16	80.0	Voronezh oblast, Kursk oblast, Tambov oblast, Yaroslavl oblast, Tver oblast, Rostov oblast, Republic of Chuvashiya
CTRI	15	14	93.0	13	84.0	Astrakhan oblast, Republic of Tatarstan
SPRIPP	11	10	90.9	7	78.0	Republic of Karelia, the city of St-Petersburg
URIPP	12	1	8.0	0	0.0	Information on treatment outcomes was provided only by Sverdlovsk oblast
NTRI	25	22	88.3	16	89.0	Republic of Altai, Novosibirsk and Amur oblast, Evenkiya Autonomous District, Chukotka Autonomous Distric

According to data from the annual cohort of new smear-positive pulmonary TB cases in 2005<sup>38</sup> at the MoH&SD facilities in 79 territories of the RF (table 5.2. and figure 5.4), an effective course of chemotherapy was reported in 57.2% of patients, 14.4% of patients failed

<sup>37</sup> In 2005– in 67 territories; in 2006– in 87 territories

<sup>38</sup> At present, data on treatment effectiveness of new smear-negative cases, as well as relapses and other re-treatment groups of patients are being processed and will be published later.

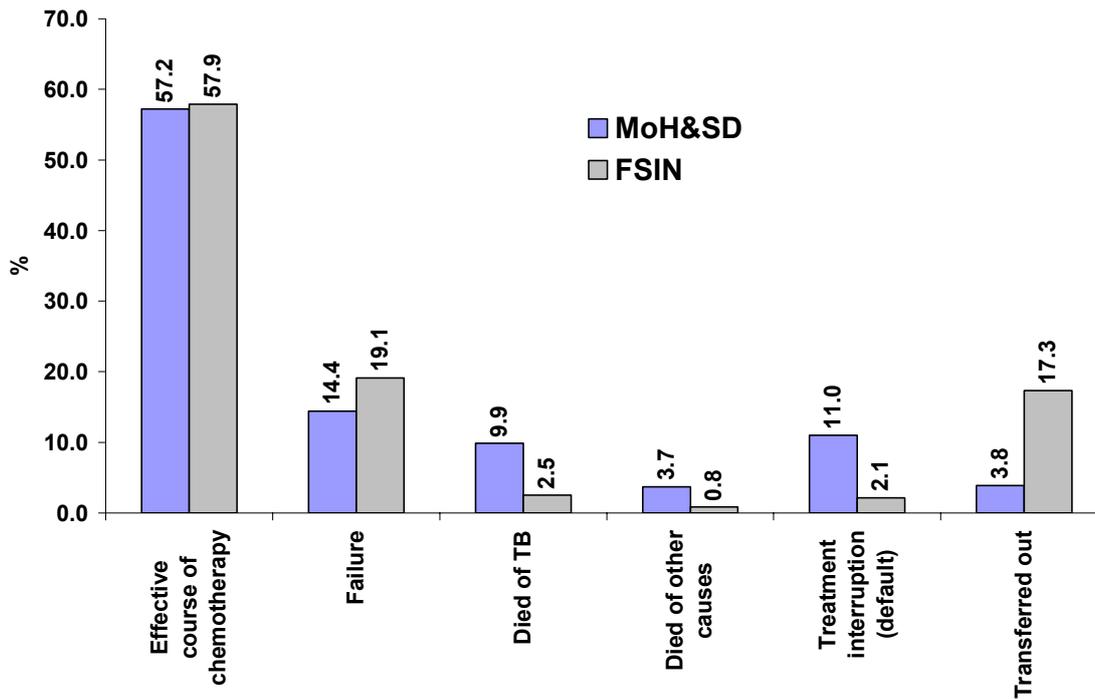
treatment, 11% had premature cessation of treatment, 9.9% died of TB, and 3.7% died of other causes.

The results show a rather low percentage of treatment effectiveness and a high percentage of treatment interruptions in MoH&SD facilities, especially compared to data obtained from FSIN. At the same time, the high percentage of patients transferred out from FSIN correctional facilities (17.3%) demonstrates that problems exist with treatment continuity which need to be resolved.

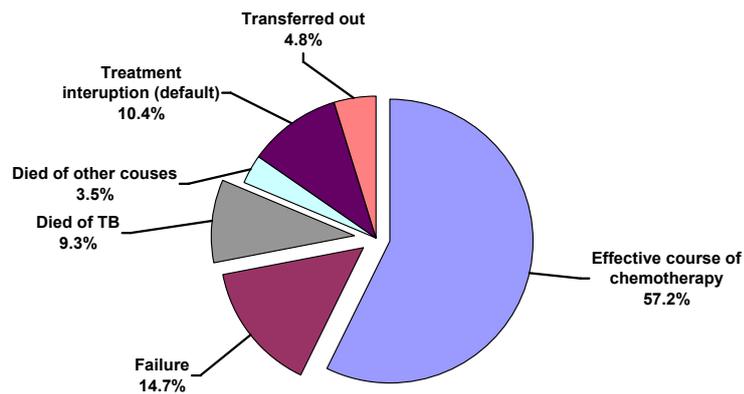
Table 5.2. Treatment effectiveness of new pulmonary smear positive cases. 2005 cohort.

Department	Cohort size abs	Effective course of chemotherapy <sup>39</sup> %	Failure %	Died of TB %	Died of other causes %	Interrupted treatment (default) %	Transferred out %
MoH&SD	23039	57.2	14.4	9.9	3.7	11.0	3.8
FSIN	1710	57.9	19.1	2.5	0.8	2.1	17.3
RF	24749	57.2	14.7	9.3	3.5	10.4	4.8

<sup>39</sup> Hereafter, effectiveness and failure of courses of chemotherapy are calculated not taking into account data from the table (1001) p.1, gr.1 Form 08-TB



A) Facilities of the MoH&SD and FSIN, RF



B) RF overall

Figure 5.4. Treatment outcomes of new pulmonary smear-positive TB cases. MoH&SD: 79 territories, 23,039 patients, FSIN: 56 territories, 1,710 patients. (Source: Form #08-TB)

Treatment outcomes differ substantially by territory and region. Figure 5.5 presents the basic treatment outcomes by federal research institute supervisory zone and by federal region.

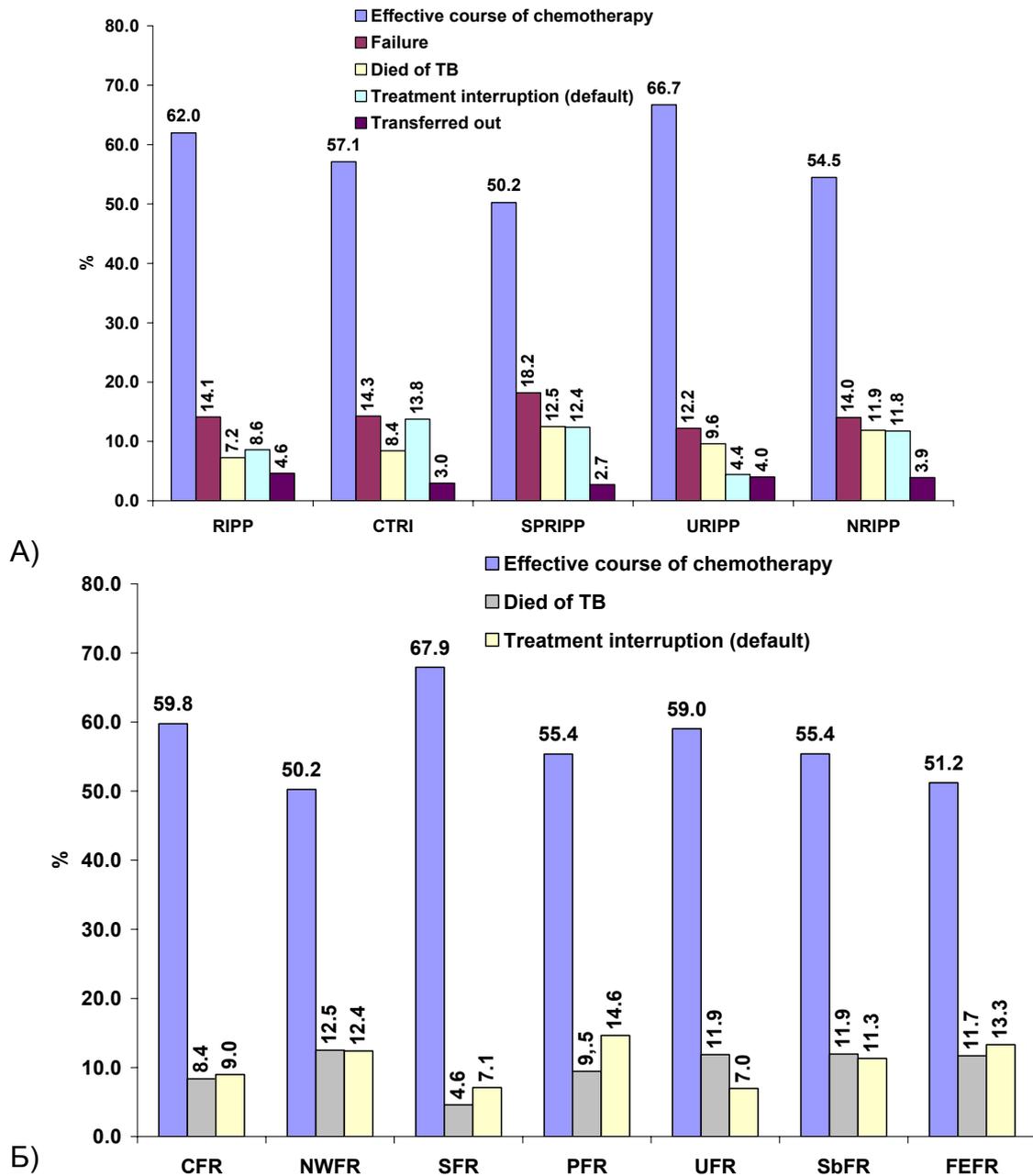


Figure 5.5. Treatment outcomes by federal research institute supervisory zone (A) and by federal region (B). 2005 cohort, new pulmonary smear-positive TB cases. MoH&SD: 79 territories, 23,039 patients. (Source: Form #08-TB)

High levels of mortality (11-13%) and treatment interruption (11-15%) and a relatively low percentage of patients receiving effective courses of chemotherapy (50-55%) were reported in the territories of the Northwestern, Povolzhie, and Eastern regions of the RF.

Figure 5.6 presents data by territory with the highest and lowest percentages of patients receiving effective courses of chemotherapy, of treatment interruptions and TB mortality (percentage of patients who died of TB). Only those territories in which the number of patients in the 2005 annual cohort numbered over 50 are taken into consideration.

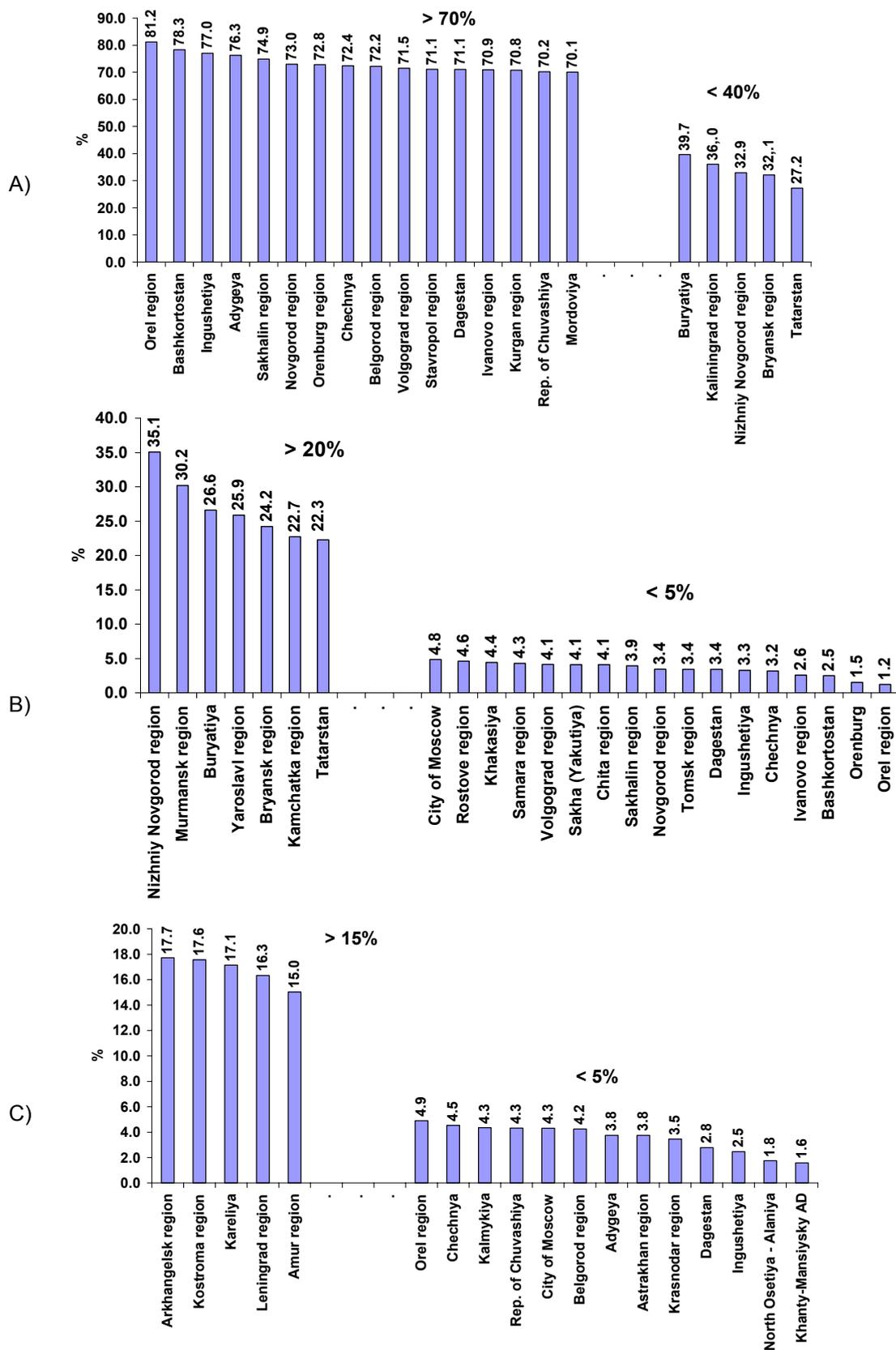


Figure 5.6. The highest and lowest percentages of patients receiving an effective course of chemotherapy<sup>40</sup> (A), of treatment interruptions (B), and of patients who died of TB (C). The cohort consists of new pulmonary smear-positive TB cases detected in 2005. Only RF territories with an annual cohort size over 50 are included. MoH&SD facilities: 79 territories, 23,039 patients. (Source: Form #08-TB)

<sup>40</sup> Not taking into consideration data from the table (1001) p.1, gr.1 Form # 8-TB

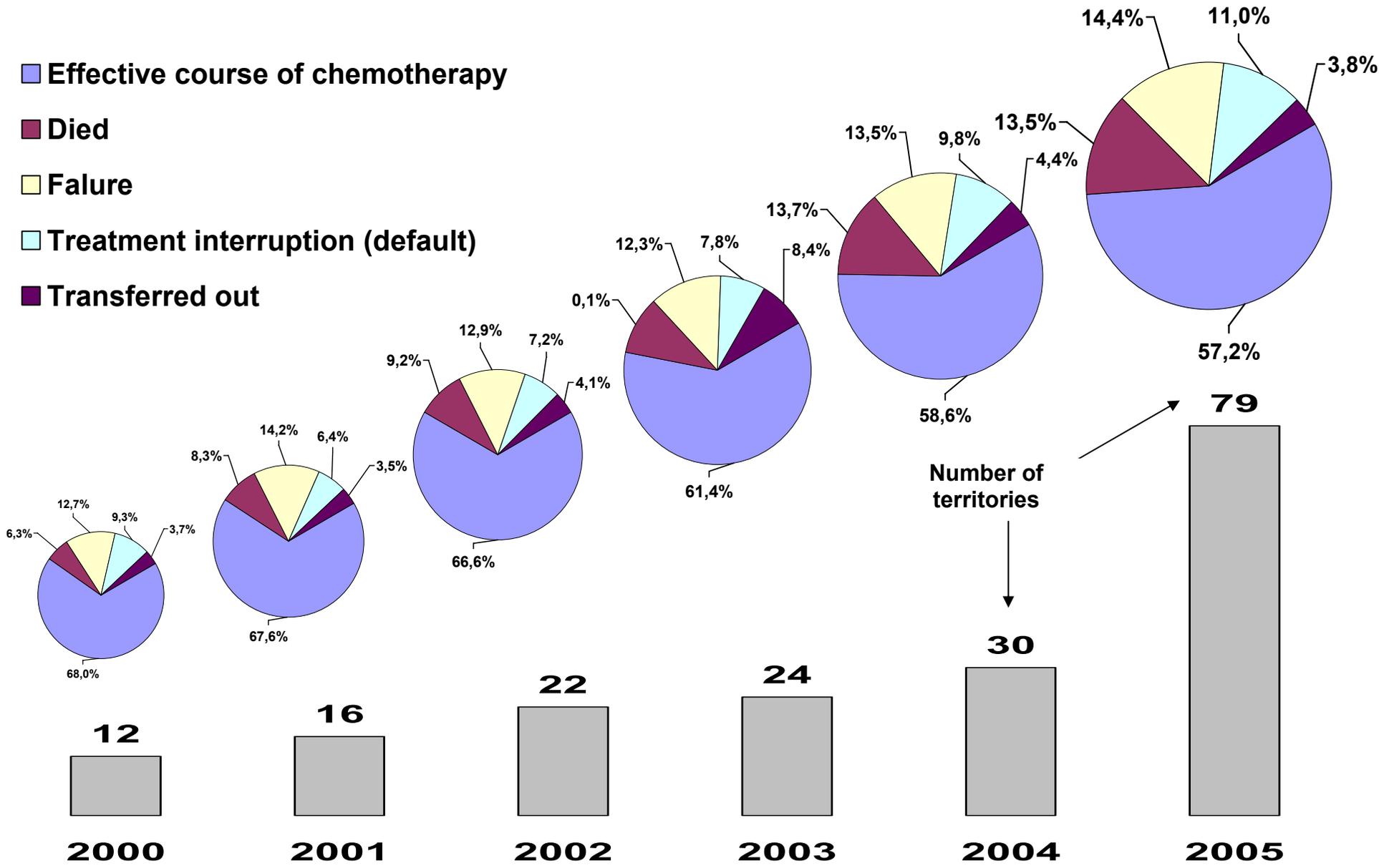


Figure 5.7. Treatment outcomes in the territories which performed cohort evaluation of treatment effectiveness. Cohorts of 2000-2005, new pulmonary smear-positive TB cases. Grey columns represent the number of territories performing the cohort analysis (Source: Form #08-TB)

As seen in the figures above, only in Orel oblast did the rate of treatment effectiveness exceed 80% and approach the internationally accepted standards. Ineffectiveness of the treatment course in the territories is due mainly to the high percentage of treatment interruptions and mortality. In seven territories, the proportion of patients with treatment interruptions exceeded one fifth of all patients registered for treatment. Only in 17 territories did the level of treatment interruptions register below the desired 5%. In seven territories, every 8<sup>th</sup> or even every 7<sup>th</sup> patient from the cohort of new pulmonary smear-positive TB cases died. Only in 13 territories was the percentage of patients who died below the desired 5%.

Worth noting is that in the course of implementation of the cohort method of treatment monitoring and the involvement of a larger number of territories in the procedure, the rates of treatment effectiveness deteriorated (Figure 5.7). This is a natural and hopefully temporary process. This finding is related to complications of control over treatment in the larger numbers of territories and to the gradual nature of training in the new approaches to management of treatment monitoring provided to TB staff.

#### **5.5. Joint evaluation of indicators from cohort analysis of treatment effectiveness and traditional indicators of TB treatment and follow up effectiveness**

In the comparison of data on treatment effectiveness from Form 33 and the cohort analysis in 29 RF territories, the following results can be obtained (21). According to data from the reporting forms of Executive Order #50 (16), a year after treatment initiation, 58.6% of new MbT+ cases had successful courses of chemotherapy confirmed by smear microscopy. According to Form 33, in 2005 in Russia in general, only 25.5% of new pulmonary MbT+ cases registered the previous year were transferred to the follow up group III (“cured TB”). Such a major difference and a low rate of clinical cure according to the data of Form 33 is evidence of serious treatment shortcomings. Thus, no more than 50% of patients with laboratory and clinical and radiological confirmation of effective chemotherapy reflected in the forms of the cohort analysis can be found in Form 33. Therefore, only partially being observed are the underlying provisions of Executive Order #109 (15) and regulating the duration of the follow up in group I as being as long as “the basic course of chemotherapy but no more than 24 months”. The time of staying in follow up group I in 29 territories in many cases

is not determined by the necessary duration of the basic chemotherapy course, but is substantially prolonged.

It would be interesting to examine treatment effectiveness of the same cohort of patients, which initiate treatment as new cases and then - as patients with a failed first course of therapy. Such patients have re-treatment courses of therapy (after failed chemotherapy, treatment interruptions, surgical treatment, MDR treatment, etc.) which can increase overall treatment effectiveness by at least 10-12% (22). The analysis of the overall effectiveness of the dispensary follow up and reporting of patients will become possible if the cohort principle is used not only for the evaluation of the effectiveness of particular courses of chemotherapy, but also for the evaluation of the effectiveness of the dispensary follow up of patient treatment overall.

Thus, the data from TB reporting forms, including the cohort analysis forms, allow for the presence of serious problems with treatment management in the RF territories to be established. The obtained information is essential for defining the targeted activities for improvement of treatment control in the country.

## **6. TB control in the penitentiary system**

In Russia, like in many countries in the world, TB prevalence in the penitentiary facilities has a major impact on the overall TB epidemiological situation in the country. This is related to the factors of TB dissemination in the closed environments of prisons and pre-trial detention centers (“SIZO”), which result in the levels of practically all epidemiological indicators among these population groups being considerably higher than in the civilian society.

The overall level of health indicators among inmates and those suspected and accused of crimes held in the penitentiary facilities of Russia, as well as persons in correctional facilities around the world, differ considerably from the respective national rates. This is related to the high concentration in the given facilities of antisocial population groups, who are more likely to suffer from socially transmitted diseases. Most incarcerated persons previously were not covered by civilian healthcare services and find out about diseases they have only after medical evaluation in penitentiary facilities.

Today, the penitentiary facilities are subordinate to FSIN, which is under the jurisdiction of the Ministry of Justice (MoJ) of the RF. TB control activities are performed in close collaboration and on the basis of a compatible organizational–methodological and regulatory base with the MoH&SD, MoJ and Ministry of Internal Affairs (MoIA) (See Figure 6.1).

Statistical reporting on TB in the penitentiary facilities is generated on the basis of the relevant MoH&SD and MoJ Executive Orders (MoH&SD Executive Orders #109 of March 21, 2003 (15) and # 50 of February 13, 2004 (16); MoJ Executive Orders #640/190 of October 17, 2005). The main TB epidemiological data in the penitentiary facilities and data measuring the outcomes of TB activities performed by FSIN medical services are contained in the annual aggregated report form 4-TUB, and starting in 2004, in the reporting cohort analysis forms (#07-TB, #08-TB, #02-TB and #10-TB) in accordance with Executive Order #50.

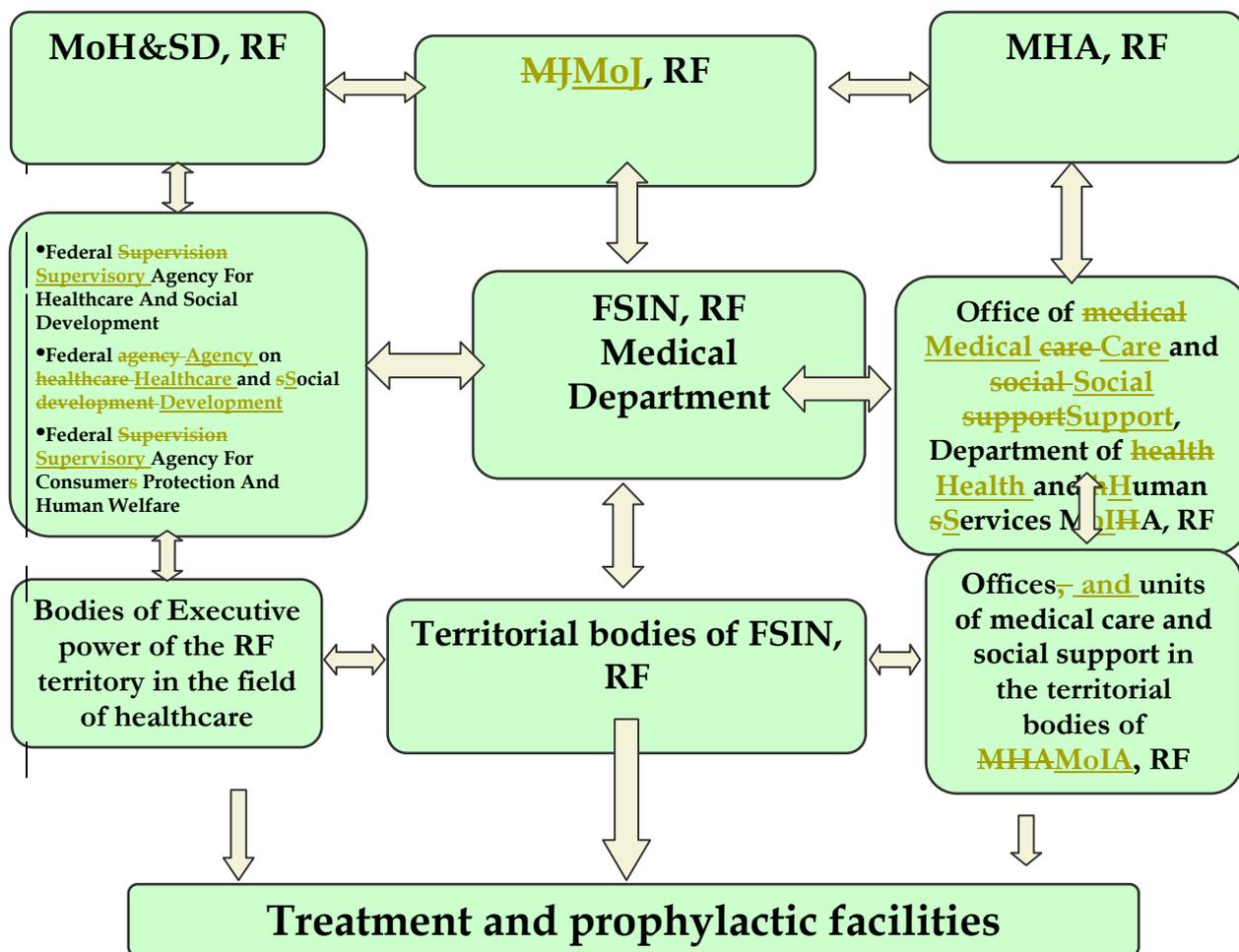


Figure 6.1. The structure of interdepartmental interaction

Using data received from the medical departments of FSIN in each territory, the surveillance departments of the head territorial TB dispensaries fill in Reporting Form #8 for all new cases, which contains summary data from FSIN, civilian services and other departments involved in TB activities. These data go to the MoH&SD and FPHI for processing and analysis of the TB notification rate in the territory.

In Chapter 2.1, the major impact of the TB situation in the penitentiary system on the overall epidemiological situation in the RF territories was discussed. New TB cases detected in the penitentiary system accounted for up to 30% (1999) of all new cases in the RF.

Every year, over 17,000 TB cases arrive at the SIZO detention centers; most of them had not visited civilian TB facilities or had not received adequate treatment prior to incarceration.

An improvement in TB activities in prisons and detention centers and the successful introduction of a system of interdepartmental interaction in the implementation of the up-to-date TB control strategy in the penitentiary system resulted in an improvement in TB indicator levels, including a decrease in TB notification rates, prevalence and mortality rates. By 2006, the percentage of new cases diagnosed in penitentiary facilities decreased to 12.1% of all new TB cases in the country

Figure 6.2 shows that according to FSIN reporting forms, over the last eight years there has been a more than three-fold decrease in TB notification rates in the penitentiary facilities— from 4,347 to 1,387 per 100,000 prisoners<sup>41</sup> (in 2005: 15,477 new TB cases, including 5,061 in SIZO and 10,416 in correctional colonies; in 2006: 15,223 new TB cases, including 6,092 in SIZO and 9,131 in correctional colonies)

At the same time, it should be noted that the notification rate in the correctional colonies and SIZO detention centers should be estimated and analyzed separately due to the fact that TB notification rates in those facilities are affected by varying factors, and different approaches are used when calculating notification rates in the detention centers and colonies<sup>42</sup> (see table 6.1.)

Table. 6.1. Number of TB patients in FSIN facilities

Year / FSIN facility	2001	2002	2003	2004	2005	2006
SIZO	12,138	6,072	6,011	5,392	5,061	4,969
CC	86,629	79,068	64,089	45,523	43,309	42,462
Total in FSIN	98,767	85,140	70,100	50,915	48,370	47,431

The number of TB cases in the SIZO detention centers is largely determined by the TB epidemic among the civilian population. According to existing FSIN regulations, all newly admitted detainees must undergo fluorography examinations. The percentage of TB cases detected at the time of incarceration at detention facilities is quite high. The existing reporting documentation does not allow for the tracing of this indicator. However, the fact that the number of defined TB patients incarcerated at the detention centers is much higher than the number of patients transferred to the FSIN entities

<sup>41</sup> In the correctional colonies, the calculation of notification and mortality rates are performed per annual average number of inmates; the calculation of prevalence, per number of inmates at the end of the year. In the pre-trial detention centers, the notification rate is calculated per number of new individuals detained in the current year, which gives a more accurate number of persons detained in the detention centers during the year

<sup>42</sup>See the footnote above

according to MoH&SD forms indirectly provides evidence that a considerable part of the cases detected in the SIZO detention centers are persons who developed the disease prior to detention (See the text below and Figure 6.9).

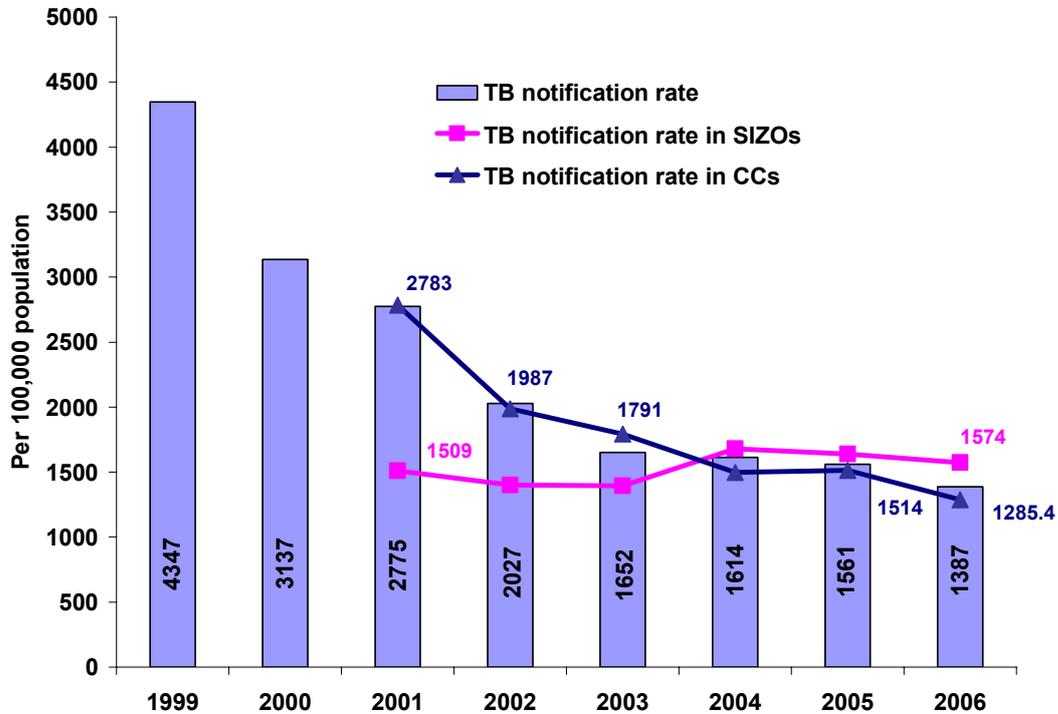


Figure 6.2. TB notification rates per year in FSIN facilities: total, in SIZO (pre-trial detention centers) and CC (correctional colonies). (Source: Form 4-TB. Calculation of TB notification rates. See footnote on p. 89)

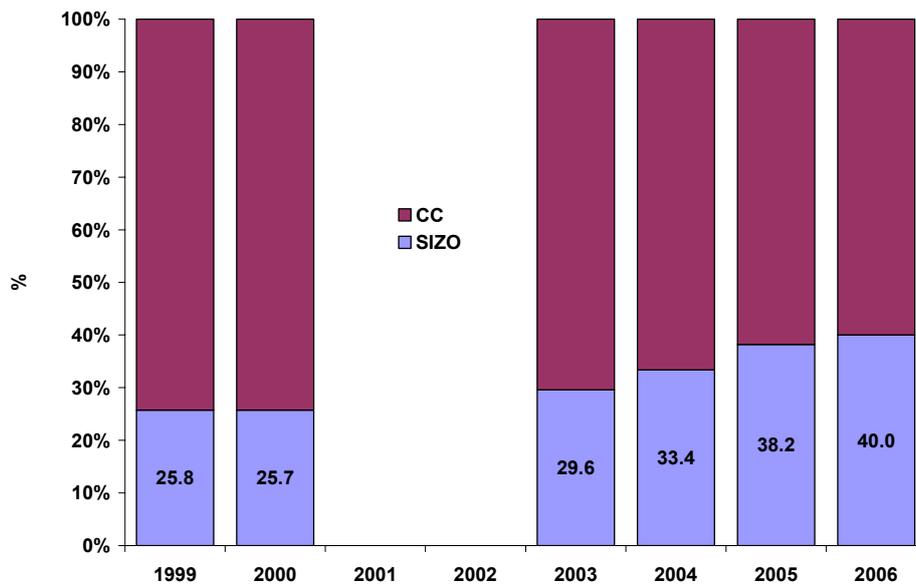


Figure 6.3. The proportion of new cases detected in SIZO among all new TB cases detected in the facilities of FSIN, RF (Source: Form 4-TUB.)

Therefore, it is wise to review data on TB detection rates in the detention centers as an integral part of the TB detection process in the civilian society.

From this point of view, the constant yearly increase in the proportion of cases detected in the detention centers among all new cases detected in correctional facilities (Figure 6.3) is interesting. Over the last few years, this indicator has increased from 25.8% (1999) to 40% (2006). Once again, it is evidence of the fact that the stabilization of the epidemiological situation which is being observed now is due to improvements in TB control activities in the FSIN correctional colonies.

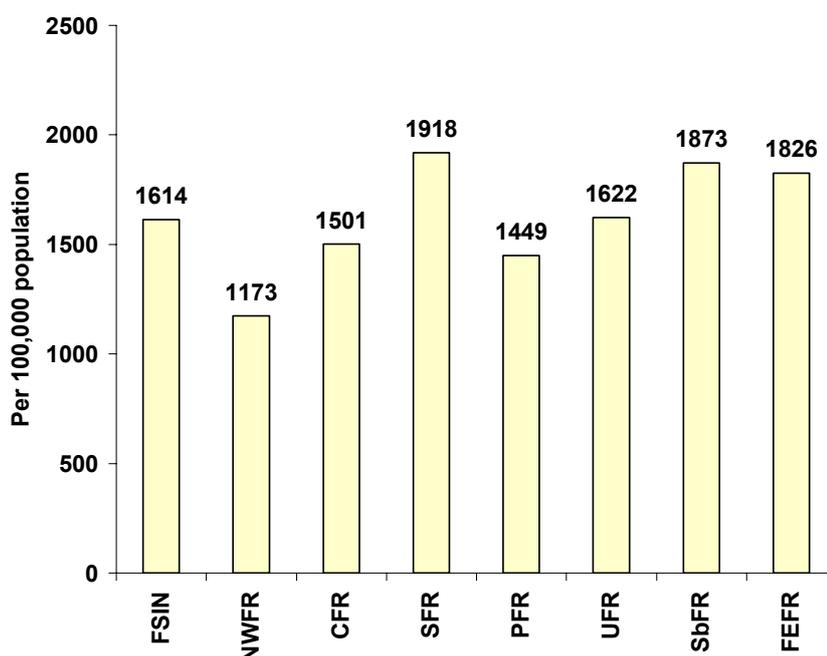


Figure 6.4. TB notification rates registered in the federal regions of RF, 2004 (Source: Form 4-TUB. and data on the number of FSIN population)

In general, the distribution of TB notification rates by federal region (Figure 6.4) shows that, as seen with the civilian population, the maximum values of the indicator are in the SbFR and FEFR (over 1,800 per 100,000 FSIN population). High rates are also reported in the correctional facilities of the Southern region (1,918 per 100,000)

The structure of the new TB cases detected in the FSIN facilities to a large degree is determined by the diagnostic capacities of the FSIN service.

The percentage of patients with destructive processes in the lungs is relatively low (Figure 6.5). In 2005, 27.3% of patients were registered with pulmonary tissue destruction among patients with respiratory TB overall (19.3% in SIZO and 31.5% in CC).

The percentage of extrapulmonary TB among new cases is small: 0.2% and 0.4% were registered in 2004 and 2005, respectively (3.6% for the civilian population, see above). These data make evident problems in detection of extrapulmonary TB in FSIN facilities.

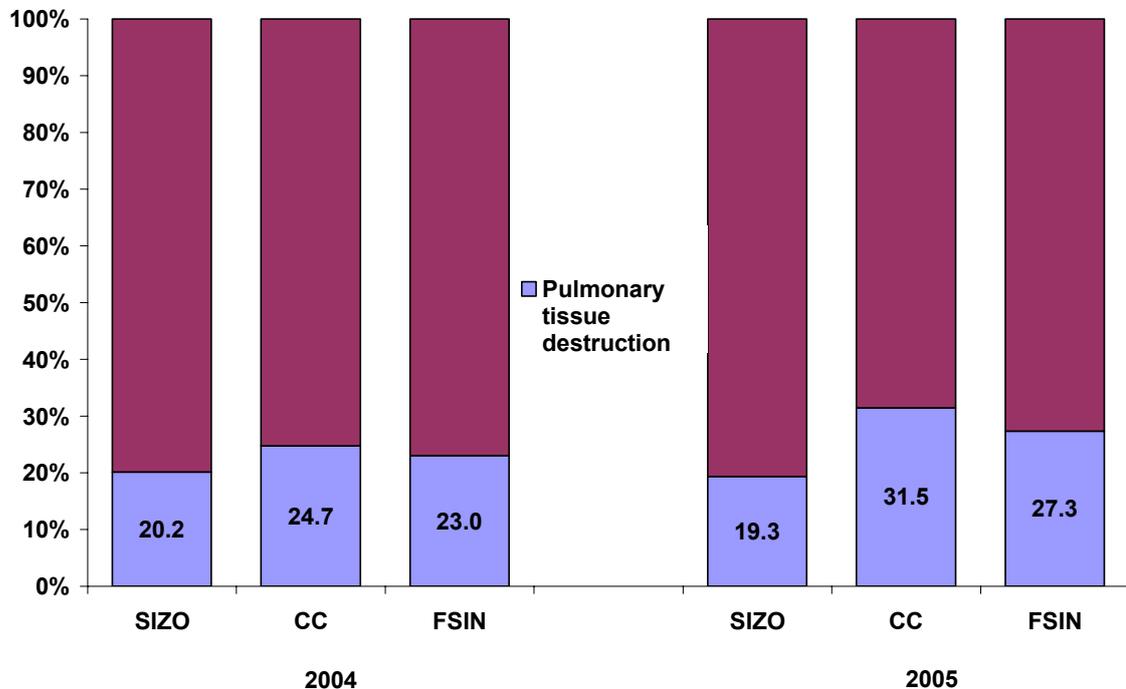


Figure 6.5. The proportion of destructive TB forms among new respiratory TB cases detected in the facilities of FSIN, RF, 2004-2005 (Source: Form 4-TUB)

Verification of TB diagnoses using microbiological methods is quite low. In 2004, 58% of patients with active TB were tested using such methods; among new TB cases, 55% were tested. Of the new TB cases that were tested, 27.7% of cases (14.9% in SIZO and 34.4% in CC) had a positive bacteriological confirmation of their diagnoses (18.1% were confirmed by smear microscopy, and 17.2%, by culture).

Development of laboratory services in the penitentiary facilities has allowed for an increase in testing of active TB patients by bacteriological methods up to 75.3% in 2005, and up to 94.0% in 2006. Among new TB cases, up to 62.7% were tested in 2005, and up to 91.5% in 2006.

Therefore, of patients with active TB evaluated by bacteriological methods, 42.2% of cases were bacteriological positive in 2005. In 2006, 51.8% of patients were bacteriological positive, and of them, 37% of bacterial excretion was reported in new TB cases in 2005 and 44% - in 2006.

