



ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ УЧРЕЖДЕНИЕ  
ЦЕНТРАЛЬНЫЙ НИИ ОРГАНИЗАЦИИ И  
ИНФОРМАТИЗАЦИИ ЗДРАВООХРАНЕНИЯ  
МИНИСТЕРСТВА ЗДРАВООХРАНЕНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

# Impact of HIV infection on TB epidemic in Russia

**Olga Nechaeva**

Head of the Federal Monitoring Center for Counteraction to Tuberculosis Spread in the Russian Federation, Federal Research Institute for Health Organization and Informatics, Moscow, Russia  
Doctor of Medical Science, professor

Vilnius, 2017.10.04

# Tuberculosis and HIV infection in Russia

HIV infection exceeds TB: prevalence since 2008 notification since 2014 mortality rate since 2015

**TB screening coverage (%):**

**TB:**

2005 – 57,9%  
2015 – 68,1%  
2016 – 69,3%.

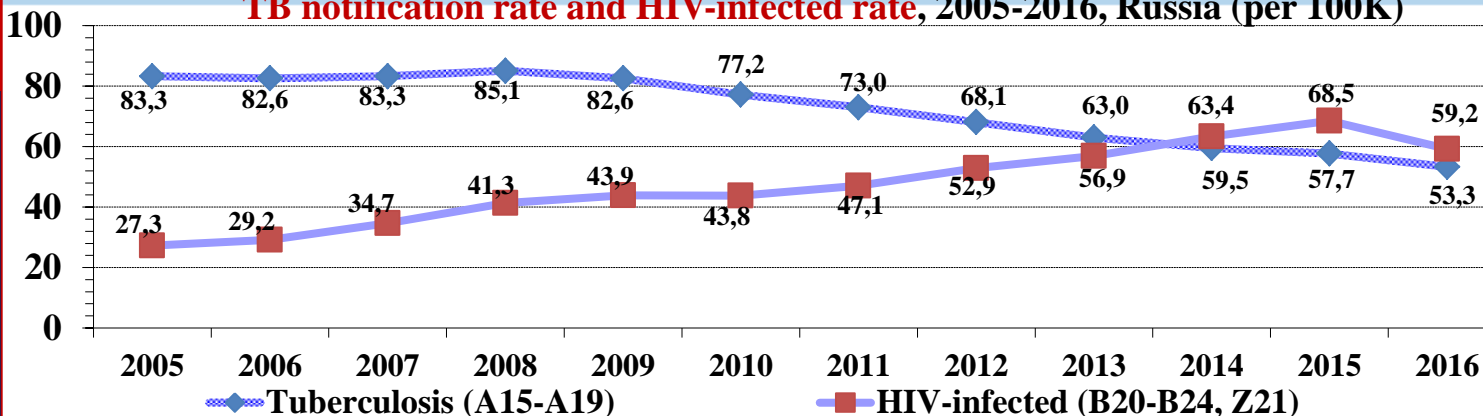
**HIV antibodies screening coverage:**

2005 – 13,6%  
2015 – 20,5%  
2016 – 21,9%

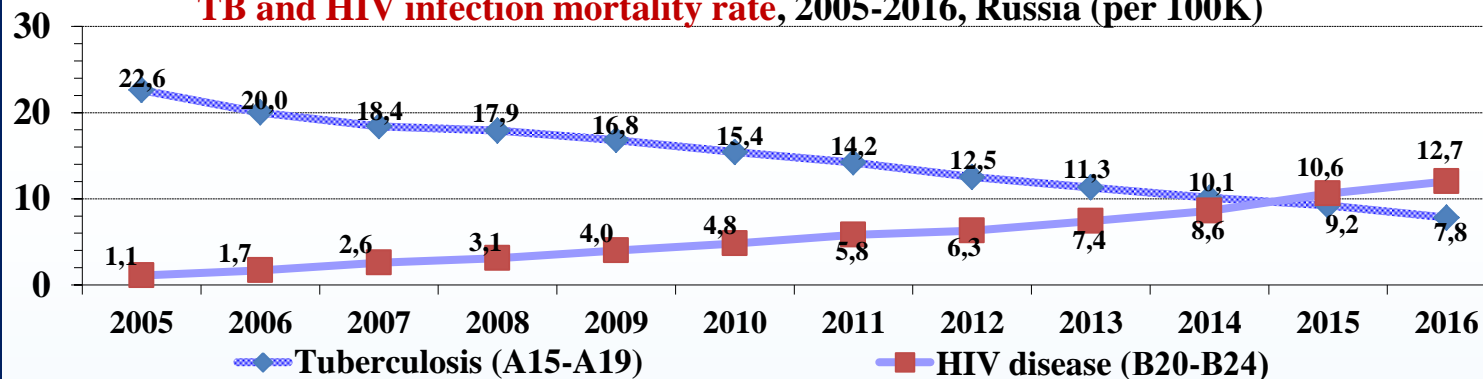
**HIV cases detected per 1000 examined:**

2005 – 0,20%  
2015 – 0,33%  
2016 – 0,38%

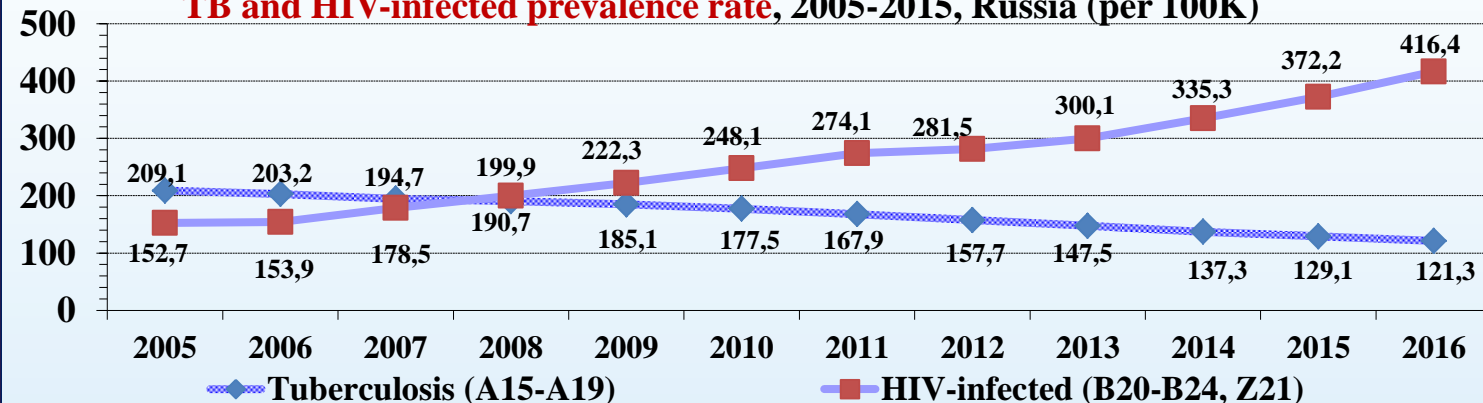
**TB notification rate and HIV-infected rate, 2005-2016, Russia (per 100K)**



