

Ambulatory TB care in Karakalpakstan/Uzbekistan: Practical experience

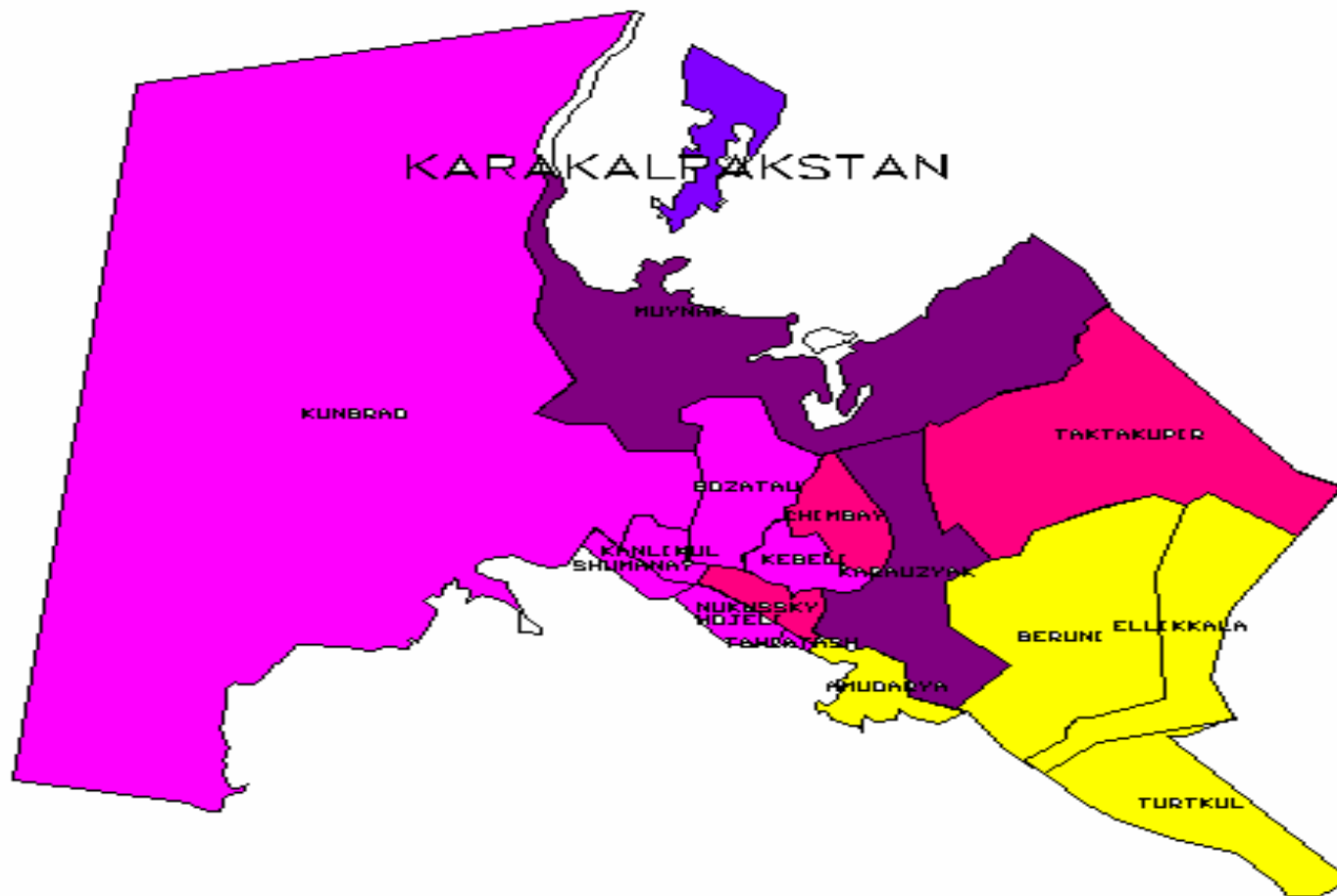
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The Republic of Karakalpakstan (RK)

- Population: 1,732,000 Area: 166,600 km²
- Capital: Nukus. Density of population: 10.4 inhabitants per km²