The main goal of the bacteriology laboratories is to examine completely and adequately all categories of TB patients. The TB mycobacteria being spread in the FSIN system have a high level of drug resistance to the basic TB drugs. Drug resistance among new MbT+ cases in 2005 and 2006 was at 51% and 49.6% (2,158 and 2,143 patients, respectively), and MDR in 2005 and 2006 was at 17.8% and 20.3% (755 and 875, respectively). Among all patients, drug resistance was found in 9,978 and 11,720 TB patients, followed up in 2005 and 2006, respectively. Of them, 4,243 (2005) and 5,720 (2006) patients had MDR TB.

A rapid decrease in mortality rates has been reported in FSIN facilities (Figure 6.6). After a threefold decrease in the rate since 1999, in 2006 it reached the level of 79.1 per 100,000 FSIN population.

Among patients who died in 2005, 17.5% were patients who died within the first year after registration (in SIZO – 31.4%), which amounts to only 1.1% of new cases (in the MoH&SD facilities – 5.5% in 2005).

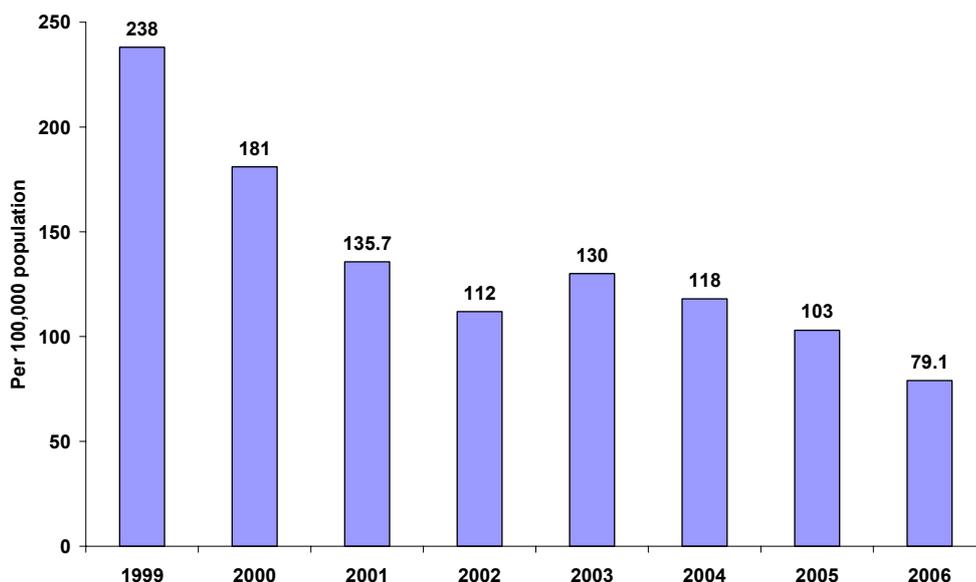


Figure 6.6. TB mortality rates in FSIN facilities (Source: Form 1 med)

Over the last few years, TB prevalence has decreased to 6,333 per 100,000 FSIN population. The number of TB patients in the system of FSIN decreased twofold from 98,767 in 2001 to 47,431 in 2006 (Figure 6.7).

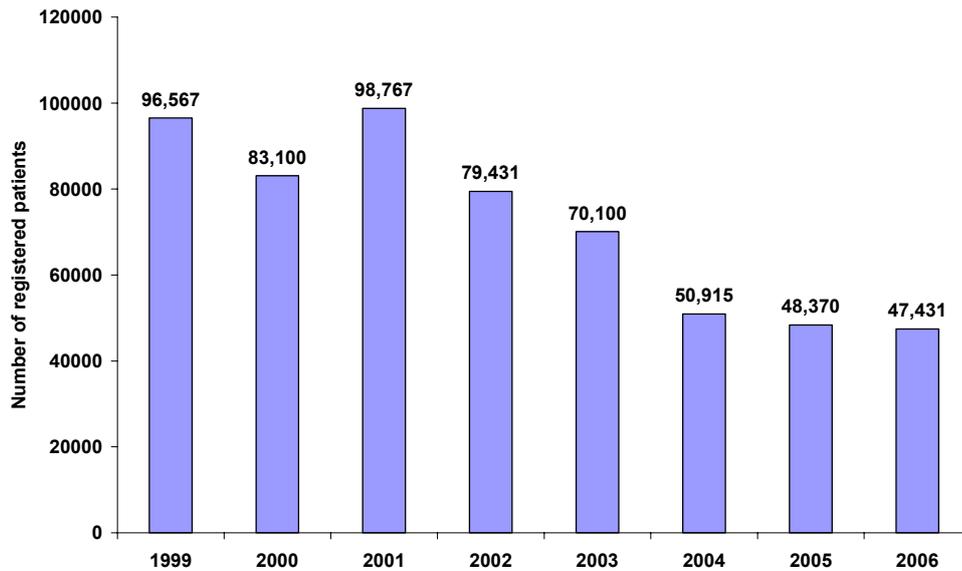


Figure 6.7. The number of TB patients registered in FSIN facilities (Source: Form 4-TUB)

Noteworthy is the prevalence of TB/HIV co-infection among TB patients in the penitentiary system. It is evident from Figure 6.8 that in recent years, while the number of TB patients has decreased, the number of HIV-infected individuals has increased and the percentage of co-infected cases among TB patients has increased from 3.7% to 6.0%.

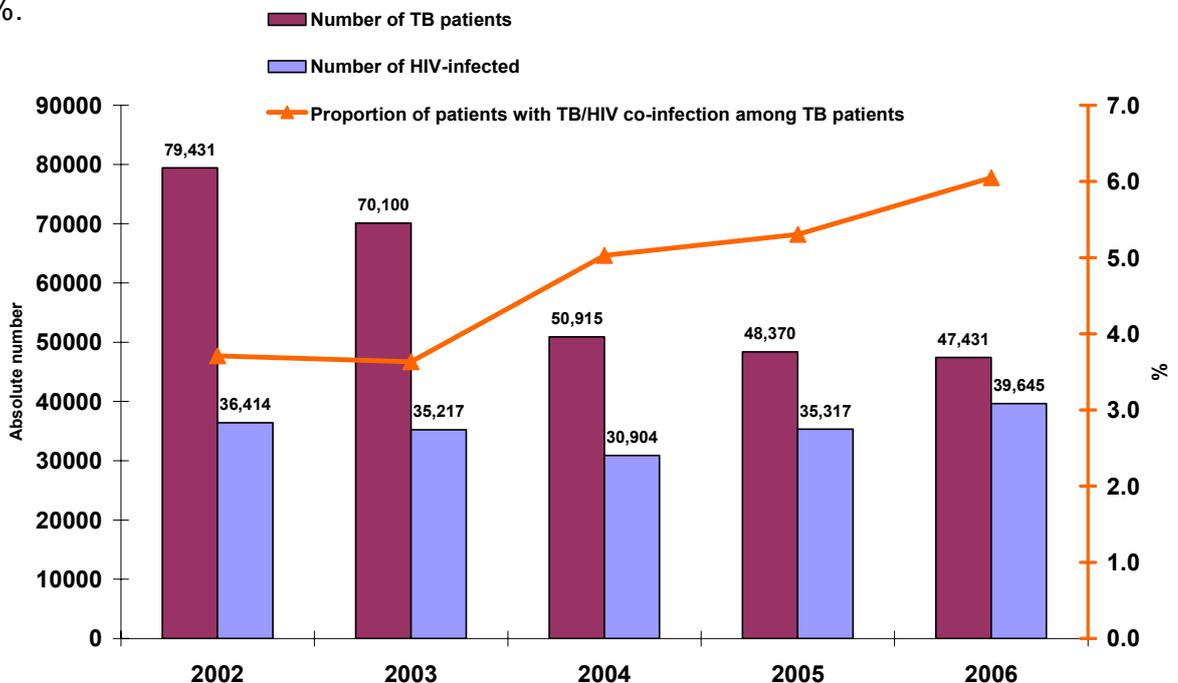


Figure 6.8. The number of HIV-infected cases and TB patients, and the percentage of TB patients with co-infection in FSIN facilities (Source: Form 4-TUB and 1-med)

An important component of TB activities is the continuity of work performed by different services. This is most relevant to the interaction between civilian (MoH&SD) and penitentiary (FSIN) services, due to the substantial number of TB patients who flow between the facilities of these services.

Figure 6.9 demonstrates the fact that in Russia, a lot of work remains to be done in order to improve such interaction. According to MoH&SD and FSIN reporting forms, the SIZO detention centers admit almost 4 times as many TB cases than get officially transferred there from the MoH&SD facilities. In the opposite direction, almost 40% of patients released from detention centers and correctional colonies do not follow up for registration at the TB dispensaries of the MoH&SD.

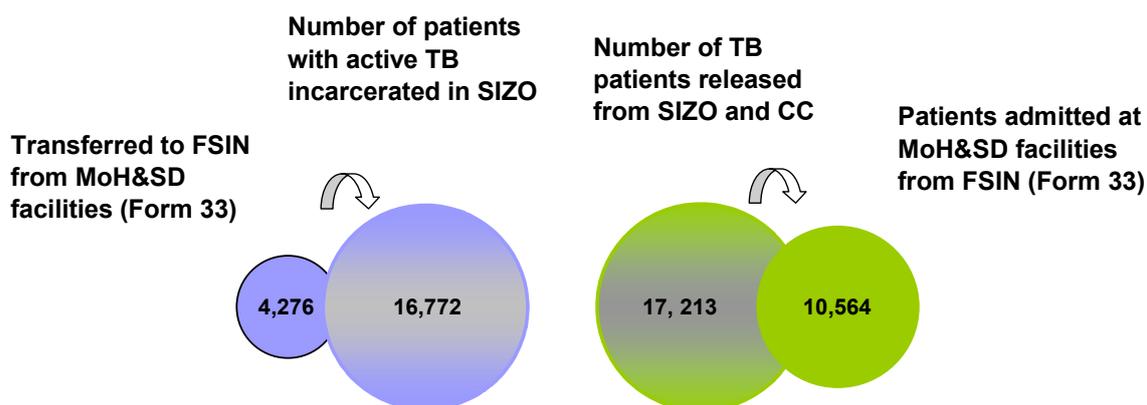


Figure 6.9. Flow of TB patients between the facilities of MoH&SD and FSIN, 2005 (Sources: Form 33 and 4-TUB)

Treatment effectiveness among new cases in FSIN is relatively low. Closure of cavernous lesions in 2004 and 2005 was reported in 69.2% and 49.5% of cases, respectively, and bacteriological conversion was reported in 70.2% and 58.3% of cases, respectively.

As mentioned earlier in chapter 5, the previous system of treatment effectiveness evaluation had certain limitations and drawbacks, especially with regards to the system of detection. Over the last two years in the RF, in both the civilian and penitentiary

systems, introduction of new statistical reporting procedures on TB has been initiated due to the implementation of the modified strategy for TB detection and treatment.

The introduction of this strategy, which was initiated in the penitentiary system in 2005, was supposed to improve considerably the effectiveness of TB control activities. The new recording and reporting forms issued upon Executive Order #50 (12) provide an opportunity to perform informative and online monitoring of TB detection and treatment on the basis of cohort analysis and adequate laboratory data.

In 2006, data on TB detection (Form #07-TB) were submitted from 72 territories<sup>43</sup>.

The number of new cases registered by this form was 16,639 – which is 7% more than the number of registered patients from Form 4-TUB (15,223 cases). This discrepancy might be related to the still existing differences and drawbacks in the process of registration of new TB patients with Form 089, in Journal #03-TB and by the data of regional Central Consultative Committees of Physicians, which control the diagnostics and treatment process in Russia.

Data from Form #4-TUB has allowed for the calculation of the percentage of patients with the most epidemically dangerous TB form – pulmonary TB (78.9%) – and the percentage of smear-positive TB patients (confirmed by microscopy) – 21%.

Figure 6.12 shows the territories with the highest (> 30%) and lowest (< 12%) percentages of TB diagnosis confirmation by microscopy. The fact that the number of territories with a low rate is considerable is an indication of both registration problems of MbT+ cases and inadequate organization of laboratory TB diagnostics.

The new reporting system has allowed for the obtainment of data on treatment effectiveness on the basis of cohort analysis. The treatment effectiveness among new MbT+ cases in the 2005 cohort in FSIN facilities was 57.9% (57.2% in MoH&SD facilities)<sup>44</sup>. At present, the poor treatment outcome rates are also a reflection of the fact that the new approaches to treatment monitoring and evaluation are still in the initial implementation phase. At the same time, in the penitentiary facilities has been observed a relatively low level of treatment interruption – 2.1% (11% at MoH&SD facilities) and of mortality, both of TB – 2.5%, and of other causes – 0.8% (9.9% and 3.7%, respectively, in MoH&SD). (See Chapter 5)

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<sup>43</sup> Information was collected by the five federal research institutes of TB and phthisiopulmonology

<sup>44</sup> According to data from 56 territories

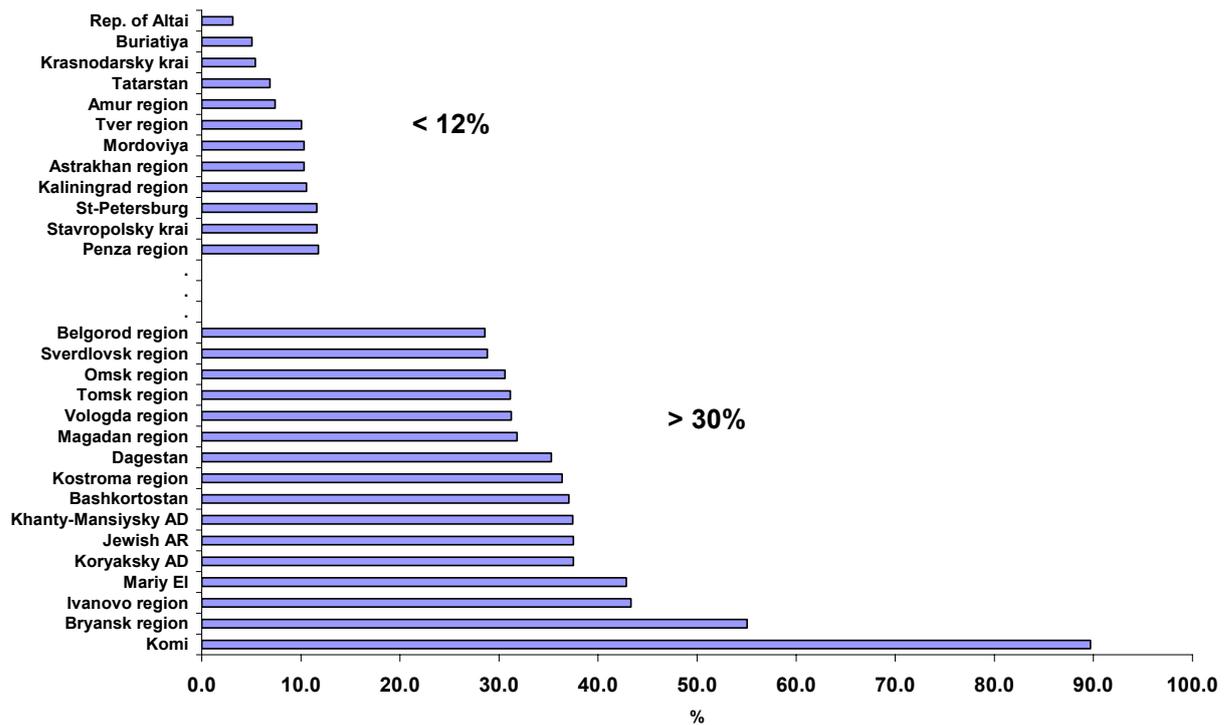


Figure 6.10. The percentage of new smear positive cases among all new pulmonary TB cases. Data of FSIN in the RF territories. Shown only are territories with rates > 30% and < 12% (Source: Form #07-TB)

Therefore, the data show major improvements in the TB situation in the penitentiary system. The obtained results also indicate that in FSIN facilities, it is critical to continue efforts to improve diagnostic methods and case recording, increase treatment effectiveness, and strengthen interaction with civilian and other services.

## **7. HIV infection in the RF and its impact on the TB epidemic**

HIV infection and TB are closely related pathogenetically, clinically and epidemiologically. In order to stress all of these interactions, the terms “co-infection” or “HIV-associated TB” are used. HIV infection is a major factor which predisposes TB infection and re-infection, as well as re-activation of latent TB (24). HIV-infection increases the probability of TB relapse among previously cured patients. At the same time, TB is the main cause of death among AIDS patients, accounting for about one third of all of deaths from AIDS (24, 25).

Both TB and HIV-infection are diseases in which social factors play an important role in their development and spread. In Russia, 65.9% of new cases of HIV infection registered in 2006 were individuals infected from injection drug use (26). In parallel, TB in Russia is most frequent among socially vulnerable groups (5, 8, 23). This suggests that these diseases affect the same population groups.

HIV has been registered in Russia since 1987, and by February 2007, 376,825 cases were registered. In 1996, a rapid increase was registered in new cases of HIV-infection, by a factor of 7.4 times compared to the previous year. The trend continued: in 1999 - by 5 times; in 2000 - by 3 times. The highest number of new cases of HIV infection was registered in 2001 (87,671). In 2003-2006, some decrease in the number of new HIV cases was reported, which lately has been in the field of 34.3-36.4 thousand cases annually (25).

The recording of HIV-associated TB has been performed in the country since the introduction in 1999 of form #61 of the federal state statistic surveillance “Information on HIV-infected groups”. In 2005, data on the coverage and results of TB patients’ testing for HIV were added to the state statistical reporting form #33 “Data on TB patients”.

A unified register of patients with TB/HIV co-infection has been in implementation in the country since 2004, when the Individual Recording Card For TB Patients with HIV Co-infection (recording form #263/y-TB) was introduced in line with MoH Executive Order #547 of 13.11.2003. According to the Executive Order, copies of the cards are coded and sent for unified recording and analysis of co-infected cases to the Federal Center of TB Care for HIV-infected Patients (FCTC-HIV) of the MoH&SD, where the monitoring of co-infection is performed. When the AIDS centers generate annual reports using Form #61, the sections related to TB are filled in for each territory of the Russian Federation on the basis of data obtained from the regional TB/HIV coordinators (27).

Data on the number of new TB/HIV co-infected cases in the RF are presented in table 7.1. As is apparent in the table, a substantial difference exists in the number of co-infected cases between the reporting form on HIV/AIDS patients and the reporting form on TB patients. The most realistic number is from the FCTC-HIV data, which is generated on the basis of conglomerated data obtained from AIDS and TB services.

Table 7.1 New cases of TB/HIV co-infection in the RF

	1999	2000	2001	2002	2003	2004	2005
New cases of TB/HIV co-infection (Form # 61)	271	320	576	833	990	1,407	2,566
New cases of TB/HIV co-infection (Data of FCTC-HIV, MoH&SD RF)	X	X	X	X	X	X	2,925
New cases of TB/HIV co-infection (Form # 33)	X	X	X	X	X	X	1,544

The incompleteness of data on HIV prevalence among TB patients obtained from Form № 33 is possibly related to incomplete recording of HIV-infected cases already registered in the regional Centers for AIDS Control and Prevention and therefore whose diagnoses were confirmed prior to TB diagnosis. When such patients develop TB and turn to TB services, they are not tested for HIV.

Table 7.2 presents data on the coverage of TB patients tested for HIV and the test results.

Table 7.2 Data on TB patients tested for HIV (Form # 33)

	2005 (%)		2006 (%)	
	RF	Range in the RF territories	RF	Range in the RF territories
Percentage of new TB cases tested for HIV	88.5	19.8-100	89.9	31-100
HIV prevalence among new TB cases	1.8	0-8	2.3	0-9.8

In 2005-2006, a large percentage of new TB cases were tested for HIV. The highest HIV prevalence among new TB cases in 2005 was reported in Khanty-Mansiyskiy AD (8.0%), and in 2006 in Samara oblast (9.8%).

Data from the FCTC-HIV show that in 2006 the proportion of patients with TB/HIV co-infection registered as being in the terminal stage of HIV infection (stages 4B-5) was 61.2% (in 2005 – 55.1%). In 2006, 1,625 patients died of HIV-associated TB (41.3% more than than in 2005), which accounted for 59% of all deaths among HIV-infected

individuals. Therefore, in 2006, TB was the primary cause of death of HIV-infected individuals in Russia (28).

The general trend in growth of TB/HIV co-infection is seen in figure 7.1.

The charts in figures 7.1 A and B<sup>45</sup> show the presence of a positive correlation between level of HIV prevalence among new TB patients and annual changes in TB notification rates at the territory level. In 2005-2006, this correlation was statistically significant:  $r=0.3$ ;  $p<0.02$ , while in 2004-2005, this correlation was not statistically significant:  $r=0.1$ ;  $p>0.1$ . For the elaboration of the epidemiological interrelations between TB and HIV-infection, further research is needed.

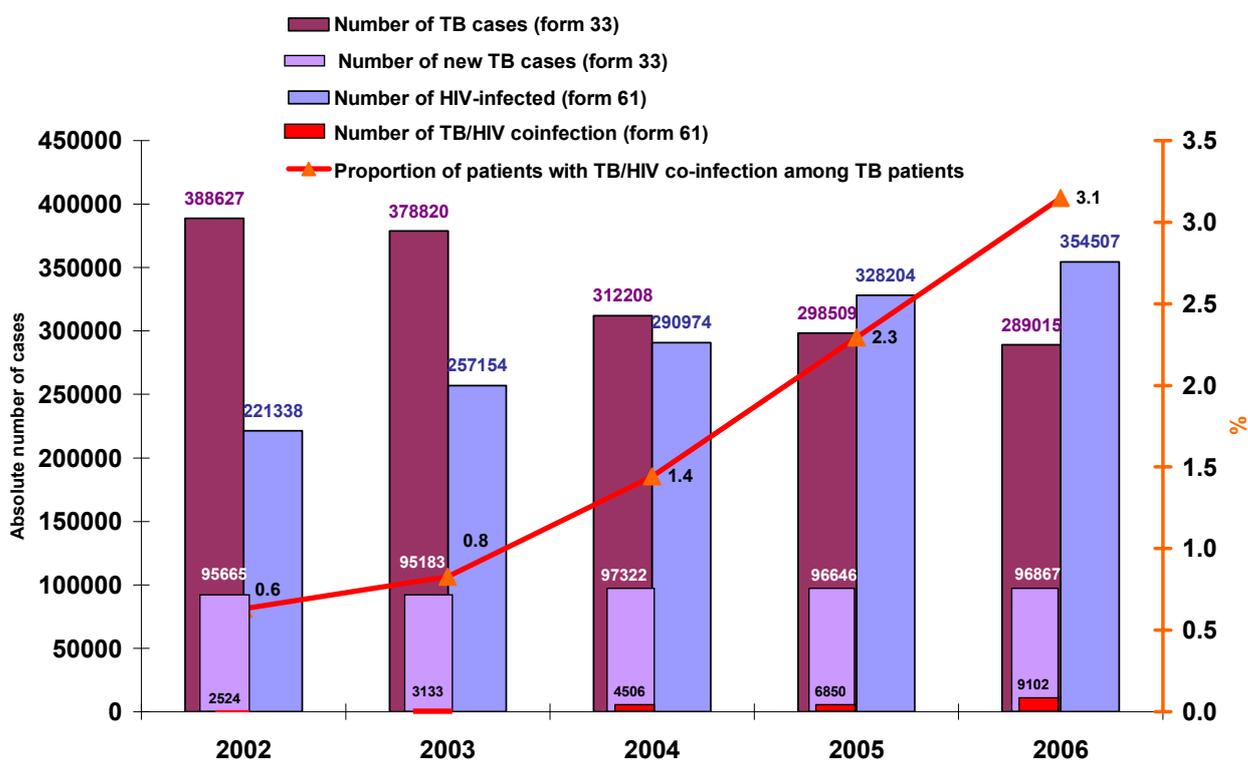
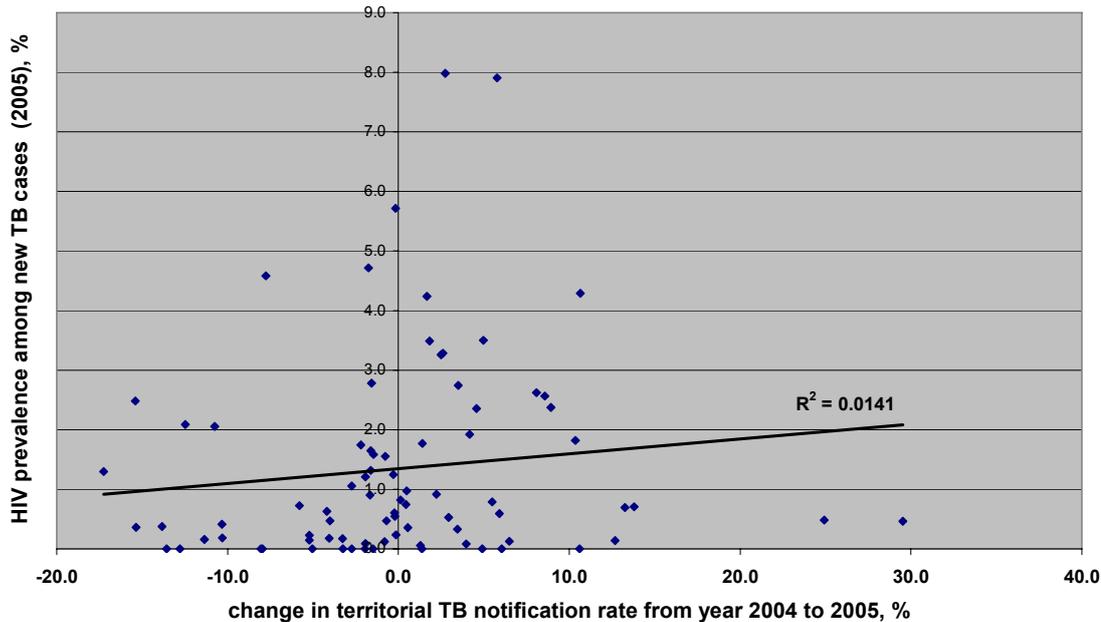
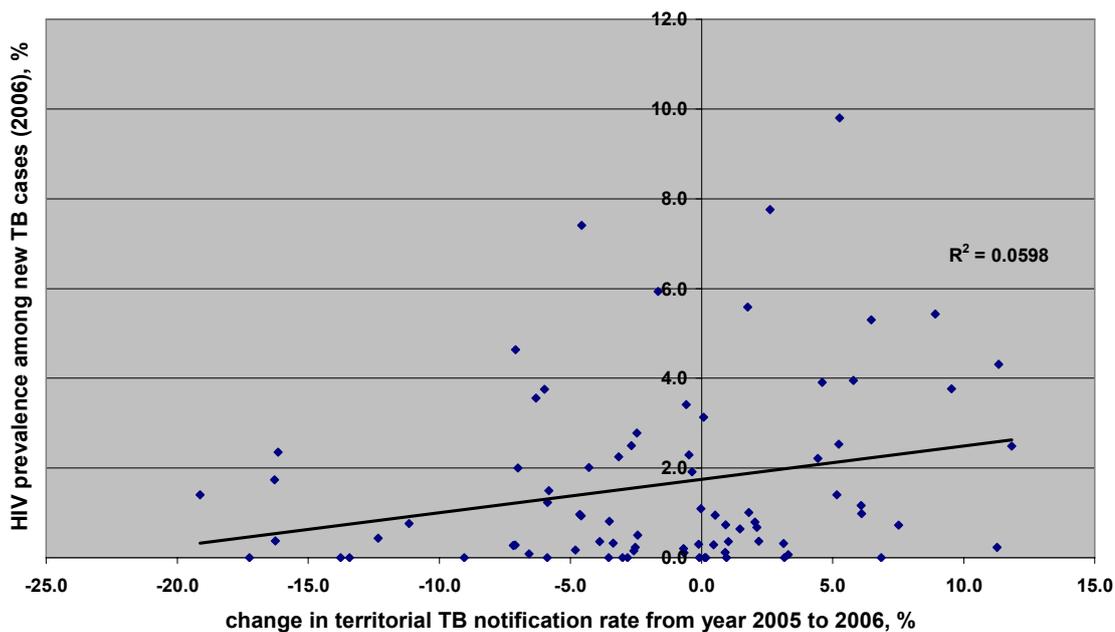


Figure 7.1. Tuberculosis and HIV infection in the RF. Sources: MoH&SD Reporting Forms 61 and 33)

<sup>45</sup> RF territories with less than 100 registered TB patients a year were excluded from the analysis (6 regions)



A)



B)

Figure 7.2 Correlation between level of HIV prevalence among new TB cases and changes in TB notification rates in the RF by territory. A – HIV prevalence in 2005, changes in notification rates between 2004-2005, B - HIV prevalence in 2006, changes in notification rates between 2005-2006 (Source: Form 33)

In 2005-2006, a pronounced correlation was observed between the registered HIV prevalence among territories and the registered HIV prevalence among new TB cases:  $r=0.6$ ;  $p<0.0001$  (Figure 7.3). In other words, the higher the HIV prevalence is

among the population, the higher the reported prevalence is among new TB cases, i.e. more HIV-associated TB.

These data provide evidence that the recording methodology of HIV infection among TB patients in Russia reflects to some extent the true situation in the country.

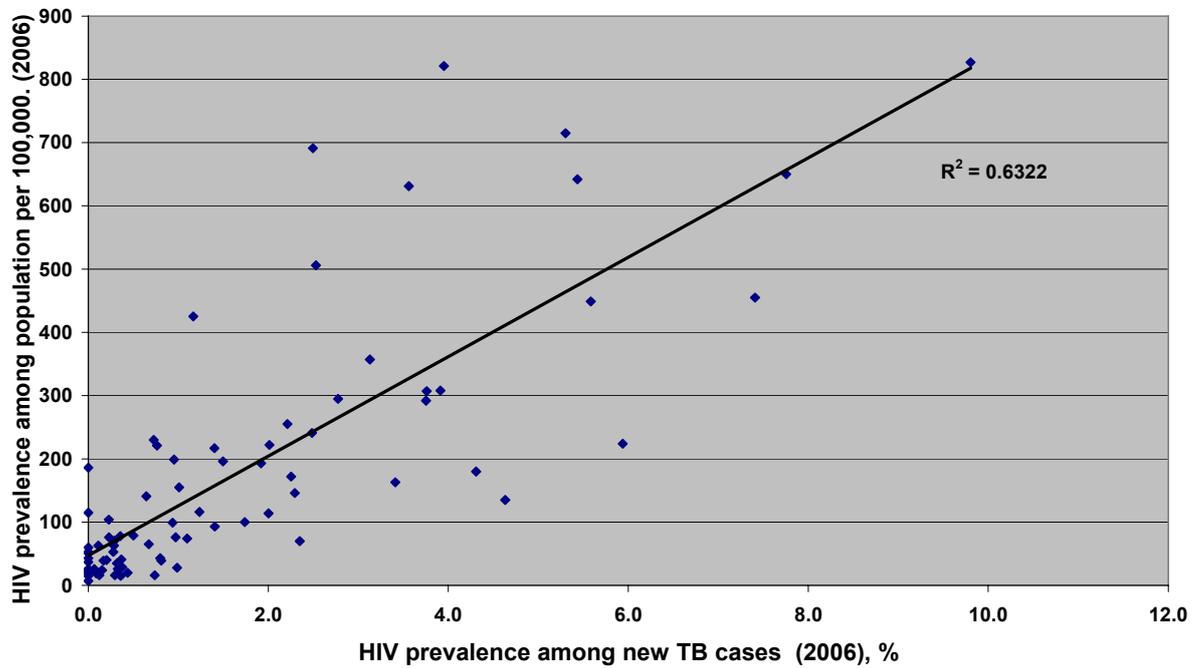


Figure 7.3. Correlation of HIV prevalence among new TB cases and HIV prevalence among the general population, 2006 (Source: Forms 33 and 61)

Therefore, although the prevalence of HIV infection among TB patients in Russia is still not high, this dual condition may grow to become a major threat to society in the future. Further improvement and development of state reporting methodology is essential to obtain the most complete and reliable information on HIV testing coverage and the results of such tests.

## **8. The network of TB service facilities. Resources<sup>46</sup>**

Changes in the TB epidemiological situation are directly related to the capacities of TB services to perform effective and comprehensive TB control activities.

Therefore, it is interesting to know how many resources are being used by TB services to fight the epidemic.

As of December 31, 2005, in TB services in the Russian Federation were 71,994 hospital beds for adult TB patients (which is 456 beds less than in 2004) and 6,781 beds for children (42 beds less than in 2004); 8,070 sanatorium beds for adults and 16 130 for children. In addition, TB services had 6,866 other beds available, of which 5,208 were located at central district hospitals (CDH); 1,116, at polyclinics of the research institutes; and 341, at clinics of higher education facilities. At TB dispensaries, there were 55,219 beds (76.7%). In 2005, a process of transfer of ownership of municipal hospital beds to the territories was initiated on the basis of Federal Laws #131-FZ of 06.10.2003 and #122-FZ of 22.08.2004. Over 70% of available beds were set at the disposal of RF territories.

Over the last 10 years, the number of TB beds for adults has decreased by 28%, while notification and prevalence rates have been increasing. As a result, the number of patients with active TB per bed has increased by three-fold. At the same time, as the health condition of patients admitted at inpatient clinics has become more severe, the average duration of the stay at inpatient clinics has increased.

TB bed occupancy in 2006 was: for adult beds, 321.1 days a year (1.2% less than in 2004) and for children's beds, 313.0 days a year (4.4% more than in 2004). The bed turnover for adults was 3.7; and for children, 3.3. The number of hospitalizations has been decreasing: in 2006, hospitalized were 79.5% of new respiratory TB cases and 76.7% of MbT+ cases. The rate decrease has been occurring in spite of the opening of day-time inpatient wards at the TB polyclinics. In 2006, 73.7% of patients with active TB who died did so at inpatient clinics.

As of December 31, 2006, RF TB services had 48,131 posts, including 14,910 physician posts and 33,221 mid-level medical worker posts. There were 8,517 physicians and 32,022 mid-level medical workers working in the service.

The number of TB staff decreases every year. Some of them get transferred to the staff of hospitals, at the time of conversion of TB dispensaries, which have a legally independent status, into departments of central municipal hospitals. From 2000 to 2006,

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<sup>46</sup> Information generated by FPHI

the number of persons employed in TB services of the MoH decreased by 7.5%, including physicians – by 13.0%. The TB physician to population ratio is 0.6 physicians per 10,000 population. Among TB physicians, 83.4% have received certification of specialization, and 29.4% have received the highest category.

In line with the country's program for provision of free medical care to all citizens, approved by RF government regulation #461 on July 28, 2005, specialized medical care for TB patients is to be financed from the budgets of the RF territories.

In the joint letter of the Deputy Minister of Healthcare and Social Development V.I. Starodubov (# 4076-BC) and the director of the Mandatory Health Insurance Federal Fund A.M. Taranov (# 3986/40-3/и), dated August 22, 2005, standards were presented for the provision and financing of specific components of TB services:

a) for TB inpatient clinics:

hospitalization rate – 4.0 hospitalizations per 1,000 population per year;

average duration of stay in an inpatient clinic for 1 patient – 79.4 days;

number of bed-days per 1,000 population: total – 317.7; of them for adults – 299.07; and for children – 18.68;

bed occupancy – 340 days a year;

bed turnover – 4.28 patients a year;

cost standard per 1 bed-day of hospitalization – 491.20 rubles;

б) for daytime inpatient clinics at the TB polyclinics (dispensary departments, TB units):

number of patient-days per 1,000 population: total - 16,8; including those for adults– 11.8; for children – 5.0;

working days – 300 days a year (6-day working week);

cost standard per 1 patient/day – 168.82 rubles;

в) for TB polyclinics:

number of visits a year per 1,000 population: total – 185.6; including those for adults – 167.4; for children – 18.1;

cost standard per 1 visit: for adults – 105.15 rubles, for children – 104.81 rubles.

The function of a TB specialist is calculated on the basis of the following standards: per 1 position there are 30 round-the-clock beds or 30 beds at a daytime inpatient clinic or 5.4 thousand appointments a year. There should be 0.67 TB specialists per 10,000 population.

In total, the per person standard of TB services financing is 178.39 rubles per person per year, or 10.1% of the healthcare budget of the RF territory. The given standard does not take into account municipal coefficients and costs related to the provision of necessary drugs to those categories of the population eligible for state social care in the form of social services.

The standards of sanatorium care for TB patients were not provided.

Overall in Russia, the number of TB specialists reaches 94.0% of the benchmark standard. The number of inpatient TB beds meets 58.9% of the standard; for adults – 57.2%, for children – 86.2% of the standard. The number of beds in daytime inpatient

clinics and the number of visits at TB services in total is unknown because the TB departments and TB units are part of the general hospitals and are not recorded separately.

The highest per capita of TB specialists, in comparison to the benchmark standard- is in the Central (112%) and Northwestern (137.5%) federal regions; the worst is in the Southern (79%) and Siberian (71%) federal regions.

In analysis of the round-the-clock use of a bed: the best situation was reported in NWFR (82.8% of the standard). The lowest was in SbFR (47.6% of the standard).

At the same time, there are 2.4 times more sanatorium beds for children than inpatient beds for children. The total number of round-the-clock TB beds for children is almost 3 times more than the standard. While an inpatient TB bed for children in 2004 was used 300.1 days, a sanatorium bed was used only 270.9 days.

Analysis of the children's sanatorium performance finds that children with active and non-active TB account for no more than 5-6% of the sanitary population. The rest are children with TB infection from TB contacts; such patients can receive prophylactic treatment at daytime inpatient clinics. Children are hospitalized at TB sanatoriums on the basis of epidemiological reasons- and even more often, on the basis of social indications.

The structure of TB care provision at all levels can be presented in the following chart, which shows the functional responsibilities of the main treatment and prophylactic facilities involved in TB care.

## FEDERAL LEVEL

Ministry of Health and Social Development and RAMS

Ministry of Justice Ministry of Internal Affairs

Federal Research Institutes, FPHI

- Development of draft regulations on TB control
- Control over the implementation of the current regulations on TB
- Training of staff and qualification improvement of TB medical personnel
- Organizational-methodological and consultative assistance to the regions
- Coordination, monitoring, supervision and evaluation of the TB control programs at the regional level
- Highly specialized medical care

Federal Penitentiary Service (FSIN) facilities

- Detection of TB cases, TB control, treatment of patients, dispensary follow up
- Work with contacts, TB prevention, hygiene education and prevention measures
- Recording and reporting
- Interdepartmental interaction

## REGIONAL LEVEL (RF territory level)

Head healthcare facility of the RF territory – oblast (republic) TB dispensary

- Development of draft regulations on TB control
- Control over the implementation of the current regulations on TB
- Training of staff and qualification improvement of TB medical personnel
- Organizational-methodological and consultative assistance to the regions
- Coordination, monitoring, supervision and evaluation of the TB control programs at the regional level
- Highly specialized medical care

## MUNICIPAL LEVEL

TB dispensaries, departments and units

- TB diagnostics, control over the organization of TB detection, treatment of patients, dispensary follow up
- Work with contacts, TB prevention among adults and children
- Hygiene education and education of the public on TB prevention measures
- Recording and reporting
- Interdepartmental interaction

TB HOSPITALS

- Differential diagnostics.
- Treatment of TB patients.

Primary healthcare facilities

- Detection of TB cases
- Treatment of TB patients in the continuation phase
- TB prevention, hygiene education and education of the public on TB prevention measures
- Recording and reporting
- Interdepartmental interaction

## Conclusion

The first years of the 21<sup>st</sup> century in the Russian Federation have been characterized by a certain stabilization of the main epidemiological TB rates and indicators, reflecting the effectiveness of TB activities. At the same time, the situation remains quite severe (4).

Numerous factors have an impact on the spread of TB and require thorough study. High-quality data analysis depends substantially on an effectively functioning statistical system, which includes recording and reporting forms and indicators. Such an analysis ensures that adequate measures are being taken and scientifically sound managerial decisions are made.

This review has been devoted to assessing the TB situation in the RF with an emphasis on the use of existing statistical reporting data on TB and the main available indicators, which we believe have allowed us to conduct an adequate analysis of the information.

The facts revealed in the analytical review tell us that the TB situation in the RF is quite complex and that there is a need for further improvement of TB control activities and implementation of modern strategies to fight this disease. In doing such, it is important to apply both the rich expertise of Soviet phthisiology and the experience of neighboring European countries.

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## Definitions used in the Russian Federation for dispensary groups and patient groups based on registration history and treatment outcomes

Definitions approved by the Russian Ministry of Health Executive Order #109 of 23.03.2003 "On improvement of TB activities in the Russian Federation" (16).

### 1. Groups of dispensary follow up and TB registration for adult patients of TB facilities.

**Group Zero (0)** - for the follow up of persons with unspecified TB activity (cases suspected of TB) and in need of differential diagnosis of TB of any site; persons in need of specifying of TB activity are included in group 0 subgroup A (0-A); persons in need of differential diagnostics of TB and other diseases are included in group 0 subgroup B (0-B).

**I-A (MbT+)**<sup>47</sup> - for the follow up of new TB cases MbT+.

**I-A (MbT-)** - for the follow up of new TB cases MbT-.

**I-B (MbT+)** - for the follow up of TB relapses MbT+.

**I-B (MbT-)** - for the follow up of TB relapses MbT-.

**I-B** - for the follow up of patients with premature treatment interruptions and patients avoiding evaluation.

Patient transfer to group I-B occurs 1 month after a failed contact.