**TB and HIV infection mortality rate, 2005-2016, Russia (per 100K)**



**TB and HIV-infected prevalence rate, 2005-2015, Russia (per 100K)**



**Tuberculosis and HIV infected**

**Notified cases (TB) - 2016:**

**85,6% - residents**

**8,5% - prison (reducing)**

**3,6% - foreigners (increasing)**

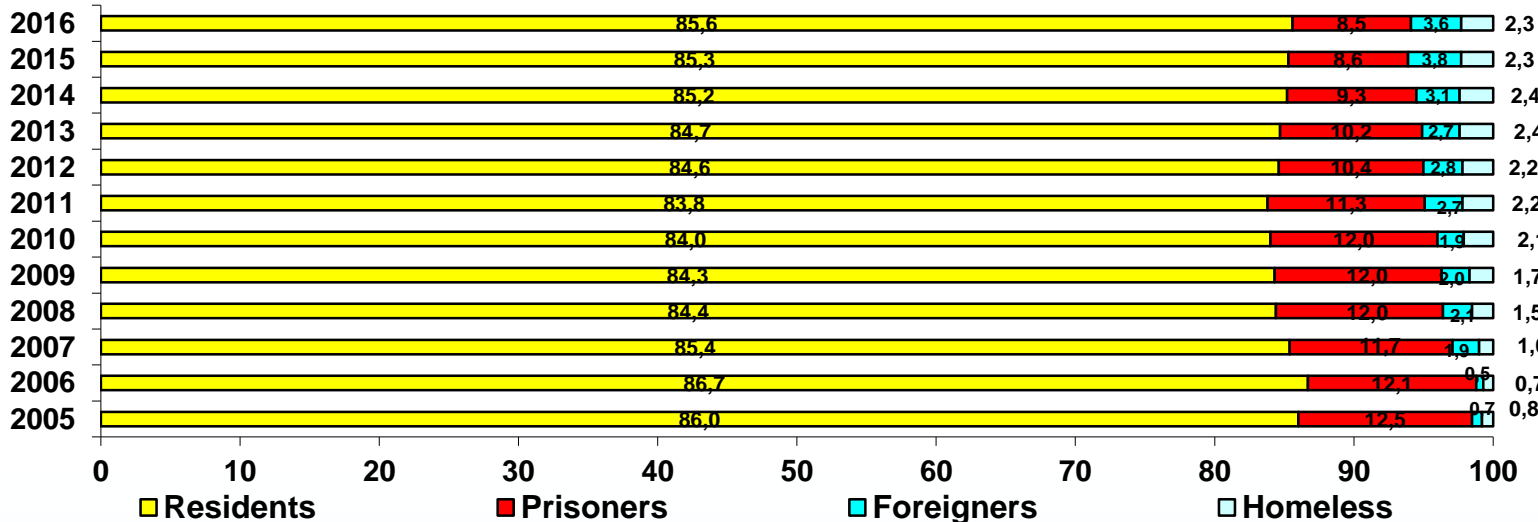
**Of them high in Moscow (29,5%)**

**Saint-Petersburg (13,0%)**

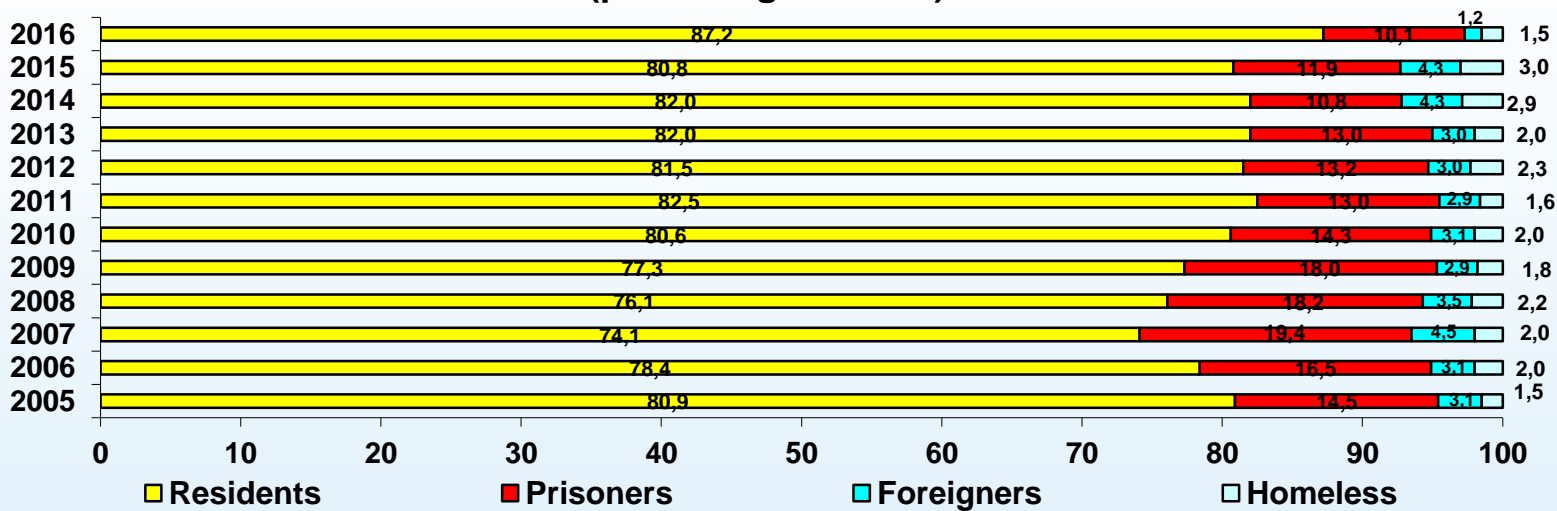
**Notified cases (HIV infected) - 2016:**