Tuberculosis incidence in RK



Incidence rate = 180-200

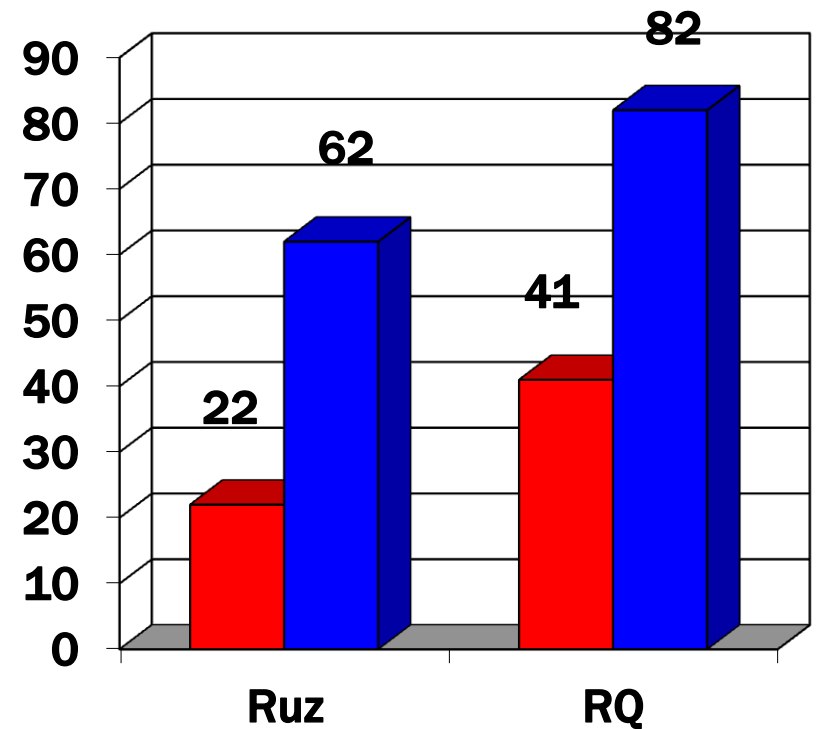
Incidence rate = 100-150

Incidence rate = 150-180

Incidence rate = 40-60

Prevalence of Multidrug Resistant TB

- According to the results of the Drug Susceptibility survey carried out in 2010-2011 prevalence of the MDR tuberculosis among newly diagnosed cases was 22% and 62% among previously treated patients; in the RK prevalence was twice higher among newly diagnosed cases than in RUz and among PTR prevalence was 1.25 times higher than in the RUz.

