Realities of MDR-TB and Challenges for TB Control

Matteo Zignol, MD, MPH
WHO Global TB Programme

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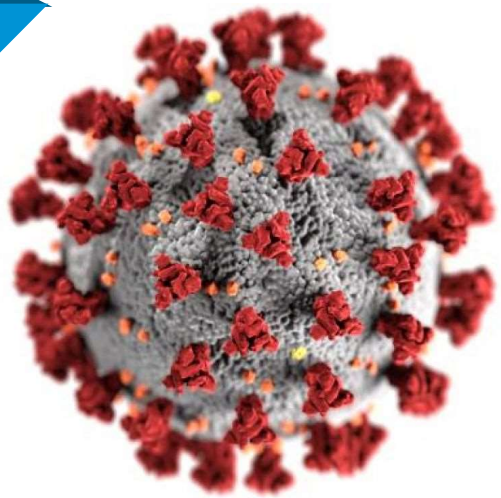
MDR-TB burden and trends



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The global TB situation

A quarter of the world's population is infected with TB bacilli

	Estimated incidence, 2019	Estimated number of deaths, 2019
All forms of TB	10.0 million (8.9–11.0 million)	1.4 million* (1.2–1.5 million)
HIV-associated TB	815,000 (729,000–906,000)	208,000 (177,000–242,000)
Multidrug- / rifampicin-resistant TB (MDR/RR-TB)	465,000 (400,000–535,000)	182,000 (113,000–250,000)

* including deaths attributed to HIV/TB

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Source: 2020 WHO global TB report

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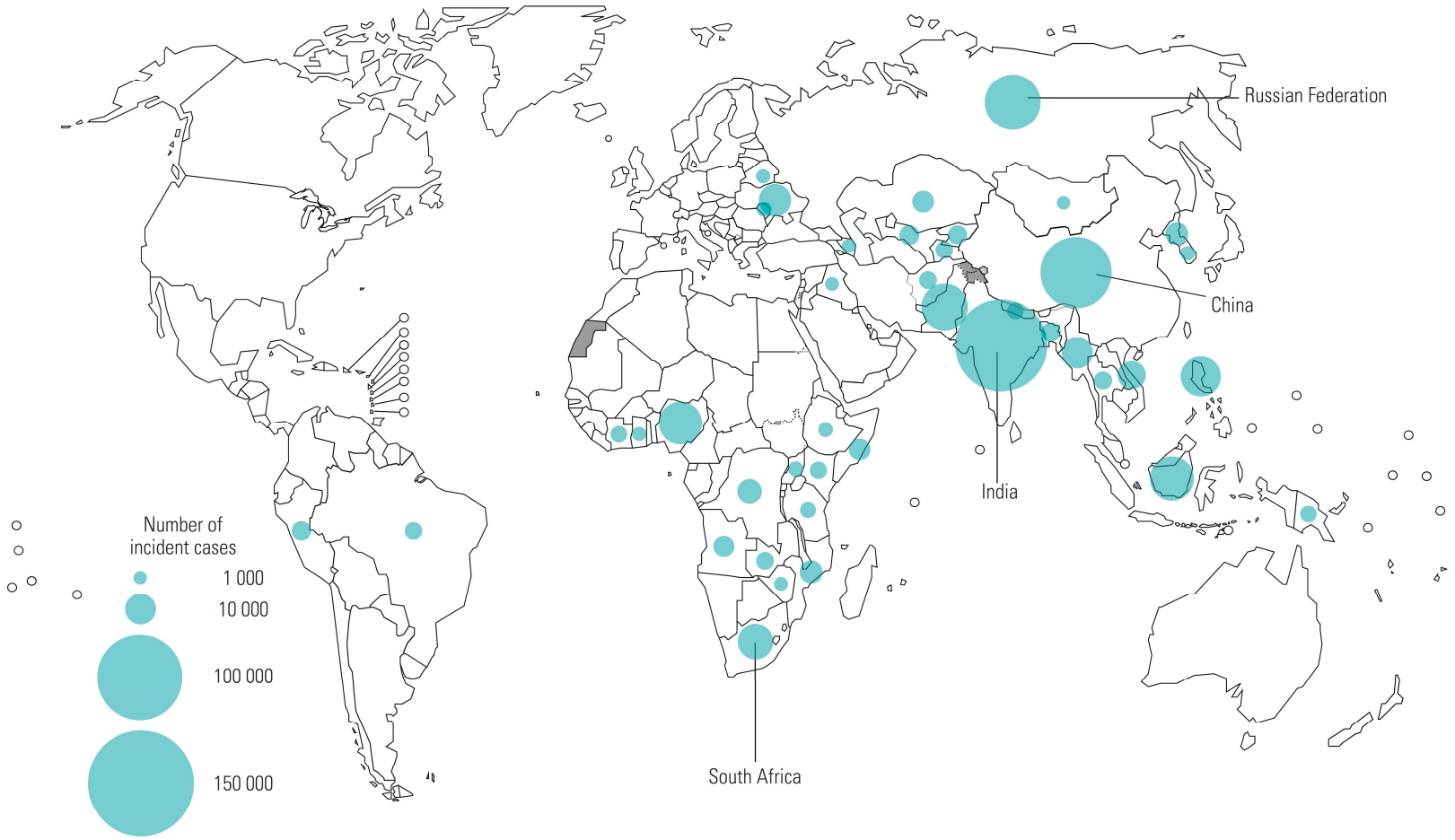
MDR/RR-TB incidence in 2019, for countries with at least 1000 incident cases



