CAN ZERO DEATHS BECOME A REALITY?

LESSONS FROM TOMSK, RUSSIAN FEDERATION

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CASCADES – IMPROVING TB CARE
PARIS, FRANCE
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BACKGROUND

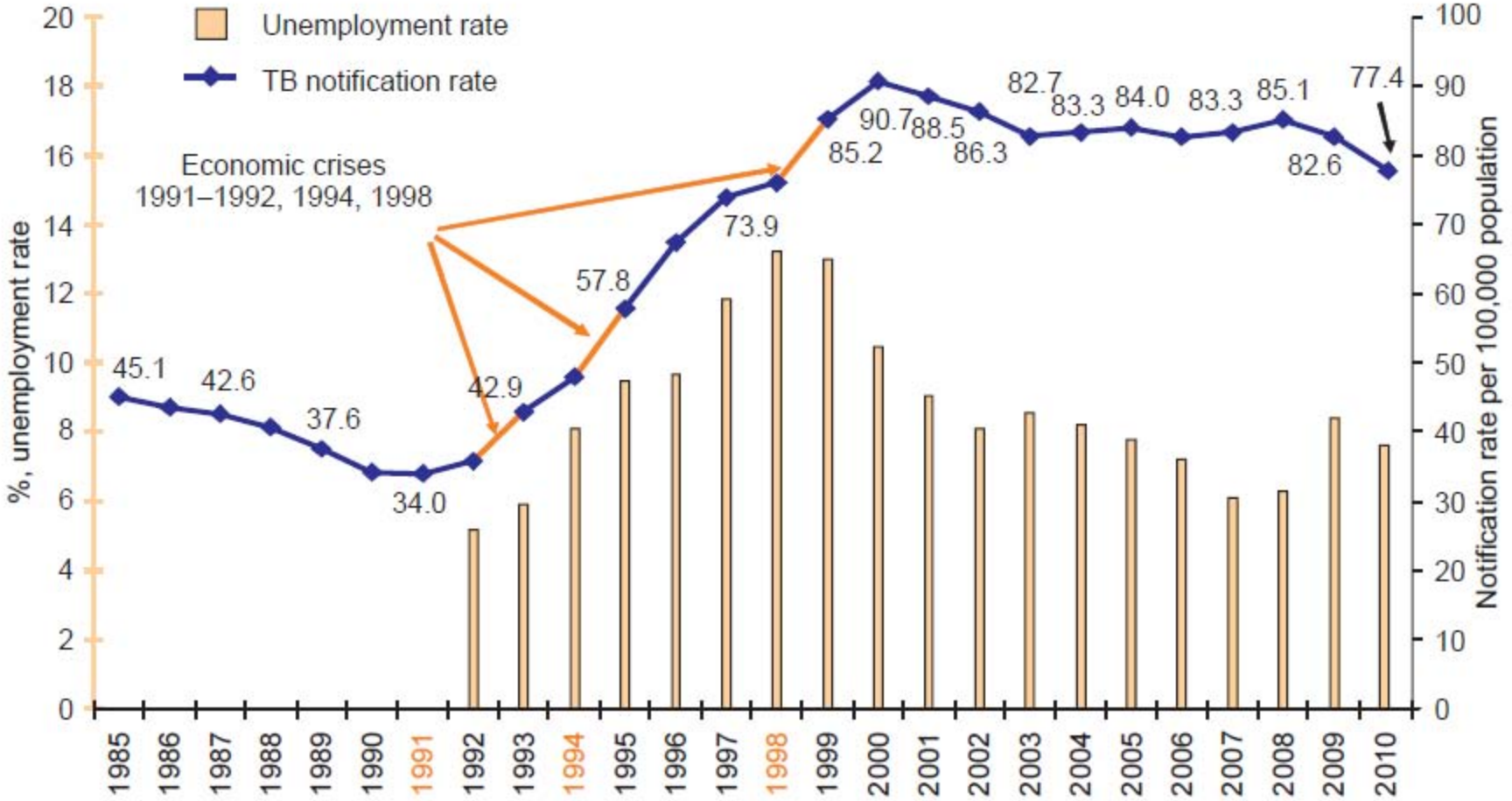


Fig. 2.1. Notification rates for new TB cases and unemployment in the Russian Federation, 1985–2010, all sectors (Sources: Form No. 8 and [29, 38], population data: Forms No. 1 and No. 4)

Source: Russian Ministry of Health and Social Development 2012

Photo: Open Society Institute/Sergei Gitman

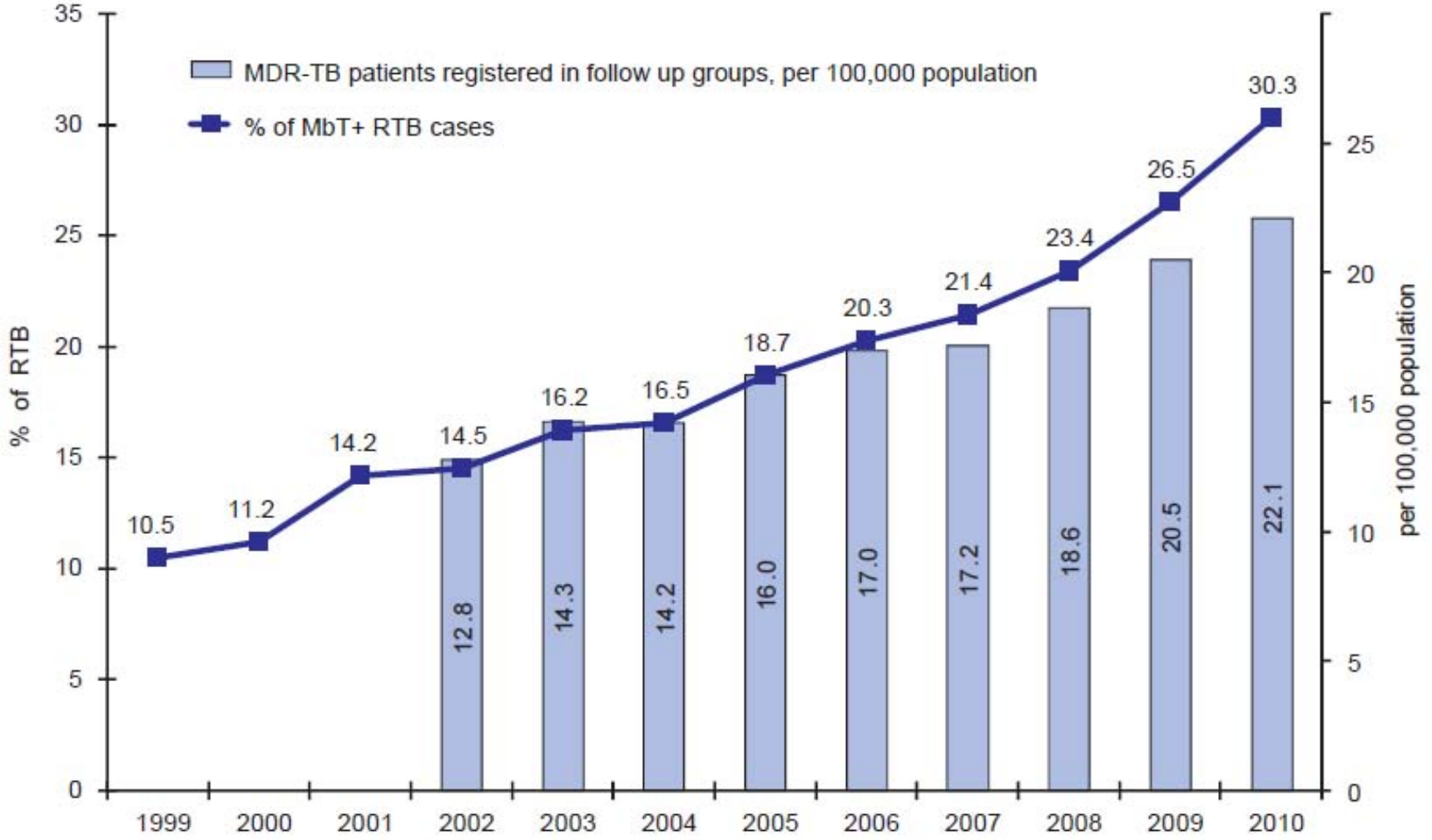


Fig. 10.7. Multidrug resistance in all groups of RTB MbT+ patients with respiratory tuberculosis: the share in RTB patients and the number of MDR-TB cases registered per 100,000 population (the indicator of registered MDR-TB prevalence in the population), the Russian Federation (Source: Form No. 33)