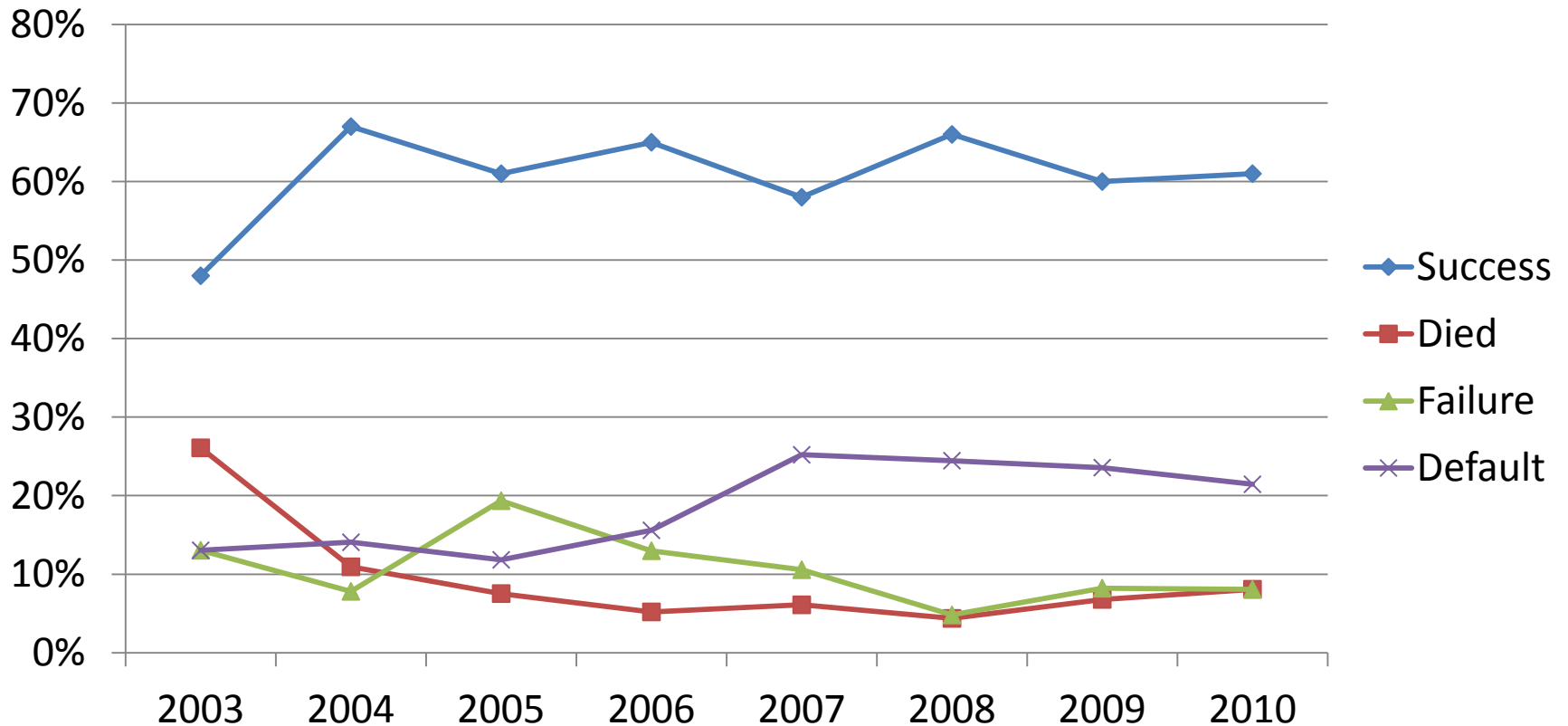


■ MDR-TB among new cases

■ MDR-TB among treated cases

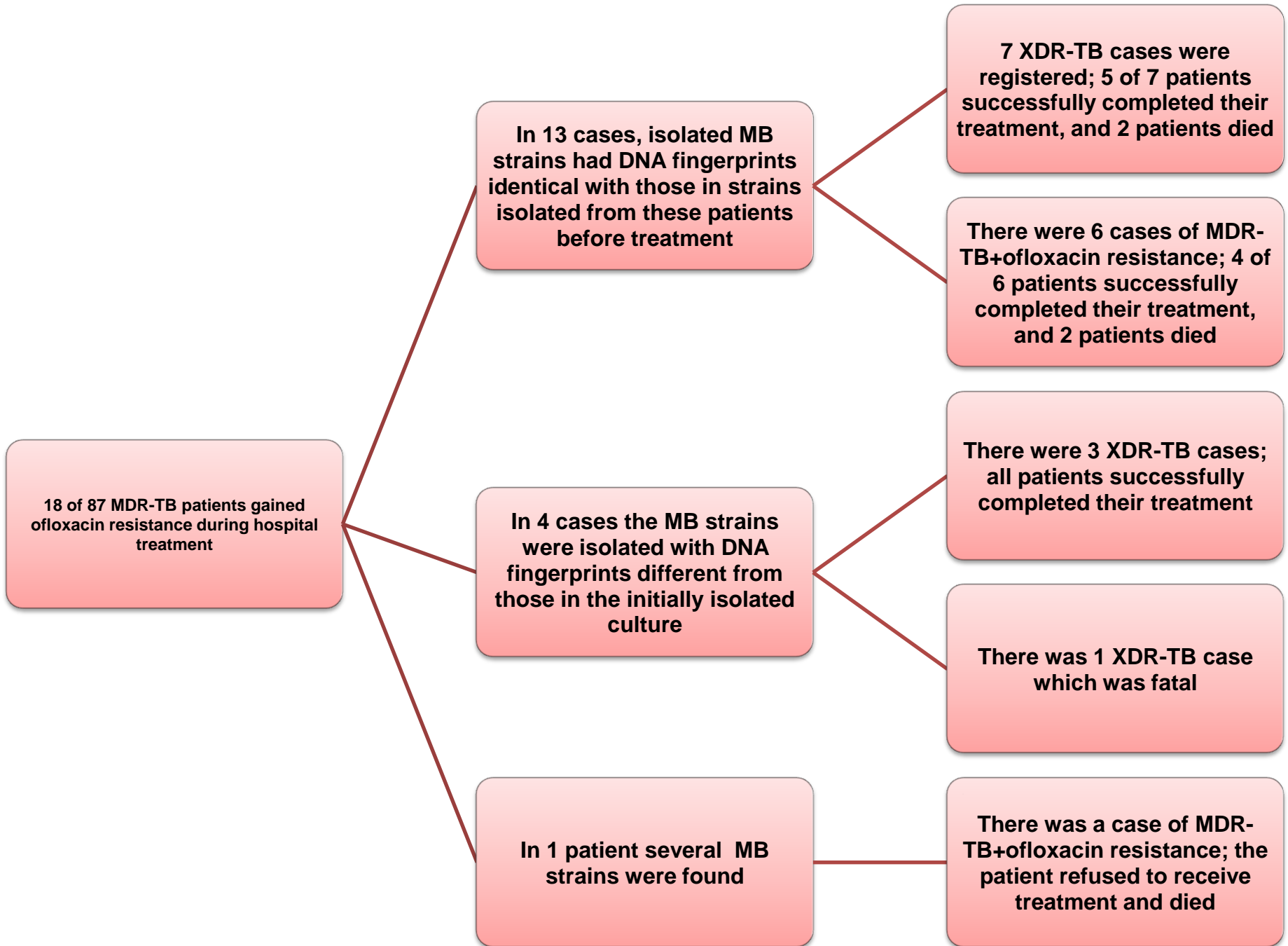
Treatment outcomes

- 1448 MDR-TB patients underwent treatment over a period of 2003 through 2010.
- Overall success rate = 62%.
 - New patients (74%).



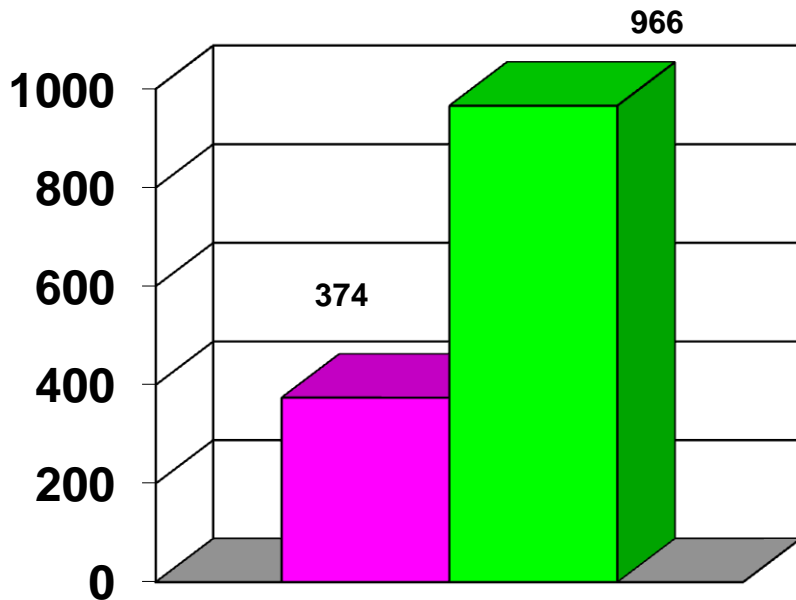
Why ambulatory treatment?

- High risk of drug resistance growth during hospital treatment was found among MDR-TB patients (18/87 in 2007 г в ТБ №2)
- There is a risk of nosocomial infection with more stable TB strains in MDR-TB patients (4 out of 18 cases of pre-XDR and XDR-TB patients)
- High MDR-TB nosocomial spread rates including high MDR-TB incidence among medical staff (3 times higher)
- High load at (in-patient department) IPD facilities
- Prolonged period from the establishment of MDR-TB diagnosis till treatment initiation (up to 6 weeks on average)