Source: 2020 WHO global TB report

Global incidence of RIF-res. and INH-res., 2019

	RIFAMPICIN-RESISTANT		RIFAMPICIN-SUSCEPTIBLE		GLOBAL	
	BEST ESTIMATE	UNCERTAINTY INTERVAL	BEST ESTIMATE	UNCERTAINTY INTERVAL	BEST ESTIMATE	UNCERTAINTY INTERVAL
ISONIAZID-RESISTANT	361	308–413	1 060	639–1 490	1 420	1 030–1 880
ISONIAZID-SUSCEPTIBLE	105	89–120	8 430	7 480–9 380	8 540	7 590–9 490
GLOBAL	**465**	**400–535**	**9 490**	**8 450–10 500**	**9 960**	**8 940–11 000**

Numbers in thousands

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Source: 2020 WHO global TB report

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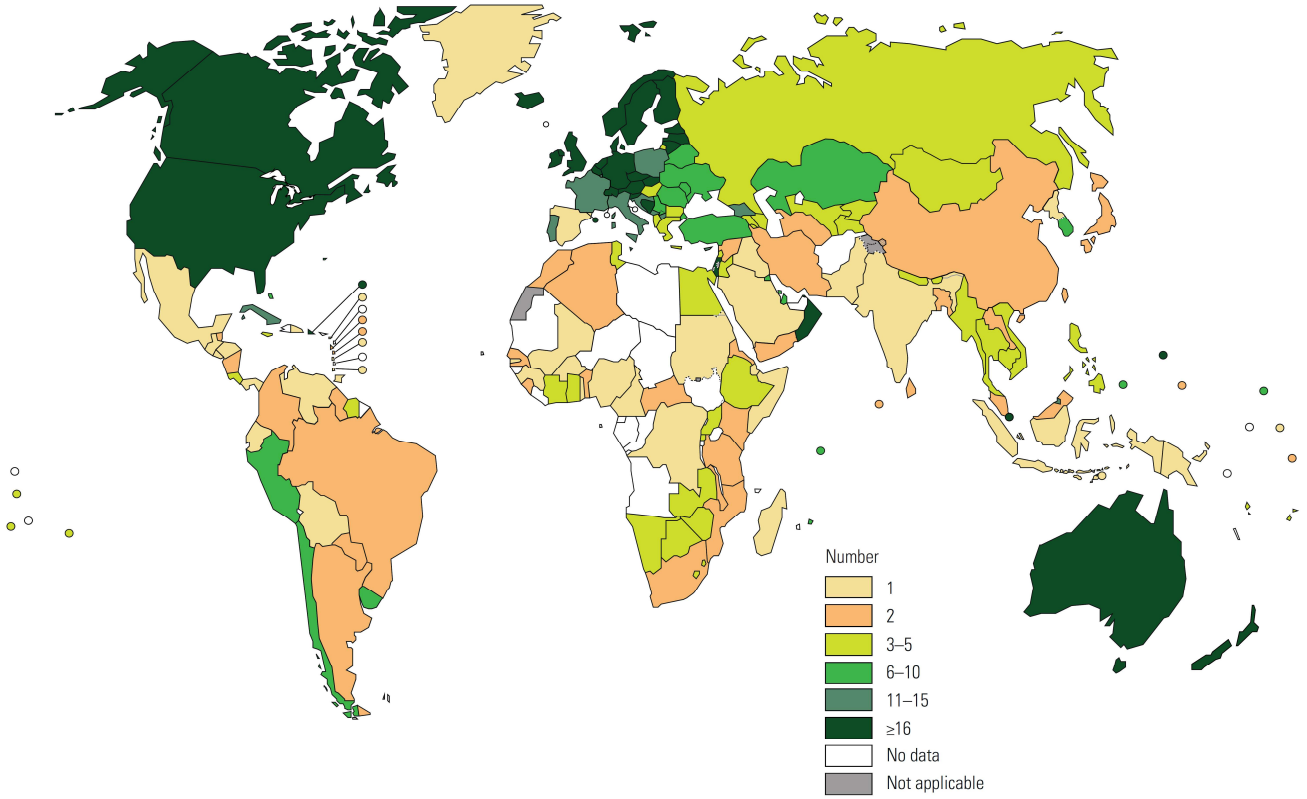
Number of data points on RIF-res in new cases, 1995-2020