**87,2% - residents**

**Tuberculosis rate breakdown in the Russian Federation, 2005-2016 (percentage of total)**



**HIV-infected rate breakdown in the Russian Federation, 2005-2016 (percentage of total)**



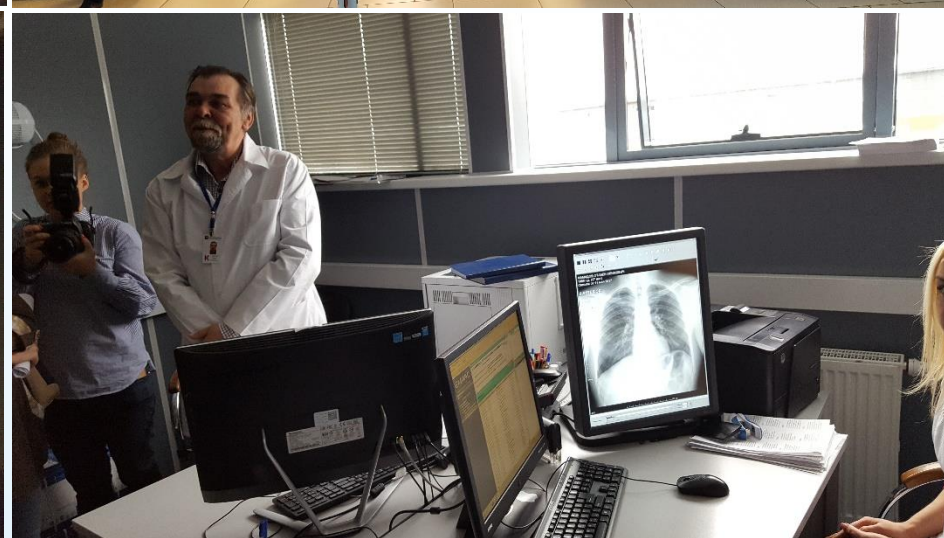


*Collaboration with the International Federation  
of Red Cross and Red Crescent (IFRC) and the  
Russian Red Cross (RRC)*

- **Access of Migrant to Services on Early Detection, Diagnosis, Prevention and Treatment of Tuberculosis and Tuberculosis Associated with HIV Infection (Analytical Review) / O. Demikhova, O. Nechaeva. – Moscow, 2016. – P. 62.**
- **[http://www.mednet.ru/images/stories/files/CMT/migranti\\_eng.pdf](http://www.mednet.ru/images/stories/files/CMT/migranti_eng.pdf)**



In the regions bearing serious migration burden it is reasonable to establish specialized medical centers for medical certification of labor migrants integrated into the system of measures implemented by the Directorate of the Federal Migration Service of the Russian Federation. This will allow to arrange the work on the basis of one-stop principle.



ЦЕНТРАЛЬНЫЙ НИИ ОРГАНИЗАЦИИ И  
ИНФОРМАТИЗАЦИИ ЗДРАВООХРАНЕНИЯ  
[www.mednet.ru](http://www.mednet.ru)

**TB and HIV infection**

Overall TB notification rate in HIV-infected positively correlates with TB / HIV coinfection notification rate

HIV positive 51 times more often contract TB than HIV negative

Federal Okrug	2016: HIV ab screening coverage (%)* incl. prison	HIV-infection (residents), 2016			New TB cases in the Russian Federation, 2016 (residents)									
		Newly diagnosed (per 100K)	Prevalence rate		TB, all cases, abs	per 100K	TB / HIV-pos, abs	Rank	per 100K	TB / HIV-neg, abs	Rank	per 100K	Ratio: «HIV+» / «HIV-»	
			per 100K	% of late stages (4B + 4B + 5)										
<b>Russia</b>	<b>21,9</b>	<b>54,2</b>	<b>373,5</b>	<b>20,9</b>	66 891	<b>45,6</b>	12 489		<b>1897,6</b>	54 402		<b>37,3</b>	<b>50,9</b>	
Central	25,4	28,5	267,7	24,1	10 494	26,8	1 202	2	1099,3	9 292	1	23,8	46,2	
North-West	18,8	41,2	459,9	30,5	4 255	30,7	711	1	1085,1	3 544	2	25,7	42,3	
South	19,4	39,0	233,0	31,1	7 204	43,9	808	5	1920,7	6 396	5	39,1	49,1	
North Caucasus	15,3	11,8	74,5	15,1	3 151	32,3	108	3	1472,2	3 043	3	31,2	47,1	
Volga	20,6	65,0	491,7	16,6	13 329	44,9	2 977	4	1859,3	10 352	4	35,1	53,0	
Ural	25,6	96,2	689,4	21,0	7 524	61,0	2 376	6	2070,1	5 148	6	42,2	49,1	
Siberia	21,2	114,0	462,6	14,6	15 854	82,0	3 987	8	2749,8	11 867	7	61,9	44,4	
Far East	23,1	31,5	219,1	37,2	5 078	82,1	320	7	2288,0	4 758	8	77,1	29,7	