**II-A** - for the follow up of patients with chronic TB who may be cured with intensive treatment.

**II-B** - for the follow up of patients with chronic TB in need of rehabilitation, symptomatic treatment and when indicated – in need of TB therapy.

**III** - for persons with non-active TB indications after clinical cure.

### 2. Groups of dispensary follow up and registration of children and adolescents at TB facilities

**Group Zero (0)** – follow up of children and adolescents referred to TB services for specifying the nature of a positive sensitivity to tuberculin and/or for differential diagnostics for the purpose of confirmation or exclusion of TB of any site.

**Group I A** - patients with active forms of disseminated and complicated TB of any site.

**Group I Б** - patients with active TB at any site with small and non-complicated TB forms.

**Group II** - patients with active TB at any site with chronic disease.

**Group III** - children and adolescents at risk of TB relapse at any site. It includes 2 subgroups: **III-A** – new cases with residual post-TB changes; **III-B** – persons transferred from groups I and II, as well as from subgroup III-A.

**Group IV** - children and adolescents in contact with sources of TB infection. It has two subgroups: **IV-A** – persons in contact with MbT+ family members, relatives and household, as well as in contact with MbT+ individuals at the facilities for children and adolescents; children and adolescents living in the territory of TB facilities; **IV-B** – persons in contact with active MbT- TB patients; from families of livestock farmers working at farms with unfavorable TB situations, as well as from families with livestock having TB.

<sup>47</sup> MbT - mycobacteria of tuberculosis, see the list of abbreviations

**Group V** – children and adolescents with complications after TB vaccinations. It includes 3 subgroups: **V-A** – patients with generalized and extended lesions; **V-B** – patients with local and circumscribed lesions; **V-B** – patients with non-active localized complications, both new cases and transferred from groups V-A and V-B.

**Group VI** – persons at high risk of localized TB. It includes 3 subgroups: **VI-A** – children and adolescents at an early stage of primary TB infection (conversion of tubercular tests); **VI-B** – previously infected children and adolescents with hyperergic reaction to tuberculin; **VI-B** – children and adolescents with increasing tuberculin sensitivity.

### 3. General definitions.

**Chemotherapy regimen** – The combination of TB drugs, duration of their administration, time and scope of follow up evaluations, as well as organizational forms of treatment, based on patient group.

**Tuberculosis of uncertain activity** – Uncertain changes in TB activity in the lungs and other organs.

**Active tuberculosis** – a specific inflammatory process caused by TB mycobacteria (MbT) which can be detected by a complex of clinical, laboratory and radiological evidences.

**Chronic course of active TB forms** – long-term (over 2 year), undulating course of the disease with the alternation of remissions and exacerbations, when the clinical, radiological and bacteriological evidence of TB process activity persists.

**Clinical cure** – disappearance of all evidence of the active TB process as the result of a performed basic course of the comprehensive treatment. Declaration of a clinical cure from TB and the moment of completion of the effective course of the comprehensive treatment are defined by the lack of evidence of any TB process developing within 2-3 months.

**Criteria of treatment effectiveness are:**

- disappearance of clinical and laboratory signs of TB inflammation;
- continued cessation of bacterial excretion confirmed by microscopy and culture tests;
- regression of radiological manifestations of TB (focal, infiltrative, destructive);
- rehabilitation of patient functional and working abilities

**Patients with bacterial excretion** (bacteriological positive TB patients) – TB patients who have MbT detected in their biological fluids and/or pathological material. Among extrapulmonary TB cases, patients with bacterial excretion are those who have MbT detected in fistula discharge, in urine, menstrual blood and discharges of other organs.

**Multi-drug resistance** – Resistance to both isoniazid and rifampicin, with or without resistance to any other TB drugs.

**Polyresistance** – Resistance to any two or more TB drugs without resistance to both isoniazid and rifampicin.

**Bacteriological conversion (dispensary follow up definition)** – disappearance of MbT from bodily fluids and pathological discharges excreted into the external environment. This requires confirmation by two consecutive microscopy and culture tests with an interval of 2-3 months after the first negative test result.

**Residual post-TB effects** – dense calcinated foci and foci of varying size, fibrotic and cirrhotic changes (including residual sanified lesions), plural thickenings, post-surgical changes in the lungs, pleura and other organs, as well as functional deviations after clinical cure. Single (as many as 3) small (up to 1 cm), dense and calcinated foci, circumscribed fibrosis (within 2 segments) are considered to be minor residual effects. All other residual effects are considered major.

**Destructive TB** – an active form of the TB disease course with cavitations confirmed by a complex of radiological methods of examination. The main detection method for destructive changes in the organs and tissues is x-ray examination (radiological - radiograms, tomograms).

**Exacerbation (progressing)** – appearance of new evidence of the active TB process after a period of improvement, and aggravation of the disease during follow up in groups I and II prior to the diagnosis of clinical cure. Exacerbation is evidence of failing treatment which requires treatment adjustment.

**Relapse** – appearance of new evidence of active TB in persons with a previous history of TB and cured; these are patients from follow up group III or purged from the registry due to cure.

**Definitions approved by Russian Ministry of Health Executive Order # 50 of 13.02.2004 “On the introduction of recording and reporting documentation for TB monitoring” (12).**

### **1. Groups of patients by their registration for treatment:**

**New cases** – patients who have never had treatment for TB or have taken TB drugs for less than one month<sup>48</sup>.

**Relapses** – new episodes of disease in patients with a previous effective course of chemotherapy and new evidence of active TB, including positive results of sputum microscopy or culture tests and/or clear clinical-radiological evidence of TB.

**Treatment after failure** – treatment after a previous ineffective course of chemotherapy (persistent bacterial excretion or a new episode of bacterial excretion confirmed by any method at month 5 or later during treatment, or clinical and radiological confirmation of a failed course).

**Treatment after default** – treatment of patients after a treatment interruption for 2 months or more.

**Transferred out (for treatment continuation)** – patients who have arrived from another administrative territory or another department (another registry), where they had initiated a chemotherapy course; these patients are registered for the continuation of treatment and the corresponding information on those patients is available.

**Other** – patients who do not meet any of the definitions given above, but for whom a decision has been made about provision of a chemotherapy course.

### **2. Treatment outcomes**

**Successful course of chemotherapy confirmed by smear microscopy** - a treatment outcome, in which a patient had positive sputum smear microscopy results prior to treatment initiation, received all doses of the drugs indicated in the treatment regimen, and by the end of the course had at least two negative sputum microscopy results registered at month 5 and later during treatment.

**Successful course of chemotherapy confirmed by culture** - a treatment outcome, in which a patient had positive culture results prior to treatment initiation, and by the end of the course had at least two negative sputum culture results registered at month 5 and later during treatment.

**Successful course of chemotherapy with clinical and radiological confirmation** -

a treatment outcome, in which a patient:

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<sup>48</sup> According to Executive Order #109 (11), the Central Consultative Committee of Physicians makes decisions about the registration of new cases and patients' removal from the registry when a TB specialist or other expert from a TB facility (TB ward) presents the case to the Committee review.

- had negative results of sputum smear microscopy and culture before treatment initiation, received all doses of the drugs indicated in the treatment regimen, and had negative sputum microscopy and culture results registered at all stages of treatment;

- had positive sputum microscopy and/or culture results prior to treatment initiation, received all doses of the drugs indicated in the treatment regimen, but did not have the necessary number of negative sputum microscopy and culture results registered at month 5 and later during treatment.

**Failed course of chemotherapy** - a treatment outcome when a patient remains smear positive or becomes smear positive at month 5 or later during treatment.

**Failed course of chemotherapy confirmed by sputum culture** - a treatment outcome when a patient had positive culture results at the beginning of treatment and the results remain positive at month 5 or later during treatment

**Failed course of chemotherapy with clinical and radiological confirmation** - a treatment outcome when a patient had negative smear microscopy and culture results at the beginning of treatment, and the results remained negative at all stages of treatment, but there was clear clinical and radiological evidence of progressive TB at month 5 or later during treatment.

**Died of TB** - a treatment outcome registered in the case of patient death from TB during the treatment course.

**Died of other causes** - a treatment outcome registered in the case of patient death during the course of treatment of causes other than TB.

**Chemotherapy default (interruption)** - a treatment outcome in which a patient has interrupted the course of chemotherapy for 2 or more months.

**Transferred out** - patients who have left the administrative territory or was transferred from one department to another (e.g.: released from a prison where TB treatment was initiated) and the final treatment outcome is unknown.

**Cohort** – patients registered during a specified quarter.

**Basic course of chemotherapy of TB patients** – a complex of treatment activities, which includes intensive and continuation phases for the achievement of clinical cure of the active TB disease course.

**TB notification in Russia for the period of 2002-2006**

(TB notification in the territories, form 8)

№ № nn.	Federal regions, ares of the Russian Federation	New TB cases all forms of TB										Of them, respiratory TB										Of them, pulmonary TB			
		##					TB notification per 100,000					##					per 100,000					absolute		per 100,000	
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2005	2006	2005	2006
		123340	118564	118924	119226	117646	86.3	82.7	83.3	84.0	82.4	118706	113993	114504	114941	113509	83.1	79.5	80.2	81.0	79.5	106906	105587	75.3	74.0
	<b>RUSSIA</b>	123340	118564	118924	119226	117646	86.3	82.7	83.3	84.0	82.4	118706	113993	114504	114941	113509	83.1	79.5	80.2	81.0	79.5	106906	105587	75.3	74.0
	<b>REGION: Central</b>	23774	23120	23266	22687	22012	65.4	61.1	61.8	60.6	58.9	22770	22162	22304	21719	21125	62.6	58.6	59.3	58.0	56.5	20149	19676	53.8	52.7
1	<b>Regions: Belgorod</b>	1004	1029	1077	879	942	67.0	68.0	71.2	58.2	62.3	957	984	1046	846	895	63.9	65.1	69.2	56.0	59.2	796	853	52.7	56.4
2	Bryansk	1187	1125	1156	1194	1168	84.6	82.2	85.4	89.2	87.7	1116	1052	1105	1116	1108	79.6	76.9	81.6	83.3	83.2	1028	1030	76.8	77.4
3	Vladimir	1196	1233	1084	1085	1189	76.4	81.6	72.5	73.3	80.7	1173	1207	1056	1058	1151	74.9	79.8	70.6	71.5	78.2	982	1071	66.4	72.7
4	Voronezh	1698	1731	1588	1643	1509	70.6	73.2	67.8	70.7	65.2	1605	1658	1525	1566	1440	66.8	70.1	65.1	67.4	62.2	1449	1345	62.4	58.1
5	Ivanovo	772	728	587	647	672	65.2	64.0	52.3	58.4	61.1	741	695	562	612	650	62.6	61.1	50.1	55.3	59.1	576	609	52.0	55.4
6	Kaluga	838	675	745	827	741	79.5	65.3	72.7	81.2	73.1	789	629	688	774	695	74.9	60.8	67.1	76.0	68.5	718	635	70.5	62.6
7	Kostroma	398	385	401	352	327	52.2	52.7	55.6	49.4	46.1	381	371	391	342	312	50.0	50.8	54.2	47.9	44.0	308	294	43.2	41.5
8	Kursk	926	913	896	978	932	72.5	74.7	74.2	82.1	78.7	874	876	868	942	904	68.5	71.6	71.9	79.1	76.4	861	838	72.3	70.8
9	Lipetsk	982	936	831	850	877	80.2	77.6	69.5	71.7	74.3	938	884	787	808	833	76.6	73.3	65.8	68.2	70.5	785	807	66.2	68.3
10	Moscow	3787	3774	3677	3553	3483	59.1	57.0	55.5	53.6	52.5	3682	3646	3536	3433	3368	57.5	55.1	53.4	51.8	50.8	3205	3139	48.3	47.4
11	Orel	594	520	522	500	496	67.5	60.9	61.7	59.7	59.5	575	502	498	478	478	65.4	58.8	58.9	57.0	57.3	448	441	53.5	52.9
12	Ryazan	962	944	977	947	927	77.1	77.6	81.3	79.7	78.4	930	908	939	911	892	74.6	74.7	78.2	76.7	75.5	839	835	70.6	70.6
13	Smolensk	991	1013	1040	975	1009	90.8	97.5	101.4	96.3	100.3	966	979	1005	937	979	88.5	94.2	98.0	92.5	97.3	867	901	65.6	89.6
14	Tambov	892	873	894	792	738	72.4	74.8	77.6	69.6	65.3	857	823	844	754	705	69.5	70.6	73.3	66.3	62.4	731	656	64.3	58.0
15	Tver	1115	1043	1118	1119	1138	72.3	71.7	77.9	79.0	80.9	1097	1020	1105	1102	1118	71.2	70.1	77.0	77.8	79.5	1042	1049	73.6	74.6
16	Tula	1666	1572	1756	1485	1261	99.3	94.9	107.5	92.2	78.8	1588	1518	1674	1419	1218	94.7	91.6	102.5	88.1	76.1	1311	1133	81.4	70.8
17	Yaroslavl	910	916	904	884	806	66.0	67.5	67.2	66.3	60.7	853	875	844	837	755	61.8	64.5	62.8	62.8	56.9	738	658	55.4	49.6
18	<b>City: Moscow</b>	3856	3710	4013	3977	3797	45.2	35.7	38.6	38.2	36.4	3648	3535	3831	3784	3624	42.7	34.0	36.8	36.3	34.8	3465	3382	33.3	32.4
	<b>REGION: Northwestern</b>	9283	8886	8993	8951	8684	65.4	64.0	65.3	65.4	63.7	8941	8530	8692	8641	8364	63.0	61.4	63.1	63.2	61.4	7786	7558	56.9	55.5
19	<b>Republics: Kareliya</b>	566	548	532	527	477	75.0	77.0	75.4	75.3	68.4	553	521	505	500	459	73.3	73.2	71.5	71.4	65.8	454	429	64.8	61.5
20	Komi	956	907	843	862	796	86.0	89.7	84.2	87.0	80.8	900	852	807	817	744	80.9	84.3	80.6	82.5	75.5	770	689	77.7	69.9
21	<b>Regions: Arkhangelsk</b>	1045	954	953	858	942	73.5	72.0	71.7	66.1	72.9	1018	931	924	839	921	71.6	70.2	70.5	64.6	71.3	779	872	60.0	67.5
	Nenetsky AD	18	20	20	21	23	39.8	47.9	47.7	50.0	54.8	18	19	17	19	23	39.8	45.5	40.6	45.3	54.8	17	22	40.5	52.4
22	Vologda	654	677	690	633	564	50.5	53.7	55.2	51.0	45.7	614	641	657	597	534	47.4	50.8	52.5	48.1	43.2	549	489	44.3	39.6
23	Kaliningrad	1042	1109	1206	1185	1265	110.6	116.5	127.3	125.7	134.6	1016	1077	1174	1165	1225	107.9	113.1	123.9	123.6	130.3	997	1048	105.8	111.5
24	Leningrad	1172	1141	1201	1249	1207	71.2	68.6	72.5	75.8	73.4	1140	1105	1178	1225	1180	69.3	66.4	71.1	74.3	71.8	1155	1106	70.1	67.3
25	Murmansk	603	588	580	574	500	62.0	66.4	66.2	66.1	57.8	585	570	559	549	482	60.2	64.4	63.8	63.2	55.7	521	448	60.0	51.8
26	Novgorod	531	503	496	463	451	75.1	73.2	73.1	69.1	67.8	515	492	486	453	430	72.9	71.6	71.6	67.6	64.6	412	408	61.5	61.3
27	Pskov	683	612	574	641	623	88.4	81.3	77.3	87.7	86.0	675	595	562	620	607	87.4	79.0	75.7	84.9	83.8	598	585	81.8	80.7
28	<b>City: St-Petersburg</b>	2031	1847	1918	1959	1859	44.3	39.8	41.6	42.7	40.6	1925	1746	1840	1876	1782	42.0	37.6	39.9	40.9	38.9	1551	1484	33.8	32.4
	<b>REGION: Southern</b>	17944	16755	16512	16346	16298	86.2	77.0	76.1	75.5	71.5	17275	16080	15852	15696	15621	83.0	73.9	73.0	72.5	68.5	14578	14690	67.3	64.4
29	<b>Republics: Adygeya</b>	361	367	388	340	346	81.2	82.3	87.2	76.6	78.2	351	356	355	321	336	78.9	79.8	79.8	72.4	75.9	299	306	67.4	69.1
30	Dagestan	1759	1716	1599	1553	1644	80.3	66.2	61.2	59.0	62.2	1662	1598	1486	1463	1539	75.9	61.7	56.9	55.6	58.3	1358	1423	51.6	53.9
31	Ingushetiya	398	355	289	246	183	84.8	75.2	60.4	50.8	37.6	371	332	280	236	180	79.0	70.3	58.5	48.7	37.0	211	153	43.6	31.4
	Чечня					912					78.4					864					74.3			805	69.2
32	Kabardino-Balkariya	418	431	452	468	488	53.5	47.9	50.3	52.3	54.6	402	407	433	450	473	51.5	45.2	48.2	50.3	52.9	400	438	44.7	49.0
33	Kalmykiya	368	376	372	376	369	121.7	129.1	128.2	130.0	127.8	349	353	356	353	347	115.4	121.2	122.7	122.0	120.2	323	304	111.7	105.3
34	Karachaevo-Cherkessiya	309	248	266	246	212	72.3	56.7	61.1	56.8	49.1	285	232	244	222	189	66.7	53.0	56.0	51.3	43.8	205	165	47.3	38.2
35	North Osetiya - Alaniya	616	547	558	522	439	91.0	77.2	79.1	74.2	62.5	570	508	516	474	391	84.2	71.7	73.1	67.4	55.7	396	338	56.3	48.1
36	<b>Krai: Krasnodarsky</b>	3637	3620	3573	3276	3105	73.1	70.8	70.0	64.3	60.9	3570	3530	3482	3175	3015	71.7	69.0	68.2	62.3	59.2	2997	2915	58.8	57.2
37	Stavropolsky	2024	1895	1544	1888	1797	76.7	69.4	56.7	69.6	66.3	1859	1745	1414	1749	1645	70.5	63.9	51.9	64.4	60.7	1650	1547	60.8	57.1
38	<b>Regions: Astrakhan</b>	1007	912	880	881	875	100.0	90.9	88.0	88.4	88.0	980	892	857	857	854	97.3	88.9	85.7	86.0	85.9	794	788	79.7	79.3

№ № nn.	Federal regions, ares of the Russian Federation	New TB cases all forms of TB										Of them, respiratory TB										Of them, pulmonary TB			
		#					TB notification per 100,000					#					per 100,000					absolute		per 100,000	
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2005	2006	2005	2006
39	Volgograd	3615	2801	2969	3041	2807	137.7	104.4	111.4	115.0	106.5	3537	2723	2875	2939	2735	134.7	101.5	107.9	111.1	103.8	2701	2636	102.1	100.0
40	Rostov	3432	3487	3622	3509	3121	80.3	79.6	83.3	81.2	72.5	3339	3404	3554	3457	3053	78.2	77.7	81.7	80.0	70.9	3244	2872	75.1	66.7
	<b>REGION: Privolzhsky</b>	<b>25241</b>	<b>23478</b>	<b>23286</b>	<b>23539</b>	<b>23815</b>	<b>80.0</b>	<b>75.7</b>	<b>75.6</b>	<b>76.9</b>	<b>78.1</b>	<b>24157</b>	<b>22434</b>	<b>22294</b>	<b>22555</b>	<b>22853</b>	<b>76.6</b>	<b>72.4</b>	<b>72.4</b>	<b>73.7</b>	<b>74.9</b>	<b>21085</b>	<b>21341</b>	<b>68.9</b>	<b>69.9</b>
41	<b>Republics: Bashkortostan</b>	2423	2421	2428	2300	2231	59.3	59.1	59.4	56.5	54.9	2258	2298	2290	2199	2109	55.3	56.1	56.1	54.0	51.9	2067	1974	50.8	48.6
42	Mariy El	424	442	431	480	469	56.7	61.0	59.9	67.2	65.9	409	422	411	467	454	54.7	58.3	57.1	65.4	63.8	430	413	60.2	58.0
43	Mordoviya	713	723	689	598	588	78.8	82.1	79.1	69.4	68.6	689	694	663	572	574	76.1	78.8	76.1	66.4	67.0	542	546	62.9	63.7
44	Tatarstan	2713	2464	2298	2308	2298	72.1	65.3	60.9	61.3	61.1	2569	2285	2160	2165	2171	68.2	60.5	57.3	57.5	57.7	1994	2021	53.0	53.7
45	Udmurtiya	1372	1291	1347	1317	1269	85.1	82.5	86.5	85.0	82.2	1329	1238	1296	1277	1221	82.4	79.1	83.3	82.5	79.1	1223	1151	79.0	74.5
46	Chuvashiya	1148	954	1084	1054	1052	85.5	72.9	83.2	81.3	81.4	1086	926	1043	1017	1028	80.9	70.8	80.1	78.5	79.6	995	1006	76.8	77.8
47	<b>Regions: Kirov</b>	1027	966	851	906	1014	66.2	64.9	57.9	62.4	70.3	971	915	800	853	968	62.6	61.4	54.4	58.7	67.1	776	889	53.4	61.6
48	Nizhniy Novgorod	3309	2966	2867	2918	2844	92.4	84.8	82.8	85.1	83.4	3208	2865	2763	2826	2754	89.6	81.9	79.8	82.4	80.7	2554	2623	74.5	76.9
49	Orenburg	2135	1909	1997	2124	2371	97.4	88.0	92.6	95.1	110.9	2054	1836	1911	2042	2297	93.7	84.6	88.6	95.2	107.4	1852	2072	86.4	96.9
50	Penza	1060	1048	1038	1056	1026	70.8	72.6	72.6	74.6	72.9	1016	994	997	1009	972	67.9	68.9	69.8	71.3	69.0	929	889	65.6	63.1
51	Perm (Permsky krai)	3175	2733	3056	3048	3200	109.0	97.5	109.9	110.5	116.4	3088	2636	2961	2923	3075	106.0	94.1	106.5	105.9	111.9	2798	2775	101.4	101.0
	Komi-Permsky AD	161	156	193	159	0	109.4	115.5	144.4	119.7	-	155	156	190	154	-	105.3	111.5	142.2	231.9	-	148	0	222.9	0.0
52	Samara	2440	2432	2230	2421	2535	75.1	75.4	69.5	75.8	79.5	2323	2340	2156	2327	2441	71.5	72.5	67.2	72.8	76.5	2205	2323	69.0	72.8
53	Saratov	2295	2167	2012	2019	1902	86.1	81.7	76.4	77.1	72.9	2198	2073	1929	1934	1819	82.4	78.1	73.2	73.9	69.7	1844	1746	70.5	66.9
54	Uliyanovsk	1007	962	958	990	1016	70.3	70.1	70.6	73.7	76.1	959	912	914	944	970	67.0	66.5	67.3	70.3	72.6	876	913	65.2	68.3
	<b>DISTRIC: Urals</b>	<b>13009</b>	<b>12215</b>	<b>12842</b>	<b>12656</b>	<b>12574</b>	<b>104.1</b>	<b>99.0</b>	<b>104.4</b>	<b>103.2</b>	<b>102.7</b>	<b>12598</b>	<b>11754</b>	<b>12380</b>	<b>12234</b>	<b>12149</b>	<b>100.8</b>	<b>95.3</b>	<b>100.7</b>	<b>99.8</b>	<b>99.2</b>	<b>11357</b>	<b>10972</b>	<b>92.6</b>	<b>89.6</b>
55	<b>Regions: Kurgan</b>	1365	1206	1298	1252	1347	127.8	119.4	130.1	127.0	137.5	1313	1158	1234	1199	1291	122.9	114.6	123.6	121.6	131.7	992	1208	100.6	123.3
56	Sverdlovsk	4831	4504	4435	4606	4620	106.7	100.9	99.0	104.2	104.8	4722	4358	4309	4470	4487	104.3	97.7	97.1	101.2	101.8	4183	4164	94.7	94.4
57	Tyumen	3952	3677	3991	3918	3949	120.4	112.1	121.0	118.2	118.8	3861	3565	3905	3835	3845	117.6	108.7	118.4	115.7	115.7	3593	3597	108.4	108.2
	Khanty-Mantyskiy AD	1338	1200	1354	1389	1423	93.3	82.9	92.6	94.3	96.3	1317	1168	1331	1371	1400	91.8	80.7	91.0	93.0	94.7	1275	1307	86.5	88.4
	Yamal-NeNETsky AD	519	492	450	514	439	101.5	96.1	86.7	97.5	82.7	502	476	435	505	422	98.2	93.0	83.8	95.8	79.5	469	378	89.0	71.2
58	Chelyabinsk	2861	2828	3118	2880	2658	79.1	78.9	87.5	81.3	75.3	2702	2673	2932	2730	2526	74.7	74.5	82.3	77.1	71.5	2589	2003	73.1	56.7
	<b>REGION: Siberian</b>	<b>25708</b>	<b>25732</b>	<b>25581</b>	<b>26371</b>	<b>25888</b>	<b>125.5</b>	<b>128.9</b>	<b>128.9</b>	<b>133.6</b>	<b>131.6</b>	<b>24816</b>	<b>24868</b>	<b>24762</b>	<b>25617</b>	<b>25229</b>	<b>121.2</b>	<b>124.6</b>	<b>124.8</b>	<b>129.8</b>	<b>128.2</b>	<b>24079</b>	<b>23672</b>	<b>122.0</b>	<b>120.3</b>
59	<b>Republics: Altai</b>	221	225	296	298	260	107.8	110.8	145.4	145.9	127.2	206	213	283	290	246	100.5	104.9	139.0	142.0	120.3	262	222	128.3	108.6
60	Buryatiya	1463	1446	1474	1531	1672	143.9	148.0	151.7	158.5	173.6	1388	1395	1432	1490	1631	136.6	142.8	147.4	154.2	169.3	1383	1515	143.1	157.3
61	Tyva	906	832	782	769	759	291.8	271.9	254.7	249.6	246.0	838	777	725	715	703	269.9	253.9	236.1	232.1	227.9	691	647	224.3	209.7
62	Khakasiya	802	719	752	736	637	139.7	132.2	138.8	136.4	118.4	784	694	735	714	625	136.6	127.6	135.7	132.3	116.1	659	598	122.1	111.1
63	<b>Krai: Altai</b>	3547	3354	3727	3716	3605	135.8	129.3	144.8	145.5	141.7	3435	3278	3622	3639	3546	131.6	126.4	140.7	142.5	139.4	3441	3337	134.7	131.2
64	Krasnoyarsky	3089	3189	3089	3199	3021	102.8	108.0	105.3	109.7	104.0	2979	3073	2960	3089	2926	99.1	104.1	100.9	105.9	100.7	2903	2770	99.6	95.3
	Taimyrsky AD	27	26	33	26	24	60.7	65.7	83.7	66.4	61.6	23	24	31	25	24	51.7	60.7	78.7	63.8	61.6	19	17	48.5	43.6
	Evenkiyskiy AD	29	37	24	26	22	160.0	210.5	137.4	149.9	127.3	27	37	23	25	21	148.9	210.5	131.7	144.1	121.5	24	21	138.3	121.5
65	<b>Regions: Irkutsk</b>	3290	3256	3140	3126	3159	121.6	126.7	123.0	123.3	125.0	3165	3154	3059	3033	3077	117.0	122.8	119.8	119.6	121.8	2882	2879	113.6	113.9
	Ust-Ordynskiy Buryatskiy AD	199	195	196	255	210	139.9	144.7	145.9	190.3	156.9	189	193	193	255	206	132.9	143.2	143.7	190.3	153.9	234	190	174.7	142.0
66	Kemerovo	4035	4171	3772	4478	4349	137.7	144.7	131.7	157.3	153.2	3937	4072	3681	4390	4242	134.4	141.3	128.5	154.2	149.4	3978	3875	139.7	136.5
67	Novosibirsk	3594	3678	3803	3774	3647	132.6	137.2	142.6	142.1	137.6	3530	3574	3711	3689	3572	130.3	133.3	139.1	138.9	134.8	3566	3434	134.3	129.6
68	Omsk	2371	2457	2419	2406	2466	111.9	118.9	117.9	117.9	121.2	2258	2321	2299	2301	2408	106.6	112.3	112.0	112.8	118.4	2180	2287	106.8	112.4
69	Tomsk	1207	1115	1099	1111	1115	114.0	106.9	105.8	107.3	107.8	1176	1079	1066	1076	1089	111.1	103.4	102.6	103.9	105.3	1013	1027	97.8	99.3
70	Chita	1183	1290	1228	1227	1198	96.0	112.3	107.7	108.4	106.2	1120	1238	1189	1191	1164	90.9	107.8	104.3	105.2	103.2	1121	1081	99.0	95.8
	Aginsky Buryatskiy AD	74	92	96	71	95	92.8	129.6	131.3	96.1	128.0	68	86	89	68	91	85.3	118.6	121.7	92.1	122.6	60	80	81.2	107.8
	<b>REGION: Far Eastern</b>	<b>8363</b>	<b>8363</b>	<b>8432</b>	<b>8670</b>	<b>8366</b>	<b>119.2</b>	<b>125.6</b>	<b>127.5</b>	<b>132.0</b>	<b>127.8</b>	<b>8135</b>	<b>8150</b>	<b>8209</b>	<b>8473</b>	<b>8162</b>	<b>116.0</b>	<b>122.4</b>	<b>124.1</b>	<b>129.0</b>	<b>124.7</b>	<b>7869</b>	<b>7673</b>	<b>119.8</b>	<b>117.2</b>
71	<b>Republic: Sakha (Yakutiya)</b>	861	745	877	798	782	87.7	78.5	92.3	84.0	82.3	799	693	826	767	734	81.4	73.0	87.0	80.7	77.3	663	635	69.8	66.8
72	<b>Krai: Primorsky</b>	3056	3056	3170	3354	3325	144.4	148.4	155.1	165.4	164.6	3005	2996	3124	3298	3267	141.9	145.5	152.9	162.7	161.8	3103	3090	153.0	153.0
73	Khabarovskiy	1779	1874	1730	1838	1721	120.1	131.0	121.5	129.8	121.9	1735	1838	1693	1807	1701	117.1	128.5	118.9	127.6	120.4	1701	1624	120.1	115.0

№ № nn.	Federal regions, ares of the Russian Federation	New TB cases all forms of TB										Of them, respiratory TB										Of them, pulmonary TB			
		##					TB notification per 100,000					##					per 100,000					absolute		per 100,000	
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2005	2006	2005	2006
74	<b>Regions: Amur</b>	1418	1445	1332	1303	1251	144.9	161.0	149.5	147.3	142.0	1378	1405	1292	1264	1223	140.8	156.5	145.0	142.9	138.8	1205	1175	136.3	133.4
75	Kamchatka	311	302	326	342	288	82.2	84.8	92.2	97.5	82.5	306	299	320	335	284	80.8	83.9	90.5	95.5	81.3	278	246	79.3	70.4
	Koryaksky AD	66	0	87	106	98	234.0	0.0	361.1	450.8	422.7	65	0	86	106	97	230.4	0.0	356.9	450.8	418.4	70	81	297.7	349.4
76	Magadan	141	143	144	143	138	62.0	79.4	81.6	82.6	80.4	135	141	130	140	130	59.4	78.3	73.6	80.9	75.8	113	114	65.3	66.4
77	Sakhalin	413	435	523	555	584	71.0	80.3	97.7	104.9	111.0	395	418	498	527	550	67.9	77.2	93.0	99.6	104.5	483	527	91.3	100.1
78	<b>Autonomous region: Jewish</b>	341	327	298	298	245	175.7	172.0	157.5	158.8	131.3	340	325	295	296	244	175.2	170.9	155.9	157.7	130.8	286	235	152.4	126.0
79	<b>Autonomous REGION: Chukot</b>	43	36	32	39	32	58.8	68.9	62.7	77.0	63.3	42	35	31	39	29	57.5	67.0	60.7	77.0	57.4	37	27	73.1	53.4

Notification of extrapulmonary TB in 2002-2005

№ № nn.	Federal REGIONS, ares of the Russian Federation	All forms of extrapulmonary tuberculosis								TB of meninx and CNS				TB of bones and joints				TB genitourinary organs			
		absolute				per 100,000				per 100,000				per 100,000							
		2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005
	<b>RUSSIA</b>	<b>4634</b>	<b>4571</b>	<b>4420</b>	<b>4285</b>	<b>3.2</b>	<b>3.2</b>	<b>3.1</b>	<b>3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>1.3</b>	<b>1.3</b>	<b>1.2</b>	<b>1.2</b>
	<b>REGION: Central</b>	<b>1004</b>	<b>958</b>	<b>962</b>	<b>968</b>	<b>2.8</b>	<b>2.5</b>	<b>2.6</b>	<b>2.6</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>
1	<b>Regions: Belgorod</b>	47	45	31	33	3.1	3.0	2	2.2	0.1	0.0	0.1	0.0	1.5	1.2	0.9	0.7	1.0	1.3	0.5	0.6
2	Bryansk	71	73	51	78	5.1	5.3	3.8	5.8	0.1	0.0	0.0	0.1	0.8	1.0	0.6	1	3.1	3.3	2.6	3.8
3	Vladimir	23	26	28	27	1.5	1.7	1.9	1.8	0.0	0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.7	0.6	0.7	0.9
4	Voronezh	93	73	63	77	3.9	3.1	2.7	3.3	0.1	0.1	0.0	0.0	0.4	0.4	0.6	0.4	2.3	1.8	1.4	1.6
5	Ivanovo	31	33	25	35	2.6	2.9	2.2	3.1	0.0	0.1	0.1	0.0	0.8	0.3	0.4	0.9	0.4	1.2	0.5	1.1
6	Kaluga	49	46	57	53	4.7	4.4	5.6	5.2	0.1	0.0	0.3	0.0	0.5	0.2	0.9	0.8	2.8	2.7	2.7	3.4
7	Kostroma	17	14	10	10	2.2	1.9	1.4	1.4	0.0	0.0	0.0	0.0	1.0	1.0	0.6	0.7	0.7	0.4	0.1	0.1
8	Kursk	52	37	28	36	4.1	3.0	2.3	3	0.8	0.5	0.2	0.1	1.5	1.1	0.6	0.6	0.6	0.5	0.5	0.7
9	Lipetsk	44	52	44	42	3.6	4.3	3.7	3.5	0.1	0.1	0.0	0.1	0.3	1.2	1.3	0.9	1.8	1.7	1.1	1.2
10	Moscow	105	128	141	120	1.6	1.9	2.1	1.8	0.1	0.1	0.2	0.1	0.5	0.7	0.7	0.4	0.7	0.6	0.5	0.5
11	Orel	19	18	24	22	2.2	2.1	2.8	2.6	0.0	0.2	0.0	0.0	0.9	1.4	0.9	1.2	0.6	0.4	0.6	0.6
12	Ryazan	32	36	38	36	2.6	3.0	3.2	3	0.1	0.2	0.4	0.2	1.0	1.0	0.9	1.2	0.4	0.8	0.6	0.6
13	Smolensk	25	34	35	38	2.3	3.3	3.4	3.7	0.1	0.3	0.2	0.1	0.5	0.5	0.5	0.8	0.1	0.6	0.9	0.9
14	Tambov	35	50	50	38	2.8	4.3	4.3	3.3	0.1	0.1	0.1	0.0	0.6	1.1	0.5	0.5	1.5	2.6	2.5	2.3
15	Tver	18	23	13	17	1.2	1.6	0.9	1.2	0.1	0.1	0.0	0.1	0.1	0.3	-	0.2	0.6	0.7	0.6	0.4
16	Tula	78	54	82	66	4.6	3.3	5	4.1	0.2	0.0	0.1	0.0	1.0	0.6	1.5	0.9	2.3	2.0	2.9	2.3
17	Yaroslavl	57	41	60	47	4.1	3.0	4.5	3.5	0.1	0.2	0.2	0.4	0.9	0.7	1.3	0.7	0.9	0.7	0.6	0.5
18	<b>City: Moscow</b>	<b>208</b>	<b>175</b>	<b>182</b>	<b>193</b>	<b>2.4</b>	<b>1.7</b>	<b>1.8</b>	<b>1.9</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>	<b>0.6</b>	<b>0.6</b>	<b>0.5</b>	<b>0.7</b>	<b>0.6</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>
	<b>REGION: Nortwestern</b>	<b>342</b>	<b>356</b>	<b>301</b>	<b>310</b>	<b>2.4</b>	<b>2.6</b>	<b>2.2</b>	<b>2.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.5</b>	<b>0.5</b>	<b>0.4</b>	<b>0.5</b>	<b>0.8</b>	<b>0.9</b>	<b>0.9</b>	<b>0.7</b>
19	<b>Republics: Kareliya</b>	13	27	27	27	1.7	3.8	3.8	3.8	0.1	0.0	0.0	0.4	0.3	0.6	0.7	0.4	0.3	0.7	0.7	0.9
20	Komi	56	55	36	45	5.0	5.4	3.6	4.5	0.1	0.2	0.2	0.3	0.5	0.5	0.4	0.5	2.2	2.0	1.6	1.9
21	<b>Regions: Arkhangelsk</b>	27	23	29	19	1.9	1.7	2.2	1.5	0.0	0.0	0.1	0.1	0.6	0.8	0.9	0.2	0.5	0.2	0.8	0.4
	Nenetsky AD	0	1	3	2	0.0	2.4	7.2	4.8	0.0	0.0	2.4	0.0	0.0	0.0	4.8	2.4	0.0	0.0	0.0	0.0
22	Vologda	40	36	33	36	3.1	2.9	2.6	2.9	0.1	0.0	0.1	0.0	0.7	0.4	0.4	0.9	1.0	1.3	0.8	1.0
23	Kaliningrad	26	32	32	20	2.8	3.4	3.4	2.1	0.1	0.0	0.3	0.2	0.4	0.6	0.2	0.3	1.3	1.8	2.4	0.5
24	Leningrad	32	36	23	24	1.9	2.2	1.4	1.5	0.1	0.1	0.1	0.2	0.4	0.4	-	0.2	0.4	0.7	0.5	0.4
25	Murmansk	18	18	21	25	1.9	2.0	2.4	2.9	0.3	0.1	0.3	0.0	0.5	0.8	0.6	0.7	0.5	0.7	1.0	1.4
26	Novgorod	16	11	10	10	2.3	1.6	1.5	1.5	0.1	0.0	0.0	0.0	0.4	0.1	0.1	0.3	0.8	0.3	0.6	0.6
27	Pskov	8	17	12	21	1.0	2.3	1.6	2.9	0.0	0.1	0.0	0.1	0.3	0.7	0.4	1.9	0.3	1.1	0.7	0.1
28	<b>City: St-Petersburg</b>	<b>106</b>	<b>101</b>	<b>78</b>	<b>83</b>	<b>2.3</b>	<b>2.2</b>	<b>1.7</b>	<b>1.8</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.4</b>	<b>0.5</b>	<b>0.3</b>	<b>0.4</b>	<b>0.9</b>	<b>0.8</b>	<b>1.0</b>	<b>0.7</b>
	<b>REGION: Southern</b>	<b>669</b>	<b>675</b>	<b>660</b>	<b>650</b>	<b>3.2</b>	<b>3.1</b>	<b>3</b>	<b>3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.9</b>	<b>1.0</b>	<b>0.9</b>	<b>0.8</b>	<b>1.0</b>	<b>0.9</b>	<b>1.0</b>	<b>1.0</b>
29	<b>Republics: Adygeya</b>	10	11	33	19	2.2	2.5	7.4	4.3	0.0	0.0	0.4	0.2	0.4	0.4	0.7	0.5	0.7	1.3	5.2	2.7
30	Dagestan	97	118	113	90	4.4	4.6	4.3	3.4	0.6	0.2	0.2	0.3	1.8	1.8	1.6	1.4	0.5	0.5	0.5	0.3
31	Ingushetiya	27	23	9	10	5.8	4.9	1.9	2.1	0.2	0.2	0.0	0.2	0.2	0.6	0.4	-	0.0	0.0	0.2	0.2
32	Kabardino-Balkariya	16	24	19	18	2.0	2.7	2.1	2	0.1	0.0	0.1	0.0	0.8	1.1	0.8	1.1	0.4	0.7	0.4	0.3
33	Kalmykiya	19	23	16	23	6.3	7.9	5.5	7.9	0.0	0.3	0.0	0.0	0.3	1.0	1	0.7	4.0	3.4	4.5	4.8
34	Karachaev-Cherkessiya	24	16	22	24	5.6	3.7	5.1	5.5	0.0	0.0	0.0	0.0	1.4	0.7	1.1	1.8	1.6	0.9	0.7	0.9
35	North Osetiya - Alaniya	46	39	42	48	6.8	5.5	6	6.8	0.0	0.1	0.1	0.4	1.9	1.7	2.1	1.7	1.9	1.6	1.8	2.1
36	<b>Krai: Krasnodarsky</b>	67	90	91	101	1.3	1.8	1.8	2	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.6	0.6	1.0
37	Stavropolsky	165	150	130	139	6.3	5.5	4.8	5.1	0.1	0.1	0.0	0.1	1.1	0.9	0.8	0.8	2.4	1.9	1.7	2.1
38	<b>Regions: Astrakhan</b>	27	20	23	24	2.7	2.0	2.3	2.4	0.0	0.0	0.0	0.1	0.4	0.5	0.5	0.7	1.8	1.1	0.9	0.9
39	Volgograd	78	78	94	102	3.0	2.9	3.5	3.8	0.0	0.0	0.0	0.1	1.4	1.7	2	1.8	1.0	0.8	1.2	1.2
40	Rostov	93	83	68	52	2.2	1.9	1.6	1.2	0.1	0.1	0.0	0.0	0.5	0.8	0.5	0.4	0.8	0.5	0.5	0.4
	<b>REGION: Privolzhsky</b>	<b>1084</b>	<b>1044</b>	<b>992</b>	<b>984</b>	<b>3.4</b>	<b>3.4</b>	<b>3.2</b>	<b>3.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>1.7</b>	<b>1.6</b>	<b>1.4</b>	<b>1.5</b>
41	<b>Republics: Bashkortostan</b>	165	123	138	101	4.0	3.0	3.4	2.5	0.0	0.1	0.0	0.0	1.0	0.5	0.8	0.7	1.7	1.3	1.5	0.8
42	Mariy El	15	20	20	13	2.0	2.8	2.8	1.8	0.0	0.0	0.0	0.0	0.4	0.7	1.1	0.7	0.3	0.7	0.6	0.3
43	Mordoviya	24	29	26	26	2.7	3.3	3	3	0.0	0.1	0.0	0.0	1.1	1.6	0.9	0.7	1.2	1.4	1.6	1.8
44	Tatarstan	144	179	138	143	3.8	4.7	3.7	3.8	0.1	0.2	0.1	0.1	0.6	1.2	0.8	1	1.9	1.9	1.5	1.7
45	Udmurtiya	43	53	51	40	2.7	3.4	3.3	2.6	0.2	0.0	0.1	0.1	0.6	0.3	0.7	0.6	1.2	2.1	1.2	1.5