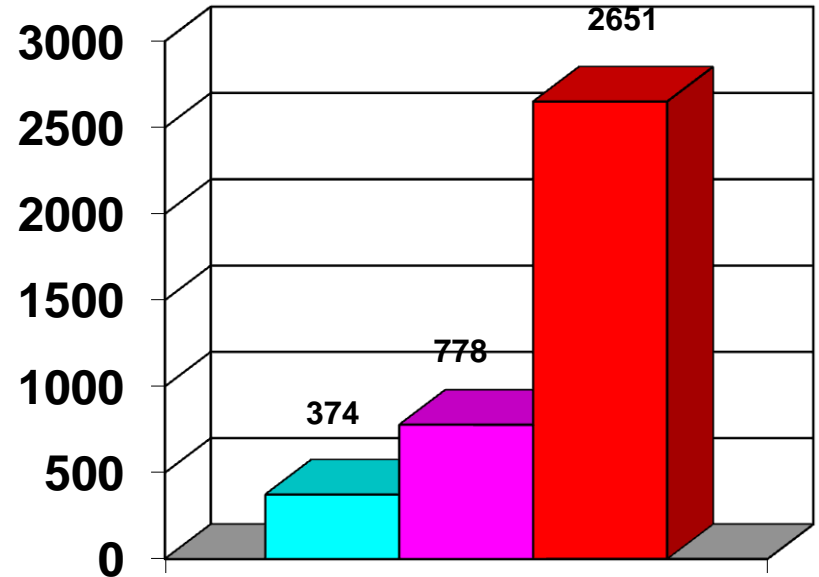
High risk of nosocomial spread of MDR-TB

Cumulative MDR-TB incidence rate
(per 100.000 inhabs. & med. profs.)