Source: Russian Ministry of Health and Social Development 2012

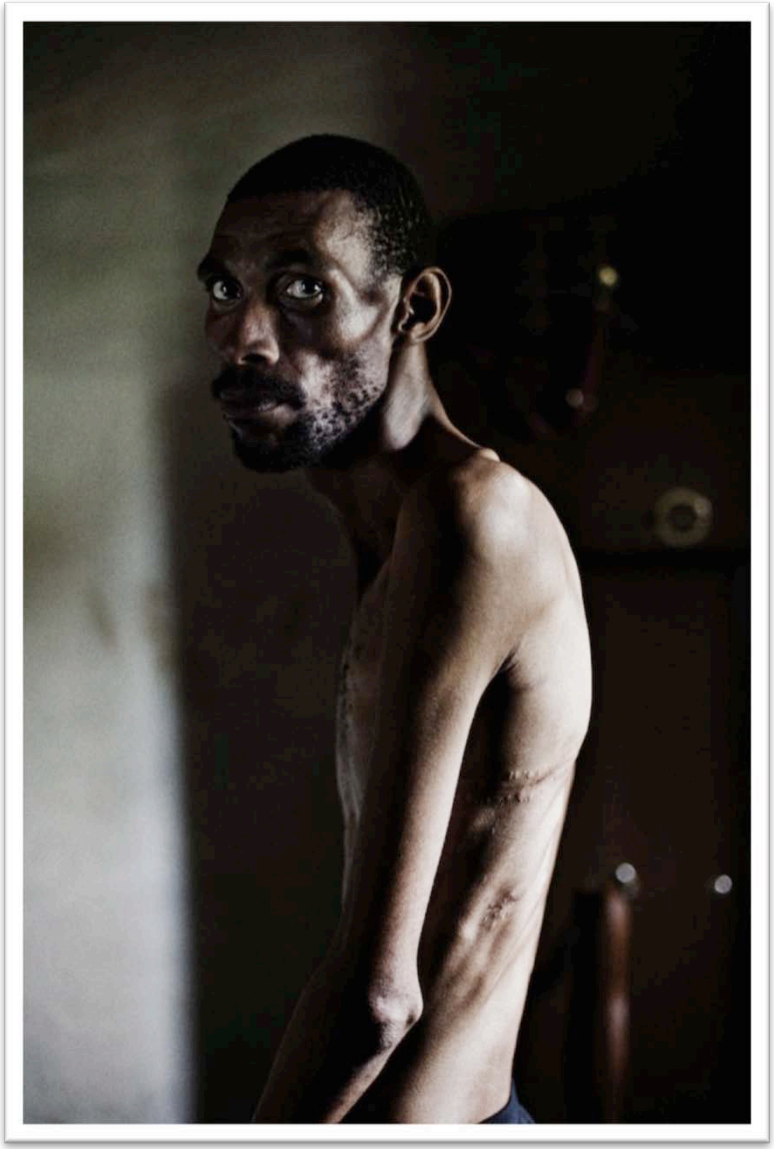


Photo: Open Society Institute/Pep Bonet

> MDR-TB is too expensive to treat in poor countries; it detracts attention and resources from treating drug-susceptible disease.
>
> - World Health Organization
> Groups At Risk, 1996