№ № пн.	Federal REGIONS, ares of the Russian Federation	All forms of extrapulmonary tuberculosis								TB of meninx and CNS				TB of bones and joints				TB genitourinary organs			
		absolute				per 100,000				per 100,000				per 100,000				per 100,000			
		2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005
46	Chuvashiya	62	28	41	37	4.6	2.1	3.1	2.8	0.1	0.4	0.1	0.1	0.7	0.8	0.6	0.6	3.3	0.4	1.1	1.3
47	Regions: Kirov	56	51	51	53	3.6	3.4	3.5	3.6	0.1	0.1	0.0	0.1	0.4	0.8	0.6	0.4	1.5	1.4	1.4	1.3
48	Nizhniy Novgorod	101	101	104	92	2.8	2.9	3	2.7	0.1	0.1	0.1	0.0	0.6	0.4	0.6	0.4	1.6	1.7	1.5	1.6
49	Orenburg	81	73	86	82	3.7	3.4	4	3.8	0.2	0.1	0.1	0.2	0.9	0.7	1	1.2	1.4	0.8	1.3	1.4
50	Penza	44	54	41	47	2.9	3.7	2.9	3.3	0.0	0.1	0.1	0.0	1.1	1.5	0.9	0.8	1.1	1.5	1.5	1.4
51	Пермская	87	97	95	125	3.0	3.5	3.4	4.5	0.1	0.0	0.0	0.1	0.6	0.4	0.4	0.4	1.8	2.5	2.0	3.1
	Komi-Permsky AD	6	0	3	5	4.1	0.0	2.2	3.8	0.0	0.0	0.0	0.0	1.4	0.0	-	-	2.7	0.0	2.2	3.0
52	Samara	117	92	74	94	3.6	2.9	2.3	2.9	0.1	0.0	0.0	0.1	0.8	0.6	1	0.9	2.3	1.8	0.8	1.2
53	Saratov	97	94	83	85	3.6	3.5	3.2	3.2	0.0	0.1	0.0	0.1	0.6	0.7	0.6	1	2.2	2.2	2.1	1.7
54	Uliyanovsk	48	50	44	46	3.4	3.6	3.2	3.4	0.1	0.1	0.3	0.0	1.0	1.3	1	1.3	1.6	1.1	0.9	0.9
	DISTRIC: Urals	411	461	462	422	3.3	3.7	3.8	3.4	0.2	0.2	0.2	0.2	0.8	0.8	0.9	0.8	1.1	1.4	1.3	1.2
55	Regions: Kurgan	52	48	64	53	4.9	4.8	6.4	5.3	0.0	0.2	0.1	0.1	0.8	0.5	1.4	0.8	2.9	3.1	3.9	3.9
56	Sverdlovsk	109	146	126	136	2.4	3.3	2.8	3.1	0.2	0.2	0.0	0.3	0.5	0.6	0.4	0.7	1.0	1.3	1.0	0.9
57	Tyumen	91	112	86	83	2.8	3.4	2.6	2.5	0.6	0.3	0.3	0.3	0.5	0.9	0.4	0.4	0.5	1.0	0.6	0.8
	Khanty-Mantiyskiy AD	21	32	23	18	1.5	2.2	1.6	1.2	0.3	0.3	0.2	0.0	0.4	0.9	0.3	0.2	0.4	0.3	0.5	0.5
	Yamalo-Nenetskiy AD	17	16	15	9	3.3	3.1	2.9	1.7	0.8	0.4	0.4	0.0	0.6	0.4	0.8	0.2	1.0	1.4	0.8	0.8
58	Chelyabinsk	159	155	186	150	4.4	4.3	5.2	4.2	0.1	0.2	0.3	0.1	1.4	1.1	1.6	1.2	1.1	1.4	1.4	1.2
	REGION: Siberian	892	864	819	754	4.4	4.3	4.1	3.8	0.2	0.2	0.2	0.1	0.9	0.9	0.9	1	1.8	2.0	1.7	1.6
59	Republics: Altai	15	12	13	8	7.3	5.9	6.4	3.9	0.0	0.5	1.0	0.0	1.5	1.5	2.5	2	0.0	1.5	0.5	0.5
60	Buryatiya	75	51	42	41	7.4	5.2	4.3	4.2	0.3	0.0	0.0	0.0	0.7	0.9	0.7	1	4.4	3.1	2.5	2.1
61	Tuva	68	55	57	54	21.9	18.0	18.6	17.6	1.0	1.3	0.7	3.3	11.3	6.2	6.5	7.2	0.6	1.3	1.0	0.3
62	Khakasiya	18	25	17	22	3.1	4.6	3.1	4.1	0.0	0.0	0.0	0.0	0.7	1.7	0.7	1.3	1.0	1.5	0.9	1.5
63	Krai: Altai	112	76	105	77	4.3	2.9	4.1	3	0.0	0.0	0.1	0.0	1.4	1.0	1.7	1	1.8	1.2	1.3	1.4
64	Krasnoyarsky	110	116	129	110	3.7	3.9	4.4	3.8	0.1	0.1	0.0	0.0	0.8	0.7	1.1	1.6	1.4	1.8	2.0	1.1
	Taimyrskiy AD	4	2	2	1	9.0	5.1	5.1	2.5	0.0	0.0	0.0	0.0	2.2	2.5	2.5	-	4.5	0.0	0.0	2.5
	Evenkiyskiy AD	2	0	10	1	11.0	0.0	5.7	5.7	0.0	0.0	5.7	0.0	0.0	0.0	-	5.7	0.0	0.0	51.4	0.0
65	Regions: Irkutsk	125	102	81	93	4.6	3.8	3.2	3.7	0.4	0.5	0.2	0.3	1.3	1.2	0.6	0.8	1.8	1.9	1.4	1.9
	Ust-Ordynskiy Buryatskiy AD	10	2	3	-	7.0	1.5	2.2	-	0.7	0.7	0.0	0.0	1.4	0.7	-	-	2.1	0.0	1.5	0.0
66	Kemerovo	98	99	91	88	3.3	3.4	3.2	3.1	0.2	0.2	0.2	0.1	0.4	0.3	0.4	0.6	1.6	1.7	1.5	1.3
67	Novosibirsk	64	104	92	85	2.4	3.9	3.4	3.2	0.5	0.3	0.2	0.3	0.3	0.6	0.4	0.8	0.6	1.2	1.1	0.9
68	Omsk	113	136	120	105	5.3	6.6	5.8	5.1	0.3	0.4	0.4	0.1	0.3	0.3	0.3	0.3	3.2	4.6	3.7	3.5
69	Tomsk	31	36	33	35	2.9	3.5	3.2	3.4	0.1	0.0	0.2	0.1	0.6	0.9	1.3	0.9	1.2	1.8	1.2	1.6
70	Chita	63	52	39	36	5.1	4.5	3.4	3.2	0.0	0.0	0.0	0.0	1.0	1.3	1.3	0.5	2.8	2.3	1.5	1.7
	Aginsky Buryatskiy AD	6	6	7	3	7.5	8.3	9.6	4.1	0.0	0.0	0.0	0.0	1.3	1.4	4.1	-	2.5	4.1	4.1	0.0
	REGION: Far Estern	228	213	223	197	3.3	3.2	3.4	3	0.2	0.2	0.2	0.2	1.0	0.9	0.8	1	1.2	1.3	1.4	1.2
71	Republic: Sakha (Yakutiya)	62	52	51	31	6.3	5.5	5.4	3.3	0.2	0.3	0.0	0.1	1.9	1.7	1.3	1.1	1.4	0.7	0.9	0.6
72	Krai: Primorsky	51	60	46	56	2.4	2.9	2.3	2.8	0.1	0.3	0.1	0.2	1.1	0.8	1	1.7	0.8	1.4	0.9	0.6
73	Khabarovskiy	44	36	37	31	3.0	2.5	2.6	2.2	0.1	0.2	0.2	0.4	0.9	0.6	0.3	0.4	0.9	1.0	1.1	0.8
74	Regions: Amur	40	40	40	39	4.1	4.5	4.5	4.4	0.7	0.3	0.4	0.5	1.0	1.1	1.1	0.8	1.7	2.1	2.3	2.5
75	Kamchatka	5	3	6	7	1.3	0.8	1.7	2	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.8	0.6
	Koryakskiy AD	1	0	1	-	3.5	0.0	4.2	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0
76	Magadan	6	2	14	3	2.6	1.1	7.9	1.7	0.0	0.0	0.6	0.0	0.0	0.0	-	-	2.2	1.1	4.5	1.1
77	Sakhalin	18	17	25	28	3.1	3.1	4.7	5.3	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.9	2.4	2.4	3.5	4.1
78	Autonomous region: Jewish	1	2	3	2	0.5	1.1	1.6	1.1	0.0	0.0	0.0	0.0	0.5	1.1	1.1	1.1	0.0	0.0	0.0	0.0
79	Autonomous REGION: Chukot	1	1	1	-	1.4	1.9	2	-	0.0	0.0	0.0	0.0	0.0	1.9	-	-	1.4	0.0	1.9	0.0

**TB notification and prevalence among children in Russia, 2002-2006**  
 (TB notification in the territories, form 8, prevalence, form 33)

№ № nn.	Federal REGIONS, ares of the Russian Federation	New cases of TB, children (0-14 years old)										Registered by the end of the year, children (0-14 years old)								
		abs. numbers					TB notification per 100,000					abs. numbers					Prevalence per 100,000			
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005
	<b>RUSSIA</b>	<b>3820</b>	<b>3685</b>	<b>3583</b>	<b>3530</b>	<b>3423</b>	<b>16.2</b>	<b>16.2</b>	<b>16.4</b>	<b>16.66</b>	<b>16.1</b>	<b>9730</b>	<b>8304</b>	<b>5229</b>	<b>4758</b>	<b>4653</b>	<b>42.4</b>	<b>37.3</b>	<b>23.5</b>	<b>23.5</b>
	<b>REGION: Central</b>	477	475	519	560	559	9.0	9.3	10.5	11.7	11.8	1292	1103	741	683	670	25.1	22.0	14.8	14.8
1	<b>Regions: Belgorod</b>	20	20	23	17	16	8.3	8.7	10.4	8.0	7.6	39	29	29	20	20	16.6	12.9	12.9	12.9
2	Bryansk	53	36	31	38	56	23.2	16.7	15.1	19.3	29.1	145	102	46	53	76	65.2	48.6	21.9	21.9
3	Vladimir	13	14	21	32	45	5.7	6.6	10.3	16.3	23.3	35	25	25	41	64	15.7	12.1	12.1	12.1
4	Voronezh	24	14	21	23	12	6.7	4.2	6.6	7.5	4.0	78	57	45	38	20	22.3	17.5	13.8	13.8
5	Ivanovo	8	13	12	13	20	4.8	8.3	8	9.1	14.2	35	34	29	18	26	21.4	22.3	19.0	19.0
6	Kaluga	26	22	16	28	17	16.7	14.8	11.3	20.4	12.6	88	68	34	37	24	58.2	47.0	23.5	23.5
7	Kostroma	10	9	8	14	6	8.4	8.2	7.7	13.9	6.1	24	19	12	8	4	20.7	17.8	11.3	11.3
8	Kursk	12	12	13	8	3	6.1	6.5	7.4	4.8	1.8	24	18	23	14	9	12.5	10.1	12.9	12.9
9	Lipetsk	21	16	19	20	16	11.2	9.0	11.1	12.1	9.9	62	55	39	26	23	34.0	31.6	22.4	22.4
10	Moscow	57	64	76	84	98	6.5	7.2	8.8	9.9	11.7	151	140	94	101	126	17.7	16.0	10.8	10.8
11	Orel	10	14	9	11	12	7.4	11.1	7.4	9.4	10.5	33	26	11	9	15	25.0	21.0	8.9	8.9
12	Ryazan	14	17	24	22	18	7.8	10.1	15	14.3	11.9	70	44	27	32	16	40.0	26.9	16.5	16.5
13	Smolensk	25	27	29	38	38	15.5	18.5	20.9	28.5	29.1	85	86	43	43	39	54.5	60.6	30.3	30.3
14	Tambov	11	16	13	8	6	5.9	9.4	8	5.1	3.9	24	22	14	10	9	13.3	13.2	8.4	8.4
15	Tver	22	22	22	12	26	9.8	10.7	11.1	6.3	13.9	39	46	33	19	27	17.8	22.9	16.4	16.4
16	Tula	27	46	39	24	32	11.7	21.1	18.8	12.0	16.3	90	92	85	69	50	40.3	43.3	40.0	40.0
17	Yaroslavl	32	29	37	36	26	16.4	15.6	20.7	20.7	15.2	78	66	51	39	29	40.9	36.3	28.0	28.0
18	<b>City: Moscow</b>	92	84	106	132	112	7.6	6.8	8.8	11.1	9.4	192	174	101	106	93	16.2	14.3	8.3	8.3
	<b>REGION: Northwestern</b>	408	370	396	371	343	19.5	18.7	20.9	20.2	19.0	971	804	512	450	367	47.7	41.6	26.5	26.5
19	<b>Republics: Kareliya</b>	13	22	13	12	15	10.8	19.7	12.2	11.7	14.9	66	61	38	24	30	56.4	56.1	35.0	35.0
20	Komi	43	40	41	37	34	23.0	22.9	24.4	22.7	21.2	115	95	56	44	38	63.3	55.6	32.8	32.8
21	<b>Regions: Arkhangelsk</b>	25	24	27	45	27	10.8	11.1	13.1	22.6	13.8	38	40	30	47	31	16.9	19.0	14.2	14.2
	Nenetsky AD	-	-	3	2	0	0.0	0.0	32.8	22.5	0.0	2	0	3	3	1	21.6	0.0	32.4	32.4
22	Vologda	20	28	39	21	21	9.5	14.1	20.5	11.4	11.6	56	44	37	31	28	27.4	22.7	19.1	19.1
23	Kaliningrad	94	67	106	101	105	64.2	46.8	77.1	76.0	80.3	185	118	97	80	68	129.4	84.2	69.2	69.2
24	Leningrad	67	61	57	40	32	28.8	26.8	26.2	19.2	15.6	155	142	85	54	30	68.8	64.0	38.3	38.3
25	Murmansk	9	10	8	7	4	6.3	7.2	6	5.4	3.2	37	22	10	11	6	27.0	16.1	7.3	7.3
26	Novgorod	13	13	5	8	6	12.2	13.0	5.2	8.7	6.7	40	34	12	15	12	38.7	34.9	12.3	12.3
27	Pskov	11	10	6	5	7	9.6	9.4	5.9	5.1	7.3	30	23	16	13	14	26.9	22.1	15.4	15.4
28	<b>City: St-Petersburg</b>	113	95	94	95	92	18.8	17.0	17.4	18.0	17.6	249	225	131	131	110	42.5	41.0	23.8	23.8
	<b>REGION: Southern</b>	660	626	594	524	510	16.9	15.8	15.5	14.1	12.7	1522	1333	872	764	891	39.7	34.3	22.4	22.4
29	<b>Republics: Adygeya</b>	4	4	4	3	2	5.2	5.2	5.4	4.2	2.8	8	8	7	2	0	10.6	10.6	9.3	9.3
30	Dagestan	127	133	111	133	105	19.9	18.4	15.8	19.4	15.6	268	226	192	213	173	42.3	31.7	26.9	26.9
31	Ingushetiya	35	46	37	23	13	26.7	29.3	24.2	15.6	9.0	76	95	60	41	40	58.0	61.2	38.7	38.7

№ № п.п.	Federal REGIONS, ares of the Russian Federation	New cases of TB, children (0-14 years old)										Registered by the end of the year, children (0-14 years old)								
		abs. numbers					TB notification per 100,000					abs. numbers					Prevalence per 100,000			
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005
	Чечня				38					10.5				183						
32	Kabardino-Balkariya	4	21	11	16	11	2.3	11.0	6	9.2	6.5	19	30	25	33	30	11.1	16.1	13.4	13.4
33	Kalmykiya	15	16	11	27	31	22.1	25.1	18	45.8	53.5	67	44	21	36	42	102.1	70.6	33.7	33.7
34	Karachaevo-Cherkessiya	22	11	12	11	12	25.0	12.4	14.1	13.4	14.9	49	55	29	26	25	57.0	63.3	33.4	33.4
35	North Osetiya - Alaniya	104	63	82	70	45	80.7	46.3	62.5	55.3	36.1	210	171	143	91	74	165.4	128.0	107.0	107.0
36	<b>Krai: Krasnodarsky</b>	96	91	91	45	37	11.3	11.1	11.4	5.8	4.8	187	184	83	51	37	22.4	22.9	10.3	10.3
37	Stavropolsky	59	54	43	45	44	12.6	11.8	9.7	10.5	10.4	157	129	72	77	67	34.2	28.6	16.0	16.0
38	<b>Regions: Astrakhan</b>	53	54	53	43	49	29.1	30.7	31	25.8	29.8	130	101	57	46	57	72.8	58.3	32.9	32.9
39	Volgograd	49	47	52	34	37	11.6	11.4	13.1	8.9	9.8	113	87	61	46	55	27.5	21.5	15.1	15.1
40	Rostov	92	86	87	74	86	13.6	13.1	13.8	12.1	14.4	238	203	122	102	108	36.1	31.6	19.0	19.0
	<b>REGION: Privolzhsky</b>	<b>640</b>	<b>639</b>	<b>571</b>	<b>566</b>	<b>542</b>	<b>12.0</b>	<b>12.7</b>	<b>11.8</b>	<b>12.2</b>	<b>11.9</b>	<b>1643</b>	<b>1370</b>	<b>836</b>	<b>776</b>	<b>729</b>	<b>31.7</b>	<b>27.8</b>	<b>17.0</b>	<b>17.0</b>
41	<b>Republics: Bashkortostan</b>	54	46	48	46	48	6.8	6.0	6.6	6.6	7.0	159	140	104	87	85	20.6	18.8	14.0	14.0
42	Mariy El	12	7	14	19	20	9.0	5.7	12	17.0	18.3	27	13	17	26	28	20.9	10.9	14.2	14.2
43	Mordoviya	16	18	14	18	11	11.1	13.4	11	14.9	9.3	55	50	27	33	21	39.3	38.4	20.7	20.7
44	Tatarstan	103	100	71	72	62	15.1	15.2	11.3	11.9	10.4	244	159	87	78	58	36.5	24.7	13.5	13.5
45	Udmurtiya	30	25	21	22	29	10.4	9.2	8	8.7	11.6	76	81	37	30	39	27.0	30.3	13.9	13.9
46	Chuvashiya	23	18	12	12	16	9.5	8.0	5.6	5.8	7.9	76	63	27	27	27	32.2	28.6	12.2	12.2
47	<b>Regions: Kirov</b>	25	30	35	29	19	10.5	13.4	16.5	14.3	9.5	90	70	45	36	30	39.0	32.2	20.7	20.7
48	Nizhniy Novgorod	90	116	83	70	63	17.1	23.3	17.4	15.2	13.9	241	215	155	131	115	47.0	44.3	31.9	31.9
49	Orenburg	56	49	41	49	45	14.1	12.9	11.3	14.0	13.1	105	95	45	63	63	27.0	25.6	12.1	12.1
50	Penza	30	29	28	26	26	13.3	13.8	14	13.7	14.0	55	43	19	23	24	25.0	21.1	9.3	9.3
51	Perm (Permsky krai)	40	33	51	40	52	8.0	7.0	11.2	9.1	12.0	104	82	65	59	63	21.4	17.8	14.1	14.1
	Komi-Permsky AD	3	1	4	3	0	9.9	3.6	15.1	23.2		11	8	4	5	0	37.5	29.7	14.9	14.9
52	Samara	70	83	63	90	77	14.1	17.5	13.7	20.2	17.5	139	147	81	97	101	28.6	31.6	17.4	17.4
53	Saratov	69	61	50	44	48	16.3	15.1	13	11.9	13.2	194	163	80	47	49	47.1	41.4	20.3	20.3
54	Uliyanovsk	22	24	40	29	26	9.5	11.3	20	15.3	14.1	78	49	47	39	26	34.8	23.9	22.9	22.9
	<b>DISTRIC: Urals</b>	<b>270</b>	<b>262</b>	<b>278</b>	<b>267</b>	<b>261</b>	<b>12.8</b>	<b>12.8</b>	<b>14.1</b>	<b>13.9</b>	<b>13.7</b>	<b>690</b>	<b>602</b>	<b>428</b>	<b>420</b>	<b>458</b>	<b>33.5</b>	<b>30.0</b>	<b>21.3</b>	<b>21.3</b>
55	<b>Regions: Kurgan</b>	70	49	52	46	43	38.0	29.4	32.7	30.2	28.8	175	147	76	64	76	97.8	90.5	46.8	46.8
56	Sverdlovsk	73	94	97	98	93	10.2	13.9	14.8	15.3	14.7	174	163	137	162	177	25.0	24.5	20.6	20.6
57	Tyumen	92	92	83	78	90	15.0	14.7	13.6	13.1	15.2	242	205	141	114	129	40.2	33.2	22.8	22.8
	Khanty-Mantyisky AD	19	18	15	16	15	6.9	6.2	5.3	5.8	5.5	62	46	21	22	22	23.0	16.1	7.4	7.4
	Yamalo-Nenetsky AD	24	24	32	26	31	23.2	21.3	29.1	24.1	29.0	66	47	46	37	42	64.9	42.3	41.4	41.4
58	Chelyabinsk	35	27	46	45	35	5.9	4.7	8.3	8.4	6.6	99	87	74	80	76	17.0	15.5	13.2	13.2
	<b>REGION: Siberian</b>	<b>976</b>	<b>922</b>	<b>852</b>	<b>865</b>	<b>924</b>	<b>27.2</b>	<b>26.9</b>	<b>25.8</b>	<b>27.0</b>	<b>29.2</b>	<b>2586</b>	<b>2196</b>	<b>1293</b>	<b>1176</b>	<b>1136</b>	<b>73.9</b>	<b>65.4</b>	<b>38.5</b>	<b>38.5</b>
59	<b>Republics: Altai</b>	20	28	20	18	12	41.2	60.0	43.8	39.8	26.6	96	72	36	20	17	200.8	156.4	78.2	78.2
60	Buryatiya	98	63	45	77	94	47.0	31.8	23.7	41.8	51.8	285	219	87	83	83	140.1	113.1	44.9	44.9
61	Tyva	62	49	46	36	30	70.0	55.7	53.4	42.7	36.0	219	166	87	68	50	250.7	190.7	100.0	100.0
62	Khakasiya	16	28	32	39	21	15.5	28.7	34	42.7	23.3	52	42	29	35	19	51.7	43.9	30.3	30.3

№ № nn.	Federal REGIONS, ares of the Russian Federation	New cases of TB, children (0-14 years old)										Registered by the end of the year, children (0-14 years old)								
		abs. numbers					TB notification per 100,000					abs. numbers					Prevalence per 100,000			
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005
63	<b>Krai: Altai</b>	71	92	80	88	98	16.8	22.5	20.3	23.1	26.0	196	183	99	100	96	47.5	45.8	24.8	24.8
64	Krasnoyarsky	166	165	148	136	126	31.8	32.5	30.3	28.9	27.2	386	322	181	160	165	75.7	64.8	36.4	36.4
	Taimyrsky AD	2	1	4	3	6	22.4	11.1	45.6	35.2	71.6	5	5	6	7	7	57.1	56.2	67.5	67.5
	Evenkiysky AD	2	3	1	1	1	47.3	71.4	24.6	25.3	25.6	8	6	1	1	1	194.9	145.1	24.2	24.2
65	<b>Regions: Irkutsk</b>	136	110	117	70	126	26.7	23.0	25.4	15.7	28.8	436	357	269	182	185	87.8	76.3	57.5	57.5
	Ust-Ordynsky Buryatskiy AD	13	7	11	6	7	34.5	19.6	32.3	18.5	22.0	38	26	26	18	8	103.5	74.7	74.7	74.7
66	Kemerovo	173	135	144	200	214	36.3	29.3	32.4	46.2	50.0	350	309	165	226	238	75.4	68.4	36.5	36.5
67	Novosibirsk	77	76	59	52	70	18.1	18.8	15.1	13.7	18.6	169	148	96	75	82	40.7	37.4	24.2	24.2
68	Omsk	87	100	101	79	67	23.8	29.3	30.9	25.0	21.6	253	247	161	135	120	71.3	74.1	48.3	48.3
69	Tomsk	33	41	29	36	27	19.3	25.0	18.3	23.3	17.7	70	74	51	53	49	42.0	46.1	31.8	31.8
70	Chita	37	35	31	34	39	15.0	15.0	13.8	15.6	18.1	74	57	32	39	32	30.7	25.0	14.0	14.0
	Aginsky Buryatsky AD	4	2	1	8	5	18.8	10.2	5.3	43.6	27.6	7	4	2	8	3	33.6	20.8	10.4	10.4
	<b>REGION: Far Estern</b>	<b>389</b>	<b>389</b>	<b>372</b>	<b>376</b>	<b>283</b>	<b>31.6</b>	<b>33.5</b>	<b>33.2</b>	<b>34.7</b>	<b>26.5</b>	<b>1023</b>	<b>893</b>	<b>546</b>	<b>488</b>	<b>401</b>	<b>85.2</b>	<b>78.5</b>	<b>48.0</b>	<b>48.0</b>
71	<b>Republic: Sakha (Yakutiya)</b>	116	131	128	105	96	50.6	58.0	58.3	49.0	45.4	253	257	154	115	96	112.4	115.6	69.3	69.3
72	<b>Krai: Primorsky</b>	102	81	61	79	62	29.7	25.0	19.6	26.3	21.0	254	208	94	94	67	76.0	65.5	29.6	29.6
73	Khabarovskiy	43	66	52	43	30	17.5	29.1	23.7	20.2	14.3	104	114	64	42	39	43.4	51.2	28.8	28.8
74	<b>Regions: Amur</b>	26	22	35	31	12	14.9	13.7	22.6	20.7	8.1	60	64	68	67	49	35.3	40.8	43.3	43.3
75	Kamchatka	69	48	55	54	34	115.0	81.0	96.6	97.7	62.4	200	116	97	79	53	344.1	200.2	167.4	167.4
	Koryaksky AD	20	0	19	34	15	353.8	0.0	372.4	694.1	313.0	88	0	40	56	37	1605.0	0.0	769.4	769.4
76	Magadan	10	20	16	23	12	28.5	66.2	55.4	82.9	44.1	58	53	25	31	21	172.0	180.0	84.9	84.9
77	Sakhalin	10	11	17	35	29	10.4	12.5	20.1	42.8	36.0	60	52	33	51	68	64.5	60.4	38.3	38.3
78	<b>Autonomous region: Jewish</b>	10	8	4	6	7	27.7	23.0	11.9	18.6	22.1	24	18	5	8	7	68.6	52.8	14.7	14.7
79	<b>Autonomous REGION: Chukots</b>	3	2	4	-	1	24.2	18.5	38.5	0.0	9.9	10	11	6	1	1	84.6	104.6	57.1	57.1

**TB notification in Russia in 2002-2006**  
(TB notification in the territories of Russia, form 8)

№ Federal REGIONS, № areas of the Russian Federation nn.	New cases MbT+										Proportion of patients MbT+ to all new cases					New cases MbT+ confirmed by microscopy													
	absolute numbers					TB notification per 100,000					%					absolute number			TB notification per 100,000.			to PTB,%							
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006
<b>RUSSIA</b>	<b>46757</b>	<b>47110</b>	<b>49265</b>	<b>50116</b>	<b>48938</b>	<b>32.7</b>	<b>32.8</b>	<b>34.5</b>	<b>35.3</b>	<b>34.28</b>	<b>37.9</b>	<b>39.7</b>	<b>41.4</b>	<b>42.0</b>	<b>41.6</b>	<b>28868</b>	<b>30890</b>	<b>34148</b>	<b>33080</b>	<b>20.1</b>	<b>21.65</b>	<b>24.05</b>	<b>23.17</b>	<b>31.9</b>	<b>31.3</b>				
<b>REGION: Central</b>	10251	10088	10410	10336	9916	28.2	26.7	27.7	27.6	26.54	43.1	43.6	44.7	45.6	45.0	5697	6315	6988	6732	15.1	16.78	18.66	18.02	34.7	34.2				
1 Regions: Belgorod	434	431	483	454	472	29.0	28.5	31.9	30.04	31.23	43.2	41.9	44.8	51.6	50.1	153	247	297	320	10.1	16.33	19.65	21.17	37.3	37.5				
2 Bryansk	653	602	686	671	625	46.5	44.0	50.7	50.11	46.94	55.0	53.5	59.3	66.2	53.5	274	514	447	406	20.0	37.97	33.38	30.5	43.5	39.4				
3 Vladimir	630	666	565	599	578	40.2	44.1	37.8	40.48	39.25	52.7	54.0	52.1	55.2	48.6	499	435	449	398	33.0	29.09	30.34	27.03	45.7	37.2				
4 Voronezh	816	847	785	873	803	33.9	35.8	33.5	37.57	34.71	48.1	48.9	49.4	53.1	53.2	473	385	443	433	20.0	16.43	19.06	18.72	30.6	32.2				
5 Ivanovo	375	420	355	389	424	31.7	36.9	31.6	35.13	38.55	48.6	57.7	60.5	60.1	63.1	293	258	251	280	25.8	22.99	22.67	25.46	43.6	46.0				
6 Kaluga	398	312	417	437	393	37.8	30.2	40.7	42.93	38.75	47.5	46.2	56.0	52.8	53.0	25	232	348	323	2.4	22.63	34.19	31.85	48.5	50.9				
7 Kostroma	187	204	171	178	180	24.5	27.9	23.7	24.96	25.39	47.0	53.0	42.6	50.6	55.0	123	120	122	111	16.8	16.63	17.1	15.66	39.6	37.8				
8 Kursk	383	360	428	404	462	30.0	29.4	35.5	33.91	39.02	41.4	39.4	47.8	41.3	49.6	195	233	263	323	15.9	19.31	22.07	27.28	30.5	38.5				
9 Lipetsk	417	319	355	359	367	34.1	26.5	29.7	30.29	31.08	42.5	34.1	42.7	42.2	41.8	2	28	178	192	0.2	2.342	15.02	16.26	22.7	23.8				
10 Moscow	1223	1263	1169	1195	1121	19.1	19.1	17.6	18.03	16.91	32.3	33.5	31.8	33.6	32.2	788	843	982	892	11.9	12.72	14.81	13.46	30.6	28.4				
11 Orel	420	372	349	356	361	47.7	43.6	41.2	42.48	43.3	70.7	71.5	66.9	71.2	72.8	271	261	269	268	31.7	30.84	32.1	32.14	60.0	60.0				
12 Ryazan	399	389	397	303	295	32.0	32.0	33	25.5	24.96	41.5	41.2	40.6	32.0	31.8	306	299	255	271	25.2	24.89	21.46	22.93	30.4	32.5				
13 Smolensk	278	378	405	401	385	25.5	36.4	39.5	39.61	38.28	28.1	37.3	38.9	41.1	38.2	112	105	173	196	10.8	10.24	17.09	19.49	20.0	21.8				
14 Tambov	491	474	525	445	370	39.8	40.6	45.6	39.12	32.73	55.0	54.3	58.7	56.2	50.1	289	313	272	259	24.8	27.17	23.91	22.91	37.2	39.5				
15 Tver	451	405	461	494	431	29.3	27.8	32.1	34.89	30.64	40.4	38.8	41.2	44.1	37.9	222	262	303	348	15.3	18.26	21.4	24.74	29.1	33.2				
16 Tula	699	665	741	642	619	41.7	40.1	45.4	39.85	38.69	42.0	42.3	42.2	43.2	49.1	441	473	411	365	26.6	28.96	25.51	22.82	31.4	32.2				
17 Yaroslavl	309	312	289	333	272	22.4	23.0	21.5	24.98	20.48	34.0	34.1	32.0	37.7	33.7	162	132	179	155	11.9	9.815	13.43	11.67	24.3	23.6				
18 City: Moscow	1688	1669	1829	1803	1758	19.8	16.1	17.6	17.31	16.86	43.8	45.0	45.6	45.3	46.3	1069	1175	1346	1192	10.3	11.3	12.92	11.43	38.8	35.2				
<b>REGION: Northwestern</b>	<b>3675</b>	<b>3898</b>	<b>4057</b>	<b>4050</b>	<b>4000</b>	<b>25.9</b>	<b>28.1</b>	<b>29.4</b>	<b>29.61</b>	<b>29.35</b>	<b>39.6</b>	<b>43.9</b>	<b>45.1</b>	<b>45.2</b>	<b>46.1</b>	<b>2747</b>	<b>2617</b>	<b>2958</b>	<b>2898</b>	<b>19.8</b>	<b>18.99</b>	<b>21.62</b>	<b>21.26</b>	<b>38.0</b>	<b>38.3</b>				
19 Republics: Kareliya	248	249	239	249	235	32.9	35.0	33.9	35.56	33.69	43.8	45.4	44.9	47.2	49.3	190	181	201	196	26.7	25.64	28.7	28.1	44.3	45.7				
20 Komi	330	397	395	388	370	29.7	39.3	39.5	39.16	37.56	34.5	43.8	46.9	45.0	46.5	279	273	297	286	27.6	27.27	29.98	29.03	38.6	41.5				
21 Regions: Arkhangelsk	508	464	461	415	493	35.7	35.0	35.2	31.97	38.18	48.6	48.6	48.4	48.4	52.3	345	338	322	378	26.0	25.78	24.81	29.27	41.3	43.3				
Nenetsky AD	11	11	10	11	17	24.3	26.3	23.9	26.21	40.49	61.1	55.0	50.0	52.4	73.9	5	10	11	10	12.0	23.87	26.21	23.82	64.7	45.5				
22 Vologda	266	294	311	293	284	20.5	23.3	24.9	23.62	22.99	40.7	43.4	45.1	46.3	50.4	226	220	174	186	17.9	17.59	14.03	15.06	31.7	38.0				
23 Kaliningrad	320	477	563	525	595	34.0	50.1	59.4	55.71	63.31	30.7	43.0	46.7	44.3	47.0	316	469	413	394	33.2	49.51	43.82	41.92	41.4	37.6				
24 Leningrad	501	534	516	592	525	30.4	32.1	31.2	35.91	31.94	42.7	46.8	43.0	47.4	43.5	262	346	383	313	15.7	20.89	23.23	19.04	33.2	28.3				
25 Murmansk	295	249	301	266	232	30.4	28.1	34.3	30.62	26.83	48.9	42.3	51.9	46.3	46.4	191	175	183	166	21.6	19.97	21.07	19.2	35.1	37.1				
26 Novgorod	264	285	276	241	229	37.4	41.5	40.7	35.99	34.42	49.7	56.7	55.6	52.1	50.8	177	83	239	219	25.7	12.24	35.69	32.91	58.0	53.0				
27 Pskov	324	325	302	362	353	41.9	43.2	40.7	49.54	48.72	47.4	53.1	52.6	56.5	56.7	286	58	259	258	38.0	7.815	35.45	35.61	43.3	44.1				
28 City: St-Petersburg	619	624	693	719	684	13.5	13.4	15	15.66	14.93	30.5	33.8	36.1	36.7	36.8	475	474	487	502	10.2	10.28	10.61	10.96	31.4	33.8				
<b>REGION: Southern</b>	<b>6293</b>	<b>6302</b>	<b>6801</b>	<b>6270</b>	<b>6182</b>	<b>30.2</b>	<b>29.0</b>	<b>31.3</b>	<b>28.96</b>	<b>27.11</b>	<b>35.1</b>	<b>37.6</b>	<b>41.2</b>	<b>38.4</b>	<b>37.9</b>	<b>3666</b>	<b>4421</b>	<b>5013</b>	<b>4523</b>	<b>16.8</b>	<b>20.37</b>	<b>23.15</b>	<b>19.83</b>	<b>34.4</b>	<b>30.8</b>				
29 Republics: Adygeya	153	165	174	177	146	34.4	37.0	39.1	39.9	32.98	42.4	45.0	44.8	52.1	42.2	138	150	169	146	30.9	33.72	38.1	32.98	56.5	47.7				
30 Dagestan	406	450	591	504	606	18.5	17.4	22.6	19.15	22.95	23.1	26.2	37.0	32.5	36.9	397	590	490	550	15.3	22.59	18.62	20.83	36.1	38.7				
31 Ingushetiya Chechnya	137	106	143	144	91	29.2	22.4	29.9	29.74	18.69	34.4	29.9	49.5	58.5	49.7	106	135	122	84	22.4	28.21	25.19	17.25	57.8	54.9				
32 Kabardino-Balkariya	150	117	164	149	187	19.2	13.0	18.3	16.64	20.92	35.9	27.1	36.3	31.8	38.3	70	126	124	154	7.8	14.03	13.85	17.23	31.0	35.2				
33 Kalmykiya	88	85	110	67	90	29.1	29.2	37.9	23.16	31.18	23.9	22.6	29.6	17.8	24.4	34	19	13	35	11.7	6.5	4.5	12.1	4.0	11.5				
34 Karachaevo-Cherkessiya	75	67	100	59	63	17.5	15.3	23	13.63	14.6	24.3	27.0	37.6	24.0	29.7	20	24	11	15	4.6	5.5	2.5	3.5	5.4	9.1				
35 North Osetiya - Alaniya	266	265	170	171	193	39.3	37.4	24.1	24.31	27.48	43.2	48.4	30.5	32.8	44.0	109	135	155	156	15.4	19.1	22.0	22.2	39.1	46.2				
36 Krai: Krasnodarsky	1278	1312	1297	1274	1130	25.7	25.7	25.4	24.99	22.17	35.1	36.2	36.3	38.9	36.4	742	697	782	656	14.5	13.66	15.34	12.87	26.1	22.5				
37 Stavropolsky	797	767	743	543	575	30.2	28.1	27.3	20.01	21.22	39.4	40.5	48.1	28.8	32.0	399	388	366	409	14.6	14.25	13.49	15.09	22.2	26.4				
38 Regions: Astrakhan	338	307	311	342	320	33.5	30.6	31.1	34.33	32.19	33.6	33.7	35.3	38.8	36.6	179	123	291	298	17.8	12.3	29.21	29.97	36.6	37.8				
39 Volgograd	1176	1137	1466	1247	1264	44.8	42.4	55	47.14	47.96	32.5	40.6	49.4	41.0	45.0	632	811	1213	781	23.6	30.44	45.85	29.63						