■ population ■ medical staff

Cumulative MDR-TB incidence rate

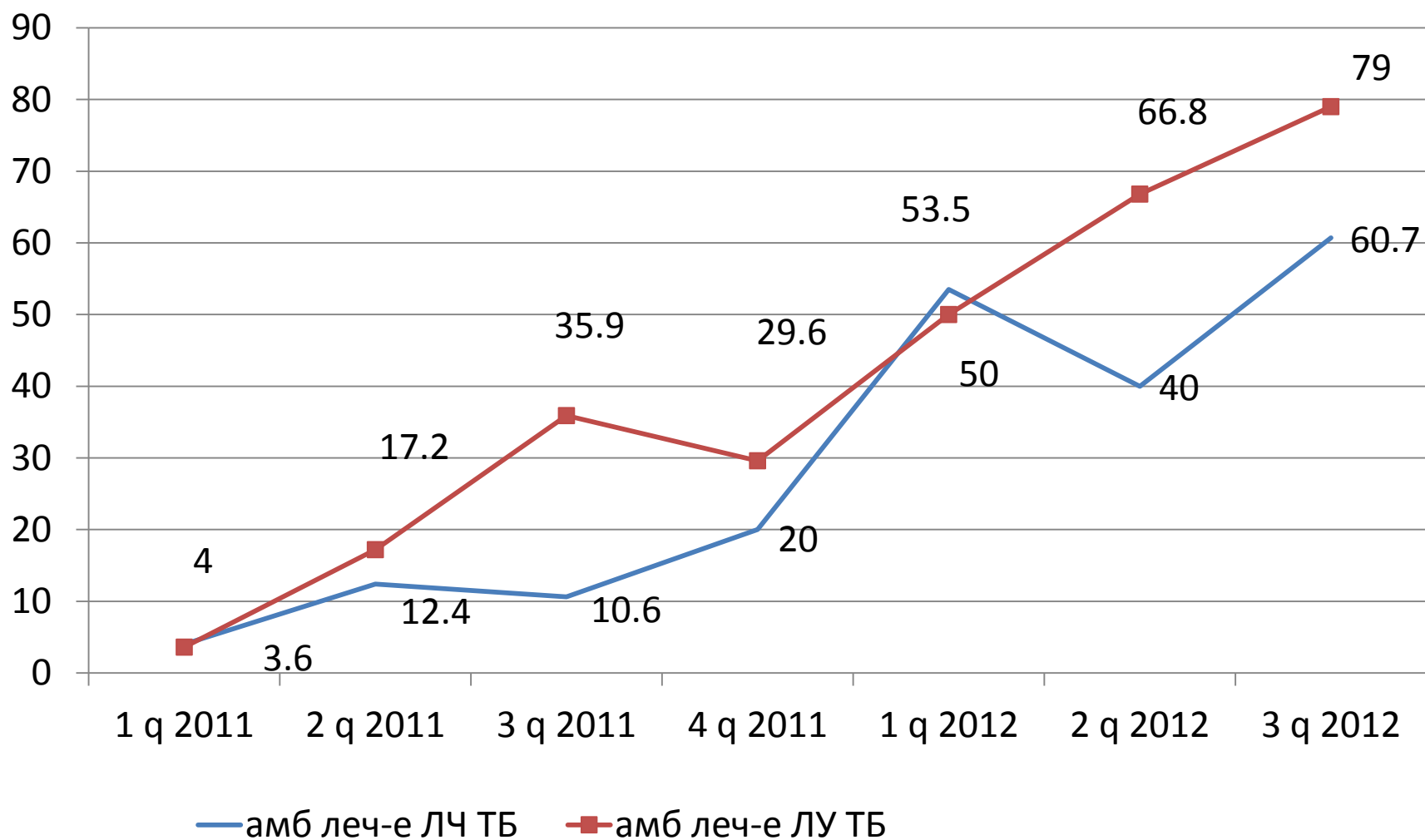


■ population ■ GMF staff ■ TBF staff

Design / Methods

- A comparative analysis of patients with Drug-Susceptible (DS) and Drug-Resistant (DR) TB who received IPD treatment or an ambulatory treatment from the beginning was performed:
- - Treatment outcomes of 1039 DS-TB patients who received IPD or ambulatory treatment from 1.01.2010 to 31.12.2012 .
- - Interim treatment outcomes (therapeutic failure, noncompliance, 12th month death, 6th month cultural conversion) of 1377 MDR-TB patients who started IPD or ambulatory treatment from 1.01.2010 to 31.09.2012

Proportion of TB patients treated ambulatorily within period (2011-2012)