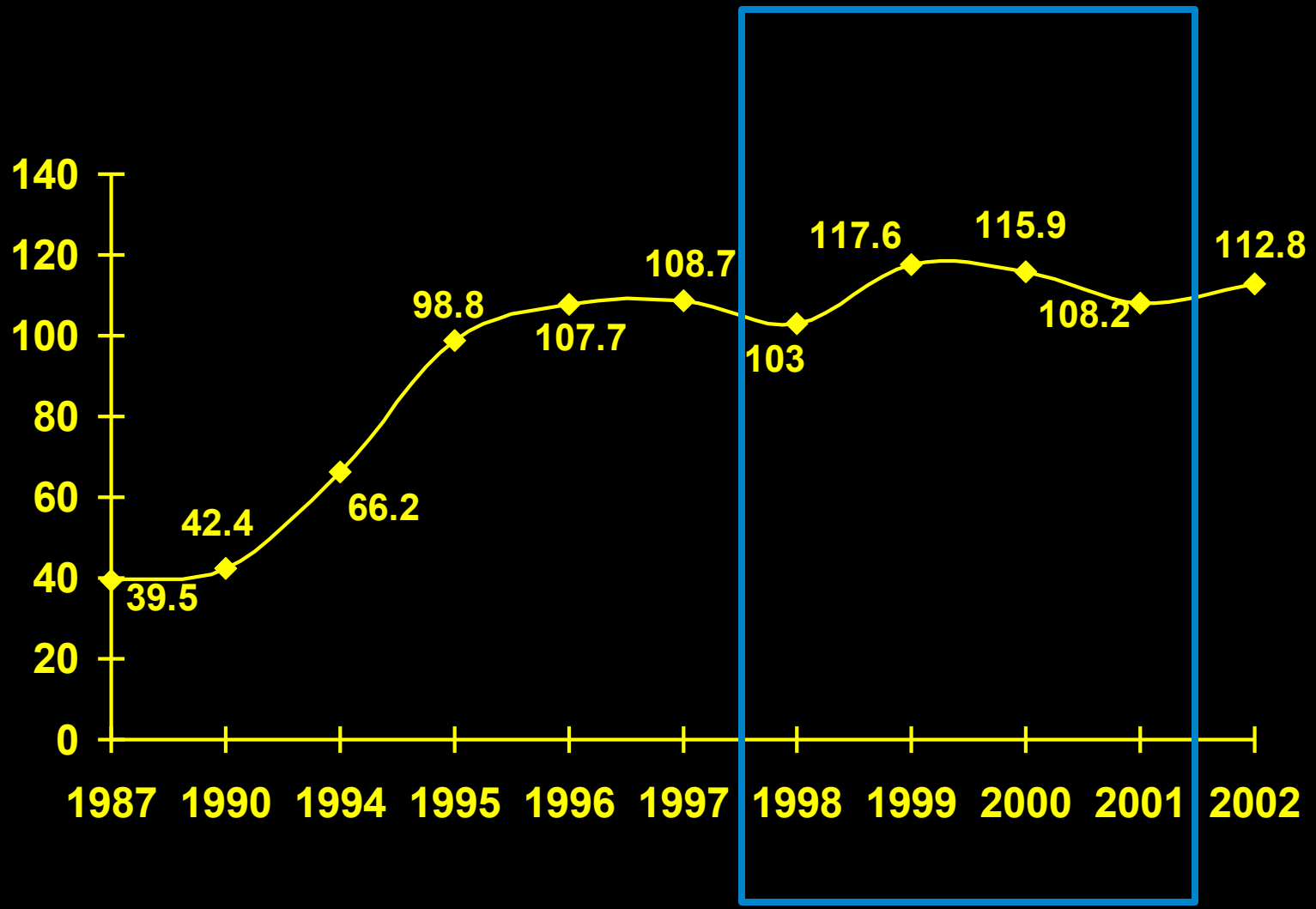
ADVISED BY THE WHO TO FOCUS ON DRUG-SENSITIVE TB ONLY


Saint-Petersburg
Moscow
Tomsk Oblast Population:
1,073,600
Area = 317,000 km²

TB Incidence per 100,000 – Tomsk Prison Sector

Source: Tomsk Oblast Tuberculosis Services

TB Incidence per 100,000 – Tomsk Civilian Sector



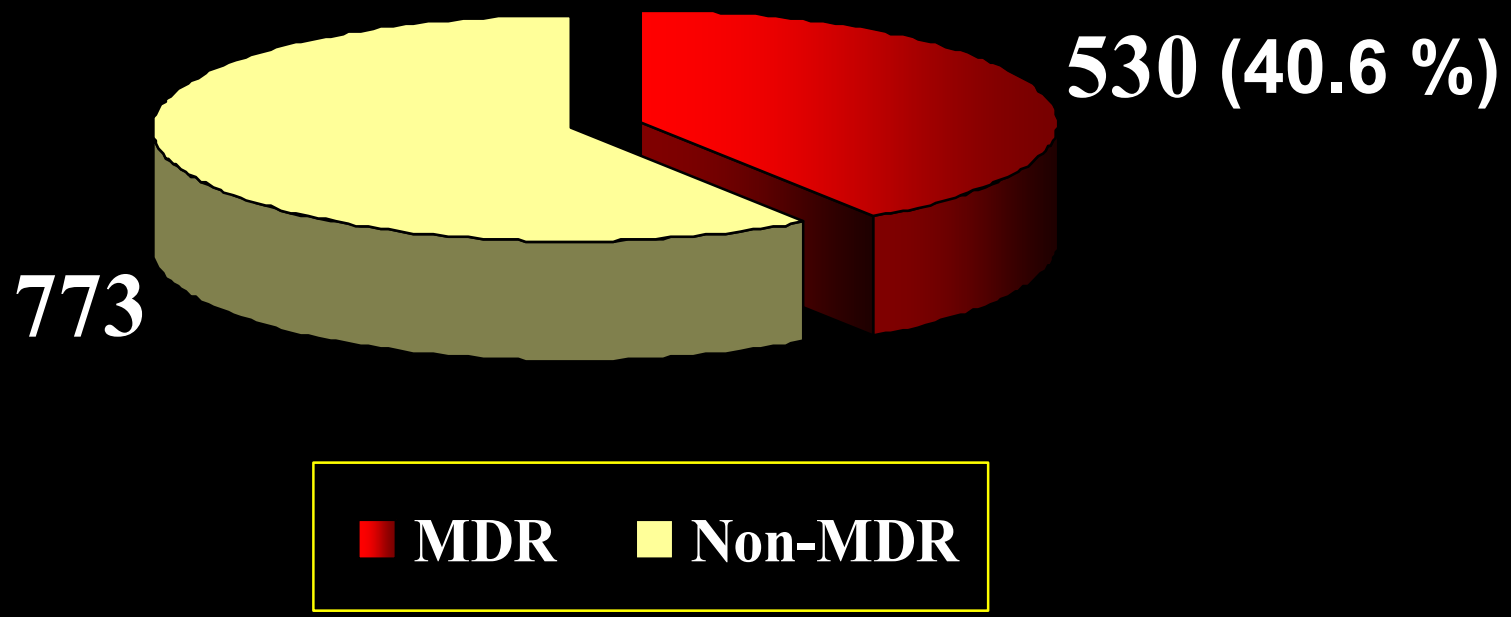
Source: Tomsk Oblast Tuberculosis Services

TB Incidence, Prevalence, and Mortality in Tomsk, Russian Federation
Penal Sector, 1998

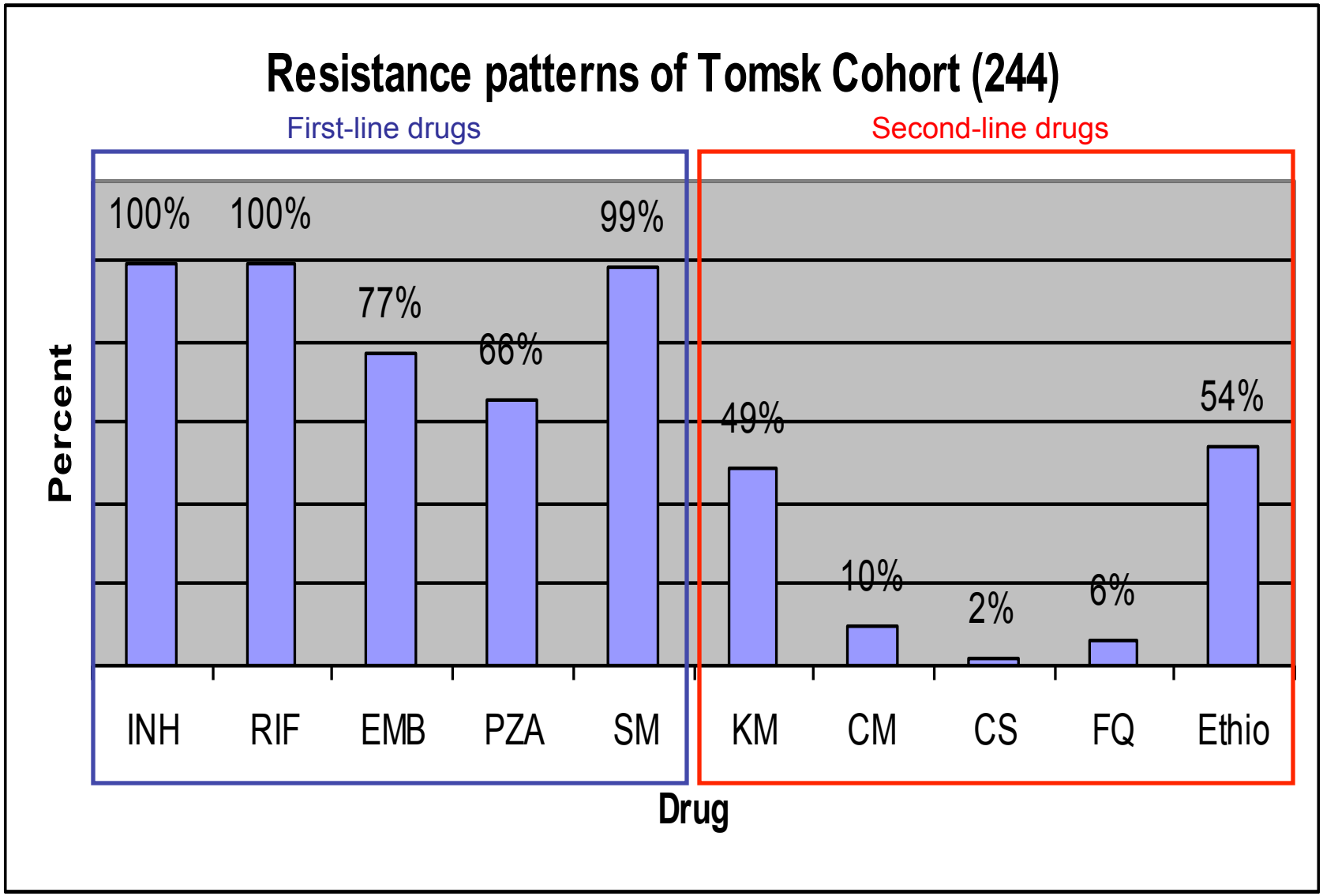
Holding Section TB case notification/100,000	3,565
Holding Section TB Prevalence/100,000	3,743
Prison TB case notification/100,000	4,042
Prison TB Prevalence/100,000	21,581
TB Mortality/100,000	353
Percentage of MDR-TB among new cases	28
Percentage of MDR-TB among re-treatment cases	54

Source: Tomsk Oblast Penitentiary Tuberculosis Services, Tomsk, Russian Federation, July 2005.

MDR-TB prevalence among all smear-positive new and re-treatment cases 2001, Tomsk Oblast (n=1303)



Source: Tomsk Oblast Tuberculosis Services



Source: Tomsk Oblast Tuberculosis Services, Tomsk, Russian Federation, 2005.

Selected characteristics of first cohort of patients in Tomsk, Russian Federation (N=244)

- Age (mean) 32
- Male 86%
- Prison 45%
- Civilian 55%
- Employed 17%
- Married 38%
- Disability 42%
- **Homeless 3.3%**
- Previous treatments: 2 (1-6)
- Yrs with TB before MDR Rx 3.3 (0.1-28.3)

- TB contact 67%
- HCW 2.5%
- **Previous prison 64%**
- **Low BMI 42%**
- Co-morbidity
  - Abnormal LFTs 18%
  - **Substance abuse 50%**
    - **Alcohol hx 35%**
    - **Alcohol during Rx 32%**
    - **IVDU 18%**
- Tobacco use 88%
- Cavitary and bilateral disease 66%

Source: Shin et al., IJTLD 2006

If the patient has the *right to care* (as is legally the case in the Russian Federation), what needs to be done in order to ensure that they receive care?