№ Federal REGIONS, № areas of the Russian Federation nn.	New cases Mbt+										Proportion of patients Mbt+ to all new cases				New cases Mbt+ confirmed by microscopy											
	absolute numbers					TB notification per 100,000					%				absolute number			TB notification per 100,000.			to PTB, %					
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006	2005
Khanty-Mantyskiy AD	418	383	493	462	502	29.1	26.5	33.7	31.35	33.96	31.2	31.9	36.4	33.3	35.3	209	255	271	276	14.4	17.43	18.39	18.67	21.3	21.1	
Yamalo-Nenetskiy AD	130	133	134	138	145	25.4	26.0	25.8	26.19	27.32	25.0	27.0	29.8	26.8	33.0	68	62	85	89	13.3	11.94	16.13	16.77	18.1	23.5	
58 Chelyabinsk	1001	1051	1063	1086	1100	27.7	29.3	29.8	30.67	31.15	35.0	37.2	34.1	37.7	41.4	1010	980	712	771	28.2	27.51	20.11	21.83	27.5	38.5	
<b>REGION: Siberian</b>	<b>9829</b>	<b>10521</b>	<b>10538</b>	<b>11287</b>	<b>10591</b>	<b>48.0</b>	<b>52.7</b>	<b>53.1</b>	<b>57.19</b>	<b>53.83</b>	<b>38.2</b>	<b>40.9</b>	<b>41.2</b>	<b>42.8</b>	<b>40.9</b>	<b>6951</b>	<b>7214</b>	<b>8086</b>	<b>7611</b>	<b>34.8</b>	<b>36.35</b>	<b>40.97</b>	<b>38.68</b>	<b>33.6</b>	<b>32.2</b>	
59 Republics: Altai	80	90	122	142	68	39.0	44.3	59.9	69.55	33.26	36.2	40.0	41.2	47.7	26.2	48	71	94	50	23.6	34.88	46.04	24.45	35.9	22.5	
60 Buryatiya	476	475	503	549	572	46.8	48.6	51.8	56.82	59.38	32.5	32.8	34.1	35.9	34.2	359	324	417	400	36.7	33.34	43.16	41.53	30.2	26.4	
61 Tyva	326	388	373	419	373	105.0	126.8	121.5	136	120.9	36.0	46.6	47.7	54.5	49.1	141	186	243	248	46.1	60.58	78.88	80.39	35.2	38.3	
62 Khakasiya	243	323	362	373	334	42.3	59.4	66.8	69.13	62.06	30.3	44.9	48.1	50.7	52.4	266	312	275	235	48.9	57.58	50.97	43.66	41.7	39.3	
63 Krai: Altai	925	1054	1027	1098	920	35.4	40.6	39.9	42.98	36.17	26.1	31.4	27.6	29.5	25.5	899	819	906	802	34.7	31.81	35.47	31.53	26.3	24.0	
64 Krasnoyarsky	1242	1320	1234	1377	1359	41.3	44.7	42.1	47.23	46.76	40.2	41.4	39.9	43.0	45.0	745	727	831	872	25.2	24.78	28.5	30.01	28.6	31.5	
Taimyrskiy AD	16	15	16	13	11	36.0	37.9	40.6	33.18	28.21	59.3	57.7	48.5	50.0	45.8											
Evenkiyskiy AD	15	18	10	15	8	82.7	102.4	57.3	86.46	46.3	51.7	48.6	41.7	57.7	36.4	7	7	9	7	39.8	40.09	51.87	40.51	37.5	33.3	
65 Regions: Irkutsk	1206	1232	1259	1198	1229	44.6	48.0	49.3	47.24	48.64	36.7	37.8	40.1	38.3	38.9	753	876	904	899	29.3	34.31	35.64	35.58	31.4	31.2	
Ust-Ordynskiy Buryatskiy AD	97	102	86	95	67	68.2	75.7	64	70.91	50.06	48.7	52.3	43.9	37.3	31.9	74	58	68	36	54.9	43.17	50.75	26.9	29.1	18.9	
66 Kemerovo	1999	2172	2024	2281	2204	68.2	75.3	70.7	80.13	77.65	49.5	52.1	53.7	50.9	50.7	1559	1446	1840	1538	54.1	50.5	64.63	54.18	46.3	39.7	
67 Novosibirsk	1422	1496	1589	1726	1416	52.5	55.8	59.6	64.98	53.44	39.6	40.7	41.8	45.7	38.8	863	1124	1054	966	32.2	42.14	39.68	36.45	29.6	28.1	
68 Omsk	862	873	887	957	963	40.7	42.2	43.2	46.9	47.33	36.4	35.5	36.7	39.8	39.1	594	637	729	770	28.7	31.03	35.72	37.85	33.4	33.7	
69 Tomsk	720	674	717	674	684	68.0	64.6	69	65.1	66.14	59.7	60.4	65.2	60.7	61.3	433	485	434	462	41.5	46.7	41.92	44.67	42.8	45.0	
70 Chita	328	424	441	493	469	26.6	36.9	38.7	43.55	41.57	27.7	32.9	35.9	40.2	39.1	291	207	359	369	25.3	18.16	31.71	32.71	32.0	34.1	
Aginskiy Buryatskiy AD	14	38	27	27	25	17.6	52.4	36.9	36.56	33.68	18.9	41.3	28.1	38.0	26.3	15	22	20	23	20.7	30.09	27.08	30.98	33.3	28.8	
<b>REGION: Far Eastern</b>	<b>2817</b>	<b>2875</b>	<b>3159</b>	<b>3547</b>	<b>3529</b>	<b>40.2</b>	<b>43.2</b>	<b>47.8</b>	<b>53.99</b>	<b>53.9</b>	<b>33.7</b>	<b>34.4</b>	<b>37.5</b>	<b>40.9</b>	<b>42.2</b>	<b>1850</b>	<b>1880</b>	<b>2262</b>	<b>2343</b>	<b>27.8</b>	<b>28.43</b>	<b>34.43</b>	<b>35.79</b>	<b>28.7</b>	<b>30.5</b>	
71 Republic: Sakha (Yakutiya)	373	312	357	388	388	38.0	32.9	37.6	40.83	40.84	43.3	41.9	40.7	48.6	49.6	150	152	186	224	15.8	16	19.57	23.58	28.1	35.3	
72 Krai: Primorsky	1059	1152	1272	1472	1469	50.0	55.9	62.2	72.6	72.74	34.7	37.7	40.1	43.9	44.2	804	855	1002	1043	39.0	41.84	49.42	51.65	32.3	33.8	
73 Khabarovskiy	509	522	563	659	676	34.4	36.5	39.5	46.53	47.87	28.6	27.9	32.5	35.9	39.3	325	344	421	466	22.7	24.2	29.7	33.0	24.8	28.7	
74 Regions: Amur	364	359	357	400	361	37.2	40.0	40.1	45.23	40.97	25.7	24.8	26.8	30.7	28.9	258	209	263	190	28.7	23.5	29.7	21.6	21.8	16.2	
75 Kamchatka	108	98	128	106	102	28.5	27.5	36.2	30.23	29.21	34.7	32.5	39.3	31.0	35.4	78	63	67	78	21.9	17.8	19.1	22.3	24.1	31.7	
Koryakskiy AD	14	0	35	31	30	49.6	0.0	145.3	131.8	129.4	21.2	0.0	0.0	0.0	30.6	0	21	18	26	0.0	87.2	76.6	112.1	25.7	32.1	
76 Magadan	62	66	59	61	65	27.3	36.6	33.4	35.23	37.89	44.0	46.2	41.0	42.7	47.1	40	40	17	29	22.2	22.7	9.8	16.9	15.0	25.4	
77 Sakhalin	175	209	285	304	325	30.1	38.6	53.2	57.43	61.76	42.4	48.0	54.5	54.8	55.7	128	151	219	225	23.6	28.2	41.4	42.8	45.3	42.7	
78 Autonomous region: Jewish	144	136	117	137	122	74.2	71.5	61.8	73.01	65.4	42.2	41.6	39.3	46.0	49.8	57	57	78	80	30.0	30.1	41.6	42.9	27.3	34.0	
79 Autonomous REGION: Chukots	23	21	21	20	21	31.5	40.2	41.1	39.51	41.56	53.5	58.3	65.6	51.3	65.6	10	9	9	8	19.1	17.63	17.78	15.83	24.3	29.6	

TB notification in Russia over the period of 2002-2006  
(TB notification in the territories, form 33)

№ № nn.	Federal REGIONS, areas of the Russian Federation	New TB cases of all forms										detected postmorte II	Of them, TB of respiratory organs				Of them, pulmonary TB				Of them, TB of other organs			
		abs.					notification per 100,000						abs.		% to all forms		abs.		% to all forms		abs.		% to all forms	
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006		2005	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006		2005	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
	<b>RUSSIA</b>	<b>95665</b>	<b>95183</b>	<b>97322</b>	<b>96646</b>	<b>96867</b>	<b>66.6</b>	<b>66.35</b>	<b>68.21</b>	<b>68.1</b>	<b>67.86</b>	<b>69.0</b>	<b>92534</b>	<b>92879</b>	<b>95.7</b>	<b>95.9</b>	<b>85442</b>	<b>85780</b>	<b>88.4</b>	<b>88.6</b>	<b>4112</b>	<b>3988</b>	<b>4.3</b>	<b>4.1</b>
	<b>REGION: Central</b>	<b>18428</b>	<b>17940</b>	<b>18208</b>	<b>17668</b>	<b>17642</b>	<b>49.5</b>	<b>47.4</b>	<b>48.4</b>	<b>47.2</b>	<b>47.2</b>	<b>48.2</b>	<b>16767</b>	<b>16803</b>	<b>94.9</b>	<b>95.2</b>	<b>15455</b>	<b>15523</b>	<b>87.5</b>	<b>88.0</b>	<b>901</b>	<b>839</b>	<b>5.1</b>	<b>4.8</b>
1	<b>Regions: Belgorod</b>	860	878	934	772	819	57.1	58.0	61.8	51.1	54.2	54.2	740	773	95.9	94.4	692	735	89.6	89.7	32	46	4.1	5.6
2	Bryansk	1015	956	1007	1051	1044	72.9	69.9	74.4	78.5	78.4	81.2	975	985	92.8	94.3	891	909	84.8	87.1	76	59	7.2	5.7
3	Vladimir	858	891	820	815	898	55.5	58.9	54.8	55.1	61.0	63.8	790	860	96.9	95.8	726	788	89.1	87.8	25	38	3.1	4.2
4	Voronezh	1249	1365	1221	1259	1166	52.2	57.7	52.1	54.2	50.4	50.7	1189	1100	94.4	94.3	1102	1019	87.5	87.4	70	66	5.6	5.7
5	Ivanovo	567	552	463	496	536	48.6	48.5	41.3	44.8	48.7	48.7	462	516	93.1	96.3	432	478	87.1	89.2	34	20	6.9	3.7
6	Kaluga	758	576	595	589	558	72.3	55.7	58.0	57.9	55.0	56.9	539	512	91.5	91.8	505	476	85.7	85.3	50	46	8.5	8.2
7	Kostroma	335	327	332	293	269	44.6	44.8	46.0	41.1	37.9	37.9	283	254	96.6	94.4	249	236	85.0	87.7	10	15	3.4	5.6
8	Kursk	763	703	728	810	779	60.7	57.5	60.3	68.0	65.8	67.5	774	752	95.6	96.5	707	687	87.3	88.2	36	27	4.4	3.5
9	Lipetsk	754	728	693	685	679	61.8	60.4	58.0	57.8	57.5	57.8	644	635	94.0	93.5	626	617	91.4	90.9	41	44	6.0	6.5
10	Moscow	3249	3180	3110	2872	2922	49.9	48.0	46.9	43.3	44.1	44.1	2760	2817	96.1	96.4	2556	2599	89.0	88.9	112	105	3.9	3.6
11	Orel	506	444	428	416	433	58.1	52.0	50.6	49.6	51.9	52.7	394	415	94.7	95.8	365	380	87.7	87.8	22	18	5.3	4.2
12	Ryazan	763	739	776	790	793	61.6	60.8	64.6	66.5	67.1	69.1	755	759	95.6	95.7	692	708	87.6	89.3	35	34	4.4	4.3
13	Smolensk	749	785	824	771	762	69.9	75.5	80.3	76.2	75.8	79.5	733	733	95.1	96.2	665	652	86.3	85.6	38	29	4.9	3.8
14	Tambov	745	740	780	666	626	61.7	63.4	67.7	58.5	55.4	55.7	628	593	94.3	94.7	605	560	90.8	89.5	38	33	5.7	5.3
15	Tver	818	801	862	881	870	54.2	55.1	60.1	62.2	61.9	61.9	867	851	98.4	97.8	816	786	92.6	90.3	14	19	1.6	2.2
16	Tula	1282	1161	1293	1116	978	76.3	70.1	79.2	69.3	61.1	63.3	1054	936	94.4	95.7	950	853	85.1	87.2	62	42	5.6	4.3
17	Yaroslavl	632	604	630	599	594	46.0	44.5	46.8	44.9	44.7	46.7	559	550	93.3	92.6	481	464	80.3	78.1	40	44	6.7	7.4
18	<b>City: Moscow</b>	<b>2525</b>	<b>2510</b>	<b>2712</b>	<b>2787</b>	<b>2916</b>	<b>26.7</b>	<b>24.2</b>	<b>26.1</b>	<b>26.8</b>	<b>28.0</b>	<b>28.8</b>	<b>2621</b>	<b>2762</b>	<b>94.0</b>	<b>94.7</b>	<b>2395</b>	<b>2576</b>	<b>85.9</b>	<b>88.3</b>	<b>166</b>	<b>154</b>	<b>6.0</b>	<b>5.3</b>
	<b>REGION: Northwestern</b>	<b>6943</b>	<b>7083</b>	<b>7115</b>	<b>7094</b>	<b>6885</b>	<b>49.2</b>	<b>51.0</b>	<b>51.6</b>	<b>51.9</b>	<b>50.5</b>	<b>51.5</b>	<b>6801</b>	<b>6585</b>	<b>95.9</b>	<b>95.6</b>	<b>6057</b>	<b>5842</b>	<b>85.4</b>	<b>84.9</b>	<b>293</b>	<b>300</b>	<b>4.1</b>	<b>4.4</b>
19	<b>Republics: Kareliya</b>	416	438	424	430	396	56.5	61.5	60.1	61.4	56.8	57.2	403	378	93.7	95.5	356	350	82.8	88.4	27	18	6.3	4.5
20	Komi	648	664	650	623	592	60.8	65.7	64.9	62.9	60.1	62.1	578	541	92.8	91.4	542	496	87.0	83.8	45	57	7.2	8.6
21	<b>Regions: Arkhangelsk</b>	702	743	718	630	630	50.8	56.1	54.8	48.5	48.8	51.6	614	612	97.5	97.1	556	565	88.3	89.7	16	18	2.5	2.9
	Nenetsky AD	18	20	20	20	23	41.5	47.9	47.7	47.7	54.8	54.8	19	23	95.0	100.0	18	22	90.0	95.7	1	0	5.0	0.0
22	Vologda	448	483	543	483	467	34.9	38.3	43.4	38.9	37.8	37.8	450	438	93.2	93.8	406	399	84.1	85.4	33	29	6.8	6.2
23	Kaliningrad	832	939	993	961	1014	87.7	98.6	104.8	102.0	107.9	107.9	944	978	98.2	96.4	792	813	82.4	80.2	17	36	1.8	3.6
24	Leningrad	1026	1014	1038	1085	1011	61.9	61.0	62.7	65.8	61.5	64.0	1064	988	98.1	97.7	999	923	92.1	91.3	21	23	1.9	2.3
25	Murmansk	414	385	413	403	376	44.3	43.5	47.1	46.4	43.5	46.0	381	360	94.5	95.7	364	336	90.3	89.4	22	16	5.5	4.3
26	Novgorod	399	389	377	365	360	56.9	56.6	55.6	54.5	54.1	54.1	355	339	97.3	94.2	324	323	88.8	89.7	10	21	2.7	5.8
27	Pskov	497	448	398	490	465	64.7	59.5	53.6	67.1	64.2	65.6	471	453	96.1	97.4	455	433	92.9	93.1	19	12	3.9	2.6
28	<b>City: St-Petersburg</b>	<b>1561</b>	<b>1580</b>	<b>1561</b>	<b>1624</b>	<b>1574</b>	<b>33.7</b>	<b>34.0</b>	<b>33.8</b>	<b>35.4</b>	<b>34.4</b>	<b>34.4</b>	<b>1541</b>	<b>1498</b>	<b>94.9</b>	<b>95.2</b>	<b>1263</b>	<b>1204</b>	<b>77.8</b>	<b>76.5</b>	<b>83</b>	<b>76</b>	<b>5.1</b>	<b>4.8</b>
	<b>REGION: Southern</b>	<b>13958</b>	<b>13575</b>	<b>13936</b>	<b>13548</b>	<b>14005</b>	<b>65.5</b>	<b>62.4</b>	<b>64.2</b>	<b>62.6</b>	<b>61.4</b>	<b>64.9</b>	<b>12905</b>	<b>13335</b>	<b>95.3</b>	<b>95.2</b>	<b>11863</b>	<b>12441</b>	<b>87.6</b>	<b>88.8</b>	<b>643</b>	<b>670</b>	<b>4.7</b>	<b>4.8</b>
29	<b>Republics: Adygeya</b>	240	249	329	278	283	53.8	55.8	74.0	62.7	63.9	66.4	260	274	93.5	96.8	242	245	87.1	86.6	18	9	6.5	3.2
30	Dagestan	1625	1611	1505	1475	1535	68.3	62.2	57.6	56.1	58.1	58.1	1385	1430	93.9	93.2	1268	1328	86.0	86.5	90	105	6.1	6.8
31	Ingushetiya Чечня	302	299	251	215	182	64.6	63.3	52.4	44.4	37.4	37.4	206	179	95.8	98.4	185	152	86.0	83.5	9	3	4.2	1.6
	Kabardino-Balkariya	391	399	429	425	437	46.5	44.3	47.8	47.5	48.9	48.9	407	422	95.8	96.6	360	388	84.7	88.8	18	15	4.2	3.4
33	Kalmykiya	310	319	332	333	342	103.8	109.5	114.4	115.1	118.5	118.5	310	320	93.1	93.6	280	277	84.1	81.0	23	22	6.9	6.4
34	Karachaevo-Cherkessiya	288	236	250	217	196	66.4	53.9	57.4	50.1	45.4	45.4	193	174	88.9	88.8	179	160	82.5	81.6	24	22	11.1	11.2
35	North Osetiya - Alaniya	538	472	500	482	403	77.5	66.6	70.9	68.5	57.4	57.4	434	355	90.0	88.1	339	302	70.3	74.9	48	48	10.0	11.9
36	<b>Krai: Krasnodarsky</b>	2880	2848	2876	2826	2626	57.0	55.7	56.4	55.4	51.5	51.6	2725	2536	96.4	96.6	2544	2434	90.0	92.7	101	90	3.6	3.4
37	Stavropolsky	1560	1472	1507	1424	1433	58.0	53.9	55.4	52.5	52.9	53.3	1286	1282	90.3	89.5	1186	1187	83.3	82.8	138	151	9.7	10.5
38	<b>Regions: Astrakhan</b>	850	804	784	780	755	84.4	80.2	78.4	78.3	75.9	75.9	756	734	96.9	97.2	693	666	88.8	88.2	24	21	3.1	2.8
39	Volgograd	2226	2050	2169	2107	2084	83.5	76.4	81.4	79.6	79.1	79.1	2007	2016	95.3	96.7	1858	1922	88.2	92.2	100	68	4.7	3.3
40	Rostov	2748	2816	3004	2986	2827	63.3	64.3	69.1	69.1	65.7	65.9	2936	2759	98.3	97.6	2729	2585	91.4	91.4	50	68	1.7	2.4
	<b>REGION: Privolzhsky</b>	<b>19768</b>	<b>19231</b>	<b>19209</b>	<b>19310</b>	<b>19399</b>	<b>63.0</b>	<b>62.0</b>	<b>62.4</b>	<b>63.1</b>	<b>63.6</b>	<b>64.4</b>	<b>18348</b>	<b>18473</b>	<b>95.0</b>	<b>95.2</b>	<b>17079</b>	<b>17108</b>	<b>88.4</b>	<b>88.2</b>	<b>962</b>	<b>926</b>	<b>5.0</b>	<b>4.8</b>
41	<b>Republics: Bashkortostan</b>	1967	1920	1922	1884	1868	48.0	46.9	47.0	46.3	46.0	46.0	1784	1747	94.7	93.5	1654	1612	87.8	86.3	100	121	5.3	6.5
42	Mariy El	382	401	392	443	449	51.7	55.4	54.5	62.0	63.1	63.1	430	434	97.1	96.7	394	393	88.9	87.5	13	15	2.9	3.3
43	Mordoviya	607	633	623	531	561	67.6	71.8	71.5	61.6	65.5	65.5	505	547	95.1	97.5	476	519	89.6	92.5	26	14	4.9	2.5
44	Tatarstan	2381	2175	2022																				

№ № nn.	Federal REGIONS, areas of the Russian Federation	New TB cases of all forms										detected postmorte	Of them, TB of respiratory organs				Of them, pulmonary TB				Of them, TB of other organs			
		abs.					notification per 100,000						abs.		% to all forms		abs.		% to all forms		abs.		% to all forms	
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006		2006	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005
49	Orenburg	1610	1579	1586	1745	1847	73.6	72.8	73.5	81.4	86.4	86.4	1664	1776	95.4	96.2	1489	1571	85.3	85.1	81	71	4.6	3.8
50	Penza	925	886	916	939	923	62.6	61.4	64.1	66.3	65.6	66.2	892	869	95.0	94.1	812	759	86.5	82.2	47	54	5.0	5.9
51	Perm (Permsky krai)	2280	2182	2438	2318	2473	79.5	77.9	87.7	84.0	90.0	92.2	2201	2359	95.0	95.4	2079	2171	89.7	87.8	117	114	5.0	4.6
	Komi-Permsky AD	157	148	186	159	0	110.8	109.6	139.2	239.4		#####	154		96.9		148	0	93.1	#####	5	0	3.1	#####
52	Samara	1768	1849	1720	1810	1898	54.4	57.3	53.6	56.6	59.5	60.4	1720	1811	95.0	95.4	1607	1706	88.8	89.9	90	87	5.0	4.6
53	Saratov	1860	1811	1750	1770	1653	69.7	68.2	66.4	67.6	63.4	63.4	1686	1573	95.3	95.2	1580	1511	89.3	91.4	84	80	4.7	4.8
54	Uliyanovsk	771	759	805	783	815	54.7	55.3	59.3	58.3	61.0	61.3	739	772	94.4	94.7	694	697	88.6	85.5	44	43	5.6	5.3
	<b>DISTRIC: Urals</b>	<b>9708</b>	<b>9733</b>	<b>10304</b>	<b>10202</b>	<b>10444</b>	<b>78.0</b>	<b>78.9</b>	<b>83.8</b>	<b>83.2</b>	<b>85.3</b>	<b>86.6</b>	<b>9806</b>	<b>10027</b>	<b>96.1</b>	<b>96.0</b>	<b>9096</b>	<b>9235</b>	<b>89.2</b>	<b>88.4</b>	<b>396</b>	<b>417</b>	<b>3.9</b>	<b>4.0</b>
55	<b>Regions: Kurgan</b>	1075	1033	1148	1043	1147	102.8	102.3	115.0	105.8	117.1	117.1	992	1092	95.1	95.2	888	975	85.1	85.0	51	55	4.9	4.8
56	Sverdlovsk	3310	3345	3444	3486	3781	73.4	75.0	77.6	78.9	85.7	87.5	3367	3654	96.6	96.6	3115	3351	89.4	88.6	119	127	3.4	3.4
57	Tyumen	3167	3146	3372	3384	3344	96.8	95.9	102.2	102.1	100.6	101.5	3301	3240	97.5	96.9	3061	2998	90.5	89.7	83	104	2.5	3.1
	Khanty-Mantyskiy AD	1140	1040	1185	1228	1268	79.7	71.9	81.0	83.3	85.8	86.6	1210	1245	98.5	98.2	1116	1158	90.9	91.3	18	23	1.5	1.8
	Yamalo-Nenetskiy AD	388	403	391	450	369	76.3	78.7	75.3	85.4	69.5	70.1	441	352	98.0	95.4	405	308	90.0	83.5	9	17	2.0	4.6
58	Chelyabinsk	2156	2209	2340	2289	2172	59.7	61.6	65.7	64.6	61.5	63.0	2146	2041	93.8	94.0	2032	1911	88.8	88.0	143	131	6.2	6.0
	<b>REGION: Siberian</b>	<b>20198</b>	<b>20864</b>	<b>21642</b>	<b>21718</b>	<b>21546</b>	<b>99.6</b>	<b>104.5</b>	<b>109.0</b>	<b>110.0</b>	<b>109.5</b>	<b>112.8</b>	<b>20989</b>	<b>20910</b>	<b>96.6</b>	<b>97.0</b>	<b>19555</b>	<b>19442</b>	<b>90.0</b>	<b>90.2</b>	<b>729</b>	<b>636</b>	<b>3.4</b>	<b>3.0</b>
59	<b>Republics: Altai</b>	213	225	291	296	257	104.4	110.8	143.0	145.0	125.7	127.2	288	243	97.3	94.6	260	220	87.8	85.6	8	14	2.7	5.4
60	Buryatiya	1185	1180	1222	1246	1385	118.6	120.8	125.8	129.0	143.8	146.3	1205	1346	96.7	97.2	1105	1239	88.7	89.5	41	39	3.3	2.8
61	Tyva	751	685	687	655	637	243.9	223.9	223.7	212.6	206.5	211.0	602	581	91.9	91.2	578	539	88.2	84.6	53	56	8.1	8.8
62	Khakasiya	505	605	671	642	535	90.1	111.2	123.8	119.0	99.4	103.9	620	524	96.6	97.9	568	495	88.5	92.5	22	11	3.4	2.1
63	<b>Krai: Altai</b>	2856	2865	3141	3074	3102	109.4	110.5	122.0	120.3	122.0	124.8	3003	3046	97.7	98.2	2813	2857	91.5	92.1	71	56	2.3	1.8
64	Krasnoyarsky	2663	2780	2797	2620	2491	89.1	94.2	95.3	89.9	85.7	89.4	2523	2403	96.3	96.5	2348	2253	89.6	90.4	97	88	3.7	3.5
	Taimyrskiy AD	27	26	33	26	24	64.3	65.7	83.7	66.4	61.6	61.6	25	24	96.2	100.0	19	17	73.1	70.8	1	0	3.8	0.0
	Evenkiyskiy AD	29	37	24	24	22	161.6	210.5	137.4	138.3	127.3	127.3	23	21	95.8	95.5	22	21	91.7	95.5	1	1	4.2	4.5
65	<b>Regions: Irkutsk</b>	2405	2361	2405	2604	2735	90.9	91.9	94.2	102.7	108.2	114.1	2511	2653	96.4	97.0	2372	2456	91.1	89.8	93	82	3.6	3.0
	Ust-Ordynskiy Buryatskiy AD	198	195	196	253	209	142.7	144.7	145.9	188.8	156.1	156.9	253	205	100.0	98.1	234	189	92.5	90.4	0	4	0.0	1.9
66	Kemerovo	3080	3275	3636	3765	3651	105.6	113.6	127.0	132.3	128.6	133.0	3680	3547	97.7	97.2	3285	3196	87.3	87.5	85	104	2.3	2.8
67	Novosibirsk	2822	2926	3017	2947	2913	104.4	109.2	113.1	111.0	109.9	112.3	2864	2840	97.2	97.5	2742	2702	93.0	92.8	83	73	2.8	2.5
68	Omsk	1903	2054	1982	1996	2003	90.6	99.4	96.6	97.8	98.4	100.9	1891	1948	94.7	97.3	1792	1837	89.8	91.7	105	55	5.3	2.7
69	Tomsk	928	908	905	900	876	88.1	87.0	87.1	86.9	84.7	85.4	865	852	96.1	97.3	802	791	89.1	90.3	35	24	3.9	2.7
70	Chita	887	1000	888	973	961	74.2	87.1	77.9	86.0	85.2	85.8	937	927	96.3	96.5	890	857	91.5	89.2	36	34	3.7	3.5
	Aginsky Buryatskiy AD	74	92	96	71	95	97.5	126.9	131.3	96.1	128.0	128.0	68	91	95.8	95.8	60	80	84.5	84.2	3	4	4.2	4.2
	<b>REGION: Far Estern</b>	<b>6644</b>	<b>6742</b>	<b>6896</b>	<b>7100</b>	<b>6937</b>	<b>96.9</b>	<b>101.3</b>	<b>104.3</b>	<b>108.1</b>	<b>106.0</b>	<b>107.6</b>	<b>6912</b>	<b>6740</b>	<b>97.4</b>	<b>97.2</b>	<b>6333</b>	<b>6184</b>	<b>89.2</b>	<b>89.1</b>	<b>188</b>	<b>197</b>	<b>2.6</b>	<b>2.8</b>
71	<b>Republic: Sakha (Yakutiya)</b>	689	658	799	718	692	71.3	69.4	84.1	75.6	72.8	73.7	687	645	95.7	93.2	569	529	79.2	76.4	31	47	4.3	6.8
72	<b>Krai: Primorsky</b>	2361	2346	2450	2628	2727	112.6	113.9	119.9	129.6	135.0	136.3	2576	2674	98.0	98.1	2397	2433	91.2	89.2	52	53	2.0	1.9
73	Khabarovskiy	1396	1510	1443	1521	1405	95.6	105.5	101.4	107.4	99.5	99.6	1492	1386	98.1	98.6	1393	1319	91.6	93.9	29	19	1.9	1.4
74	<b>Regions: Amur</b>	1084	1126	1076	1052	1046	115.1	125.4	120.8	119.0	118.7	121.4	1017	1018	96.7	97.3	964	971	91.6	92.8	35	28	3.3	2.7
75	Kamchatka	265	245	265	291	253	71.8	68.8	75.0	83.0	72.4	73.6	284	249	97.6	98.4	228	211	78.4	83.4	7	4	2.4	1.6
	Koryakskiy AD	66	0	84	106	97	246.7	0.0	348.6	450.8	418.4	418.4	106	96	100.0	99.0	71	80	67.0	82.5	0	1	0.0	1.0
76	Magadan	137	138	132	119	110	66.7	76.6	74.8	68.7	64.1	65.9	115	102	96.6	92.7	87	92	73.1	83.6	4	8	3.4	7.3
77	Sakhalin	387	396	446	468	447	68.5	73.1	83.3	88.4	84.9	91.6	440	413	94.0	92.4	399	391	85.3	87.5	28	34	6.0	7.6
78	<b>Autonomous region: Jewish</b>	282	288	253	264	225	146.4	151.4	133.7	140.7	120.6	122.8	262	224	99.2	99.6	257	211	97.3	93.8	2	1	0.8	0.4
79	<b>Autonomous REGION: Chukots</b>	43	35	32	39	32	67.7	67.0	62.7	77.0	63.3	63.3	39	29	100.0	90.6	39	27	100.0	84.4	0	3	0.0	9.4

TB notification in Russia over the period of 2002-2006  
(TB notification in the territories, form 33)

№ nn.	Federal REGIONS, areas of the Russian Federation	New respiratory TB cases MbT+								Proportion of MbT+ cases among new respiratory TB patients				New TB cases MbT+ confirmed by microscopy									
		absolute numbers				notification per 100,000				%				absolute number				notification per 100,000				to RTB.%	
		2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006
	<b>RUSSIA</b>	41367	43311	43931	43262	32.7	32.8	34.5	35.3	45.5	46.5	47.5	46.6	24511	25733	28584	28844	17.1	18.03	20.13	20.21	30.9	31.1
	<b>REGION: Central</b>	8588	8820	8715	8562	22.7	23.4	23.27	22.92	50.4	51.0	52.0	51.0	4826	5296	5593	5769	12.8	14.1	14.9	15.4	33.4	34.3
1	Regions: Belgorod	392	456	422	416	25.9	30.2	27.92	27.52	47.0	50.4	57.0	53.8	142	232	275	280	9.4	15.3	18.2	18.5	37.2	36.2
2	Bryansk	563	643	636	594	41.2	47.5	47.5	44.62	63.6	67.3	65.2	60.3	263	441	415	378	19.2	32.6	31.0	28.4	42.6	38.4
3	Vladimir	520	454	450	475	34.4	30.4	30.41	32.26	60.0	57.3	57.0	55.2	413	364	370	369	27.3	24.3	25.0	25.1	46.8	42.9
4	Voronezh	705	627	702	668	29.8	26.8	30.21	28.87	54.5	54.0	59.0	60.7	401	317	349	362	17.0	13.5	15.0	15.6	29.4	32.9
5	Ivanovo	341	302	303	341	30.0	26.9	27.36	31	65.5	68.8	65.6	66.1	253	220	0	244	22.2	19.6	0.0	22.2	0.0	47.3
6	Kaluga	264	356	369	312	25.5	34.7	36.25	30.76	49.8	65.9	68.5	60.9	14	213	296	257	1.4	20.8	29.1	25.3	54.9	50.2
7	Kostroma	179	150	151	146	24.5	20.8	21.17	20.59	57.2	46.6	53.4	57.5	114	101	39	87	15.6	14.0	5.5	12.3	13.8	34.3
8	Kursk	330	356	376	394	27.0	29.5	31.56	33.28	49.3	50.7	48.6	52.4	159	213	253	241	13.0	17.7	21.2	20.4	32.7	32.0
9	Lipetsk	278	327	323	319	23.1	27.4	27.25	27.01	41.0	50.3	50.2	50.2	2	28	153	168	0.2	2.3	12.9	14.2	23.8	26.5
10	Moscow	1163	1068	1079	1056	17.6	16.1	16.28	15.93	38.0	35.9	39.1	37.5	763	793	891	841	11.5	12.0	13.4	12.7	32.3	29.9
11	Orel	335	306	298	333	39.2	36.2	35.56	39.94	78.3	75.7	75.6	80.2	250	230	222	258	29.3	27.2	26.5	30.9	56.3	62.2
12	Ryazan	343	353	274	272	28.2	29.4	23.06	23.01	48.8	47.7	36.3	35.8	283	262	227	250	23.3	21.8	19.1	21.2	30.1	32.9
13	Smolensk	339	371	361	351	32.6	36.2	35.66	34.9	45.1	46.9	49.2	47.9	77	103	147	177	7.4	10.0	14.5	17.6	20.1	24.1
14	Tambov	427	470	389	339	36.6	40.8	34.2	29.99	61.9	64.3	61.9	57.2	186	185	244	253	15.9	16.1	21.4	22.4	38.9	42.7
15	Tver	370	412	437	370	25.4	28.7	30.86	26.31	47.6	48.5	50.4	43.5	206	230	256	295	14.2	16.0	18.1	21.0	29.5	34.7
16	Tula	581	663	556	556	35.1	40.6	34.52	34.75	52.3	54.7	52.8	59.4	369	405	384	361	22.3	24.8	23.8	22.6	36.4	38.6
17	Yaroslavl	259	246	281	235	19.1	18.3	21.08	17.7	45.8	43.1	50.3	42.7	135	102	133	133	9.9	7.6	10.0	10.0	23.8	24.2
18	City: Moscow	1199	1260	1308	1385	11.5	12.1	12.56	13.29	50.4	49.3	49.9	50.1	796	857	939	948	7.7	8.2	9.0	9.1	35.8	34.3
	<b>REGION: Northwestern</b>	3370	3496	3520	3465	24.3	25.4	25.73	25.43	49.9	51.1	51.8	52.6	2124	2161	2340	2364	15.3	15.7	17.1	17.3	34.4	35.9
19	Republics: Kareliya	211	200	220	211	29.6	28.3	31.42	30.25	51.3	50.4	54.6	55.8	165	154	174	170	23.2	21.8	24.8	24.4	43.2	45.0
20	Komi	333	334	304	305	32.9	33.4	30.68	30.96	54.5	54.2	52.6	56.4	230	233	235	236	22.8	23.3	23.7	24.0	40.7	43.6
21	Regions: Arkhangelsk	360	364	332	367	27.2	27.8	25.58	28.42	49.8	52.4	54.1	60.0	275	269	247	278	20.8	20.5	19.0	21.5	40.2	45.4
	Nenetsky AD	11	10	11	17	26.3	23.9	26.21	40.49	57.9	58.8	57.9	73.9	5	7	7	10	12.0	16.7	16.7	23.8	36.8	43.5
22	Vologda	238	267	239	242	18.9	21.4	19.27	19.59	53.1	52.0	53.1	55.3	179	186	147	158	14.2	14.9	11.9	12.8	32.7	36.1
23	Kaliningrad	457	523	477	525	48.0	55.2	50.61	55.86	50.4	54.2	50.5	53.7	289	440	382	363	30.4	46.4	40.5	38.6	40.5	37.1
24	Leningrad	491	460	539	491	29.5	27.8	32.7	29.87	49.9	45.2	50.7	49.7	235	310	347	290	14.1	18.7	21.1	17.6	32.6	29.4
25	Murmansk	195	247	216	202	22.0	28.2	24.86	23.36	52.3	62.7	56.7	56.1	142	139	147	146	16.0	15.9	16.9	16.9	38.6	40.6
26	Novgorod	240	233	216	200	34.9	34.3	32.25	30.06	63.2	63.5	60.8	59.0	161	54	0	100	23.4	8.0	0.0	15.0	0.0	29.5
27	Pskov	263	238	314	290	34.9	32.1	42.97	40.02	60.9	61.5	66.7	64.0	70	50	221	212	9.3	6.7	30.2	29.3	46.9	46.8
28	City: St-Petersburg	582	630	663	632	12.5	13.7	14.44	13.8	39.2	42.5	43.0	42.2	378	326	440	411	8.1	7.1	9.6	9.0	28.6	27.4
	<b>REGION: Southern</b>	5545	5819	5408	5414	25.5	26.8	24.98	25.03	42.9	43.7	41.9	40.6	3118	3612	3383	4027	14.3	16.6	15.6	18.6	26.2	30.2
29	Republics: Adygeya	146	162	142	141	32.7	36.4	32.01	31.85	60.8	54.7	54.6	51.5	110	112	133	122	24.7	25.2	30.0	27.6	51.2	44.5
30	Dagestan	450	560	485	572	17.4	21.4	18.43	21.66	30.1	40.2	35.0	40.0	364	455	181	518	14.0	17.4	6.9	19.6	13.1	36.2
31	Ingushetiya	98	123	129	91	20.8	25.7	26.64	18.69	34.4	50.6	62.6	50.8	98	117	111	84	20.8	24.4	22.9	17.2	53.9	46.9
	Чечня				338				29.07				39.6				338				29.1		39.6
32	Kabardino-Balkariya	117	156	141	166	13.0	17.4	15.75	18.57	31.2	38.0	34.6	39.3	71	118	116	134	7.9	13.1	13.0	15.0	28.5	31.8
33	Kalmykiya	77	106	58	81	26.4	36.5	20.05	28.06	25.9	33.5	18.7	25.3	27	19	13	35	9.3	6.5	4.5	12.1	4.2	10.9
34	Karachaevo-Cherkessiya	65	91	57	55	14.8	20.9	13.16	12.75	29.5	39.7	29.5	31.6	20	24	11	15	4.6	5.5	2.5	3.5	5.7	8.6
35	North Ossetiya - Alaniya	239	164	160	177	33.7	23.2	22.75	25.2	55.2	35.8	36.9	49.9	109	109	134	147	15.4	15.4	19.1	20.9	30.9	41.4
36	Krai: Krasnodarsky	1241	1216	1234	1089	24.3	23.8	24.2	21.37	45.0	43.6	45.3	42.9	694	619	748	625	13.6	12.1	14.7	12.3	27.4	24.6
37	Stavropolsky	647	732	494	496	23.7	26.9	18.2	18.3	48.9	53.2	38.4	38.7	337	388	366	376	12.3	14.3	13.5	13.9	28.5	29.3
38	Regions: Astrakhan	255	287	310	273	25.4	28.7	31.12	27.46	32.5	37.7	41.0	37.2	128	117	0	244	12.8	11.7	0.0	24.5	0.0	33.2
39	Volgograd	857	860	854	852	31.9	32.3	32.28	32.33	43.5	41.1	42.6	42.3	472	471	526	549	17.6	17.7	19.9	20.8	26.2	27.2
40	Rostov	1353	1362	1344	1083	30.9	31.3	31.12	25.17	49.5	46.4	45.8	39.3	688	1063	1044	840	15.7	24.4	24.2	19.5	35.6	30.4
	<b>REGION: Privolzhsky</b>	8207	8708	9011	8961	26.5	28.3	29.44	29.37	45.1	47.7	49.1	48.5	4347	4629	5583	5380	14.0	15.0	18.2	17.6	30.4	29.1
41	Republics: Bashkortostan	832	729	831	734	20.3	17.8	20.41	18.06	46.2	40.9	46.6	42.0	483	477	494	475	11.8	11.7	12.1	11.7	27.7	27.2
42	Mariy El	322	280	321	307	44.5	38.9	44.95	43.15	84.5	75.3	74.7	70.7	162	157	177	177	22.4	21.8	24.8	24.9	41.2	40.8
43	Mordoviya	238	264	202	238	27.0	30.3	23.44	27.78	39.4	44.2	40.0	43.5	96	93	202	153	10.9	10.7	23.4	17.9	40.0	28.0
44	Tatarstan	764	859	851	879	20.2	22.8	22.6	23.37	38.3	45.5	44.6	45.6	454	503	501	523	12.0	13.3	13.3	13.9	26.2	27.1
45	Udmurtiya	522	573	586	530	33.4	36.8	37.84	34.32	50.1	53.1	54.4	51.5	190	198	376	331	12.1	12.7	24.3	21.4	34.9	32.1
46	Chuvashiya	419	462	558	607	32.0	35.5	43.06	46.97	55.6	54.7	66.6	70.3	406	457	515	465	31.0	35.1	39.7	36.0	61.5	53.8
47	Regions: Kirov	420	442	478	474	28.2	30.1	32.92	32.85	55.3	59.6	61.8	60.5	205	239	262	262	13.8	16.3	18			