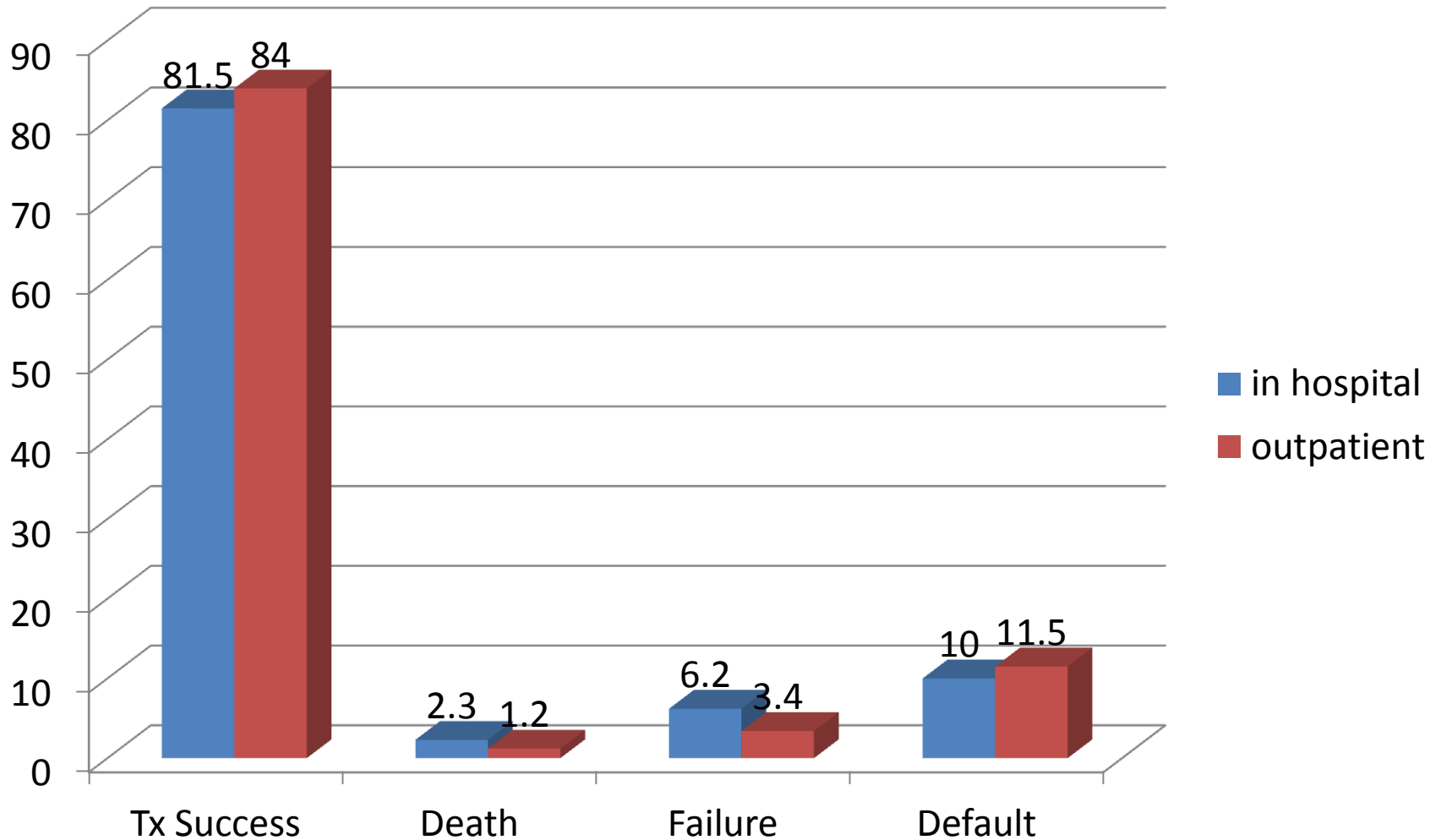


Treatment outcomes among DS-TB patients

DS outcomes, adjusted for sex, cavitory disease, and bmi

	Ambulatory vs IPD outcomes			
Outcome	IPD%	Ambulatory %	Ambulatory aOR (95% CI)	p
Tx success	81.5%	84.0%	1.14 (0.77-1.67)	0.518
Death	2.3%	1.2%	0.65 (0.18-2.26)	0.495
Failure	6.2%	3.4%	0.49 (0.23-1.01)	0.055
Default	10.0%	11.5%	1.23 (0.79-2.02)	0.312

Treatment outcomes among DS-TB in- and out-patients



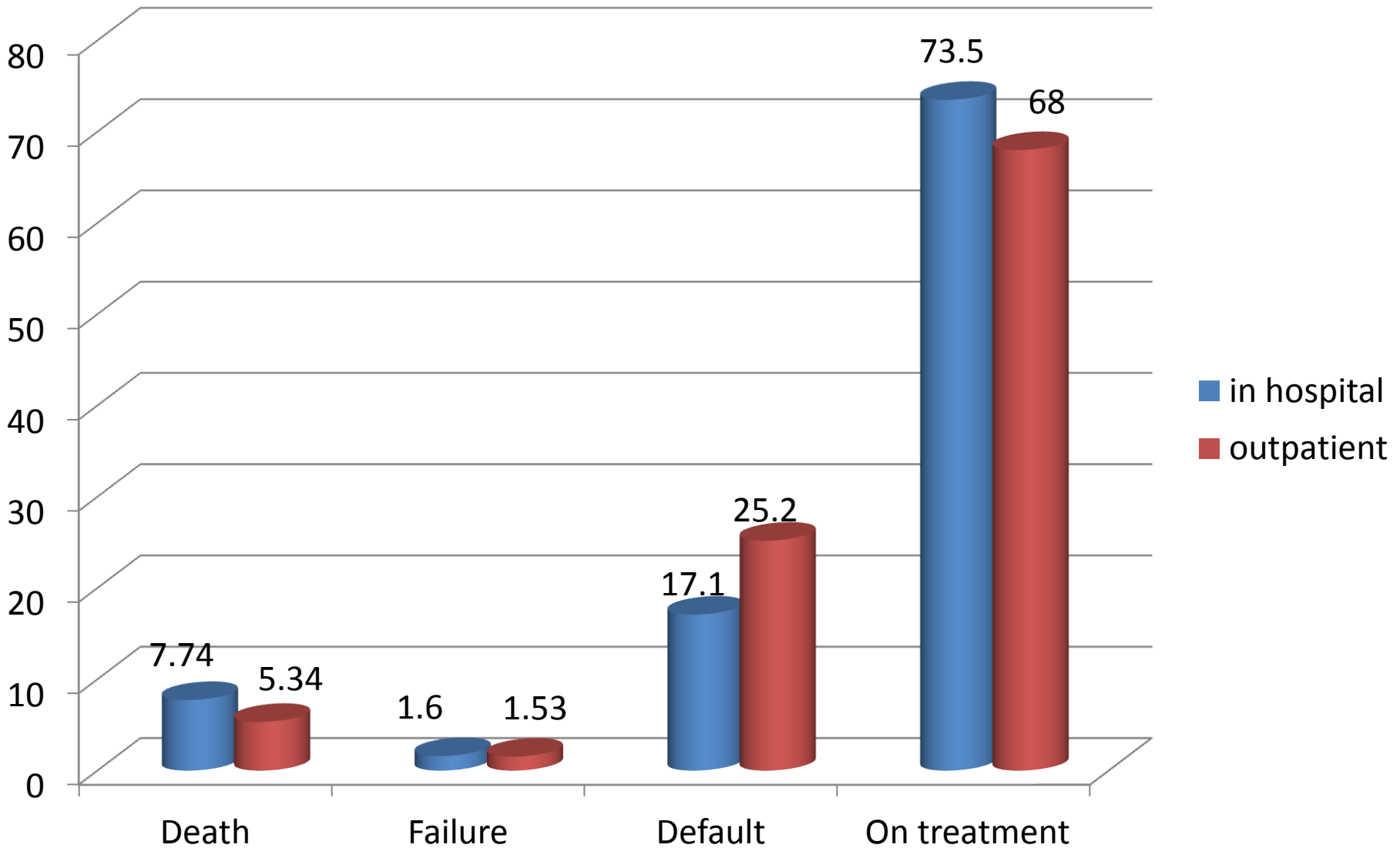
Interim treatment outcomes among MDR-TB patients