Find programmatic solutions for all barriers to care.

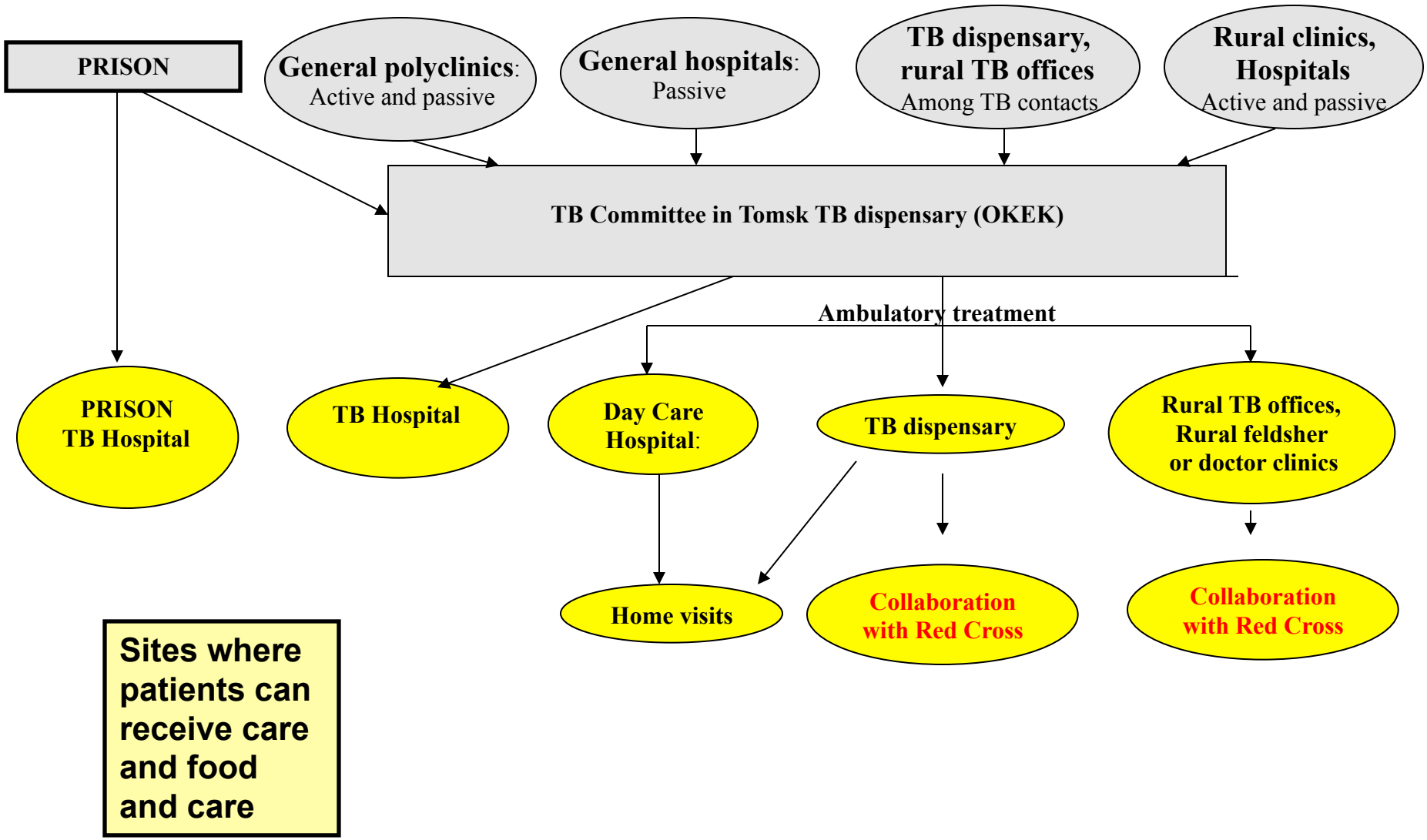
DIAGNOSIS & MEDICINES

TREATMENT

SOLUTIONS

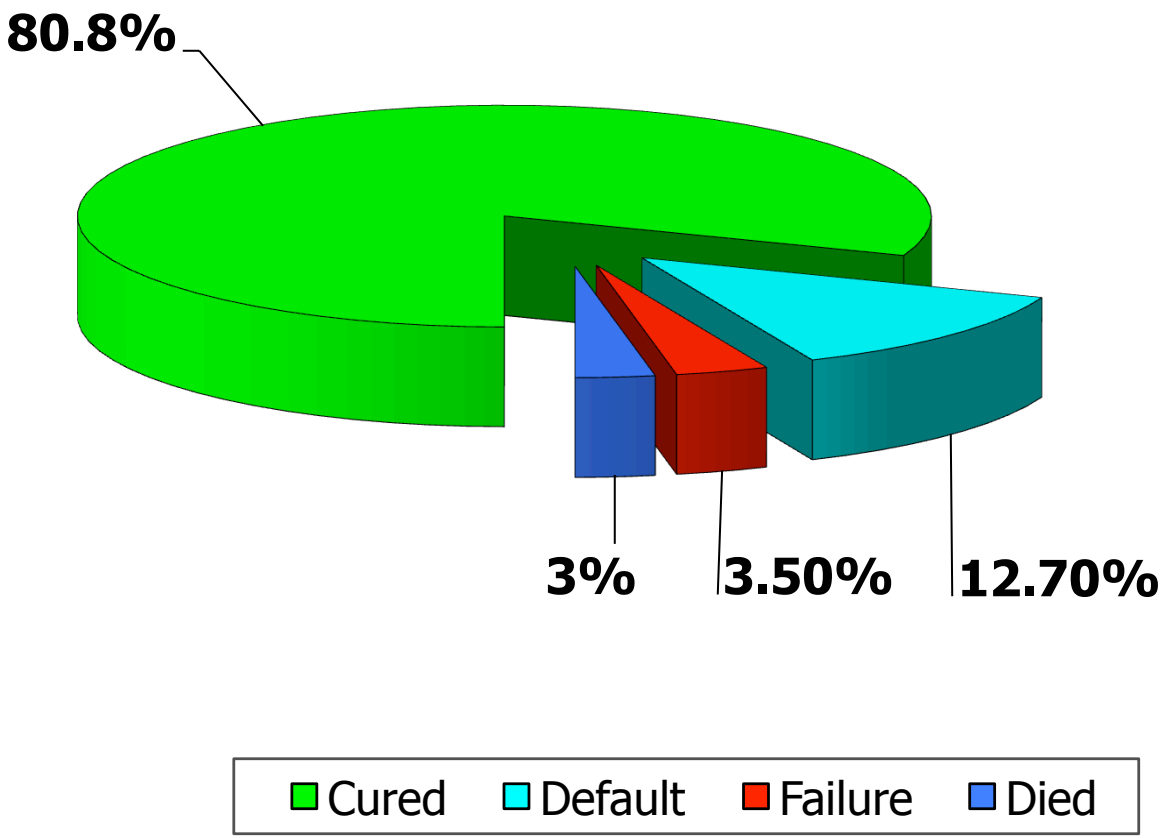
- Improvement of facilities
- Transportation assistance for patients and health workers
- Choice of treatment site
- Food assistance for patients
- Aggressive management of adverse events
- Treatment at home for patients who are unable to ambulate or who live too far
- The use of enablers and incentives
- Social assistance for patients