# Tuberculosis and HIV infection

**Pick of TB notification and of HIV-infected In 25-34 age group (Female), 35-44 age group (Male).**

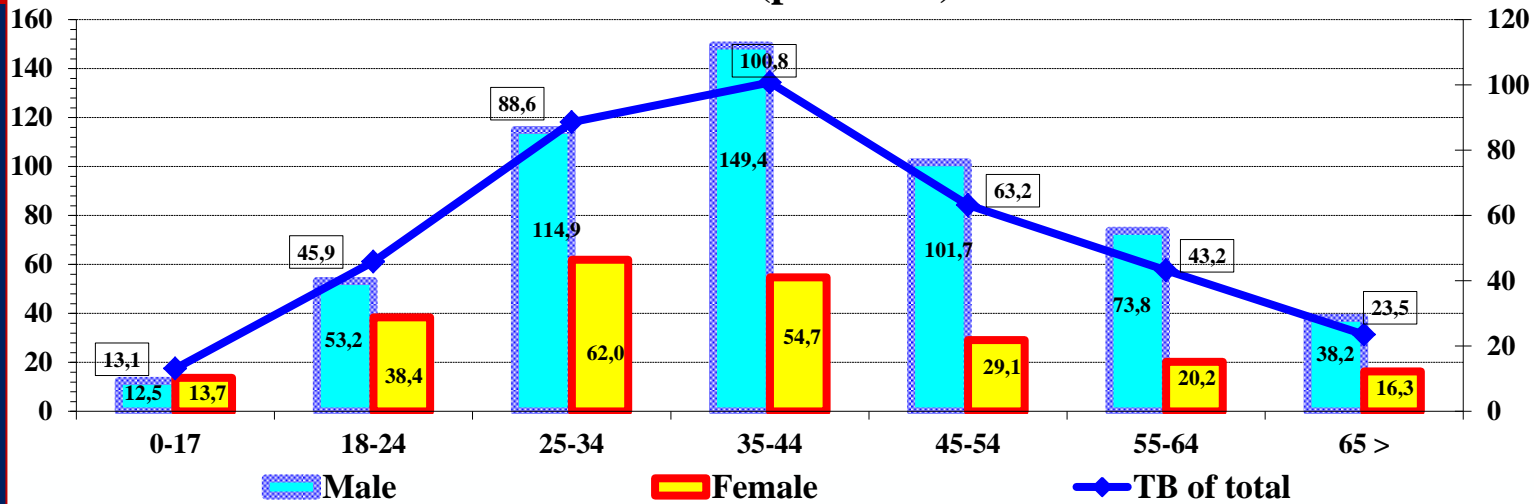
**TB notification in age groups in 2016:**

- 0-17 – 4,9 %
- 18-24 – 6,4 %
- 25-34 – 27,8 %
- 35-44 – 27,7 %
- 0-44 – 66,8%
- 45-54 – 15,6 %
- 55 > – 17,6 %

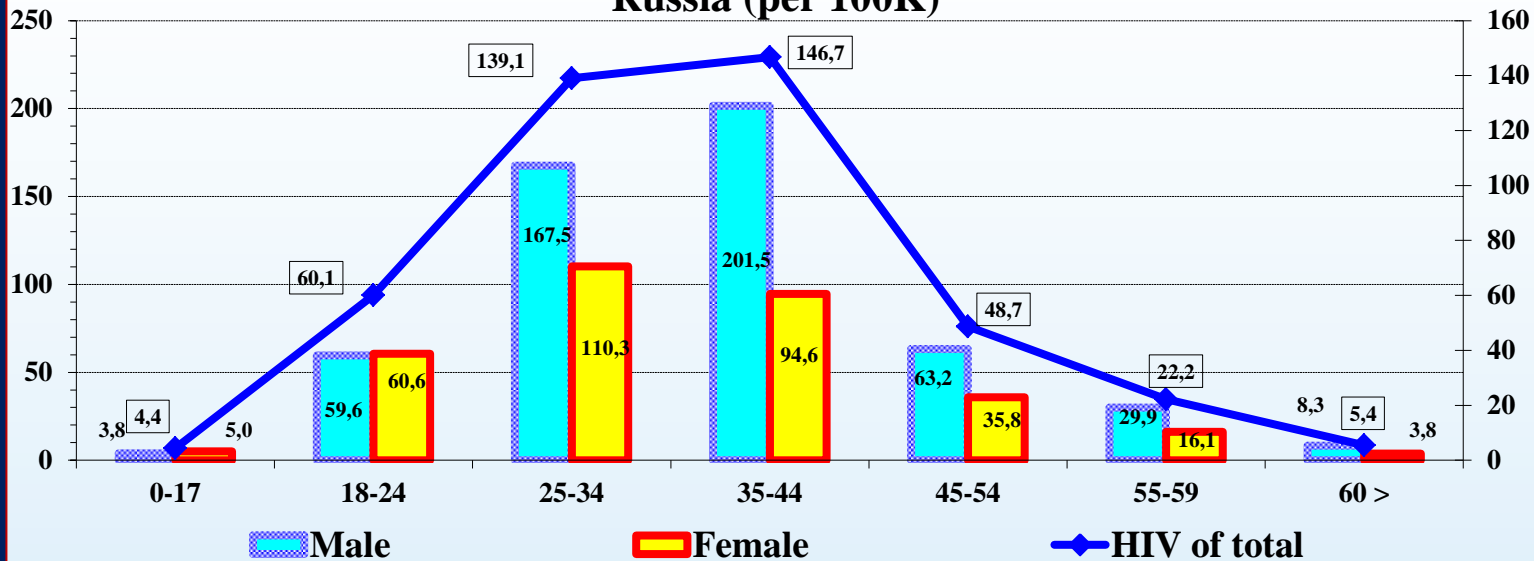
**HIV-infected in age groups in 2016:**

- 0-17 – 1,5 %
- 18-24 – 7,5 %
- 25-34 – 39,3 %
- 35-44 – 36,2 %
- 0-44 – 84,5%
- 45-54 – 10,8 %
- 55 > – 4,7 %