№ № nn.	Federal REGIONS, areas of the Russian Federation	New respiratory TB cases MbT+								Proportion of MbT+ cases among new respiratory TB patients				New TB cases MbT+, confirmed by microscopy											
		absolute numbers				notification per 100,000				%				absolute number				notification per 100,000				to RTB.%			
		2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006
	Komi-Permsky AD	121	153	119		89.6	114.5	179.2		81.8	83.6	77.3		36	54	70		26.7	40.4	105.4		45.5	20.6		
52	Samara	863	857	949	945	26.7	26.7	29.7	29.63	49.0	51.9	55.2	52.2	477	482	575	490	14.8	15.0	18.0	15.4	33.4	27.1		
53	Saratov	504	585	560	607	19.0	22.2	21.4	23.27	29.3	35.1	33.2	38.6	177	251	351	347	6.7	9.5	13.4	13.3	20.8	22.1		
54	Uliyanovsk	295	360	327	324	21.5	26.5	24.34	24.25	41.5	47.2	44.2	42.0	196	250	266	224	14.3	18.4	19.8	16.8	36.0	29.0		
	<b>DISTRIC: Urals</b>	<b>3759</b>	<b>4046</b>	<b>4108</b>	<b>4113</b>	<b>30.5</b>	<b>32.9</b>	<b>33.5</b>	<b>33.59</b>	<b>40.4</b>	<b>40.9</b>	<b>41.9</b>	<b>41.0</b>	<b>2197</b>	<b>2260</b>	<b>2427</b>	<b>2480</b>	<b>17.8</b>	<b>18.4</b>	<b>19.8</b>	<b>20.3</b>	<b>24.8</b>	<b>24.7</b>		
55	Regions: Kurgan	384	419	400	397	38.0	42.0	40.57	40.51	38.9	38.6	40.3	36.4	143	117	195	233	14.2	11.7	19.8	23.8	19.7	21.3		
56	Sverdlovsk	1575	1612	1651	1720	35.3	36.3	37.36	39	49.0	48.4	49.0	47.1	1118	950	1016	1063	25.1	21.4	23.0	24.1	30.2	29.1		
57	Tyumen	884	1084	1022	1050	27.0	32.9	30.83	31.6	29.1	33.0	31.0	32.4	489	573	639	689	14.9	17.4	19.3	20.7	19.4	21.3		
	Khanty-Mantyskiy AD	365	483	448	497	25.2	33.0	30.4	33.62	36.2	41.5	37.0	39.9	206	253	266	273	14.2	17.3	18.1	18.5	22.0	21.9		
	Yamalo-Nenetskiy AD	115	122	133	126	22.5	23.5	25.24	23.74	29.6	32.4	30.2	35.8	68	62	82	76	13.3	11.9	15.6	14.3	18.6	21.6		
58	Chelyabinsk	916	931	1035	946	25.5	26.1	29.23	26.79	44.2	42.8	48.2	46.3	447	620	577	495	12.5	17.4	16.3	14.0	26.9	24.3		
	<b>REGION: Siberian</b>	<b>9294</b>	<b>9568</b>	<b>9922</b>	<b>9518</b>	<b>46.5</b>	<b>48.2</b>	<b>50.28</b>	<b>48.37</b>	<b>46.4</b>	<b>45.9</b>	<b>47.3</b>	<b>45.5</b>	<b>6353</b>	<b>6507</b>	<b>7198</b>	<b>6714</b>	<b>31.8</b>	<b>32.8</b>	<b>36.5</b>	<b>34.1</b>	<b>34.3</b>	<b>32.1</b>		
59	Republics: Altai	85	122	141	68	41.8	59.9	69.06	33.26	39.9	43.9	49.0	28.0	48	71	94	50	23.6	34.9	46.0	24.5	32.6	20.6		
60	Buryatiya	436	460	514	569	44.6	47.3	53.2	59.07	38.6	38.8	42.7	42.3	230	309	351	400	23.5	31.8	36.3	41.5	29.1	29.7		
61	Tyva	353	353	372	314	115.4	115.0	120.7	101.8	55.9	55.9	61.8	54.0	114	102	204	91	37.3	33.2	66.2	29.5	33.9	15.7		
62	Khakasiya	301	346	354	309	55.3	63.9	65.61	57.41	51.9	52.8	57.1	59.0	249	299	269	222	45.8	55.2	49.9	41.2	43.4	42.4		
63	Krai: Altai	936	924	950	837	36.1	35.9	37.19	32.91	33.5	30.4	31.6	27.5	807	749	770	725	31.1	29.1	30.1	28.5	25.6	23.8		
64	Krasnoyarsky	1193	1150	1247	1205	40.4	39.2	42.77	41.46	44.7	43.0	49.4	50.1	703	687	748	750	23.8	23.4	25.7	25.8	29.6	31.2		
	Taimyrskiy AD	15	16	13	11	37.9	40.6	33.18	28.21	62.5	51.6	52.0	45.8	0	0	12	11	0.0	0.0	30.6	28.2	48.0	45.8		
	Evenkiyskiy AD	18	10	13	8	102.4	57.3	74.93	46.3	48.6	43.5	56.5	38.1	7	7	9	7	39.8	40.1	51.9	40.5	39.1	33.3		
65	Regions: Irkutsk	1070	1096	1135	1161	41.6	42.9	44.75	45.94	47.3	47.1	45.2	43.8	764	781	859	842	29.7	30.6	33.9	33.3	34.2	31.7		
	Ust-Ordynskiy Buryatskiy AD	101	85	95	67	74.9	63.3	70.91	50.06	52.3	44.0	37.5	32.7	74	58	68	36	54.9	43.2	50.8	26.9	26.9	17.6		
66	Kemerovo	1922	2003	2032	1962	66.7	69.9	71.38	69.12	60.4	56.5	55.2	55.3	1412	1446	1674	1411	49.0	50.5	58.8	49.7	45.5	39.8		
67	Novosibirsk	1306	1360	1356	1292	48.7	51.0	51.05	48.76	46.2	46.5	47.3	45.5	853	908	936	872	31.8	34.0	35.2	32.9	32.7	30.7		
68	Omsk	722	724	799	798	34.9	35.3	39.15	39.22	37.5	38.9	42.3	41.0	549	550	614	623	26.6	26.8	30.1	30.6	32.5	32.0		
69	Tomsk	603	652	578	582	57.8	62.8	55.83	56.28	69.2	74.8	66.8	68.3	377	429	361	384	36.1	41.3	34.9	37.1	41.7	45.1		
70	Chita	367	378	444	421	32.0	33.2	39.22	37.31	38.6	44.4	47.4	45.4	247	176	318	344	21.5	15.4	28.1	30.5	33.9	37.1		
	Aginsky Buryatskiy AD	37	27	27	24	51.0	36.9	36.56	32.33	43.0	30.3	39.7	26.4	15	16	20	23	20.7	21.9	27.1	31.0	29.4	25.3		
	<b>REGION: Far Eastern</b>	<b>2604</b>	<b>2853</b>	<b>3246</b>	<b>3229</b>	<b>39.1</b>	<b>43.1</b>	<b>49.41</b>	<b>49.32</b>	<b>39.8</b>	<b>42.7</b>	<b>47.0</b>	<b>47.9</b>	<b>1546</b>	<b>1267</b>	<b>2059</b>	<b>2110</b>	<b>23.2</b>	<b>19.2</b>	<b>31.3</b>	<b>32.2</b>	<b>29.8</b>	<b>31.3</b>		
71	Republic: Sakha (Yakuttya)	292	330	350	344	30.8	34.7	36.83	36.21	48.1	44.1	50.9	53.3	61	105	169	214	6.4	11.1	17.8	22.5	24.6	33.2		
72	Krai: Primorsky	1014	1131	1351	1363	49.2	55.3	66.63	67.49	44.3	47.0	52.4	51.0	701	540	903	921	34.0	26.4	44.5	45.6	35.1	34.4		
73	Khabarovsky	454	500	596	602	31.7	35.1	42.08	42.63	30.8	35.5	39.9	43.4	269	294	374	397	18.8	20.7	26.4	28.1	25.1	28.6		
74	Regions: Amur	335	330	372	350	37.3	37.0	42.07	39.72	30.8	31.8	36.6	34.4	238	189	241	179	26.5	21.2	27.3	20.3	23.7	17.6		
75	Kamchatka	91	113	100	96	25.5	32.0	28.51	27.49	37.6	43.3	35.2	38.6	73	59	63	72	20.5	16.7	18.0	20.6	22.2	28.9		
	Koryaksky AD	35	31	29	0	145.3	131.8	125.1			42.2	29.2	30.2	21	18	25		87.2	76.6	107.8	17.0	26.0			
76	Magadan	62	55	50	56	34.4	31.2	28.88	32.64	45.6	46.6	43.5	54.9	20	14	17	28	11.1	7.9	9.8	16.3	14.8	27.5		
77	Sakhalin	199	264	277	284	36.7	49.3	52.33	53.97	52.5	62.7	63.0	68.8	117	0	212	213	21.6	0	40.1	40.5	48.2	51.6		
78	Autonomous region: Jewish	136	110	130	115	71.5	58.1	69.28	61.65	47.6	44.0	49.6	51.3	57	57	71	78	30.0	30.1	37.8	41.8	27.1	34.8		
79	Autonomous REGION: Chukots	21	20	20	19	40.2	39.2	39.51	37.6	61.8	64.5	51.3	65.5	10	9	9	8	19.1	17.6	17.8	15.8	23.1	27.6		

Notification of destructive and FC TB in Russia, 2002-2006  
(TB notification in the territories, form 33)

№ № nn.	Federal REGIONS, areas of the Russian Federation	Destructive pulmonary TB								Fibro-cavitary TB among new cases									
		absolute numbers				% to PTB				absolute number				notification per 100,000					
		2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006
		2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006
	<b>RUSSIA</b>	<b>42710</b>	<b>43342</b>	<b>44077</b>	<b>43166</b>	<b>51.0</b>	<b>50.4</b>	<b>51.59</b>	<b>50.32</b>	<b>2237</b>	<b>2055</b>	<b>2026</b>	<b>1905</b>	<b>1.6</b>	<b>1.433</b>	<b>1.42</b>	<b>1.342</b>	<b>2.4</b>	<b>2.2</b>
	<b>REGION: Central</b>	<b>7784</b>	<b>7893</b>	<b>7678</b>	<b>7610</b>	<b>49.6</b>	<b>49.3</b>	<b>49.68</b>	<b>49.02</b>	<b>427</b>	<b>431</b>	<b>410</b>	<b>435</b>	<b>1.1</b>	<b>1.145</b>	<b>1.095</b>	<b>1.164</b>	<b>2.7</b>	<b>2.8</b>
1	<b>Regions: Belgorod</b>	384	368	359	373	48.9	42.7	51.88	50.75	15	21	24	25	1.0	1.389	1.588	1.654	3.5	3.4
2	Bryansk	394	449	483	536	51.2	51.0	54.21	58.97	22	30	39	24	1.6	2.216	2.913	1.803	4.4	2.6
3	Vladimir	327	330	310	338	41.4	45.3	42.7	42.89	13	10	6	8	0.9	0.669	0.405	0.543	0.8	1.0
4	Voronezh	589	494	531	540	48.7	45.7	48.19	52.99	22	20	8	39	0.9	0.853	0.344	1.686	0.7	3.8
5	Ivanovo	226	197	204	234	46.4	47.4	47.22	48.95	5	6	2	6	0.4	0.535	0.181	0.546	0.5	1.3
6	Kaluga	294	297	312	238	58.9	58.0	61.78	50	32	45	31	25	3.1	4.39	3.046	2.465	6.1	5.3
7	Kostroma	132	109	113	97	46.2	38.4	45.38	41.1	4	0	2	4	0.5	0	0.28	0.564	0.8	1.7
8	Kursk	341	385	405	402	55.6	60.0	57.28	58.52	48	43	50	43	3.9	3.563	4.196	3.632	7.1	6.3
9	Lipetsk	261	247	232	242	39.5	39.0	37.06	39.22	22	16	16	19	1.8	1.338	1.35	1.609	2.6	3.1
10	Moscow	1272	1270	1222	1213	45.3	46.6	47.81	46.67	61	50	54	64	0.9	0.755	0.815	0.966	2.1	2.5
11	Orel	204	221	206	235	50.9	57.1	56.44	61.84	12	10	5	12	1.4	1.182	0.597	1.439	1.4	3.2
12	Ryazan	360	382	338	368	56.7	57.9	48.84	51.98	44	39	34	37	3.6	3.246	2.861	3.13	4.9	5.2
13	Smolensk	424	422	381	384	60.3	57.2	57.29	58.9	19	14	6	10	1.8	1.365	0.593	0.994	0.9	1.5
14	Tambov	391	420	340	302	58.7	59.2	56.2	53.93	18	17	23	16	1.5	1.476	2.022	1.415	3.8	2.9
15	Tver	377	407	434	426	53.2	51.7	53.19	54.2	16	16	31	31	1.1	1.115	2.189	2.204	3.8	3.9
16	Tula	471	539	444	339	46.4	49.1	46.74	39.74	29	51	41	23	1.7	3.122	2.545	1.438	4.3	2.7
17	Yaroslavl	251	261	272	240	54.7	54.4	56.55	51.72	8	6	5	3	0.6	0.446	0.375	0.226	1.0	0.6
18	<b>City: Moscow</b>	<b>1086</b>	<b>1095</b>	<b>1092</b>	<b>1103</b>	<b>49.4</b>	<b>45.8</b>	<b>45.59</b>	<b>42.82</b>	<b>37</b>	<b>37</b>	<b>33</b>	<b>46</b>	<b>0.4</b>	<b>0.356</b>	<b>0.317</b>	<b>0.441</b>	<b>1.4</b>	<b>1.8</b>
	<b>REGION: Northwestern</b>	<b>3634</b>	<b>3607</b>	<b>3594</b>	<b>3438</b>	<b>60.4</b>	<b>59.7</b>	<b>59.34</b>	<b>58.85</b>	<b>70</b>	<b>62</b>	<b>60</b>	<b>55</b>	<b>0.5</b>	<b>0.45</b>	<b>0.439</b>	<b>0.404</b>	<b>1.0</b>	<b>0.9</b>
19	<b>Republics: Kareliya</b>	248	213	242	233	68.3	65.5	67.98	66.57	4	1	2	3	0.6	0.142	0.286	0.43	0.6	0.9
20	Komi	372	377	368	339	62.4	66.6	67.9	68.35	2	6	8	14	0.2	0.599	0.807	1.421	1.5	2.8
21	<b>Regions: Arkhangelsk</b>	447	410	355	355	69.0	64.6	63.85	62.83	5	10	8	5	0.4	0.763	0.616	0.387	1.4	0.9
	Nenetsky AD	11	12	11	17	57.9	85.7	61.11	77.27	0	0	0	1	0.0	0	0	2.382	0.0	4.5
22	Vologda	239	245	235	220	58.2	53.4	57.88	55.14	4	1	3	1	0.3	0.08	0.242	0.081	0.7	0.3
23	Kaliningrad	470	498	447	501	59.7	61.5	56.44	61.62	8	4	11	10	0.8	0.422	1.167	1.064	1.4	1.2
24	Leningrad	521	531	588	478	58.8	57.7	58.86	51.79	14	17	10	8	0.8	1.026	0.607	0.487	1.0	0.9
25	Murmansk	167	186	194	192	47.2	50.7	53.3	57.14	11	6	4	6	1.2	0.685	0.46	0.694	1.1	1.8
26	Novgorod	198	185	162	148	57.2	55.9	50	45.82	4	1	3	0	0.6	0.147	0.448	0	0.9	0.0
27	Pskov	215	212	278	253	51.3	57.3	61.1	58.43	4	1	1	0	0.5	0.135	0.137	0	0.2	0.0
28	<b>City: St-Petersburg</b>	<b>757</b>	<b>750</b>	<b>725</b>	<b>719</b>	<b>62.9</b>	<b>61.6</b>	<b>57.4</b>	<b>59.72</b>	<b>14</b>	<b>15</b>	<b>10</b>	<b>8</b>	<b>0.3</b>	<b>0.325</b>	<b>0.218</b>	<b>0.175</b>	<b>0.8</b>	<b>0.7</b>
	<b>REGION: Southern</b>	<b>6551</b>	<b>6583</b>	<b>6777</b>	<b>6830</b>	<b>54.5</b>	<b>53.8</b>	<b>57.13</b>	<b>54.9</b>	<b>171</b>	<b>158</b>	<b>183</b>	<b>173</b>	<b>0.8</b>	<b>0.728</b>	<b>0.845</b>	<b>0.8</b>	<b>1.5</b>	<b>1.4</b>
29	<b>Republics: Adygeya</b>	139	164	166	158	63.2	60.3	68.6	64.49	6	8	1	7	1.3	1.798	0.225	1.581	0.4	2.9
30	Dagestan	928	797	860	916	66.1	62.6	67.82	68.98	18	15	13	15	0.7	0.574	0.494	0.568	1.0	1.1
31	Ingushetiya	151	105	136	111	57.9	51.7	73.51	73.03	4	5	8	5	0.8	1.045	1.652	1.027	4.3	3.3
	Чечня				512				64.4				11			0.946			1.4
32	Kabardino-Balkariya	241	281	266	281	70.7	74.1	73.89	72.42	11	9	13	9	1.2	1.002	1.452	1.007	3.6	2.3
33	Kalmykiya	124	127	107	111	46.1	42.6	38.21	40.07	5	7	9	10	1.7	2.4	3.1	3.5	3.2	3.6
34	Karachaevo-Cherkessiya	107	133	116	97	50.7	59.6	64.8	60.63	3	1	3	2	0.7	0.2	0.7	0.5	1.7	1.3
35	North Osetiya - Alaniya	220	177	210	164	61.5	50.1	61.95	54.3	11	8	8	9	1.6	1.1	1.1	1.3	2.4	3.0
36	<b>Krai: Krasnodarsky</b>	1544	1458	1643	1483	60.3	58.1	64.58	60.93	26	17	31	35	0.5	0.333	0.608	0.687	1.2	1.4
37	Stavropolsky	555	658	600	529	45.6	52.3	50.59	44.57	22	16	23	18	0.8	0.588	0.847	0.664	1.9	1.5
38	<b>Regions: Astrakhan</b>	243	280	284	257	32.7	40.3	40.98	38.59	11	14	18	13	1.1	1.4	1.807	1.308	2.6	2.0
39	Volgograd	989	1056	1061	1136	52.9	52.7	57.1	59.11	48	42	49	30	1.8	1.577	1.852	1.138	2.6	1.6
40	Rostov	1310	1347	1328	1075	51.1	48.7	48.66	41.59	6	16	7	9	0.1	0.368	0.162	0.209	0.3	0.3
	<b>REGION: Privolzhsky</b>	<b>8162</b>	<b>8134</b>	<b>8534</b>	<b>8297</b>	<b>48.4</b>	<b>47.8</b>	<b>49.97</b>	<b>48.5</b>	<b>333</b>	<b>294</b>	<b>302</b>	<b>262</b>	<b>1.1</b>	<b>0.954</b>	<b>0.987</b>	<b>0.859</b>	<b>1.8</b>	<b>1.5</b>
41	<b>Republics: Bashkortostan</b>	657	588	627	613	39.6	35.4	37.91	38.03	29	25	21	21	0.7	0.612	0.516	0.517	1.3	1.3
42	Mariy El	182	173	174	196	50.1	49.6	44.16	49.87	3	0	5	2	0.4	0	0.7	0.281	1.3	0.5
43	Mordoviya	318	323	276	314	57.4	57.4	57.98	60.5	47	44	16	17	5.3	5.05	1.857	1.984	3.4	3.3
44	Tatarstan	749	740	751	743	40.4	42.4	43.01	41.46	3	8	10	9	0.1	0.212	0.266	0.239	0.6	0.5
45	Udmurtiya	607	645	670	586	62.4	62.3	65.43	60.79	10	8	11	6	0.6	0.514	0.71	0.388	1.1	0.6
46	Chuvashiya	443	485	504	506	60.5	59.0	61.61	60.02	10	19	13	12	0.8	1.459	1.003	0.929	1.6	1.4
47	<b>Regions: Kirov</b>	399	383	448	393	59.3	58.7	63.73	55.51	5	2	6	5	0.3	0.136	0.413	0.347	0.9	0.7
48	Nizhniy Novgorod	1212	1163	1194	1065	58.7	58.9	59.61	57.2	134	107	124	106	3.8	3.09	3.617	3.108	6.2	5.7

№ № nn.	Federal REGIONS, areas of the Russian Federation	Destructive pulmonary TB								Fibro-cavitary TB among new cases									
		absolute numbers				% to PTB				absolute number				notification per 100,000					
		2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006
		2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006	2005	2006
49	Orenburg	612	652	759	821	46.6	48.0	50.97	52.26	3	4	5	5	0.1	0.185	0.233	0.234	0.3	0.3
50	Penza	428	386	407	397	55.4	45.9	50.12	52.31	19	12	18	21	1.3	0.84	1.272	1.492	2.2	2.8
51	Perm (Permsky krai)	945	1038	1024	1035	48.2	47.5	49.25	47.67	8	11	10	11	0.3	0.396	0.362	0.4	0.5	0.5
	Komi-Permsky AD	95	84	98		66.9	49.7	66.22		0	3	0		0.0	2.245	0		0.0	
52	Samara	685	577	734	733	41.4	37.2	45.68	42.97	27	22	28	25	0.8	0.685	0.876	0.784	1.7	1.5
53	Saratov	588	617	590	563	36.0	38.7	37.34	37.26	15	14	11	9	0.6	0.531	0.42	0.345	0.7	0.6
54	Uliyanovsk	337	364	376	332	51.3	52.5	54.18	47.63	20	18	24	13	1.5	1.326	1.787	0.973	3.5	1.9
	<b>DISTRIC: Urals</b>	<b>3781</b>	<b>4031</b>	<b>4003</b>	<b>3930</b>	<b>43.8</b>	<b>43.7</b>	<b>44.01</b>	<b>42.56</b>	<b>127</b>	<b>115</b>	<b>129</b>	<b>125</b>	<b>1.0</b>	<b>0.935</b>	<b>1.052</b>	<b>1.021</b>	<b>1.4</b>	<b>1.4</b>
55	<b>Regions: Kurgan</b>	431	496	494	537	47.6	49.9	55.63	55.08	15	13	23	13	1.5	1.303	2.333	1.327	2.6	1.3
56	Sverdlovsk	1450	1400	1324	1389	49.2	45.6	42.5	41.45	39	33	40	43	0.9	0.744	0.905	0.975	1.3	1.3
57	Tyumen	989	1153	1162	1140	34.8	37.1	37.96	38.03	42	39	46	51	1.3	1.182	1.387	1.535	1.5	1.7
	Khanty-Mantyskiy AD	319	402	422	421	33.4	36.2	37.81	36.36	15	9	6	10	1.0	0.615	0.407	0.677	0.5	0.9
	Yamalo-Nenetskiy AD	167	150	168	139	47.3	45.6	41.48	45.13	0	0	0	2	0.0	0	0	0.377	0.0	0.6
58	Chelyabinsk	911	982	1023	864	46.8	47.8	50.34	45.21	31	30	20	18	0.9	0.842	0.565	0.51	1.0	0.9
	<b>REGION: Siberian</b>	<b>9968</b>	<b>10192</b>	<b>10318</b>	<b>9858</b>	<b>53.6</b>	<b>52.7</b>	<b>52.76</b>	<b>50.7</b>	<b>800</b>	<b>735</b>	<b>672</b>	<b>560</b>	<b>4.0</b>	<b>3.703</b>	<b>3.405</b>	<b>2.846</b>	<b>3.4</b>	<b>2.9</b>
59	<b>Republics: Altai</b>	76	100	136	104	42.2	41.5	52.31	47.27	12	15	15	7	5.9	7.369	7.346	3.423	5.8	3.2
60	Buryatiya	506	627	636	621	49.0	61.2	57.56	50.12	13	34	9	11	1.3	3.499	0.931	1.142	0.8	0.9
61	Tyva	239	293	272	259	41.2	49.7	47.06	48.05	14	17	13	20	4.6	5.536	4.22	6.483	2.2	3.7
62	Khakasiya	315	375	361	335	57.1	61.4	63.56	67.68	34	29	11	13	6.3	5.352	2.039	2.415	1.9	2.6
63	<b>Krai: Altai</b>	1574	1597	1563	1522	59.9	55.1	55.56	53.27	89	77	59	45	3.4	2.991	2.31	1.769	2.1	1.6
64	Krasnoyarsky	1472	1410	1322	1284	59.2	57.1	56.3	56.99	86	84	61	48	2.9	2.863	2.092	1.652	2.6	2.1
	Taimyrskiy AD	9	14	11	13	40.9	48.3	57.89	76.47	0	0	0	0	0.0	0	0	0	0.0	0.0
	Evenkiyskiy AD	26	15	16	17	72.2	68.2	72.73	80.95	1	1	0	0	5.7	5.727	0	0	0.0	0.0
65	<b>Regions: Irkutsk</b>	1245	1258	1345	1305	59.6	58.2	56.7	53.14	143	148	172	138	5.6	5.797	6.782	5.461	7.3	5.6
	Ust-Ordynskiy Buryatskiy AD	114	105	132	102	65.9	61.0	56.41	53.97	7	14	8	8	5.2	10.42	5.971	5.977	3.4	4.2
66	Kemerovo	1567	1625	1697	1590	54.1	50.3	51.66	49.75	133	118	95	64	4.6	4.121	3.337	2.255	2.9	2.0
67	Novosibirsk	1316	1352	1335	1233	49.6	48.1	48.69	45.63	75	51	62	45	2.8	1.912	2.334	1.698	2.3	1.7
68	Omsk	759	709	816	798	42.5	41.6	45.54	43.44	113	106	134	132	5.5	5.164	6.567	6.488	7.5	7.2
69	Tomsk	462	478	426	406	57.2	58.8	53.12	51.33	14	22	14	13	1.3	2.118	1.352	1.257	1.7	1.6
70	Chita	437	368	409	401	48.2	45.9	45.96	46.79	74	34	27	24	6.4	2.983	2.385	2.127	3.0	2.8
	Aginsky Buryatskiy AD	43	33	26	32	52.4	38.8	43.33	40	1	1	0		1.4	1.368	1.354	0	1.7	0.0
	<b>REGION: Far Estern</b>	<b>2830</b>	<b>2901</b>	<b>3173</b>	<b>3203</b>	<b>47.8</b>	<b>47.2</b>	<b>50.1</b>	<b>51.79</b>	<b>309</b>	<b>260</b>	<b>270</b>	<b>295</b>	<b>4.6</b>	<b>3.931</b>	<b>4.11</b>	<b>4.506</b>	<b>4.3</b>	<b>4.8</b>
71	<b>Republic: Sakha (Yakutiya)</b>	224	278	249	289	47.9	45.7	43.76	54.63	5	9	3	5	0.5	0.948	0.316	0.526	0.5	0.9
72	<b>Krai: Primorsky</b>	982	1026	1192	1256	46.6	45.3	49.73	51.62	180	146	174	188	8.7	7.144	8.581	9.309	7.3	7.7
73	Khabarovsky	534	534	588	566	39.4	40.5	42.21	42.91	34	32	26	26	2.4	2.2	1.8	1.8	1.9	2.0
74	<b>Regions: Amur</b>	525	500	541	513	50.4	50.9	56.12	52.83	47	26	23	12	5.2	2.9	2.6	1.4	2.4	1.2
75	Kamchatka	126	110	130	125	65.3	53.9	57.02	59.24	11	17	14	24	3.1	4.8	4.0	6.9	6.1	11.4
	Koryakskiy AD	0	33	43	42		52.4	60.56	52.5	0	7	2	8	0.0	29.1	8.5	34.5	2.8	10.0
76	Magadan	64	52	45	52	55.2	49.1	51.72	56.52	0	0	1	0	0.0	0.0	0.6	0.0	1.1	0.0
77	Sakhalin	241	288	306	275	67.1	72.5	76.69	70.33	28	23	27	30	5.2	4.3	5.1	5.7	6.8	7.7
78	<b>Autonomous region: Jewish</b>	113	100	105	107	44.8	41.2	40.86	50.71	4	6	1	7	2.1	3.2	0.5	3.8	0.4	3.3
79	<b>Autonomous REGION: Chukots</b>	21	13	17	20	77.8	44.8	43.59	74.07	0	1	1	3	0.0	1.959	1.976	5.938	2.6	11.1

TB mortality in Russia, 2002-2005

№ nn.	Federal REGIONS, № areas of the Russian Federation	TB mortality				Died within 1 year of the follow up (form 33)										Died, unknown to the TB dispensary (in the RF territory, form 8)									
		per 100,000				abs. number					proportion among new cases (f. 33), %					abs. number					proportion among new cases (f. 8), %				
		2002	2003	2004	2005	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	<b>RUSSIA</b>	<b>21.9</b>	<b>22.0</b>	<b>21.4</b>	<b>22.6</b>	<b>4193</b>	<b>4253</b>	<b>4489</b>	<b>5300</b>	<b>4443</b>	<b>4.4</b>	<b>4.5</b>	<b>4.6</b>	<b>5.5</b>	<b>4.6</b>	<b>2894</b>	<b>3263</b>	<b>3311</b>	<b>3290</b>	<b>2773</b>	<b>2.0</b>	<b>2.3</b>	<b>2.8</b>	<b>2.8</b>	<b>2.4</b>
	<b>REGION: Central</b>	<b>16.8</b>	<b>16.0</b>	<b>15.0</b>	<b>15.8</b>	<b>886</b>	<b>944</b>	<b>910</b>	<b>973</b>	<b>910</b>	<b>4.8</b>	<b>5.3</b>	<b>5.0</b>	<b>5.5</b>	<b>5.2</b>	<b>1036</b>	<b>1127</b>	<b>1103</b>	<b>895</b>	<b>822</b>	<b>2.9</b>	<b>3.5</b>	<b>4.7</b>	<b>3.9</b>	<b>3.7</b>
1	Regions: Belgorod	10.4	8.9	8.7	9.9	43	23	33	20	25	5.0	2.6	3.5	2.6	3.1	6	13	16	21	19	0.7	0.8	1.5	2.4	2.0
2	Bryansk	26.2	27.8	24.6	29.1	81	79	84	105	85	8.0	8.3	8.3	10.0	8.1	33	32	30	46	37	3.3	3.3	2.6	3.9	3.2
3	Vladimir	19.2	20.6	18.3	18.4	38	40	45	52	47	4.4	4.5	5.5	6.4	5.2	17	25	26	25	42	2.0	2.8	2.4	2.3	3.5
4	Voronezh	13.2	14.3	13.0	14.7	38	50	43	46	33	3.0	3.7	3.5	3.7	2.8	13	12	17	13	10	0.9	0.7	1.1	0.8	0.7
5	Ivanovo	17.2	18.8	18.5	17.7	18	16	22	21	23	3.2	2.9	4.8	4.2	4.3	8	10	10	12	11	1.4	1.8	1.7	1.9	1.6
6	Kaluga	19.7	22.4	23.6	22.9	35	30	31	45	31	4.6	5.2	5.2	7.6	5.6	29	42	54	86	24	1.7	4.0	7.2	10.4	3.2
7	Kostroma	10.6	11.8	8.2	10.5	23	32	24	26	22	6.9	9.8	7.2	8.9	8.2	5	2	5	10	9	0.6	0.6	1.2	2.8	2.8
8	Kursk	21.9	21.2	22.5	24.2	38	43	38	42	46	5.0	6.1	5.2	5.2	5.9	3	36	36	31	37	2.6	2.3	4.0	3.2	4.0
9	Lipetsk	12.8	12.4	14.6	11	24	29	32	23	26	3.2	4.0	4.6	3.4	3.8	8	5	14	7	5	0.9	0.5	1.7	0.8	0.6
10	Moscow	16.8	16.8	14.8	17.2	190	225	189	203	221	5.8	7.1	6.1	7.1	7.6	269	323	300	367	342	6.6	8.1	8.2	10.3	9.8
11	Orel	8.8	6.7	5.7	8	23	15	13	11	22	4.5	3.4	3.0	2.6	5.1	2	7	9	6	7	0.4	1.6	1.7	1.2	1.4
12	Ryazan	19.2	20.8	17.9	18.4	32	35	36	28	29	4.2	4.7	4.6	3.5	3.7	18	18	19	31	36	2.2	2.0	1.9	3.3	3.9
13	Smolensk	28.6	29.2	34.3	32.3	32	37	41	35	22	4.3	4.7	5.0	4.5	2.9	16	24	27	31	38	1.6	2.4	2.6	3.2	3.8
14	Tambov	20.4	18.8	17.5	19.3	37	33	27	22	25	5.0	4.5	3.5	3.3	4.0	4	1	3	1	4	0.4	0.1	0.3	0.1	0.5
15	Tver	19.7	20.3	21.1	21.6	66	63	71	67	79	8.1	7.9	8.2	7.6	9.1	23	21	19	30	31	2.8	2.4	1.7	2.7	2.7
16	Tula	35.0	31.4	30.7	29.7	51	61	53	91	65	4.0	5.3	4.1	8.2	6.6	34	39	30	53	49	1.6	1.8	1.7	3.6	3.9
17	Yaroslavl	13.7	14.7	14.3	12.5	41	33	31	33	34	6.5	5.5	4.9	5.5	5.7	26	38	31	36	32	3.3	4.8	3.4	4.1	4.0
18	City: Moscow	11.8	9.6	8.3	8.8	76	100	97	103	75	3.0	4.0	3.6	3.7	2.6	486	479	457	89	89	4.2	5.3	11.4	2.2	2.3
	<b>REGION: Northwestern</b>	<b>18.8</b>	<b>19.8</b>	<b>19.4</b>	<b>19.6</b>	<b>371</b>	<b>413</b>	<b>496</b>	<b>459</b>	<b>499</b>	<b>5.3</b>	<b>5.8</b>	<b>7.0</b>	<b>6.5</b>	<b>7.2</b>	<b>173</b>	<b>202</b>	<b>239</b>	<b>336</b>	<b>316</b>	<b>2.1</b>	<b>2.5</b>	<b>2.7</b>	<b>3.8</b>	<b>3.6</b>
19	Republics: Kareliya	20.7	20.6	16.4	20.8	21	22	27	47	37	5.0	5.0	6.4	10.9	9.3	10	6	19	15	19	2.4	1.1	3.6	2.8	4.0
20	Komi	17.0	17.5	20.8	22	30	40	52	50	40	4.6	6.0	8.0	8.0	6.8	14	12	21	46	26	2.2	1.8	2.5	5.3	3.3
21	Regions: Arkhangelsk Nenetsky AD	16.7	18.9	19.2	19.3	49	71	52	74	62	7.0	9.6	7.2	11.7	9.8	18	14	26	31	36	2.4	1.5	2.7	3.6	3.8
22	Vologda	13.3	19.2	9.5	16.7	1	0	0	0	0	5.6	0.0	0.0	0.0	0.0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
23	Kaliningrad	10.6	13.6	11.1	11.8	22	34	41	34	54	4.9	7.0	7.6	7.0	11.6	13	9	8	25	9	2.9	1.7	1.2	3.9	1.6
24	Leningrad	27.8	33.6	35.4	33.2	58	68	96	58	71	7.0	7.2	9.7	6.0	7.0	30	58	49	104	91	3.1	5.6	4.1	8.8	7.2
25	Murmansk	33.1	34.9	33.6	33.7	75	63	85	67	96	7.3	6.2	8.2	6.2	9.5	8	24	21	20	51	0.8	1.9	1.7	1.6	4.2
26	Murmansk	11.2	9.3	14.0	12.1	30	16	39	37	31	7.2	4.2	9.4	9.2	8.2	16	14	26	30	24	1.4	1.8	4.5	5.2	4.8
27	Novgorod	29.3	31.9	27.7	26.7	10	16	8	13	21	2.5	4.1	2.1	3.6	5.8	4	7	6	8	5	1.0	1.8	1.2	1.7	1.1
28	City: St-Petersburg	24.3	23.4	16.8	17.8	31	29	20	29	29	6.2	6.5	5.0	5.9	6.2	10	12	13	10	12	1.0	1.6	2.3	1.6	1.9
	<b>REGION: Southern</b>	<b>25.4</b>	<b>25.1</b>	<b>22.9</b>	<b>23.4</b>	<b>302</b>	<b>301</b>	<b>252</b>	<b>718</b>	<b>303</b>	<b>2.2</b>	<b>2.2</b>	<b>1.8</b>	<b>5.3</b>	<b>2.2</b>	<b>215</b>	<b>221</b>	<b>253</b>	<b>204</b>	<b>103</b>	<b>0.8</b>	<b>0.7</b>	<b>1.5</b>	<b>1.2</b>	<b>0.6</b>
29	Republics: Adygeya	22.5	48.0	26.5	27.1	9	14	15	15	20	3.8	5.6	4.6	5.4	7.1	21	22	27	31	23	5.8	4.4	7.0	9.1	6.6
30	Dagestan	18.5	12.9	13.7	12	25	19	9	22	20	1.5	1.2	0.6	1.5	1.3	0	12	0	0	0	0.0	0.0	0.0	0.0	0.0
31	Ingushetiya Chechnya	10.7	11.6	13.0	12.2	7	17	7	8	5	2.3	5.7	2.8	3.7	2.7	0	0	0	4	1	0.0	0.0	0.0	1.6	0.5
32	Kabardino-Balkariya	20.7	20.4	20.3	22.1	2	10	7	7	10	0.5	2.5	1.6	1.6	2.3	24	13	17	0	0	1.8	1.3	3.8	0.0	0.0
33	Kaimykiya	34.7	33.3	30.0	28.7	13	9	17	9	9	4.2	2.8	5.1	2.7	2.6	12	14	5	21	8	1.9	3.8	1.3	5.6	2.2
34	Karachaevo-Cherkessiya	16.6	18.5	11.0	15	10	12	5	5	7	3.5	5.1	2.0	2.3	3.6	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
35	North Osetiya - Alaniya	22.7	24.8	22.0	19.6	25	24	7	4	16	4.6	5.1	1.4	0.8	4.0	3	6	7	0	2	0.6	0.0	1.3	0.0	0.5
36	Krai: Krasnodarsky	24.9	23.9	24.4	25.6	63	58	60	103	73	2.2	2.0	2.1	3.6	2.8	2	1	4	41	4	0.0	0.0	0.1	1.3	0.1
37	Stavropolsky	19.8	20.5	16.2	16.5	31	31	39	47	42	2.0	2.1	2.6	3.3	2.9	33	31	58	47	14	1.0	1.0	3.8	2.5	0.8
38	Regions: Astrakhan	42.3	40.3	38.5	41.7	24	13	12	9	5	2.8	1.6	1.5	1.2	0.7	34	35	42	0	0	0.0	0.0	4.8	0.0	0.0
39	Volgograd	27.9	31.2	27.3	29.2	69	72	50	74	57	3.1	3.5	2.3	3.5	2.7	77	80	85	60	42	2.7	2.0	2.9	2.0	1.5
40	Rostov	31.0	32.0	31.0	30.6	24	22	24	415	20	0.9	0.8	0.8	13.9	0.7	9	7	8	0	7	0.3	0.2	0.2	0.0	0.2
	<b>REGION: Privolzhzky</b>	<b>16.2</b>	<b>12.7</b>	<b>17.5</b>	<b>18.6</b>	<b>680</b>	<b>721</b>	<b>817</b>	<b>973</b>	<b>881</b>	<b>3.4</b>	<b>3.7</b>	<b>4.3</b>	<b>5.0</b>	<b>4.5</b>	<b>309</b>	<b>387</b>	<b>455</b>	<b>529</b>	<b>488</b>	<b>1.1</b>	<b>1.3</b>	<b>2.0</b>	<b>2.2</b>	<b>2.0</b>
41	Republics: Bashkortostan	12.2	10.6	13.4	14.7	61	65	63	76	72	3.1	3.4	3.3	4.0	3.9	11	10	12	10	10	0.3	0.4	0.5	0.4	0.4
42	Mariy El	10.2	11.6	11.1	13.3	16	25	24	18	19	4.2	6.2	6.1	4.1	4.2	4	0	1	12	6	0.8	0.0	0.2	2.5	1.3
43	Mordoviya	14.0	12.5	13.1	13	25	17	18	19	16	4.1	2.7	2.9	3.6	2.9	21	10	22	4	0	0.0	0.2	3.2	0.7	0.0
44	Tatarstan	12.2	20.8	14.5	14	60	48	57	98	73	2.5	2.2	2.8	4.8	3.6	26	31	35	59	35	0.5	1.3	1.5	2.6	1.5
45	Udmurtiya	19.4	13.5	21.2	21.2	61	62	92	92	70	5.8	5.7	8.1	8.2	6.5	22	34	29	35	46	2.1	3.1	2.2	2.7	3.6
46	Chuvashiya	12.0	15.6	14.6	14.3	37	35	35	39	42	4.0	4.5	4.0	4.5	4.7	16	12	18	24	20	1.7	1.5	1.7	2.3	1.9
47	Regions: Kirov	9.7	23.1	14.4	13.8	33	44	46	46	40	3.9	5.4	5.8	5.5	4.8	18	15	26	34	34	1.3	0.7	3.1	3.8	3.4
48	Nizhniy Novgorod	22.3	17.5	24.6	25	110	126	137	137	145	4.6	5.4	6.1	6.2	7.0	44	51	76	161	163	1.8				