Case detection and management of TB and MDR-TB in Tomsk Oblast



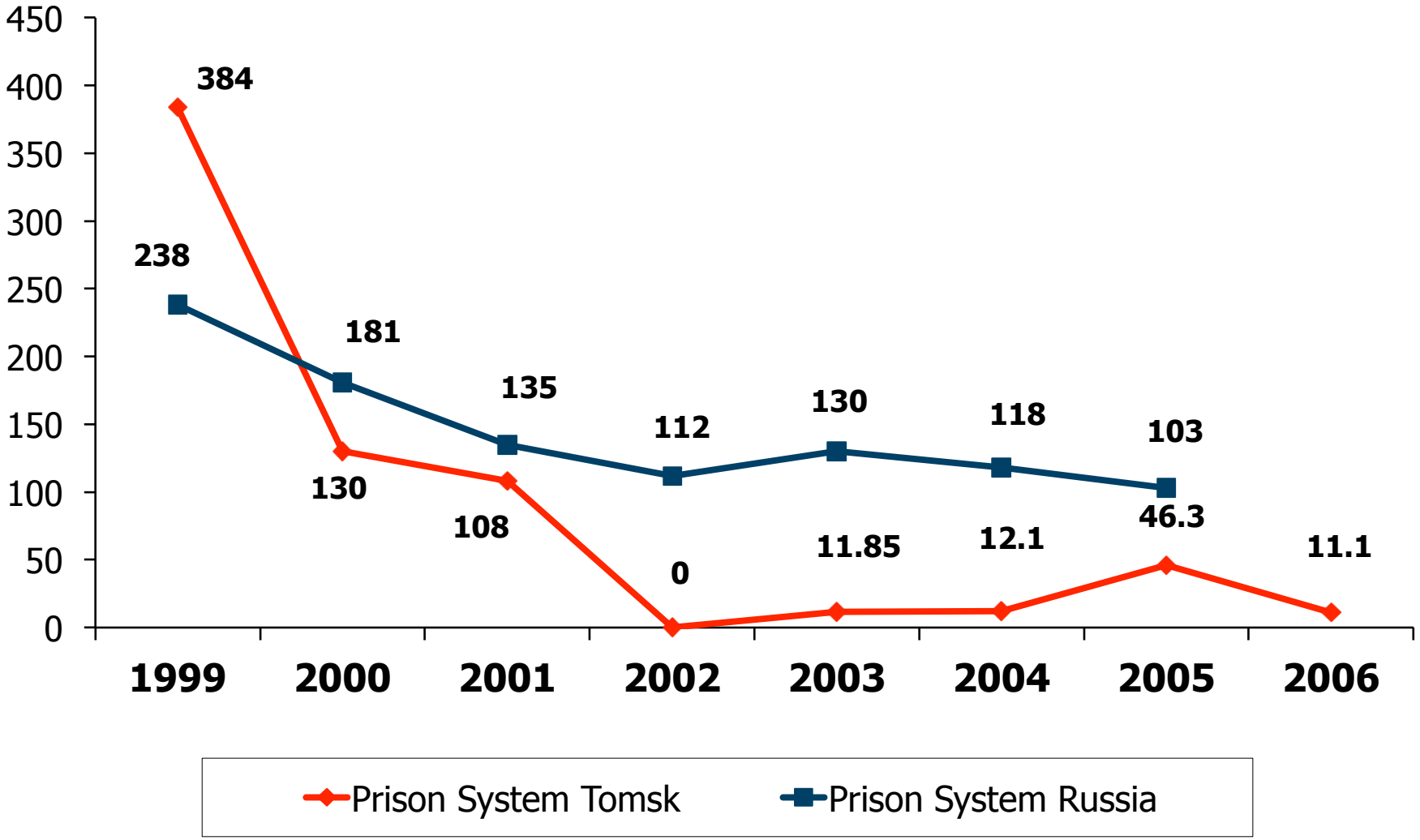
OUTCOMES

MDR-TB Patient Treatment Outcomes
Tomsk Oblast Prison Sector (2000 – 2004)
N=110



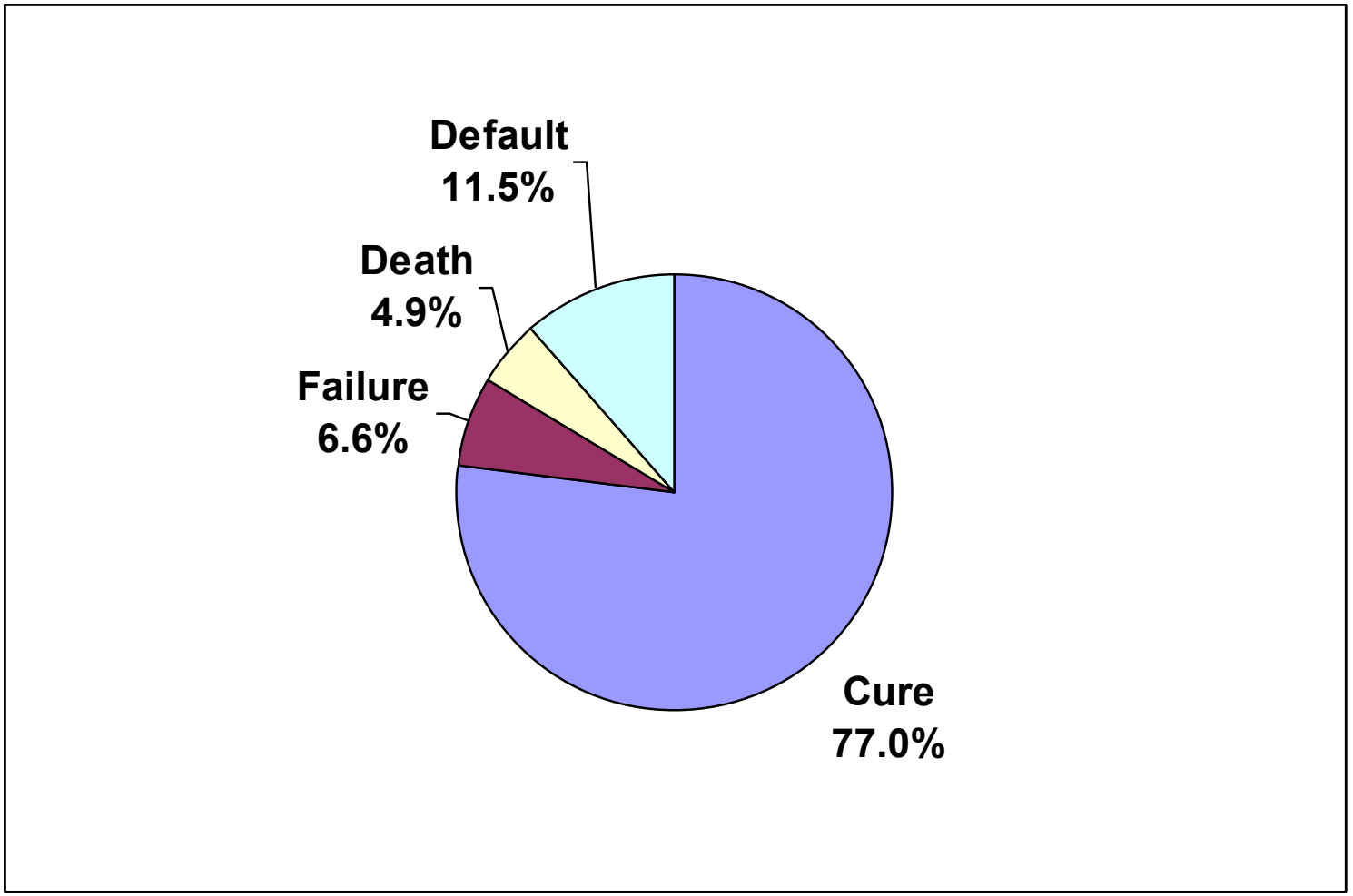
Source: Tomsk Oblast TB Services

TB mortality in the Tomsk Penitentiary System (1999 – 2006; per 100,000 population)



Source: Tomsk Oblast TB Services

TREATMENT OUTCOMES OF FIRST COHORT (N=244) TOMSK, RUSSIA



Source: Shin et al., IJTLD 2006

Treatment of extensively drug-resistant tuberculosis in Tomsk, Russia: a retrospective cohort study

Salmaan Keshavjee, Irina Y Gelmanova, Paul E Farmer, Sergey P Mishustin, Aivar K Strelis, Yevgeny G Andreev, Alexander D Pasechnikov, Sidney Atwood, Joia S Mukherjee, Michael L Rich, Jennifer J Furin, Edward A Nardell, Jim Y Kim, Sonya S Shin

	XDR TB (N=29)	Non-XDR TB (N=579)	Total number	p value
Favourable outcome	14 (48%)	386 (67%)	400 (66%)	0·04*
Cured	13 (45%)	366 (63%)	379 (62%)	
Treatment completed	1 (3·%)	20 (3%)	21 (3%)	
Poor outcome				
Failure	9 (31%)	49 (8%)	58 (9%)	0·0008†
Death	2 (7%)	29 (5%)	31 (5%)	0·65†
Default	4 (14%)	115 (20%)	119 (20%)	0·42†

Total number of patients=608. Data are numbers (%). MDR=multidrug resistant tuberculosis. XDR TB=extensively drug-resistant tuberculosis. Non-XDR TB=non-extensively drug-resistant tuberculosis. *This value refers to the comparison between favourable and poor outcome. †This value refers to the comparison between each outcome (ie, failure, death, or default) and all other outcomes.