## TB notification rate by age and sex groups, 2016, Russia (per 100K)



## HIV-infected (B20-B24, Z21) rate by age and sex groups, 2016, Russia (per 100K)



## Tuberculosis and HIV infection

**Pick of TB mortality rate** in 35-64 age group (71,9% of total).

**Died from TB in age groups in 2016:**

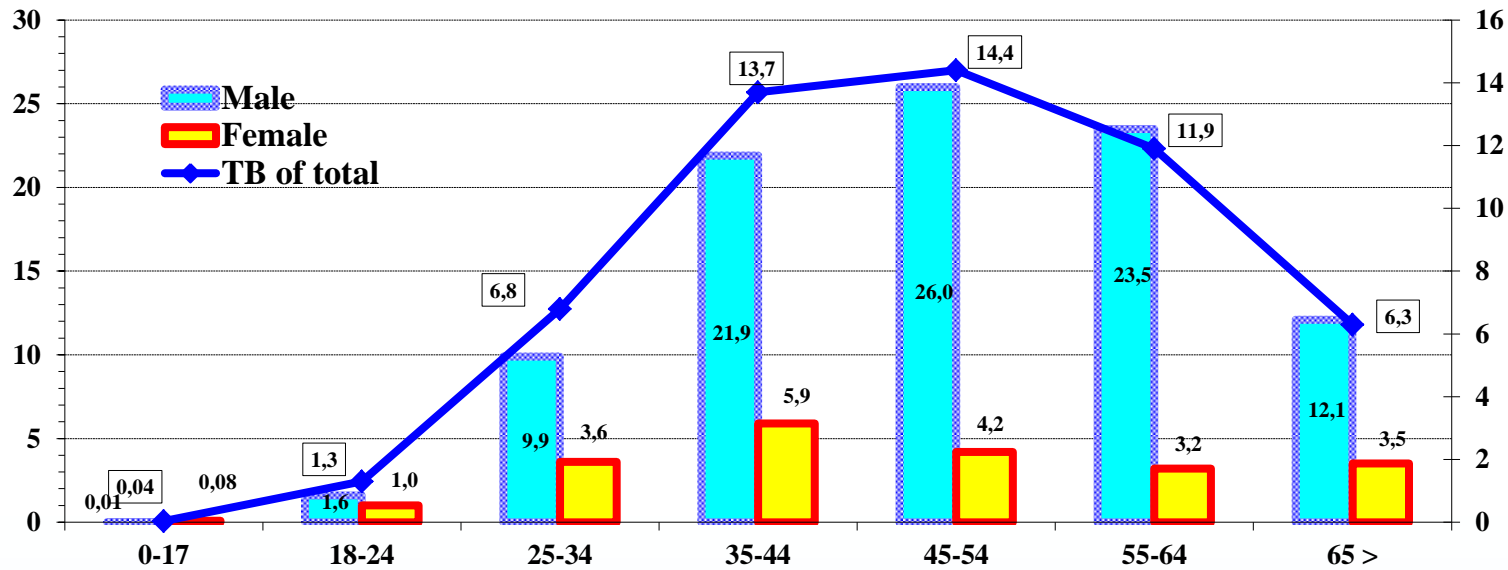
- 0-24 – 1,3 %
- 25-34 – 14,6 %
- 35-44 – 25,8 %
- 0-44 – 41,7%
- 45-54 – 24,6 %
- 55-64 – 21,6 %
- 65 > – 11,4 %

**Pick of HIV mortality rate** in age group 25-44 (81,6% of total)

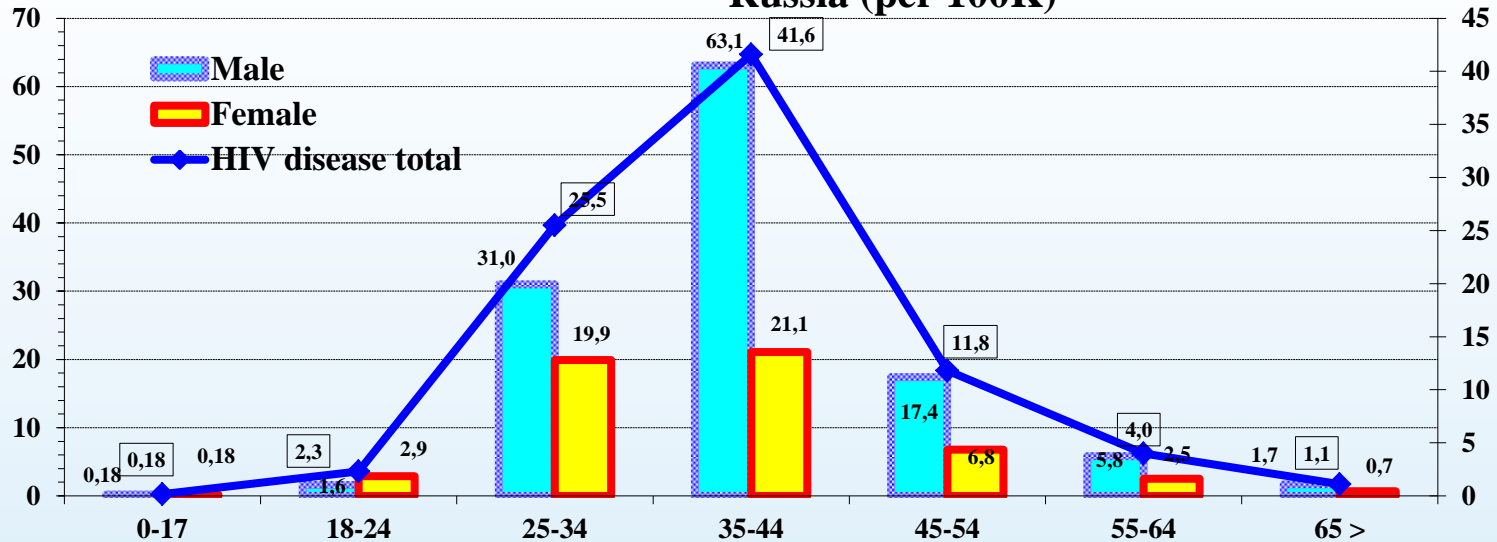
**Died from HIV in 2016:**

- 0-24 – 1,6 %
- 25-34 – 33,6 %
- 35-44 – 48,0 %
- 0-44 – 83,2%
- 45-54 – 12,3 %
- 55-64 – 3,5 %
- 65 > – 0,7 %

### TB mortality rate by age and sex groups, 2016, Russia (per 100K)



### HIV disease mortality rate by age and sex groups, 2016, Russia (per 100K)





- Infectious and parasitic diseases in the structure of mortality from all causes account for a small proportion: 1,7% (2011–2014) — 1,9% (2016)