Prevalence of TB in Russia, 2002-2005

№ № пп.	Federal REGIONS, areas of the Russian Federation	TB patients registered by the end of the year										Of them MbT+				
		absolute numbers значения					prevalence per 100,000					prevalence per 100,000				
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	<b>RUSSIA</b>	<b>388627</b>	<b>378820</b>	<b>312208</b>	<b>298509</b>	<b>289015</b>	<b>272.8</b>	<b>264.8</b>	<b>218.3</b>	<b>209.7</b>	<b>202.5</b>	<b>88.5</b>	<b>88.3</b>	<b>86.9</b>	<b>86.6</b>	<b>83.9</b>
	<b>REGION: Central</b>	<b>72796</b>	<b>70041</b>	<b>59214</b>	<b>55480</b>	<b>52827</b>	<b>200.9</b>	<b>185.6</b>	<b>156.9</b>	<b>147.8</b>	<b>141.4</b>	<b>71.9</b>	<b>66.9</b>	<b>62.3</b>	<b>59.8</b>	<b>57.1</b>
1	Regions: Belgorod	2255	2052	1869	1525	1522	150.4	135.6	123.5	100.9	100.7	64.8	61.9	64.6	58.7	58.3
2	Bryansk	4170	4029	3049	3104	3365	298.8	296.0	224.0	230.5	252.7	151.8	156.6	101.5	106.3	104.3
3	Vladimir	3490	3220	2306	2158	2159	224.1	214.1	153.4	145.1	146.6	73.3	73.6	69.9	69.4	67.7
4	Voronezh	5614	5390	4339	3918	3575	234.6	229.0	184.4	167.9	154.5	93.9	93.2	84.9	85.9	82.2
5	Ivanovo	2345	2134	1551	1363	1133	199.4	188.9	137.3	122.3	103.0	73.8	75.5	67.4	61.3	61.8
6	Kaluga	2524	2228	1660	1384	1345	240.7	216.6	161.3	135.5	132.6	79.6	67.6	74.2	72.4	61.9
7	Kostroma	1413	1215	812	670	526	186.3	167.4	111.9	93.4	74.2	70.5	67.0	60.1	51.4	40.6
8	Kursk	2836	2577	2353	2384	2286	223.5	212.2	193.7	198.8	193.1	77.7	77.2	74.8	77.7	76.7
9	Lipetsk	2984	2980	2330	1992	1910	244.6	248.1	194.0	167.4	161.7	79.1	68.1	65.9	64.0	60.5
10	Moscow	14055	13909	12481	11992	11322	219.7	210.0	188.5	180.9	170.8	54.3	51.9	49.9	50.0	46.8
11	Orel	1853	1765	1463	1083	977	211.6	207.6	172.1	128.6	117.2	100.7	99.2	82.2	48.9	43.1
12	Ryazan	3127	2908	2122	2099	1942	252.3	240.7	175.6	175.7	164.3	79.6	77.1	79.5	71.3	67.0
13	Smolensk	3253	3312	2453	2331	2435	300.2	320.8	237.6	228.7	242.1	110.3	123.5	113.4	112.5	115.3
14	Tambov	2284	2247	2062	1855	1726	186.5	193.9	177.9	162.0	152.7	88.3	91.6	101.7	90.7	84.9
15	Tver	3347	3218	2876	2545	2381	218.6	222.9	199.2	178.5	169.3	93.4	99.5	81.5	77.4	66.7
16	Tula	4229	4077	3781	3582	3075	253.9	247.9	229.9	220.9	192.2	96.1	91.0	91.1	85.8	80.9
17	Yaroslavl	1918	1882	1732	1668	1613	139.7	139.3	128.2	124.6	121.5	57.6	55.9	53.7	58.1	55.3
18	City: Moscow	11099	10898	9975	9827	9535	130.1	104.9	96.0	94.4	91.5	46.2	37.0	35.9	34.2	34.5
	<b>REGION: Northwestern</b>	<b>27605</b>	<b>26112</b>	<b>21364</b>	<b>20029</b>	<b>18824</b>	<b>195.1</b>	<b>188.8</b>	<b>154.5</b>	<b>145.9</b>	<b>138.1</b>	<b>62.0</b>	<b>65.5</b>	<b>67.8</b>	<b>68.7</b>	<b>66.6</b>
19	Republics: Kareliya	1857	1572	1416	1251	1087	246.9	221.8	199.8	177.9	155.8	73.8	78.7	77.6	80.4	75.4
20	Komi	2717	2534	1902	1723	1607	245.5	252.0	189.1	172.9	163.1	73.5	78.7	79.8	74.4	75.8
21	Regions: Arkhangelsk	2039	1847	1611	1534	1451	144.1	140.1	122.2	117.6	112.4	64.2	69.7	68.2	70.5	69.5
	Nenetsky AD	109	109	100	78	68	239.6	260.6	239.1	185.9	161.9	79.1	93.2	88.4	69.1	76.2
22	Vologda	1862	1814	1248	1245	1241	144.3	144.5	99.4	100.0	100.5	44.2	47.6	53.8	55.5	59.3
23	Kaliningrad	2918	2976	2771	2805	2608	310.3	313.4	291.8	296.8	277.5	99.0	118.5	133.1	141.0	148.7
24	Leningrad	4223	3993	2980	2316	2208	257.2	240.6	179.5	140.1	134.3	72.6	73.8	74.3	69.8	68.9
25	Murmansk	1767	1749	1341	1270	1073	182.9	198.7	152.4	145.5	124.1	67.9	76.6	82.8	86.7	73.9
26	Novgorod	1483	1415	1206	1187	1152	211.0	207.3	176.7	176.1	173.1	80.3	86.3	85.7	81.6	79.1
27	Pskov	1566	1300	1217	1289	1245	204.2	173.9	162.8	175.0	171.8	69.9	64.3	64.3	71.9	71.8
28	City: St-Petersburg	7173	6912	5672	5409	5152	157.1	149.5	122.7	117.6	112.5	44.9	45.5	46.6	47.5	42.9
	<b>REGION: Southern</b>	<b>62273</b>	<b>61011</b>	<b>52904</b>	<b>51416</b>	<b>54099</b>	<b>299.7</b>	<b>280.8</b>	<b>243.5</b>	<b>237.2</b>	<b>237.4</b>	<b>95.2</b>	<b>90.0</b>	<b>86.7</b>	<b>84.1</b>	<b>79.0</b>
29	Republics: Adygeya	709	691	827	769	726	159.5	155.2	185.7	173.0	164.0	95.2	95.5	97.7	100.4	90.1
30	Dagestan	6692	6595	6076	5787	5513	304.2	253.5	233.5	220.7	208.7	60.0	50.5	57.0	50.0	50.2
31	Ingushetiya	1590	1610	1387	1376	1368	336.5	338.5	291.6	285.7	280.9	59.7	60.8	56.3	51.3	41.1
	Чечня	5776	5288	4644	4439	4258					366.2					88.5
32	Kabardino-Balkariya	1683	1594	1599	1596	1625	215.7	177.3	177.9	177.9	181.8	56.1	42.6	44.3	49.5	55.0
33	Kalmykiya	1710	1609	1479	1481	1287	571.6	553.6	508.9	510.9	445.8	159.5	140.7	154.5	149.4	138.6
34	Karachaevo-Cherkessiya	1173	1097	957	922	928	275.2	251.3	219.2	212.2	215.1	50.9	42.1	45.8	38.7	40.6
35	North Osetiya - Alaniya	2063	1952	1824	1701	1644	305.0	276.1	258.0	241.5	234.1	102.8	95.8	84.2	80.6	86.0
36	Krai: Krasnodarsky	12814	12786	9757	9799	9521	257.8	250.4	191.1	192.1	186.8	96.4	95.5	93.4	94.4	89.9
37	Stavropolsky	7050	6978	5816	5656	5443	267.8	255.9	213.3	208.1	200.8	76.6	73.1	76.5	65.0	55.0
38	Regions: Astrakhan	3753	3503	2910	2758	2579	373.0	349.9	290.6	276.3	259.4	104.5	98.9	100.7	98.5	92.1
39	Volgograd	9459	8723	7899	7744	7619	361.6	326.3	295.5	291.7	289.1	113.8	106.8	104.1	102.4	101.6
40	Rostov	13577	13873	12373	11827	11588	319.0	317.8	283.4	272.9	269.3	119.6	118.2	99.8	100.1	86.1
	<b>REGION: Privolzhsky</b>	<b>77408</b>	<b>74581</b>	<b>59014</b>	<b>56928</b>	<b>55538</b>	<b>246.2</b>	<b>241.3</b>	<b>191.0</b>	<b>185.4</b>	<b>182.0</b>	<b>79.9</b>	<b>80.4</b>	<b>81.8</b>	<b>83.6</b>	<b>83.2</b>
41	Republics: Bashkortostan	7365	7249	5446	5303	5224	180.5	177.1	133.1	130.0	128.6	56.0	57.3	54.6	57.2	57.7
42	Mariy El	744	747	754	813	787	99.8	103.5	104.4	113.4	110.6	74.3	77.3	77.2	82.0	74.9
43	Mordoviya	2485	2242	1882	1651	1620	276.2	255.9	214.8	190.5	189.1	60.1	63.7	66.0	59.0	61.0
44	Tatarstan	8723	7972	5738	5458	4845	231.9	211.3	152.1	144.8	128.8	70.9	69.4	67.3	68.3	65.3
45	Udmurtiya	4503	4260	3992	3872	3725	280.0	273.0	255.9	249.4	241.2	86.9	89.9	98.6	106.2	103.2
46	Chuvashiya	3593	3424	2270	2138	1912	268.3	262.4	173.9	164.5	148.0	95.0	84.2	94.1	108.8	107.2
47	Regions: Kirov	3692	3499	2381	2476	2489	239.4	236.5	160.9	169.4	172.5	92.0	89.4	92.1	99.4	105.9
48	Nizhniy Novgorod	9595	9303	7262	7074	6984	269.4	267.4	208.7	205.3	204.7	85.3	83.9	84.2	82.1	81.4
49	Orenburg	5544	5576	4348	4391	4425	253.6	257.8	201.1	204.2	207.0	83.2	85.5	85.0	91.5	94.5
50	Penza	3301	3222	2518	2068	2250	221.6	224.4	175.4	145.4	159.8	67.5	71.6	72.4	68.7	64.8
51	Perm (Permsky krai)	8975	8461	7153	6806	6695	309.1	302.1	256.3	245.7	243.6	117.8	118.8	114.3	110.5	105.0
	Komi-Permsky AD	537	514	464	442	0	366.5	382.4	345.2	332.8		185.6	189.7	216.5	192.0	
52	Samara	7127	6984	6258	6172	6089	219.8	217.1	194.5	192.8	190.9	79.9	79.8	84.8	89.0	89.2
53	Saratov	8576	8358	6226	5926	5996	322.9	316.2	235.5	225.7	229.9	86.9	88.3	89.8	89.7	98.9
54	Uliyanovsk	3185	3284	2786	2780	2497	223.5	240.7	204.2	205.8	186.9	56.8	68.9	83.2	82.4	75.9
	<b>DISTRIC: Urals</b>	<b>39069</b>	<b>38404</b>	<b>30888</b>	<b>30382</b>	<b>29629</b>	<b>313.3</b>	<b>311.8</b>	<b>250.8</b>	<b>247.4</b>	<b>242.0</b>	<b>95.9</b>	<b>96.0</b>	<b>94.4</b>	<b>93.0</b>	<b>92.2</b>
55	Regions: Kurgan	4067	3795	3081	2976	2900	382.9	378.0	306.9	300.0	295.9	119.7	129.8	124.7	119.1	115.9
56	Sverdlovsk	13634	13143	11173	11013	11198	302.2	295.5	251.2	248.7	253.9	96.0	92.4	91.5	91.6	95.3
57	Tyumen	13558	13699	10088	9944	9567	411.9	416.4	306.6	300.7	287.9	126.2	125.6	118.1	111.0	105.2
	Khanty-Mantiysky AD	4768	4666	3622	3471	3429	330.2	320.4	248.7	236.3	232.0	110.4	111.0	105.3	97.8	95.1
	Yamalo-Nenetsky AD	1511	1485	1456	1563	1386	294.3	288.3	282.7	298.6	261.2	102.8	99.0	98.2	102.0	93.3
58	Chelyabinsk	7810	7767	6546	6449	5964	216.7	217.3	183.2	181.6	168.9	61.2	63.6	67.6	70.7	69.6
	<b>REGION: Siberian</b>	<b>81853</b>	<b>81355</b>	<b></b>												

№ № пп.	Federal REGIONS, areas of the Russian Federation	TB patients registered by the end of the year										Of them MbT+				
		absolute numbers значения					prevalence per 100,000					prevalence per 100,000				
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	<b>RUSSIA</b>	<b>388627</b>	<b>378820</b>	<b>312208</b>	<b>298509</b>	<b>289015</b>	<b>272.8</b>	<b>264.8</b>	<b>218.3</b>	<b>209.7</b>	<b>202.5</b>	<b>88.5</b>	<b>88.3</b>	<b>86.9</b>	<b>86.6</b>	<b>83.9</b>
61	Tyva	3222	3222	2558	2174	2026	1037.3	1051.4	834.7	706.6	656.7	368.3	426.5	409.5	365.0	341.3
62	Khakasiya	2366	2271	1985	1862	1770	413.3	418.5	365.8	344.2	328.9	151.5	160.1	172.5	173.0	182.1
63	<b>Krai: Altai</b>	11271	10895	9528	8786	8526	433.3	421.7	368.8	342.5	335.2	107.5	113.0	111.8	112.6	111.9
64	Krasnoyarsky	11619	11291	8385	7613	7355	387.7	383.8	285.0	260.2	253.1	134.2	132.8	117.8	110.8	108.2
	Taimyrsky AD	127	120	115	98	78	285.1	304.3	291.6	248.9	200.1	89.8	91.3	121.7	106.7	92.3
	Evenkiysky AD	136	135	102	71	70	754.7	771.4	582.9	407.5	405.1	222.0	194.3	165.7	109.1	133.1
65	<b>Regions: Irkutsk</b>	11310	10917	9305	9286	9134	419.5	426.3	363.4	364.8	361.5	136.9	146.0	143.9	146.2	144.2
	Ust-Ordynsky Buryatskiy AD	843	729	669	707	592	594.0	541.7	497.1	527.2	442.3	179.7	198.4	171.7	197.6	156.9
66	Kemerovo	12153	12227	9857	9990	8607	416.4	425.7	343.2	349.9	303.2	152.2	171.4	174.0	176.9	160.0
67	Novosibirsk	10618	11023	8405	8044	7189	392.9	412.4	314.5	302.1	271.3	138.0	148.3	150.1	149.8	138.2
68	Omsk	7636	8146	7257	7126	6984	362.0	395.7	352.5	348.2	343.3	83.8	94.3	94.6	98.9	105.1
69	Tomsk	2548	2385	2136	1964	1876	241.1	229.2	205.2	189.5	181.4	123.5	118.7	126.3	125.7	126.0
70	Chita	3667	3536	3002	2711	2616	298.8	309.1	262.4	238.7	231.9	54.2	69.2	72.4	77.7	79.1
	Aginsky Buryatsky AD	306	330	285	215	192	382.9	453.7	391.8	292.6	258.6	47.6	96.2	94.9	102.1	75.4
	<b>REGION: Far Estern</b>	<b>27543</b>	<b>27244</b>	<b>22028</b>	<b>20774</b>	<b>18579</b>	<b>394.1</b>	<b>410.7</b>	<b>332.0</b>	<b>315.1</b>	<b>283.8</b>	<b>121.0</b>	<b>127.1</b>	<b>128.4</b>	<b>136.6</b>	<b>133.4</b>
71	<b>Republic: Sakha (Yakutiya)</b>	2523	2397	2037	1955	1974	257.1	252.6	214.7	205.6	207.8	88.0	89.3	89.8	91.8	95.4
72	<b>Krai: Primorsky</b>	9363	9102	7383	6729	5388	443.9	443.7	359.9	330.5	266.8	138.0	141.3	140.3	159.8	158.3
73	Khabarovsk	5569	5526	4016	3746	3257	377.2	387.2	281.4	263.8	230.6	105.8	106.3	107.0	111.1	105.1
74	<b>Regions: Amur</b>	5043	5273	4329	4205	4184	517.5	589.5	484.0	473.8	474.9	146.3	164.9	164.1	174.9	169.3
75	Kamchatka	1137	1009	894	831	727	301.7	284.5	252.0	236.0	208.2	103.7	102.6	113.0	102.5	95.1
	Koryaksky AD	354	0	313	324	327	1269.6	0.0	1,285.5	1,359.1	1,410.4	319.2	0.0	492.9	520.2	500.3
76	Magadan	644	595	540	473	362	285.5	333.6	302.8	270.8	211.0	86.9	101.5	84.7	75.0	57.7
77	Sakhalin	2000	2075	1940	1940	1859	345.8	385.6	360.5	364.4	353.3	102.2	112.6	137.5	137.9	140.1
78	<b>Autonomous region: Jewish</b>	1104	1102	767	788	724	570.1	580.7	404.2	417.5	388.1	241.7	255.6	228.2	247.9	231.6
79	<b>Autonomous REGION: Chuko</b>	160	165	122	107	104	221.2	320.9	237.3	211.0	205.8	63.6	108.9	124.5	110.4	112.8

Prevalence of some TB forms in Russia, 2002-2006

№ № пн.	Federal REGIONS, areas of the Russian Federation	Pulmonary TB patients with cavities										Fibro-Cavitary pulmonary TB										МЛУ у больных, состоящих на учете среди ТОД с бактериовыделением, %				
		absolute numbers					prevalence per 100,000					absolute number					prevalence per 100,000					с бактериовыделением, %				
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	<b>RUSSIA</b>	117674	116398	113444	112676	111089	82.6	81.4	79.7	79.2	77.8	35619	35366	36295	35351	34999	25.0	24.7	25.4	24.8	24.5	14.5	16.2	16.5	18.7	20.3
	<b>REGION: Central</b>	19767	19142	18669	17872	17548	54.5	50.7	49.7	47.6	47	5531	5449	5527	5215	5241	15.3	14.4	14.6	13.9	14.0	15.2	18.1	17.3	19.3	20.4
1	<b>Regions: Belgorod</b>	728	689	653	608	589	48.6	45.5	43.2	40.2	39	231	236	258	237	196	15.4	15.6	17.1	15.7	13.0	19.1	13.4	19.3	22.9	26.4
2	Bryansk	1199	1232	1286	1306	1375	85.9	90.5	95.5	97	103.3	408	424	436	406	397	29.2	31.2	32.0	30.2	29.8	28.8	15.3	7.7	22.0	26.1
3	Vladimir	783	763	769	728	762	50.3	50.7	51.7	49	51.7	158	178	172	180	160	10.1	11.8	11.4	12.1	10.9	11.1	16.7	20.5	27.0	34.8
4	Voronezh	1802	1697	1515	1437	1469	75.3	72.1	64.9	61.6	63.5	574	536	494	434	464	24.0	22.8	21.0	18.6	20.1	24.9	39.9	33.5	32.7	30.1
5	Ivanovo	507	495	463	430	439	43.1	43.8	41.5	38.6	39.9	131	114	103	95	102	11.1	10.1	9.1	8.5	9.3	14.7	21.5	30.9	44.9	43.6
6	Kaluga	689	619	539	511	416	65.7	60.2	52.8	50	41	249	221	213	176	168	23.8	21.5	20.7	17.2	16.6	17.5	10.5	13.3	12.3	13.5
7	Kostroma	235	196	164	156	144	31.0	27.0	22.9	21.7	20.3	69	53	50	48	40	9.1	7.3	6.9	6.7	5.6	16.8	16.9	16.3	22.9	31.7
8	Kursk	804	762	854	779	823	63.4	62.7	71.2	65	69.5	301	349	366	349	372	23.7	28.7	30.1	29.1	31.4	12.0	20.2	3.7	2.9	2.8
9	Lipetsk	525	550	500	453	439	43.0	45.8	42	38.1	37.2	209	208	187	165	155	17.1	17.3	15.6	13.9	13.1	11.6	20.1	23.3	22.6	20.2
10	Moscow	3514	3443	3328	3278	3182	54.9	52.0	50.2	49.4	48	815	797	870	866	864	12.7	12.0	13.1	13.1	13.0	14.2	17.1	19.6	17.0	16.4
11	Orel	386	329	355	274	257	44.1	38.7	42.1	32.5	30.8	137	110	86	65	52	15.6	12.9	10.1	7.7	6.2	10.4	15.4	16.1	19.3	20.4
12	Ryazan	791	748	830	784	811	63.8	61.9	69.5	65.6	68.6	293	295	309	314	364	23.6	24.4	25.6	26.3	30.8	7.7	8.9	10.2	9.5	9.6
13	Smolensk	1169	1239	1121	1138	1142	107.9	120.0	110	111.7	113.5	216	236	224	205	240	19.9	22.9	21.7	20.1	23.9	14.7	4.5	6.8	6.6	10.5
14	Tambov	899	862	905	826	737	73.4	74.4	79.1	72.2	65.2	210	214	287	255	239	17.2	18.5	24.8	22.3	21.1	10.3	11.2	16.2	25.7	15.3
15	Tver	1020	1040	1085	1052	1124	66.6	72.0	76.1	73.8	79.9	226	237	223	225	248	14.8	16.4	15.4	15.8	17.6	13.0	15.6	7.6	8.1	6.1
16	Tula	1263	1096	1112	1079	909	75.8	66.6	68.6	66.5	56.8	400	389	389	401	390	24.0	23.7	23.7	24.7	24.4	13.3	19.7	15.7	20.4	22.2
17	Yaroslavl	646	647	582	604	531	47.0	47.9	43.5	45.1	40	165	146	143	158	147	12.0	10.8	10.6	11.8	11.1	10.0	15.2	16.4	10.6	12.0
18	<b>City: Moscow</b>	2807	2735	2608	2429	2399	32.9	26.3	25.1	23.3	23	739	706	717	636	643	8.7	6.8	6.9	6.1	6.2	19.0	19.2	18.3	19.4	23.0
	<b>REGION: Northwestern</b>	8340	8446	8370	8495	8111	59.0	61.1	61	61.9	59.5	1299	1263	1317	1267	1210	9.2	9.1	9.5	9.2	8.9	21.0	21.6	24.0	26.5	28.5
19	<b>Republics: Kareliya</b>	508	531	473	473	457	67.5	74.9	67.3	67.3	65.5	106	105	103	95	89	14.1	14.8	14.5	13.5	12.8	20.2	17.2	17.7	23.0	25.4
20	Komi	718	747	774	783	727	64.9	74.3	77.7	78.6	73.8	107	82	95	101	87	9.7	8.2	9.4	10.1	8.8	19.3	18.6	20.8	28.1	26.2
21	<b>Regions: Arkhangelsk</b>	939	965	911	872	858	66.4	73.2	69.8	66.8	66.4	93	101	96	88	74	6.6	7.7	7.3	6.7	5.7	35.9	38.8	45.6	52.7	48.3
	Nenetsky AD	37	34	38	29	29	81.3	81.3	90.6	69.1	69.1	8	8	9	7	8	17.6	19.1	21.5	16.7	19.1	36.1	30.8	37.8	51.7	40.6
22	Vologda	539	536	560	606	617	41.8	42.7	45	48.7	49.9	72	66	79	82	75	5.6	5.3	6.3	6.6	6.1	15.2	12.7	17.2	20.3	0.0
23	Kaliningrad	755	888	925	860	904	80.3	93.5	97.9	91	96.2	114	110	168	151	243	12.1	11.6	17.7	16.0	25.9	0.0	0.0	5.8	19.4	22.6
24	Leningrad	1144	1111	1172	1232	1136	69.7	66.9	70.9	74.5	69.1	203	225	219	166	146	12.4	13.6	13.2	10.0	8.9	8.4	9.1	17.5	19.6	24.8
25	Murmansk	374	425	378	431	391	38.7	48.3	43.3	49.4	45.2	87	112	104	123	93	9.0	12.7	11.8	14.1	10.8	26.8	36.8	38.4	38.6	39.9
26	Novgorod	463	493	461	435	410	65.9	72.2	68.4	64.5	61.6	58	38	38	41	35	8.3	5.6	5.6	6.1	5.3	27.7	30.7	33.0	29.7	43.2
27	Pskov	556	435	477	526	518	72.5	58.2	64.7	71.4	71.5	128	108	86	81	75	16.7	14.4	11.5	11.0	10.4	22.8	20.2	25.5	22.5	29.9
28	<b>City: St-Petersburg</b>	2344	2315	2239	2277	2093	51.3	50.1	48.7	49.5	45.7	331	316	329	339	293	7.3	6.8	7.1	7.4	6.4	29.8	30.6	26.8	21.9	30.1
	<b>REGION: Southern</b>	22715	22157	20923	20748	21170	109.3	102.0	96.5	95.7	92.9	7854	7753	8046	7865	8029	37.8	35.7	37.0	36.3	35.2	11.1	13.0	10.3	10.0	11.3
29	<b>Republics: Adygeya</b>	383	384	398	385	365	86.2	86.2	89.6	86.6	82.4	112	122	134	132	118	25.2	27.4	30.1	29.7	26.7	5.0	5.9	7.8	7.0	7.2
30	Dagestan	3419	3195	2896	2824	2745	155.4	122.8	110.5	107.7	103.9	1614	1566	1461	1343	1179	73.4	60.2	56.1	51.2	44.6	4.5	6.2	9.4	6.6	4.9
31	Ingushetiya	326	399	279	320	307	69.0	83.9	57.9	66.5	63	212	200	165	167	151	44.9	42.0	34.7	34.7	31.0	0.0	2.4	2.6	8.1	16.5
	Чечня				1138				97.9	444	497	523	323	418						35.9						
32	Kabardino-Balkariya	684	571	563	698	876	87.7	63.5	62.8	77.8	98	272	319	342	375	324	34.9	35.5	38.0	41.8	36.2	17.6	10.7	0.0	0.0	0.0
33	Kalmykiya	511	475	539	455	434	170.8	163.4	185.9	157	150.3	295	223	237	242	244	98.6	76.7	81.5	83.5	84.5	36.7	28.9	24.8	0.0	23.8
34	Karachaevo-Cherkessiya	290	228	235	231	231	68.0	52.2	54.1	53.2	53.5	98	91	102	85	81	23.0	20.8	23.4	19.6	18.8	22.1	16.3	12.6	9.6	12.7
35	North Osetiya - Alaniya	647	643	622	669	637	95.7	90.9	88.3	95	90.7	295	287	303	325	362	43.6	40.6	42.9	46.1	51.5	7.6	8.4	10.4	0.0	1.5
36	<b>Krai: Krasnodarsky</b>	5362	5490	5233	5189	5206	107.9	107.5	102.6	101.7	102.1	1995	2071	2298	2283	2327	40.1	40.6	45.0	44.8	45.7	11.9	15.4	16.3	17.1	18.2
37	Stavropolsky	1846	1699	1786	1637	1515	70.1	62.3	65.7	60.2	55.9	470	450	481	448	414	17.9	16.5	17.6	16.5	15.3	12.3	21.5	11.3	10.8	16.9
38	<b>Regions: Astrakhan</b>	1030	1021	1056	1002	916	102.4	102.0	105.8	100.4	92.1	465	458	471	449	440	46.2	45.7	47.0	45.0	44.3	12.1	7.2	4.1	9.8	13.0

№ № пн.	Federal REGIONS, areas of the Russian Federation	Pulmonary TB patients with cavities										Fibro-Cavitary pulmonary TB										МЛУ у больных, состоящих на учете среди ТОД с бактериовыделением, %				
		absolute numbers					prevalence per 100,000					absolute number					prevalence per 100,000									
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
39	Volgograd	3249	3022	3065	3108	3187	124.2	113.1	115.4	117.1	120.9	935	894	949	957	967	35.7	33.4	35.5	36.0	36.7	14.5	18.4	9.6	9.4	10.4
40	Rostov	4968	5030	4251	4230	3613	116.7	115.2	98.1	97.6	84	1091	1072	1103	1059	1004	25.6	24.6	25.3	24.4	23.3	7.5	7.8	5.3	6.8	7.9
	<b>REGION: Privolzhsky</b>	<b>21939</b>	<b>21767</b>	<b>21741</b>	<b>21572</b>	<b>21356</b>	<b>69.8</b>	<b>70.4</b>	<b>70.8</b>	<b>70.2</b>	<b>70</b>	<b>6160</b>	<b>6169</b>	<b>6326</b>	<b>5928</b>	<b>5711</b>	<b>19.6</b>	<b>20.0</b>	<b>20.5</b>	<b>19.3</b>	<b>18.7</b>	<b>17.1</b>	<b>19.6</b>	<b>19.4</b>	<b>19.8</b>	<b>22.4</b>
41	<b>Republics: Bashkortostan</b>	2008	2020	2021	2049	2049	49.2	49.4	49.5	50.2	50.4	802	785	883	828	803	19.7	19.2	21.6	20.3	19.8	21.7	24.1	24.8	25.0	24.3
42	Mariy El	270	282	313	293	300	36.2	39.1	43.7	40.9	42.2	52	61	71	67	61	7.0	8.4	9.8	9.3	8.6	18.2	19.2	30.0	30.3	33.0
43	Mordoviya	637	654	685	568	601	70.8	74.6	79	65.5	70.1	284	282	258	225	167	31.6	32.2	29.4	26.0	19.5	27.4	33.3	11.1	13.2	14.9
44	Tatarstan	2219	2102	2002	1952	1924	59.0	55.7	53.1	51.8	51.1	463	475	525	446	452	12.3	12.6	13.9	11.8	12.0	14.5	16.9	17.0	15.2	15.9
45	Udmurtiya	1146	1208	1317	1386	1284	71.3	77.4	84.8	89.3	83.1	198	225	236	291	283	12.3	14.4	15.1	18.7	18.3	9.0	13.1	12.0	13.7	15.1
46	Chuvashiya	1197	1078	1086	1096	1035	89.4	82.6	83.6	84.4	80.1	190	188	183	168	159	14.2	14.4	14.0	12.9	12.3	11.3	0.0	3.4	9.1	23.1
47	<b>Regions: Kirov</b>	768	746	734	830	766	49.8	50.4	50.2	56.8	53.1	121	109	99	95	96	7.8	7.4	6.7	6.5	6.7	19.5	22.7	22.6	22.6	22.1
48	Nizhniy Novgorod	3081	3232	2997	2937	2831	86.5	92.9	87	85.2	83	1098	1125	1091	981	956	30.8	32.3	31.4	28.5	28.0	19.6	26.8	29.4	28.4	29.3
49	Orenburg	1802	1804	1837	1972	2065	82.4	83.4	85.4	91.7	96.6	250	254	261	273	254	11.4	11.7	12.1	12.7	11.9	19.2	24.9	28.6	19.0	18.5
50	Penza	1005	941	885	801	812	67.5	65.5	62.2	56.3	57.7	307	285	245	221	241	20.6	19.8	17.1	15.5	17.1	16.0	19.5	16.3	10.8	16.1
51	Perm (Permsky krai)	2770	2634	2714	2573	2578	95.4	94.4	98	92.9	93.8	891	883	940	827	800	30.7	31.6	33.7	29.9	29.1	21.7	26.7	20.6	23.1	22.3
	Komi-Permsky AD	187	227	218	218		127.6	168.9	164.1	164.1		53	60	70	50	0	36.2	44.6	52.1	37.6		14.3	42.7	12.8	22.0	
52	Samara	2157	2122	2064	2246	2321	66.5	65.9	64.5	70.2	72.8	718	724	723	716	702	22.1	22.5	22.5	22.4	22.0	9.7	10.5	9.5	16.7	27.7
53	Saratov	1935	1944	2029	1806	1820	72.9	73.5	77.3	68.8	69.8	556	543	555	534	491	20.9	20.5	21.0	20.3	18.8	13.4	14.4	19.0	19.8	21.1
54	Uliyanovsk	944	1000	1057	1063	970	66.2	73.3	78.3	78.7	72.6	230	230	256	256	246	16.1	16.9	18.8	19.0	18.4	24.4	16.0	20.7	21.7	26.5
	<b>DISTRIC: Urals</b>	<b>10083</b>	<b>9767</b>	<b>9557</b>	<b>9628</b>	<b>9403</b>	<b>80.9</b>	<b>79.3</b>	<b>77.8</b>	<b>78.4</b>	<b>76.8</b>	<b>2925</b>	<b>2922</b>	<b>2989</b>	<b>3055</b>	<b>3077</b>	<b>23.5</b>	<b>23.7</b>	<b>24.3</b>	<b>24.9</b>	<b>25.1</b>	<b>11.0</b>	<b>10.5</b>	<b>10.9</b>	<b>10.8</b>	<b>13.0</b>
55	<b>Regions: Kurgan</b>	957	930	892	946	1017	90.1	92.6	89.9	95.4	103.8	414	437	411	484	442	39.0	43.5	40.9	48.8	45.1	8.3	8.1	7.6	7.7	8.1
56	Sverdlovsk	3760	3557	3265	3227	3215	83.3	80.0	73.7	72.9	72.9	990	895	947	967	1042	21.9	20.1	21.3	21.8	23.6	8.0	8.5	9.9	9.9	11.3
57	Tyumen	3474	3360	3371	3323	3091	105.5	102.1	101.9	100.7	93	1049	1031	1030	1017	987	31.9	31.3	31.3	30.7	29.7	11.0	9.6	13.0	12.6	16.9
	Khanty-Mantyskiy AD	1133	1123	1177	1202	1096	78.5	77.1	80.1	81.8	74.1	349	338	333	309	270	24.2	23.2	22.9	21.0	18.3	13.2	14.9	16.4	14.9	18.2
	Yamalo-Nenetskiy AD	428	455	453	476	424	83.4	88.3	86.6	90.9	79.9	106	89	98	117	135	20.6	17.3	19.0	22.4	25.4	32.4	14.3	15.5	9.3	22.5
58	Chelyabinsk	1892	1920	2029	2124	2080	52.5	53.7	57.1	59.8	58.9	472	559	601	587	606	13.1	15.6	16.8	16.5	17.2	18.4	17.2	10.9	11.1	12.8
	<b>REGION: Siberian</b>	<b>26979</b>	<b>27057</b>	<b>26238</b>	<b>26099</b>	<b>25384</b>	<b>132.2</b>	<b>136.0</b>	<b>132.6</b>	<b>131.9</b>	<b>129</b>	<b>8887</b>	<b>8822</b>	<b>9072</b>	<b>8951</b>	<b>8722</b>	<b>43.5</b>	<b>44.3</b>	<b>45.6</b>	<b>45.2</b>	<b>44.3</b>	<b>13.8</b>	<b>16.1</b>	<b>18.3</b>	<b>23.4</b>	<b>25.8</b>
59	<b>Republics: Altai</b>	222	168	174	213	214	108.2	82.7	85.3	104.5	104.7	109	116	111	117	108	53.1	57.1	54.6	57.4	52.8	25.7	33.5	28.5	25.1	20.1
60	Buryatiya	1415	1552	1737	1749	1737	139.6	159.3	179.2	180.5	180.3	316	338	392	488	527	31.2	34.7	40.2	50.4	54.7	2.9	4.1	4.9	8.8	11.7
61	Tyva	861	904	925	924	867	277.2	295.0	300.7	300.3	281	295	326	430	401	427	95.0	106.4	140.3	130.3	138.4	27.6	22.8	42.9	52.7	58.3
62	Khakasiya	880	845	722	793	843	153.7	155.7	133.5	146.6	156.6	238	260	270	220	121	41.6	47.9	49.8	40.7	22.5	11.4	11.2	15.5	24.8	32.2
63	<b>Krai: Altai</b>	4361	4311	4177	4005	3979	167.7	166.9	162.8	156.1	156.5	1598	1533	1447	1283	1169	61.4	59.3	56.0	50.0	46.0	4.9	4.6	8.7	15.1	13.2
64	Krasnoyarsky	4276	4066	3622	3315	3271	142.7	138.2	123.8	113.3	112.6	1095	1009	975	874	849	36.5	34.3	33.1	29.9	29.2	16.3	14.3	15.5	21.8	25.2
	Taimyrsky AD	24	20	27	35	21	53.9	50.7	68.6	88.9	53.9	14	10	8	7	10	31.4	25.4	20.3	17.8	25.6	25.0	13.9	81.3	31.0	22.2
	Evenkiyskiy AD	62	54	48	37	44	344.1	308.6	275.5	212.4	254.7	17	18	13	10	9	94.3	102.9	74.3	57.4	52.1	32.5	82.4	93.0	36.8	60.9
65	<b>Regions: Irkutsk</b>	4013	4218	4095	4129	4112	148.8	164.7	160.9	162.2	162.7	1305	1333	1512	1631	1594	48.4	52.1	59.0	64.1	63.1	2.8	5.8	5.5	7.8	8.3
	Ust-Ordynsky Buryatskiy AD	297	281	261	306	314	209.3	208.8	194.6	228.2	234.6	91	79	90	96	88	64.1	58.7	66.9	71.6	65.7	5.1	6.7	5.7	2.6	4.8
66	Kemerovo	4070	4139	3966	4005	3609	139.4	144.1	138.9	140.3	127.1	1489	1500	1510	1427	1495	51.0	52.2	52.6	50.0	52.7	15.7	17.8	23.5	25.8	30.2
67	Novosibirsk	3218	3318	3367	3362	3016	119.1	124.1	126.5	126.3	113.8	1006	1027	1031	1015	923	37.2	38.4	38.6	38.1	34.8	13.2	17.5	23.7	28.8	30.6
68	Omsk	1697	1893	1869	1958	2156	80.5	92.0	91.3	95.7	106	818	896	928	1041	1083	38.8	43.5	45.1	50.9	53.2	17.2	20.5	22.6	31.0	36.6
69	Tomsk	747	692	690	779	735	70.7	66.5	66.6	75.2	71.1	148	127	111	103	102	14.0	12.2	10.7	9.9	9.9	46.8	38.9	29.2	43.7	45.9
70	Chita	1219	951	894	867	845	99.3	83.1	78.7	76.3	74.9	470	357	355	351	324	38.3	31.2	31.0	30.9	28.7	10.5	62.2	21.1	23.3	22.3
	Aginsky Buryatskiy AD	61	76	69	54	49	76.3	104.5	93.9	73.5	66	17	18	25	31	31	21.3	24.7	34.4	42.2	41.8	0.0	0.0	5.9	13.3	17.9
	<b>REGION: Far Eastern</b>	<b>7850</b>	<b>8062</b>	<b>7945</b>	<b>8261</b>	<b>8117</b>	<b>112.3</b>	<b>121.5</b>	<b>120.5</b>	<b>125.3</b>	<b>124</b>	<b>2962</b>	<b>2988</b>	<b>3017</b>	<b>3069</b>	<b>3009</b>	<b>42.4</b>	<b>45.0</b>	<b>45.5</b>	<b>46.5</b>	<b>46.0</b>	<b>12.9</b>	<b>11.6</b>	<b>13.9</b>	<b>19.8</b>	<b>17.0</b>
71	<b>Republic: Sakha (Yakutiya)</b>	592	549	556	568	571	60.3	57.9	58.5	59.7	60.1	132	125	126	99	101	13.5	13.2	13.3	10.4	10.6	14.9	16.6	22.9	21.9	23.2
72	<b>Krai: Primorsky</b>	2959	2947	2783	2913	2992	140.3	143.7	136.7	143.1	148.2	1331	1311	1221	1243	1290	63.1	63.9	59.5	61.1	63.9	13.7	10.4	13.6	14.6	18.0
73	Khabarovskiy	1270	1347	1342	1382	1304	86.0	94.4	94.5	97.3	92.3	469	447	455	427	401	31.8	31.3	31.9	30.1	28.4	14.7	12.2	5.1	34.3	9.8

№ № пп.	Federal REGIONS, areas of the Russian Federation	Pulmonary TB patients with cavities										Fibro-Cavitary pulmonary TB										МЛУ у больных, состоящих на учете среди ТОД с бактериовыделением, %				
		absolute numbers					prevalence per 100,000					absolute number					prevalence per 100,000									
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
74	Regions: Amur	1511	1614	1692	1755	1776	155.0	180.4	190.6	197.7	201.6	534	615	687	714	655	54.8	68.8	76.8	80.4	74.3	10.1	8.4	17.1	19.3	22.7
75	Kamchatka	383	413	354	330	327	101.6	116.4	100.5	93.7	93.6	129	124	136	156	152	34.2	35.0	38.3	44.3	43.5	14.3	0.0	0.0	4.7	6.6
	Koryaksky AD	100	0	108	143	116	358.7	0.0	453	599.9	500.3	34	0	34	35	44	121.9	0.0	139.6	146.8	189.8	0.0	0.0	0.0	0.0	0.0
76	Magadan	136	145	131	147	112	60.3	81.3	75	84.2	65.3	32	37	17	30	25	14.2	20.7	9.5	17.2	14.6	19.4	0.6	23.0	32.1	19.2
77	Sakhalin	713	703	765	807	714	123.3	130.6	143.7	151.6	135.7	221	203	248	285	258	38.2	37.7	46.1	53.5	49.0	6.3	18.8	17.7	18.5	18.1
78	Autonomous region: Jewish	248	301	274	312	268	128.1	158.6	145.2	165.3	143.7	104	111	106	94	97	53.7	58.5	55.9	49.8	52.0	10.3	13.6	18.5	6.8	3.7
79	Autonomous REGION: Chuko	38	43	48	47	53	52.5	83.6	94.7	92.7	104.9	10	15	21	21	30	13.8	29.2	40.8	41.4	59.4	28.3	32.1	41.3	92.9	50.0