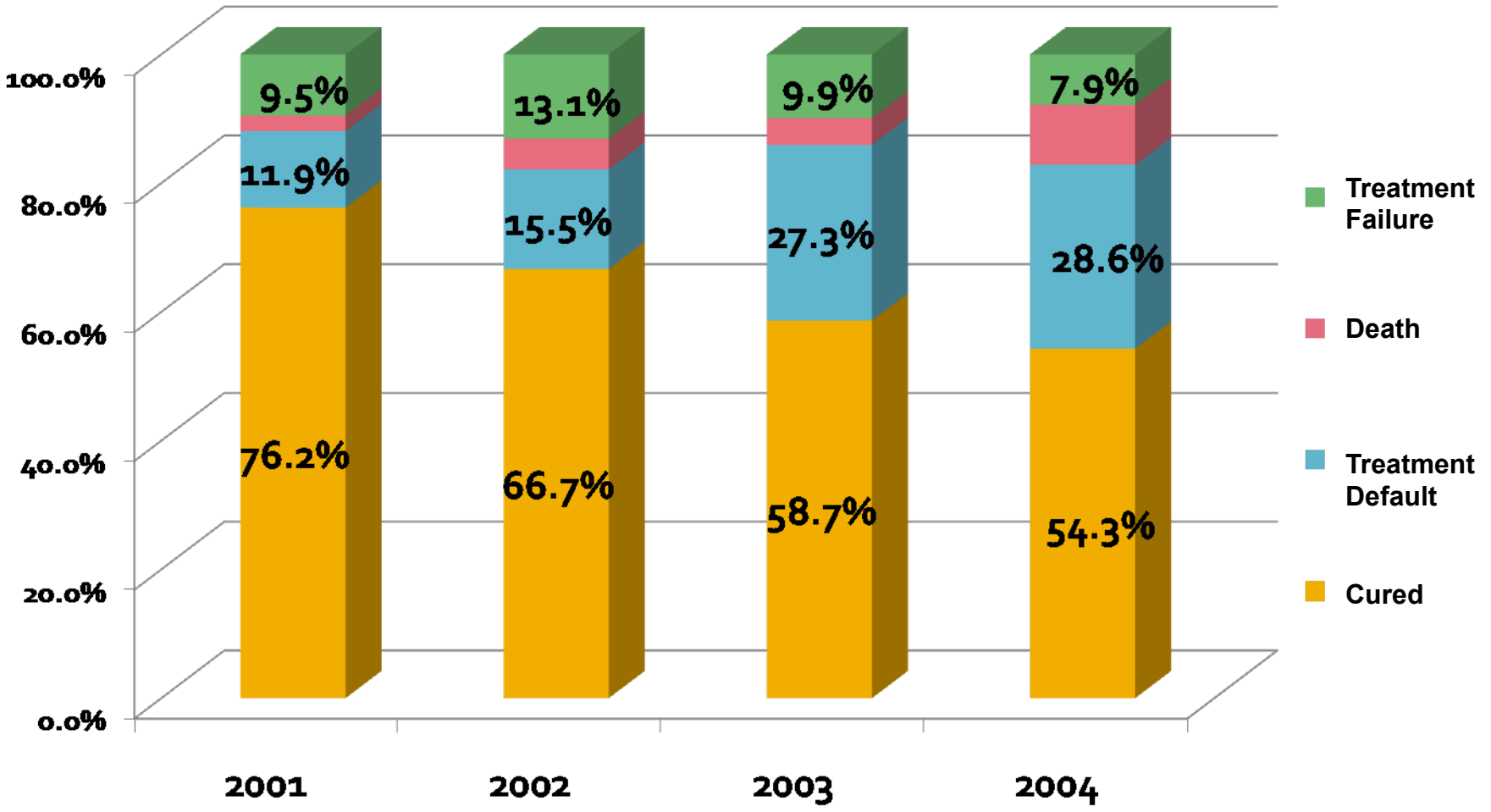
***Table 2:* Treatment outcomes of patients with MDR tuberculosis**

Source: Keshavjee et al., *Lancet*, 2008

Photo: PIH Kazakhstan

KNOW YOUR EPIDEMIC

Treatment Outcomes, Civilian Sector
Tomsk Oblast, Russian Federation



Source: Tomsk Oblast TB Services, Analysis by Dr. D Taran, PIH Moscow

"Sputnik" program

- Some patients require assistance to finish treatment
- Need a system of accompaniment to help overcome barriers to treatment (this is different from simple DOT)
  - Social supports
  - Nutritional supports
  - Family support
- One *Sputnik* will look after five to seven patients
- Changes the onus of responsibility for adherence from the patient ("non-compliant") to the program (programmatic failure)

"SPUTNIK" Program

53 non-adherent patients were enrolled on Sputnik program from December 17, 2006 to November 30, 2008

2 patients refused to participate

51 patients stayed on Sputnik program

5 patients restarted new treatment course with 83% adherence [baseline adherence 0%]

46 patients continued previous treatment. Adherence increased from 52% before enrolment on the program to 81% while on Sputnik, $p<0.0001$

Table 3 Treatment outcomes for all patients referred to the Sputnik program ($n = 53$) divided by MDR-TB vs. all others

	Patients receiving treatment for MDR-TB ($n = 38$) n (%)	All other patients ($n = 15$) n (%)	Total ($n = 53$) n (%)
Cured/treatment completed*	27 (71.1)	9 (60.0)	36 (67.9)
Failure	2 (5.3)	1 (6.7)	3 (5.7)
Died†	2 (5.3)	1 (6.7)	3 (5.7)
Transfer out	1 (2.6)	1 (6.7)	2 (3.8)
Default‡	6 (15.8)	3 (20.0)	9 (17.0)

Note: No deaths were due to TB; most were due to violent crimes
"Default" includes the 2 patients who refused to participate in the program