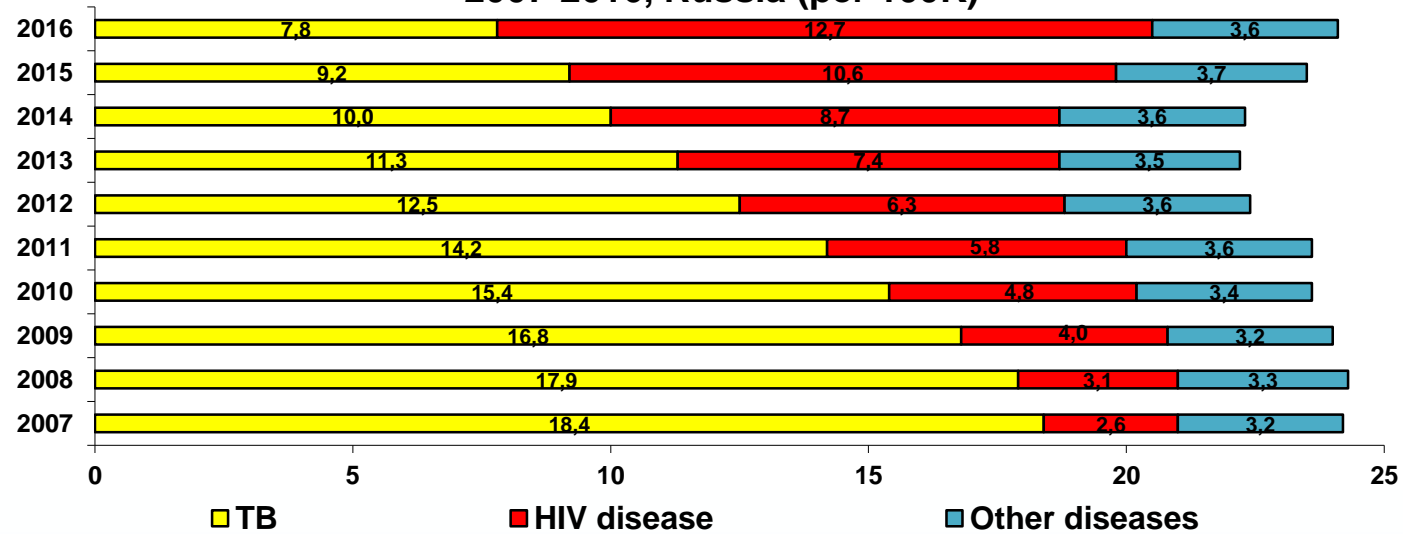
- Their share differs very significantly in different ages (2016):
 

0–17	3,7%
18–44	12,3%
male	11,5%
female	14,5%
45–64	2,0%
65 and over	0,2%.

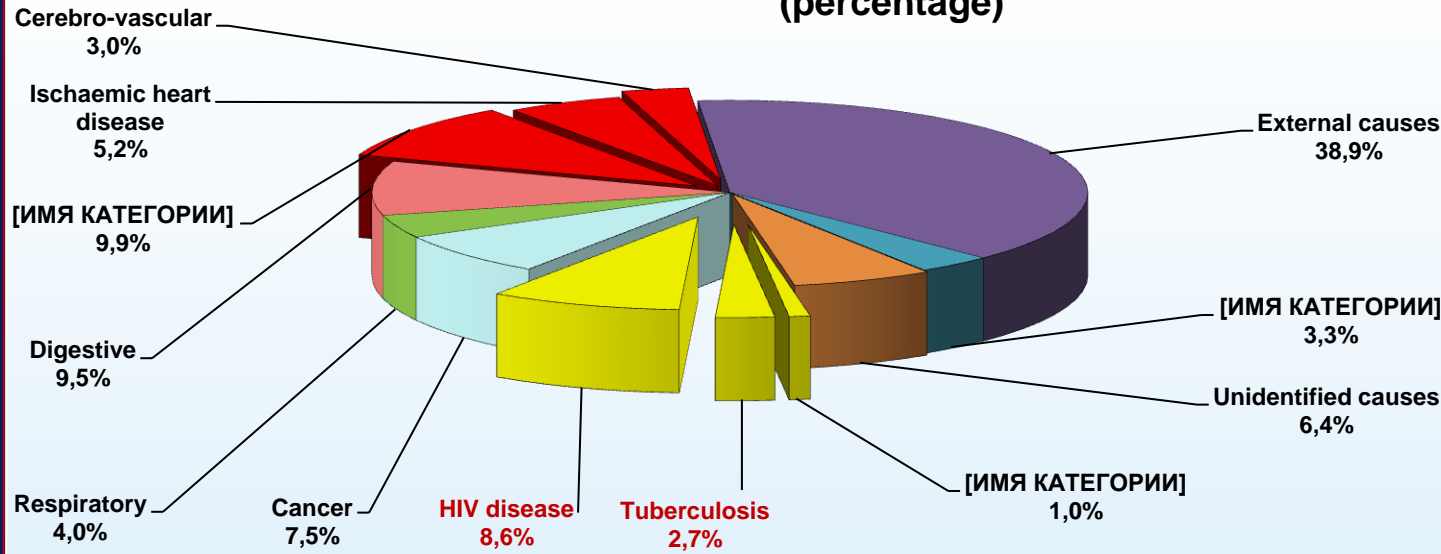
- The proportion of tuberculosis as the cause of death of infectious and parasitic diseases is declining: 82,8% in 2005; 32,2% in 2016 while the proportion of deaths from HIV infection grows from 3,9% in 2005 to 52,6 % in 2016.

- HIV-infection goes to one of the first places in mortality breakdown in age group 18–44 .