Treatment success rates among TB patients in Russia in 2002-2006

№ № nn.	Federal REGIONS, areas of the Russian Federation	Closure of cavitary lesions (for new TB cases)					Conversion of new MBT+ cases				Clinical cure of respiratory TB				Clinical cure of extrapulmonary TB			Bacteriological conversion			
		%					%				%				%			%			
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2003	2004	2005	2006	2003	2004	2005	2003	2004	2005	2006
	<b>RUSSIA</b>	<b>62.8</b>	<b>62.4</b>	<b>63.0</b>		<b>74.2</b>	<b>73.5</b>	<b>73.5</b>		<b>21.4</b>	<b>39.4</b>	<b>28.1</b>	<b>30.1</b>	<b>17.2</b>	<b>40.6</b>	<b>24.4</b>	<b>28.0</b>	<b>31.9</b>	<b>30.7</b>	<b>33.4</b>	
	<b>REGION: Central</b>	65.1	65.2	64.0		78.8	78.9	77.2		22.1	37.0	28.7	29.8	17.3	35.9	24.4	30.1	38.7	37.2	37.9	
1	<b>Regions: Belgorod</b>	72.4	73.6	81.3		74.7	81.4	86.3		45.1	50.9	53.5	51.7	38.3	39.1	50.7	43.1	45.6	54.3	48.7	
2	Bryansk	71.1	71.4	71.8		86.0	85.6	81.6		22.8	56.2	26.0	18.8	29.6	59.2	36.7	23.0	86.6	43.7	42.7	
3	Vladimir	59.1	58.5	63.3		79.3	74.8	79.7		23.5	53.5	37.4	32.7	12.5	42.1	13.4	40.4	39.3	39.0	37.6	
4	Voronezh	69.3	70.6	72.6		80.0	80.7	81.8		25.7	42.8	33.7	34.5	15.2	22.1	25.4	30.2	36.4	32.8	35.1	
5	Ivanovo	71.2	72.3	67.1		79.4	84.3	70.7		25.8	48.8	35.8	55.6	19.7	37.5	45.0	34.9	44.8	51.9	46.6	
6	Kaluga	78.9	77.1	78.7		83.2	82.6	77.5		27.2	40.7	41.7	38.0	16.9	97.5	46.8	44.2	32.6	41.7	47.8	
7	Kostroma	61.9	63.6	70.7		67.1	73.2	71.4		23.3	53.4	41.5	57.5	22.5	121.3	35.0	21.2	27.3	46.3	55.0	
8	Kursk	61.1	61.7	56.4		71.9	68.5	71.2		22.8	27.2	22.0	25.4	14.4	20.1	33.9	25.0	29.7	28.6	33.3	
9	Lipetsk	70.7	64.2	66.9		82.1	76.3	77.4		16.9	42.4	39.8	33.5	9.6	30.7	21.6	37.1	35.9	43.8	48.4	
10	Moscow	57.0	57.4	50.3		68.9	69.3	72.0		14.4	24.7	18.4	20.3	9.3	23.6	10.4	24.3	26.7	25.0	31.1	
11	Orel	78.4	78.8	77.2		92.8	90.9	90.5		25.4	38.2	43.1	41.6	26.4	42.2	40.5	39.0	53.4	71.3	87.8	
12	Ryazan	62.8	63.5	55.9		82.0	80.6	70.8		22.9	51.9	30.5	37.5	21.2	62.9	13.9	28.9	28.1	32.6	28.6	
13	Smolensk	47.7	45.5	43.8		75.2	70.9	62.5		14.1	46.2	26.0	17.8	12.5	35.9	15.7	14.7	28.0	25.2	22.6	
14	Tambov	76.1	78.8	73.4		81.5	82.6	79.2		30.2	38.4	34.6	32.7	23.0	39.8	32.9	34.0	31.5	40.4	33.6	
15	Tver	45.2	50.1	45.8		63.4	65.8	49.7		22.3	30.6	31.8	33.8	16.3	22.9	29.1	19.5	43.1	36.2	42.5	
16	Tula	71.6	74.2	77.1		78.4	84.2	84.2		25.7	32.2	27.0	35.2	13.0	25.0	32.5	38.7	40.0	39.3	41.5	
17	Yaroslavl	51.3	54.4	59.7		73.2	70.2	74.6		24.6	27.9	25.5	29.9	17.0	54.7	38.5	27.0	29.5	22.7	29.0	
18	<b>City: Moscow</b>	70.4	69.1	68.8		86.3	85.3	84.5		22.8	31.9	25.5	29.7	19.9	27.0	21.6	33.2	35.7	36.8	36.8	
	<b>REGION: Northwestern</b>	64.9	62.3	61.7		72.6	70.1	68.4		23.6	38.2	29.6	32.2	18.6	55.6	26.9	27.1	29.0	29.3	33.6	
19	<b>Republics: Kareliya</b>	64.6	62.6	65.5		71.3	73.8	76.1		32.5	25.7	27.0	35.8	16.4	55.8	31.4	25.0	27.8	25.8	34.8	
20	Komi	70.6	60.9	64.7		77.4	70.0	66.9		22.4	40.1	25.3	29.4	11.3	36.6	21.7	26.7	30.9	32.9	27.3	
21	<b>Regions: Arkhangelsk</b>	62.6	61.7	54.1		71.1	75.6	60.9		36.0	43.8	36.9	38.5	40.6	61.1	16.9	28.1	32.6	29.9	35.4	
	Nenetsky AD	83.3	75.0	72.7		88.9	71.4	83.3		17.4	25.1	28.4	45.2	18.2	40.0	40.0	32.0	44.7	41.4	55.7	
22	Vologda	58.5	56.8	50.0		68.3	73.1	59.5		21.1	61.0	28.4	31.1	14.7	81.2	32.8	22.1	21.3	22.9	20.6	
23	Kaliningrad	39.1	42.5	48.7		47.6	47.5	50.0		18.9	27.7	20.3	33.0	15.0	27.0	15.2	14.6	21.4	16.6	21.6	
24	Leningrad	56.7	57.2	56.2		64.7	62.1	70.3		16.9	45.8	44.3	41.5	17.3	67.4	49.0	27.7	29.1	41.8	43.7	
25	Murmansk	46.7	37.2	52.8		59.9	56.5	43.6		14.9	34.7	20.6	24.8	5.5	14.6	27.7	19.8	20.1	13.3	27.9	
26	Novgorod	85.2	82.9	80.1		86.2	85.2	81.1		27.4	39.4	27.1	26.8	38.7	95.6	32.1	45.4	47.1	45.3	43.8	
27	Pskov	57.8	69.0	69.2		70.8	78.1	81.2		45.6	32.6	24.6	30.3	15.8	63.4	8.9	51.3	54.0	38.6	47.1	
28	<b>City: St-Petersburg</b>	83.6	75.9	73.6		89.2	78.7	84.0		21.9	35.9	30.0	29.7	21.3	62.6	29.5	26.0	25.8	31.1	37.3	
	<b>REGION: Southern</b>	73.3	73.8	74.7		83.1	83.4	82.7		21.5	35.4	25.2	26.4	17.9	35.3	25.5	29.2	33.9	31.3	34.3	
29	<b>Republics: Adygeya</b>	74.4	70.8	71.3		76.5	74.2	75.2		33.2	28.6	34.0	34.8	26.7	26.3	21.2	25.5	36.1	28.3	30.0	

№ № пп.	Federal REGIONS, areas of the Russian Federation	Closure of cavitary lesions (for new TB cases)					Conversion of new MBT+ cases				Clinical cure of respiratory TB				Clinical cure of extrapulmonary TB			Bacteriological conversion			
		%					%				%				%			%			
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2003	2004	2005	2006	2003	2004	2005	2003	2004	2005	2006
30	Dagestan	72.1	73.3	73.2		90.2	89.7	80.6		25.8	30.8	28.5	31.2	40.0	37.3	31.5	31.3	31.5	40.9	31.9	
31	Ingushetiya Чечня	11.8	61.8	65.0		13.0	71.9	78.4		15.0	25.3	14.1	9.6	0.7	13.2	1.6	36.4	38.1	54.7	50.6	
32	Kabardino-Balkariya	81.7	78.6	79.8		81.2	77.5	83.8		18.5	18.9	24.3	40.2	13.2	8.3	26.4	39.0	34.6	11.9	42.6	
33	Kalmykiya	71.2	62.6	68.6		85.3	82.5	90.7		23.7	31.3	24.3	15.2	19.9	17.8	21.6	38.6	29.3	28.5	40.1	
34	Karachaevo-Cherkessiya	84.8	74.1	77.6		85.0	83.1	82.8		15.8	28.5	17.8	19.1	20.7	19.1	17.3	38.4	51.7	54.2	26.4	
35	North Osetiya - Alaniya	77.5	72.1	75.4		82.0	77.4	87.6		23.1	28.5	28.9	18.9	17.7	13.7	47.7	27.1	31.0	30.9	35.6	
36	<b>Krai: Krasnodarsky</b>	66.7	68.0	69.5		76.0	77.2	73.9		18.1	46.2	24.6	25.5	15.7	53.3	24.8	23.5	27.3	23.6	26.5	
37	Stavropolsky	73.0	71.1	71.2		84.3	89.1	86.9		15.3	31.3	19.3	23.8	22.0	60.5	32.3	28.6	31.8	37.3	38.9	
38	<b>Regions: Astrakhan</b>	79.0	81.8	79.7		84.1	85.0	81.9		28.1	45.1	30.4	33.7	16.3	22.1	25.3	32.0	33.5	32.9	36.1	
39	Volgograd	75.8	71.2	71.6		88.4	82.1	82.2		24.7	32.6	24.5	24.6	7.7	27.1	18.4	31.0	31.9	31.0	30.0	
40	Rostov	83.7	83.7	83.9		88.6	88.5	88.7		22.0	34.8	26.7	25.8	16.1	34.1	22.8	30.7	42.9	34.6	40.9	
	<b>REGION: Privolzhsky</b>	64.4	63.9	64.7		76.3	74.7	75.7		23.6	44.7	28.8	29.9	18.6	42.5	24.8	29.1	29.9	28.2	31.6	
41	<b>Republics: Bashkortostan</b>	72.9	73.0	71.8		87.6	87.3	85.1		28.5	58.2	39.0	37.4	16.6	47.3	20.0	36.9	36.9	34.0	35.8	
42	Mariy El	73.2	78.1	74.0		84.3	82.5	80.9		47.5	50.9	45.9	51.4	53.9	0.0	34.1	50.4	47.5	43.6	57.7	
43	Mordoviya	73.2	73.0	77.2		74.2	75.4	83.0		33.1	40.4	33.9	28.4	10.0	41.6	21.8	31.1	43.3	44.7	42.2	
44	Tatarstan	67.3	66.6	64.9		77.2	73.4	70.9		30.1	55.0	34.0	42.1	21.6	60.9	27.1	28.5	34.1	28.7	32.5	
45	Udmurtiya	64.7	62.4	58.3		67.9	64.0	61.9		21.6	24.6	19.9	22.4	21.5	26.1	15.4	25.8	22.2	18.2	26.8	
46	Chuvashiya	46.5	57.1	57.3		55.8	63.0	67.7		21.4	57.2	32.7	47.7	11.5	82.6	31.6	40.9	23.2	20.4	41.0	
47	<b>Regions: Kirov</b>	62.2	58.3	62.9		76.8	75.1	72.0		19.4	53.5	22.3	23.4	17.4	72.6	36.7	29.0	26.5	20.9	18.7	
48	Nizhniy Novgorod	57.8	54.9	58.9		64.0	62.6	65.9		19.6	39.3	20.8	20.9	20.1	39.8	28.3	26.2	25.2	25.2	27.5	
49	Orenburg	71.6	77.4	78.1		85.0	89.0	86.4		26.5	54.3	34.7	36.3	40.7	61.1	35.8	31.4	36.4	33.3	36.6	
50	Penza	67.3	67.8	67.6		77.1	78.8	79.3		22.5	47.8	44.7	27.7	16.1	35.7	57.7	30.5	41.9	48.2	46.7	
51	Perm (Permsky krai)	62.5	59.1	59.9		79.9	75.9	77.7		23.1	37.2	25.8	27.4	19.6	46.1	30.5	26.9	31.8	32.4	33.6	
	Komi-Permsky AD	56.4	58.2	57.5		62.1	70.3	67.3		25.9	43.0	24.8		26.3	55.2	8.3	42.1	38.5	46.8		
52	Samara	66.6	68.5	64.5		76.8	75.2	75.0		24.2	33.7	27.7	26.3	11.9	23.9	14.4	32.9	30.9	29.7	30.0	
53	Saratov	61.3	61.3	65.3		77.8	77.8	83.3		19.0	47.9	26.0	22.8	14.7	16.6	19.0	18.0	19.1	17.2	17.5	
54	Uliyanovsk	60.5	57.9	59.9		76.9	66.1	76.0		14.8	35.1	20.0	35.3	13.6	18.5	19.4	16.5	16.8	22.9	33.4	
	<b>DISTRIC: Urals</b>	61.1	60.6	63.4		70.3	69.4	71.8		20.5	41.9	26.4	28.7	16.2	40.4	23.9	28.6	31.8	30.8	31.9	
55	<b>Regions: Kurgan</b>	62.3	62.1	62.4		64.4	70.2	72.6		28.7	48.5	28.5	31.4	17.5	25.6	31.9	28.0	35.4	36.1	29.6	
56	Sverdlovsk	63.5	61.7	65.6		71.6	68.4	72.4		20.9	32.4	23.4	24.1	15.8	40.3	18.2	34.9	34.6	33.3	33.3	
57	Tyumen	56.9	57.1	60.1		72.0	71.6	72.6		17.4	50.6	28.0	29.6	12.1	27.1	24.2	20.1	26.8	25.4	28.6	
	Khanty-Mantyisky AD	57.0	58.7	56.9		66.3	65.7	68.4		19.7	47.7	29.4	28.8	10.7	55.5	27.9	20.4	29.6	29.8	28.7	
	Yamalo-Nenetsky AD	72.1	68.3	73.2		90.3	81.5	83.8		25.3	26.8	22.5	27.3	22.9	34.2	28.3	26.4	32.1	24.1	30.5	
58	Chelyabinsk	61.2	61.9	64.0		68.7	68.1	69.7		21.0	40.1	28.2	34.4	19.7	57.1	26.6	32.7	33.7	32.5	35.4	
	<b>REGION: Siberian</b>	52.1	53.3	55.3		64.6	65.1	67.3		19.0	39.0	29.4	31.5	15.5	42.9	22.6	25.2	28.7	29.8	32.2	

№ № nn.	Federal REGIONS, areas of the Russian Federation	Closure of cavitary lesions (for new TB cases)					Conversion of new MBT+ cases					Clinical cure of respiratory TB				Clinical cure of extrapulmonary TB			Bacteriological conversion			
		%					%					%				%			%			
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2003	2004	2005	2006	2003	2004	2005	2003	2004	2005	2006	
59	<b>Republics: Altai</b>	63.8	48.5	51.4			54.7	46.7	58.8		28.1	70.8	46.4	40.4	6.3	4.9	19.0	28.6	31.4	38.5	44.5	
60	Buryatiya	59.7	50.3	50.5			75.1	71.7	65.0		18.9	42.1	42.1	54.0	14.1	69.2	58.8	19.0	28.3	26.2	39.6	
61	Tyva	62.7	61.7	62.3			75.3	72.2	72.8		21.1	37.4	33.7	32.7	23.9	96.9	52.8	26.8	33.2	40.1	34.6	
62	Khakasiya	43.8	50.6	44.7			55.3	53.8	64.0		22.4	38.8	28.0	28.0	18.1	12.4	26.4	24.0	23.2	29.6	22.4	
63	<b>Krai: Altai</b>	59.5	60.0	56.9			70.2	67.1	64.4		21.4	34.8	29.5	28.6	22.0	21.3	21.8	22.2	23.0	23.2	27.5	
64	Krasnoyarsky	44.0	45.3	50.7			48.1	54.6	56.7		17.2	42.9	30.2	24.9	15.8	69.1	21.8	22.2	32.2	35.7	32.9	
	Taimyrsky AD	100.0	100.0	88.9			100.0	100.0	93.3		25.6	37.1	34.3	43.2	16.7	33.3	23.1	39.5	23.8	47.6	43.6	
	Evenkiysky AD	42.9	31.6	59.1			37.5	28.6	53.3		14.8	37.0	42.4	27.0	0.0	60.0	66.7	51.4	44.4	84.2	33.3	
65	<b>Regions: Irkutsk</b>	41.3	42.2	52.5			58.8	60.2	63.7		14.8	27.2	20.5	20.8	6.0	15.4	9.4	18.2	22.4	22.9	24.9	
	Ust-Ordynsky Buryatskiy AD	53.9	52.5	58.5			54.4	42.6	59.8		21.0	24.7	23.1	36.8	2.8	27.4	2.0	25.3	35.6	20.4	38.4	
66	Kemerovo	46.0	54.8	55.4			62.1	69.9	72.1		19.7	45.4	28.4	41.2	18.6	57.0	28.4	30.1	31.4	30.7	39.0	
67	Novosibirsk	52.0	54.1	56.8			64.2	58.7	66.1		18.2	49.7	32.0	38.6	16.1	65.6	21.7	22.6	26.0	28.0	30.1	
68	Omsk	53.2	47.7	52.3			65.5	61.1	66.2		16.1	28.3	22.5	21.9	6.6	31.9	12.3	31.4	32.2	30.3	27.6	
69	Tomsk	81.6	76.7	77.5			92.4	87.2	88.5		38.9	48.5	47.7	50.3	29.0	38.3	42.4	47.4	39.9	42.9	43.7	
70	Chita	63.2	61.8	60.8			73.2	73.0	67.6		16.6	29.9	29.4	27.5	36.9	47.3	43.4	24.4	30.6	30.3	31.5	
	Aginsky Buryatsky AD	75.0	75.0	66.7			91.7	78.6	86.1		21.7	41.9	46.0	50.1	25.7	84.5	54.2	25.9	53.6	40.0	58.0	
	<b>REGION: Far Eastern</b>	<b>59.3</b>	<b>55.9</b>	<b>55.1</b>			<b>70.5</b>	<b>67.3</b>	<b>64.3</b>		<b>19.1</b>	<b>39.6</b>	<b>29.4</b>	<b>36.5</b>	<b>15.8</b>	<b>37.7</b>	<b>23.6</b>	<b>25.2</b>	<b>27.3</b>	<b>24.6</b>	<b>30.6</b>	
71	<b>Republic: Sakha (Yakutiya)</b>	82.9	71.0	76.2			85.3	80.3	82.3		34.2	49.1	37.6	32.9	21.0	57.4	27.3	42.1	41.5	40.9	39.7	
72	<b>Krai: Primorsky</b>	60.4	56.5	56.3			74.2	70.2	66.3		19.1	36.3	31.9	52.6	21.0	53.0	28.6	25.9	28.6	20.1	32.3	
73	Khabarovsk	61.0	59.1	58.7			76.8	71.3	70.8		19.5	54.2	36.2	41.3	14.6	30.0	39.6	24.0	28.2	28.0	33.5	
74	<b>Regions: Amur</b>	44.0	43.0	39.2			46.8	40.4	36.8		11.1	32.0	20.1	19.9	10.0	39.4	27.2	13.8	15.9	15.2	17.8	
75	Kamchatka	54.3	46.2	48.3			53.5	61.2	46.6		26.1	34.4	31.5	36.8	30.4	27.7	22.6	19.9	19.9	31.0	31.2	
	Koryaksky AD	38.9	0.0	51.2			38.2	0.0	44.8		0.0	66.7	24.1	20.3	0.0	20.0	10.0	0.0	55.0	21.8	24.2	
76	Magadan	65.3	54.2	57.4			74.5	62.7	57.9		24.3	23.9	23.3	41.2	75.0	12.2	20.7	42.4	40.1	46.6	62.6	
77	Sakhalin	50.4	54.4	55.0			64.8	62.7	65.3		12.6	22.4	18.0	17.7	3.2	14.2	6.3	25.6	27.7	33.9	29.9	
78	<b>Autonomous region: Jewish</b>	63.4	65.3	64.2			73.9	76.4	72.3		22.4	54.5	24.9	31.6	42.4	21.4	7.7	25.0	27.5	18.8	26.0	
79	<b>Autonomous REGION: Chuko</b>	84.2	81.0	57.1			84.2	90.9	42.9		21.4	56.8	43.3	29.4	0.0	0.0	50.0	37.3	31.9	44.6	42.9	

### Treatment success rates among TB patients in Russia on the basis of the cohort analysis (cohort of 2005 )

New pulmonary TB cases MbT+ confirmed by microscopy

№ № nn.	Federal REGIONS, areas of the Russian Federation	2005										
		Successful treatment			Failure			Died			Defaulted	Tranferred out
		By microscopy	Clinico- radiological	Total	By microscopy	Clinico- radiological	Total	of TB	not of TB	Total		
	<b>RUSSIA</b>	<b>54.5</b>	<b>2.7</b>	<b>57.2</b>	<b>10.0</b>	<b>4.4</b>	<b>14.4</b>	<b>9.9</b>	<b>3.7</b>	<b>13.5</b>	<b>11.0</b>	<b>3.8</b>
	<b>REGION: Central</b>	59.0	0.8	59.8	11.1	3.0	14.2	8.4	4.0	12.3	9.0	4.7
1	<b>Regions: Belgorod</b>	72.2	0.0	72.2	9.3	0.0	9.3	4.2	2.7	6.9	6.9	4.6
2	Bryansk	31.0	1.1	32.1	3.9	28.7	32.7	8.2	2.5	10.7	24.2	0.3
3	Vladimir	66.9	0.0	66.9	12.1	0.0	12.1	10.8	2.9	13.6	6.6	0.8
4	Voronezh	63.3	0.0	63.3	9.7	0.0	9.7	7.9	6.0	13.9	7.1	6.0
5	Ivanovo	70.9	0.0	70.9	12.8	0.0	12.8	7.7	3.8	11.5	2.6	2.1
6	Kaluga	59.8	0.0	59.8	10.3	1.0	11.3	13.1	6.2	19.2	6.9	2.7
7	Kostroma	45.9	0.0	45.9	18.9	1.4	20.3	17.6	2.7	20.3	12.2	1.4
8	Kursk	57.6	0.0	57.6	16.7	0.0	16.7	6.8	3.0	9.8	11.4	4.5
9	Lipetsk	69.8	0.0	69.8	6.5	0.0	6.5	5.9	4.1	10.1	8.3	5.3
10	Moscow	61.8	0.0	61.8	13.8	0.0	13.8	10.3	4.2	14.5	6.5	3.5
11	Orel	76.7	4.5	81.2	6.5	0.4	6.9	4.9	5.3	10.2	1.2	0.4
12	Ryazan	46.6	0.7	47.3	14.4	6.2	20.5	8.2	7.5	15.8	15.1	1.4
13	Smolensk	60.0	0.0	60.0	10.7	0.7	11.3	14.7	3.3	18.0	6.7	4.0
14	Tambov	60.0	0.0	60.0	15.8	0.0	15.8	8.4	5.3	13.7	5.8	4.7
15	Tver	52.7	9.6	62.2	5.9	8.5	14.4	5.9	3.2	9.0	12.8	1.6
16	Tula	57.0	0.0	57.0	10.4	1.1	11.5	11.5	2.6	14.1	13.7	3.7
17	Yaroslavl	30.4	0.0	30.4	25.9	3.6	29.5	7.1	4.5	11.6	25.9	2.7
18	<b>City: Moscow</b>	57.5	0.2	57.6	11.5	0.0	11.5	4.3	3.2	7.5	4.8	18.5
	<b>REGION: Northwestern</b>	45.7	4.6	50.2	12.6	5.6	18.2	12.5	3.9	16.4	12.4	2.7
19	<b>Republics: Kareliya</b>	52.0	0.0	52.0	14.3	0.0	14.3	17.1	4.6	21.7	6.9	5.1
20	Komi	36.7	12.9	49.6	15.8	3.2	19.1	8.6	4.3	12.9	12.6	5.8
21	<b>Regions: Arkhangelsk</b>	47.2	0.8	48.0	25.6	0.0	25.6	17.7	2.0	19.7	5.5	1.2
	Nenetsky AD	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Vologda	56.5	0.0	56.5	3.7	7.5	11.2	9.9	7.5	17.4	13.0	1.9
23	Kaliningrad	21.8	14.2	36.0	10.8	18.9	29.7	9.9	5.2	15.1	18.0	1.2
24	Leningrad	47.3	0.7	48.0	5.3	9.3	14.7	16.3	4.0	20.3	13.7	3.3
25	Murmansk	26.2	2.7	28.9	18.8	0.7	19.5	14.8	2.0	16.8	30.2	4.7
26	Novgorod	73.0	0.0	73.0	11.5	0.0	11.5	9.2	2.3	11.5	3.4	0.6
27	Pskov	65.5	0.8	66.4	8.8	0.4	9.2	10.1	3.4	13.4	9.2	1.7
28	<b>City: St-Petersburg</b>											
	<b>REGION: Southern</b>	63.6	4.3	67.9	9.2	4.0	13.2	4.6	2.8	7.4	7.1	4.3



№ № nn.	Federal REGIONS, areas of the Russian Federation	2005 %										
		Successful treatment			Failure			Died			Defaulted	Tranferred out
		By microscopy	Clinico- radiological	Total	By microscopy	Clinico- radiological	Total	of TB	not of TB	Total		
	<b>REGION: Siberian</b>	53.8	1.6	55.4	9.9	3.7	13.6	11.9	4.0	15.9	11.3	3.8
59	<b>Republics: Altai</b>	61.2	4.7	65.9	12.9	1.2	14.1	9.4	2.4	11.8	7.1	1.2
60	Buryatiya	38.2	1.4	39.7	13.3	5.4	18.7	6.8	5.1	11.9	26.6	3.1
61	Tyva											
62	Khakasiya	51.5	1.5	52.9	19.5	7.7	27.2	11.4	2.6	14.0	4.4	1.5
63	<b>Krai: Altai</b>	51.4	0.5	51.9	12.7	3.3	16.0	12.8	3.2	16.0	11.1	4.9
64	Krasnoyarsky	61.6	0.1	61.7	5.8	0.9	6.8	10.0	3.0	13.1	16.8	1.6
	Taimyrsky AD	81.8	0.0	81.8	0.0	0.0	0.0	0.0	0.0	0.0	18.2	0.0
	Evenkiysky AD	66.7	0.0	66.7	0.0	0.0	0.0	33.3	0.0	33.3	0.0	0.0
65	<b>Regions: Irkutsk</b>	48.7	3.7	52.4	6.1	3.8	9.9	14.7	4.7	19.3	15.9	2.4
	Ust-Ordynsky Buryatskiy AD	60.3	0.0	60.3	5.9	1.5	7.4	11.8	4.4	16.2	10.3	5.9
66	Kemerovo	53.3	0.5	53.8	9.9	4.7	14.6	14.7	4.4	19.1	8.9	3.6
67	Novosibirsk	54.8	2.3	57.1	11.8	2.3	14.1	11.2	4.2	15.4	6.8	6.6
68	Omsk	44.7	3.5	48.2	14.2	3.8	18.0	8.8	3.7	12.5	14.2	7.0
69	Tomsk	66.9	2.9	69.7	5.1	7.4	12.6	9.1	2.9	12.0	3.4	2.3
70	Chita	68.5	0.0	68.5	6.3	1.6	7.9	11.7	6.0	17.7	4.1	1.9
	Aginsky Buryatsky AD	80.0	0.0	80.0	0.0	0.0	0.0	5.0	10.0	15.0	5.0	0.0
	<b>REGION: Far Estern</b>	47.6	3.6	51.2	8.6	6.9	15.5	11.7	3.9	15.5	13.3	4.5
71	<b>Republic: Sakha (Yakutiya)</b>	69.7	0.0	69.7	10.8	0.0	10.8	7.7	3.1	10.8	4.1	4.6
72	<b>Krai: Primorsky</b>	42.8	3.6	46.4	6.5	9.3	15.8	14.1	4.6	18.7	14.5	4.6
73	Khabarovsky	44.9	0.0	44.9	13.5	3.5	17.0	8.2	3.5	11.7	19.4	7.0
74	<b>Regions: Amur</b>	31.6	16.1	47.7	6.7	12.4	19.2	15.0	3.6	18.7	10.4	4.1
75	Kamchatka	29.5	0.0	29.5	13.6	15.9	29.5	11.4	2.3	13.6	22.7	4.5
	Koryaksky AD											
76	Magadan	25.0	4.2	29.2	8.3	8.3	16.7	4.2	0.0	4.2	50.0	0.0
77	Sakhalin	71.9	3.0	74.9	5.9	2.5	8.4	8.9	3.9	12.8	3.9	0.0
78	<b>Autonomous region: Jewish</b>	58.8	0.0	58.8	17.6	0.0	17.6	9.8	0.0	9.8	9.8	3.9
79	<b>Autonomous REGION: Chuko</b>	50.0	0.0	50.0	16.7	16.7	33.3	0.0	0.0	0.0	0.0	16.7

Evaluation of TB detection in Russia for the period of 2002-2006

№ № пп.	Federal REGIONS, areas of the Russian Federation	Coverage of the population by screening				Proportion of TB patients detected during screening of all new cases				
		%				%				
		2002	2003	2004	2005	2002	2003	2004	2005	2006
	<b>РОССИЯ</b>	<b>58.5</b>	<b>58.4</b>	<b>57.8</b>	<b>58.2</b>	<b>52.8</b>	<b>52.8</b>	<b>53.5</b>	<b>53.4</b>	<b>54.5</b>
	<b>REGION: Central</b>	<b>50.8</b>	<b>49.8</b>	<b>49.3</b>	<b>49.0</b>	<b>45.3</b>	<b>44.4</b>	<b>46.6</b>	<b>48.0</b>	<b>46.8</b>
1	<b>Regions: Belgorod</b>	65.2	67.4	67.3	63.0	59.1	56.2	60.1	62.0	61.1
2	Bryansk	46.0	49.2	46.8	46.8	36.1	36.6	41.5	46.0	39.0
3	Vladimir	46.7	46.2	47.1	47.2	36.9	38.2	41.8	43.2	46.5
4	Voronezh	61.8	66.5	63.9	64.6	64.1	68.9	68.6	70.1	68.3
5	Ivanovo	70.6	75.3	70.0	68.1	50.1	47.6	48.6	44.6	46.6
6	Kaluga	54.1	45.4	43.4	43.2	51.2	51.9	51.1	49.9	43.4
7	Kostroma	49.6	52.7	50.7	51.6	57.0	45.9	48.8	48.5	41.3
8	Kursk	51.8	53.7	55.4	53.9	48.0	44.8	44.8	49.4	50.4
9	Lipetsk	61.2	64.6	65.6	70.0	59.3	60.4	60.2	62.2	62.7
10	Moscow	39.7	42.1	40.1	38.8	42.8	35.9	40.7	41.7	36.9
11	Orel	64.5	62.9	58.0	57.4	41.5	40.8	40.0	42.8	41.1
12	Ryazan	57.4	58.4	57.5	59.2	56.1	55.3	54.1	61.6	60.8
13	Smolensk	58.8	61.3	61.6	48.7	45.1	37.6	37.4	43.6	39.5
14	Tambov	58.3	60.4	60.0	59.5	49.5	51.6	55.0	55.0	60.7
15	Tver	64.7	60.6	56.0	57.9	49.4	45.6	45.4	45.2	40.5
16	Tula	58.4	56.6	57.0	55.3	49.5	55.1	50.6	44.4	50.3
17	Yaroslavl	54.9	55.9	52.6	50.5	39.1	46.2	48.3	48.4	45.8
18	<b>City: Moscow</b>	41.0	36.2	38.9	40.4	25.7	27.3	35.2	37.8	40.4
	<b>REGION: Nortwestern</b>	<b>54.2</b>	<b>54.4</b>	<b>53.6</b>	<b>54.0</b>	<b>47.4</b>	<b>46.3</b>	<b>47.5</b>	<b>48.8</b>	<b>50.3</b>
19	<b>Republics: Kareliya</b>	53.4	58.1	54.9	54.6	51.2	38.4	44.6	48.8	42.7
20	Komi	59.0	64.6	63.3	61.6	45.2	49.2	48.0	50.1	43.1
21	<b>Regions: Arkhangelsk</b>	52.9	56.1	55.9	53.4	41.0	40.0	44.0	41.1	38.7
	Nenetsky AD	73.0	77.7	78.9	78.0	66.7	85.0	100.0	85.0	95.7
22	Vologda	60.9	61.9	61.6	62.2	51.3	49.9	50.3	47.4	50.1
23	Kaliningrad	51.3	53.1	47.8	52.3	57.3	54.3	47.0	52.7	60.7
24	Leningrad	55.8	54.3	48.2	49.9	46.5	42.8	49.2	48.2	52.3
25	Murmansk	49.3	54.8	53.6	49.4	43.7	38.2	37.5	41.7	43.1
26	Novgorod	66.0	65.7	66.1	66.1	48.9	50.4	47.7	47.7	50.6
27	Pskov	53.9	54.6	57.3	54.1	49.5	54.9	55.8	44.7	48.2
28	<b>City: St-Petersburg</b>	50.9	47.6	49.3	51.0	44.5	45.1	48.2	53.3	54.0
	<b>REGION: Southern</b>	<b>59.8</b>	<b>57.3</b>	<b>57.5</b>	<b>59.2</b>	<b>53.9</b>	<b>53.6</b>	<b>55.3</b>	<b>52.9</b>	<b>54.0</b>

№ № пп.	Federal REGIONS, areas of the Russian Federation	Coverage of the population by screening				Proportion of TB patients detected during screening of all new cases				
		%				%				
		2002	2003	2004	2005	2002	2003	2004	2005	2006
29	<b>Republics: Adygeya</b>	50.4	47.3	49.5	49.3	42.5	42.2	42.2	44.6	47.7
30	Dagestan	75.0	62.8	67.8	80.2	47.9	50.5	50.5	50.8	44.0
31	Ingushetiya	57.6	40.3	39.9	40.2	100.0	31.4	58.6	53.5	30.8
	Чечня									10.6
32	Kabardino-Balkariya	53.1	43.3	41.2	45.4	37.3	38.3	35.4	37.6	53.2
33	Kalmykiya	68.1	68.7	67.1	66.2	50.3	53.6	57.5	58.6	49.5
34	Karachaevo-Cherkessiya	50.1	58.8	58.2	58.9	44.8	43.6	51.2	49.8	90.3
35	North Osetiya - Alaniya	66.3	63.2	61.8	60.2	54.3	46.2	51.6	100.0	10.6
36	<b>Krai: Krasnodarsky</b>	59.3	58.0	57.9	57.5	52.5	53.3	52.1	47.2	52.1
37	Stavropolsky	73.4	71.9	64.3	69.4	54.4	55.0	54.7	3.7	56.1
38	<b>Regions: Astrakhan</b>	54.1	54.0	58.7	61.0	62.4	62.9	62.8	56.5	57.2
39	Volgograd	53.5	54.6	57.3	51.5	46.1	50.5	53.4	51.4	56.0
40	Rostov	51.4	50.3	51.4	51.9	61.7	62.2	65.1	77.9	72.2
	<b>REGION: Privolzhsky</b>	<b>67.0</b>	<b>67.5</b>	<b>65.7</b>	<b>66.3</b>	<b>58.7</b>	<b>58.8</b>	<b>59.8</b>	<b>59.3</b>	<b>58.6</b>
41	<b>Republics: Bashkortostan</b>	64.5	63.8	65.6	63.1	54.7	54.9	57.1	57.0	57.0
42	Mariy El	70.4	59.0	0.0	60.9	38.7	48.4	53.3	50.8	47.4
43	Mordoviya	63.1	71.0	71.1	72.4	59.5	58.0	56.7	59.9	57.6
44	Tatarstan	69.1	67.4	67.4	67.0	61.9	59.1	61.0	60.1	58.5
45	Udmurtiya	64.2	66.0	63.5	64.1	50.4	48.0	48.8	50.0	55.3
46	Chuvashiya	63.7	67.8	63.3	63.0	50.6	46.5	44.4	46.4	50.7
47	<b>Regions: Kirov</b>	63.3	61.1	59.8	58.4	49.3	48.5	55.2	54.3	58.7
48	Nizhniy Novgorod	50.9	51.4	50.1	50.4	55.6	55.9	57.6	55.9	52.9
49	Orenburg	71.9	71.3	70.6	69.6	62.0	65.2	65.4	61.8	62.0
50	Penza	50.4	54.2	53.0	52.4	52.3	63.0	62.9	65.4	55.9
51	Perm (Permsky krai)	67.5	69.8	68.8	69.0	55.7	55.1	58.5	56.7	58.1
	Komi-Permsky AD	72.1	80.0	75.7	74.4	61.8	57.4	62.9	54.7	
52	Samara	75.8	76.5	75.8	75.1	70.5	69.8	69.1	67.4	66.1
53	Saratov	88.6	89.2	90.2	88.9	74.6	74.0	73.5	76.8	72.5
54	Uliyanovsk	68.3	69.7	71.6	67.6	52.1	51.1	51.6	46.1	46.9
	<b>DISTRICT: Urals</b>	<b>61.7</b>	<b>63.3</b>	<b>63.8</b>	<b>63.3</b>	<b>53.6</b>	<b>56.4</b>	<b>57.9</b>	<b>57.1</b>	<b>58.1</b>
55	<b>Regions: Kurgan</b>	58.8	64.2	68.4	61.9	53.5	55.4	59.3	55.6	58.4
56	Sverdlovsk	57.9	58.6	57.8	59.3	49.3	49.4	53.5	52.1	53.2
57	Tyumen	71.7	74.7	76.2	74.5	60.1	63.7	62.0	62.7	64.1
	Khanty-Mantyisky AD	78.6	79.6	79.6	79.4	67.0	65.2	70.0	66.9	70.3
	Yamalo-Nenetsky AD	81.0	85.2	82.7	85.8	62.9	60.3	63.4	67.1	61.2

№ № №№.	Federal REGIONS, areas of the Russian Federation	Coverage of the population by screening				Proportion of TB patients detected during screening of all new cases				
		%				%				
		2002	2003	2004	2005	2002	2003	2004	2005	2006
58	Chelyabinsk	58.2	58.6	58.7	58.2	50.8	57.1	58.0	57.2	57.4
	<b>REGION: Siberian</b>	<b>58.0</b>	<b>60.0</b>	<b>60.1</b>	<b>60.3</b>	<b>52.9</b>	<b>52.5</b>	<b>55.1</b>	<b>54.9</b>	<b>55.9</b>
59	<b>Republics: Altai</b>	59.5	66.3	67.6	73.3	55.4	66.2	56.7	55.1	58.4
60	Buryatiya	71.6	72.7	62.6	60.5	71.1	64.2	63.2	55.1	59.8
61	Tyva	67.7	67.5	70.8	80.6	54.2	55.2	63.5	60.2	66.6
62	Khakasiya	49.2	50.3	60.5	50.2	46.3	55.0	46.1	44.2	46.7
63	<b>Krai: Altai</b>	56.3	56.7	58.7	58.2	58.8	54.0	56.4	57.3	59.4
64	Krasnoyarsky	54.7	57.6	54.1	53.1	50.2	51.1	53.2	50.1	52.1
	Taimyrsky AD	77.8	77.7	78.7	82.3	59.3	69.2	78.8	73.1	62.5
	Evenkiysky AD	63.1	73.9	71.2	70.6	34.5	51.4	33.3	50.0	63.6
65	<b>Regions: Irkutsk</b>	52.7	53.8	55.3	56.7	41.3	40.9	40.6	42.2	43.2
	Ust-Ordynsky Buryatskiy AD	59.6	68.7	97.5	81.2	41.9	42.6	46.4	53.8	55.5
66	Kemerovo	54.1	56.9	56.7	56.4	42.7	43.7	50.4	50.6	48.6
67	Novosibirsk	60.9	62.8	63.5	67.5	56.2	55.9	60.6	61.1	62.3
68	Omsk	71.7	67.6	69.6	69.2	66.2	61.7	66.9	74.5	68.5
69	Tomsk	48.0	52.8	52.8	53.3	46.4	53.3	52.9	49.0	55.3
70	Chita	59.5	72.7	73.8	72.1	55.2	59.5	61.0	61.4	64.1
	Aginsky Buryatsky AD	78.1	84.6	85.9	80.1	73.0	65.2	60.4	67.6	61.1
	<b>REGION: Far Estern</b>	<b>59.5</b>	<b>61.7</b>	<b>60.5</b>	<b>61.8</b>	<b>57.7</b>	<b>58.9</b>	<b>45.5</b>	<b>45.9</b>	<b>58.8</b>
71	<b>Republic: Sakha (Yakutiya)</b>	68.7	65.8	70.2	72.2	60.1	65.7	69.8	67.4	53.0
72	<b>Krai: Primorsky</b>	53.9	55.1	54.9	54.4	51.8	52.9	51.3	50.6	51.4
73	Khabarovsk	67.9	70.3	64.2	65.9	64.3	64.4	0.0	5.2	69.7
74	<b>Regions: Amur</b>	57.9	64.1	62.8	64.2	59.3	59.6	59.4	60.6	71.4
75	Kamchatka	38.9	40.6	38.5	50.2	64.2	59.6	68.7	67.7	59.7
	Koryaksky AD	45.5	0.0	53.0	64.5	75.8	0.0	71.4	74.5	72.2
76	Magadan	48.5	65.1	68.6	67.0	59.9	83.3	77.3	79.0	61.8
77	Sakhalin	60.6	62.4	60.6	60.1	53.5	52.8	50.4	54.9	52.1
78	<b>Autonomous region: Jewish</b>	61.6	64.2	59.0	58.0	64.2	59.4	59.7	60.6	48.0
79	<b>Autonomous REGION: Chuk</b>	73.5	91.4	82.8	95.1	41.9	28.6	75.0	56.4	75.0