Source: Gelmanova et al.. IJTLD 2011

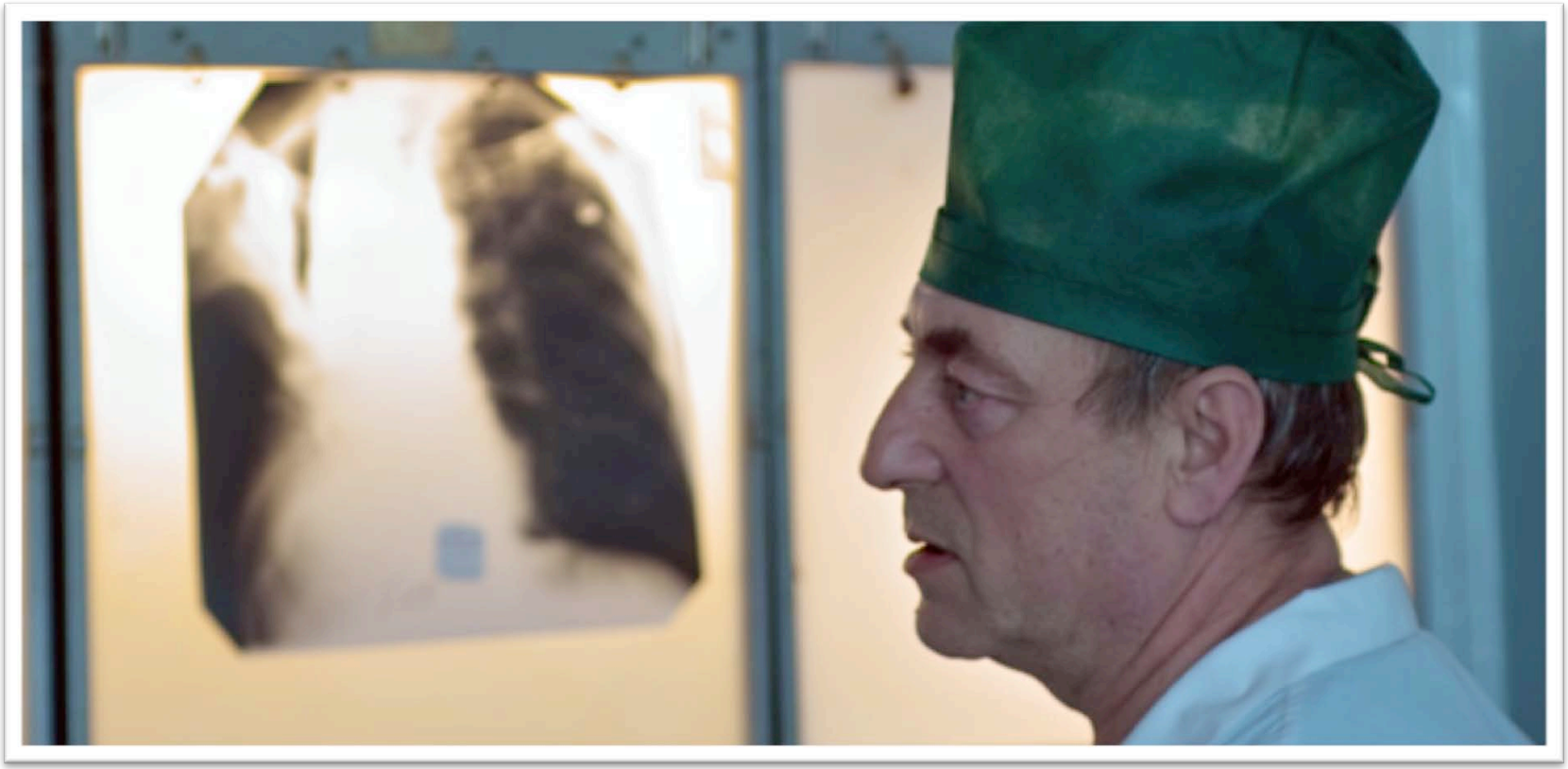
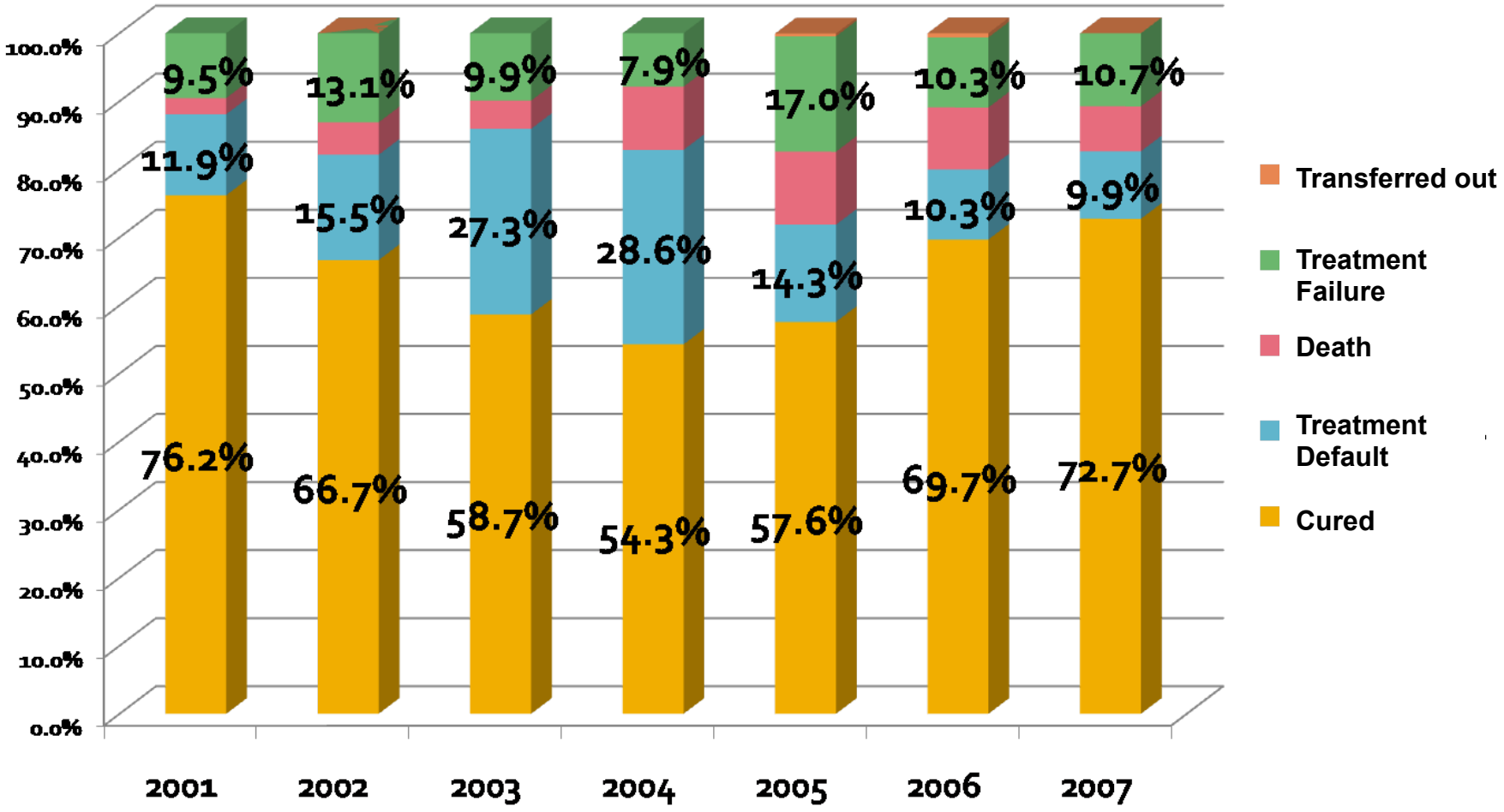