**Mortality rate from certain infectious and parasitic diseases, 2007-2016, Russia (per 100K)**



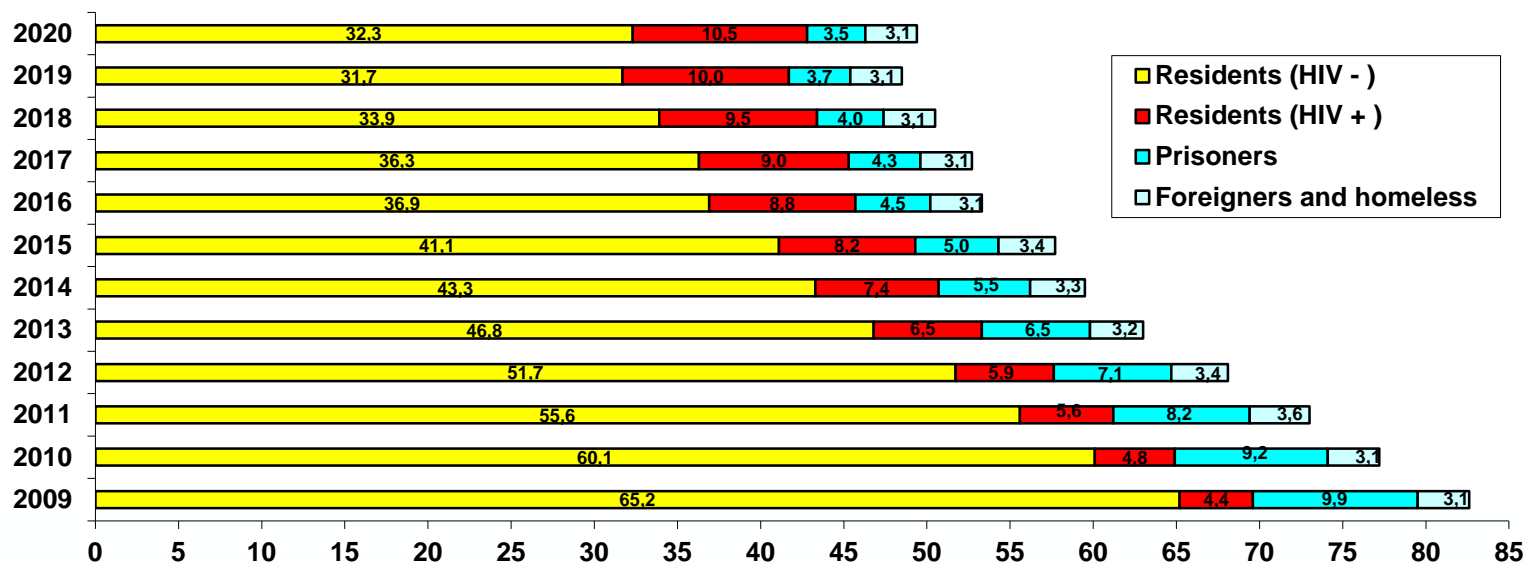
**Mortality by causes of death, age 18-44, Russia, 2016 (percentage)**



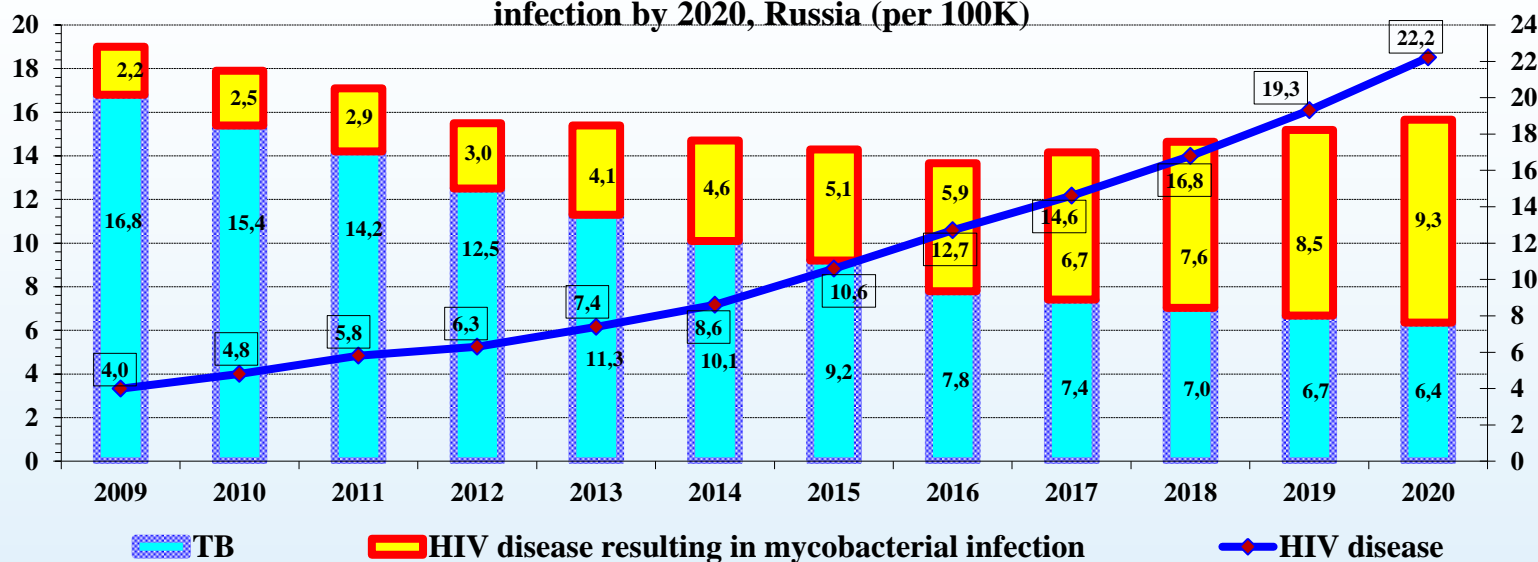
HIV-infection will not allow to reduce the incidence and prevalence of TB

- By 2020 25% of new TB cases will be HIV-infected
- By 2020 most TB patients will be dying from HIV infection and most patients dying from HIV will have TB disease

Prognosis of TB notification rate by 2020, Russia (per 100K)