MDR interim outcomes at 12 months of treatment

Outcome	IPD %	Ambulatory vs IPD			Ambulatory vs IPD (adjusted ORs)*	
		Ambulatory %	Ambulatory OR (95% CI)	p	Ambulatory aOR (95% CI)	p
Death	7.74%	5.34%	0.67 (0.37-1.22)	0.189	0.95 (0.51-1.78)	0.882
Failure	1.59%	1.53%	0.96 (0.31-2.93)	0.938	1.19 (0.37-3.82)	0.768
Default	17.20%	25.19%	1.62 (1.17-2.25)	0.004	1.46 (1.03-2.06)	0.035
On tx	73.46%	67.94%	0.77 (0.57-1.03)	0.080	0.73 (0.54-1.01)	0.055

* adjusted for sex, cavitory disease, bmi, and previous exposure to SLDs

Interim treatment outcomes among MDR-TB in- and out-patients



Patient compliance rate for IPD and ambulatory treatment

Average monthly adherence in the first year, of MDR patients starting in IPD and as ambulatory



Discussion

- In case of DS-TB patients, ambulatory treatment was more successful (84%) than IPD treatment (81%).
- Incompliance level was slightly higher among patients who started ambulatory treatment from the first day (11.5%) compared to patients who started treatment in hospital environment (10%).
- Percentage of deaths and treatment failure among IPD patients was significantly higher than among ambulatory patients (2.3% versus 1.2% and 6.2% versus 3.4%, respectively)

MDR-TB patients treatment outcomes

- MDR-TB patients death rates do not differ significantly between IPD and ambulatory patients (7.7% against 5.3%) {in the first year of treatment).
- Proportion of patients who discontinued treatment was significantly higher among ambulatory patients (25.2% against 17.2%, $p < 0.03$).
- 6th month cultural conversion rate is higher in MDR-TB patients who started ambulatory treatment from the first day (91.7% against 83.9%, or 2.8 increment, $p = 0.01$).
- Patient compliance rate decreases during the first three months of treatment in both patient groups; from then on, the rates stabilize; however, the rate still remains higher in patients who started treatment in hospital environment (82% against 85%); the difference does not change within the 12 months of treatment.

CONCLUSIONS

- The ambulatory DS-TB treatment efficacy is supported by satisfactory TB treatment success rates – the ambulatory treatment efficacy is definitely higher compared to the IPD-based treatment.
- Treatment outcomes of DS-TB and MDR-TB patients were not deteriorated by the ambulatory treatment right from the first day.
- Patient noncompliance rate was higher among MDR-TB patients who started treatment on an ambulatory basis compared to the patients who started treatment in hospital environment.
- There is a need for deeper insight into the reasons for treatment noncompliance among MDR-TB patients .
- ambulatory treatment represents a strategic approach for risk reduction for the nosocomial TB spread as well as a way of alleviating the burden of extended hospital stay.