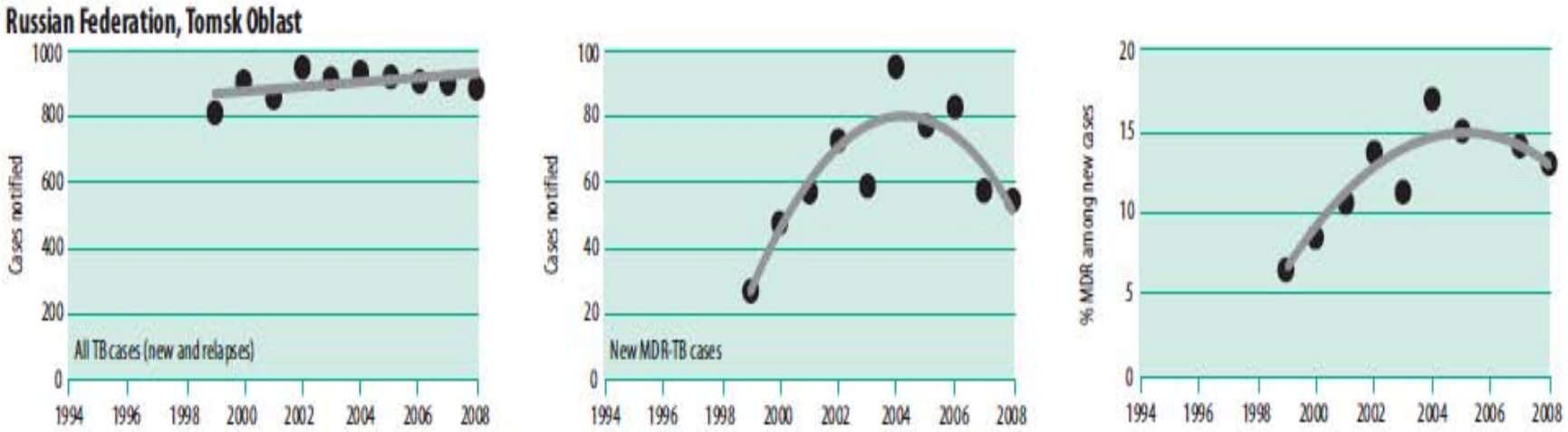
Photo: PIH Russia

Treatment Outcomes, Civilian Sector
Tomsk Oblast, Russian Federation
2001-2007



Source: Tomsk Oblast TB Services, Analysis by Dr. D Taran, PIH Moscow

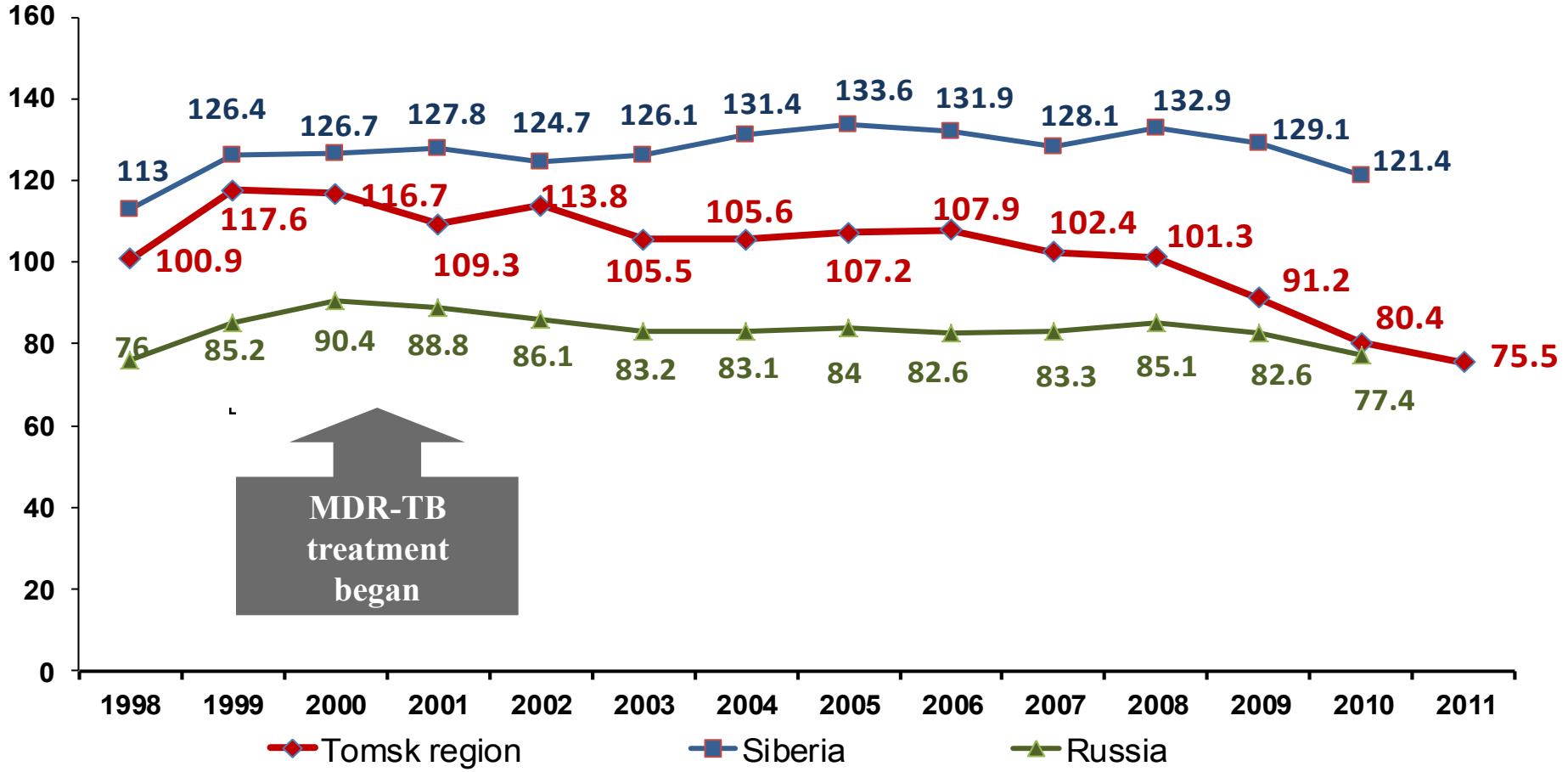
Interrupting transmission: treatment of all patients



Ambulatory care and community based approaches provide a way to treat large numbers of patients rapidly, and safely

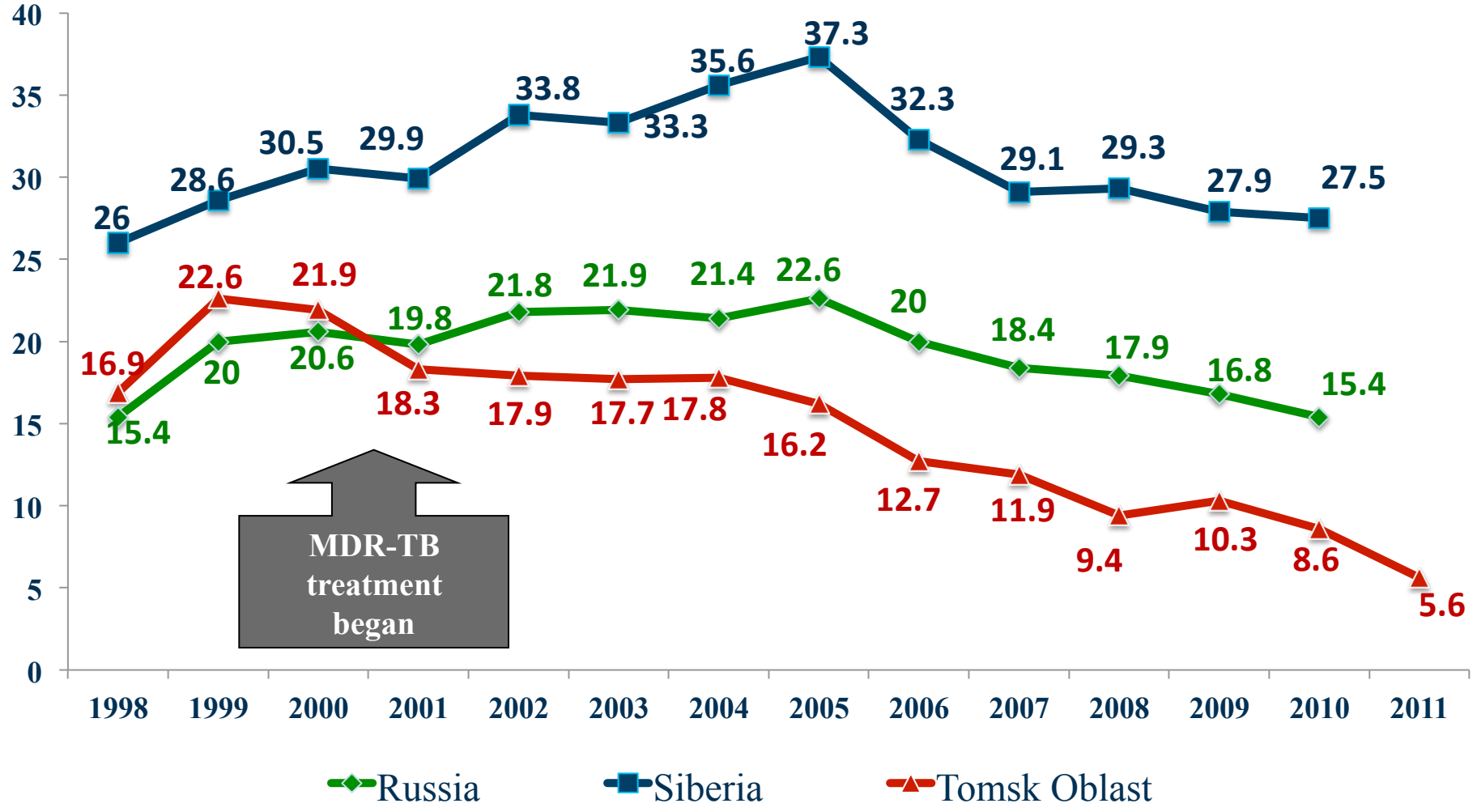
Source: WHO 2010

Dynamics of Tuberculosis notification rate in Tomsk Oblast, Siberia, and Russian Federation (per 100,000 population)



Source: Tomsk Oblast TB Services

Dynamics of Tuberculosis mortality in Tomsk Oblast, Siberia, and Russian Federation (per 100,000 population)



Source: Tomsk Oblast TB Services

Thank you

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