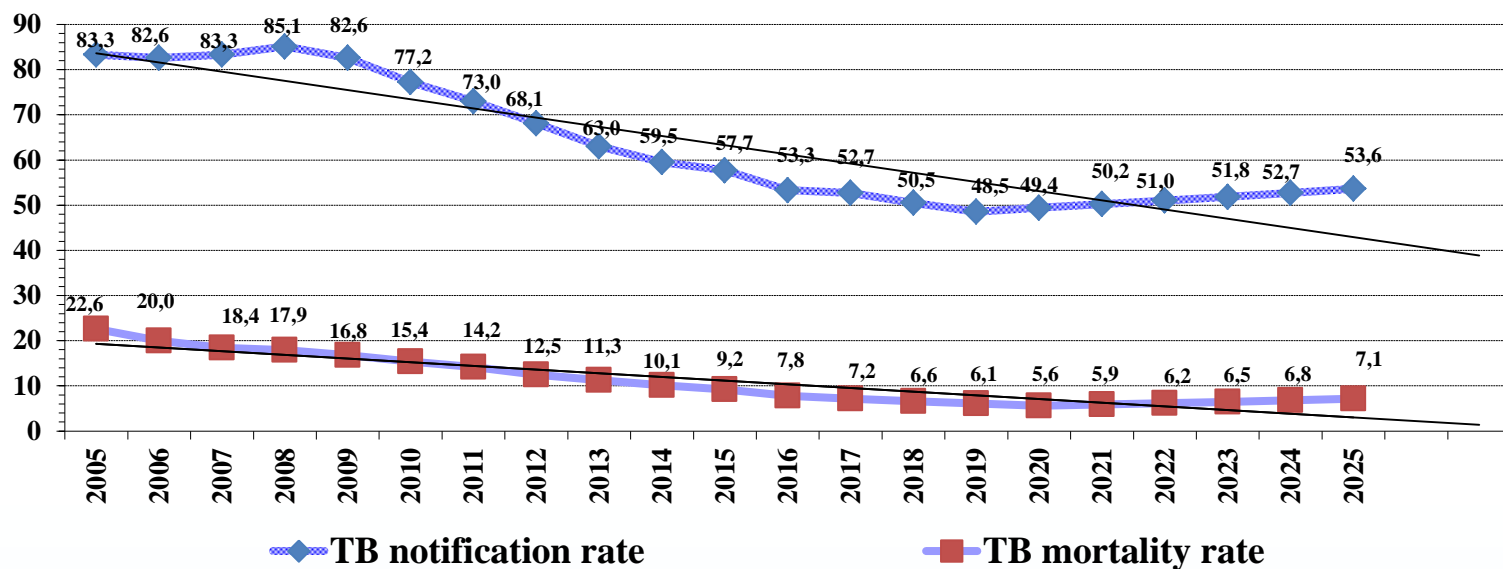


Prognosis of mortality from TB, HIV and HIV disease resulting in mycobacterial infection by 2020, Russia (per 100K)

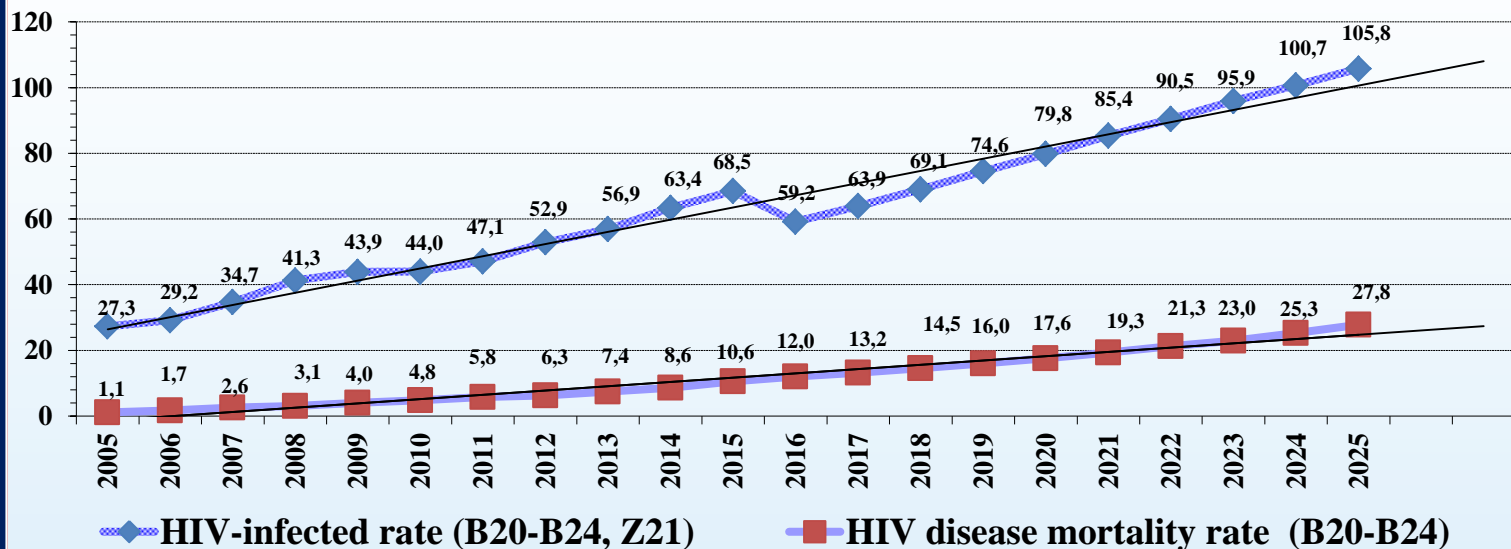


- In Russia there are no social reasons for the rise of TB incidence in the short term.
- But after 2020 the TB incidence can begin to grow through the development of the HIV epidemic.
- Late stage of HIV-infection among the resident population, on the account of TB service:
  - 2005 – 2,8%;
  - 2016 – 20,9%.
- By 2025, the proportion of late stages of HIV infection can reach 40% among HIV-positive.
- The number of patients with late stages of HIV infection increased from 6505 patients in 2005 to 137463 patients in 2016, that is 21 times.

## TB notification and TB mortality rates trend, Russia (per 100K)



## HIV-infected and HIV disease mortality rates trend, Russia (per 100K)



***Thank you for  
attention !***



ЦЕНТРАЛЬНЫЙ НИИ ОРГАНИЗАЦИИ И  
ИНФОРМАТИЗАЦИИ ЗДРАВООХРАНЕНИЯ  
[www.mednet.ru](http://www.mednet.ru)