Limited number of data points in HBCs

Source: 2020 WHO global TB report

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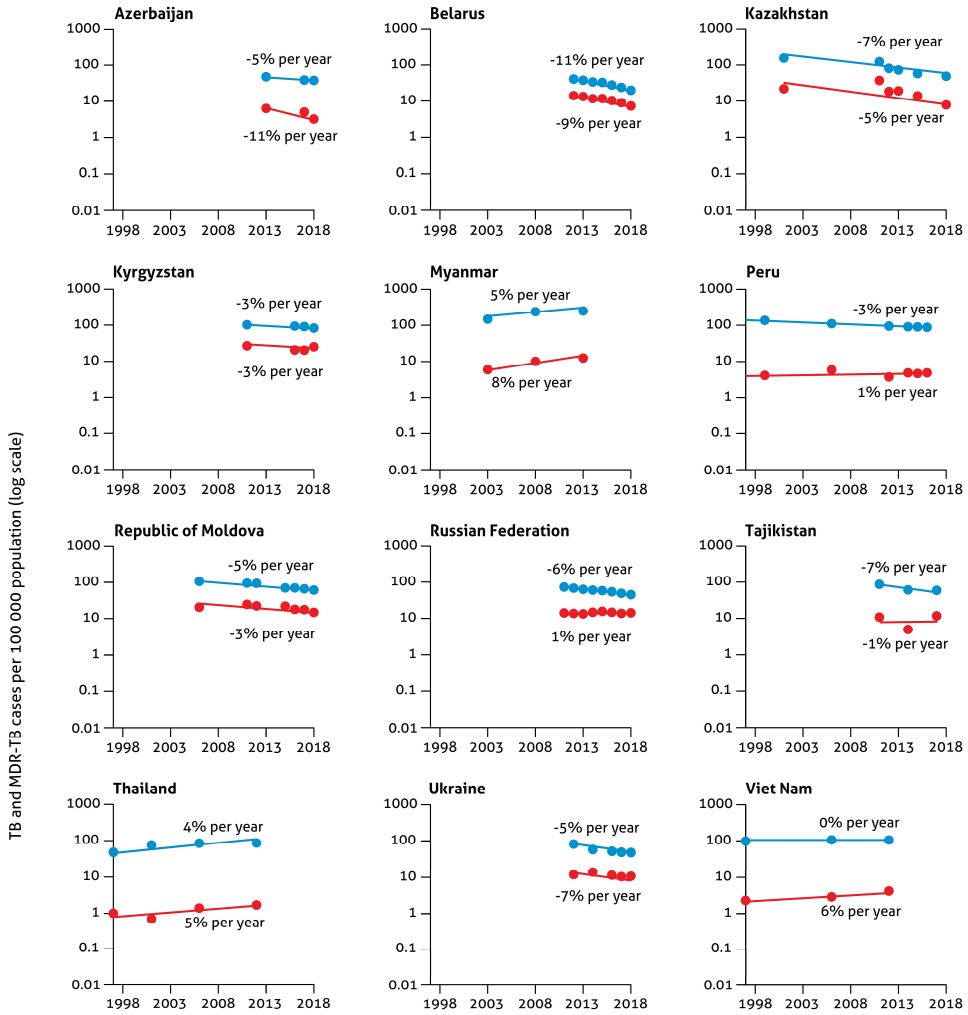
Trends in levels of MDR-TB in selected HBCs



Trends in levels of drug resistance in selected high MDR-TB burden countries with at least three years of data. The **blue** lines show rates of new notified TB cases per 100 000 population, and the **red** lines show rates of MDR-TB cases among new TB patients per 100 000 population in high MDR-TB burden countries with at least three years of data. Change is indicated as an average annual percentage. The scale is logarithmic.

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Source: 2019 WHO global TB report

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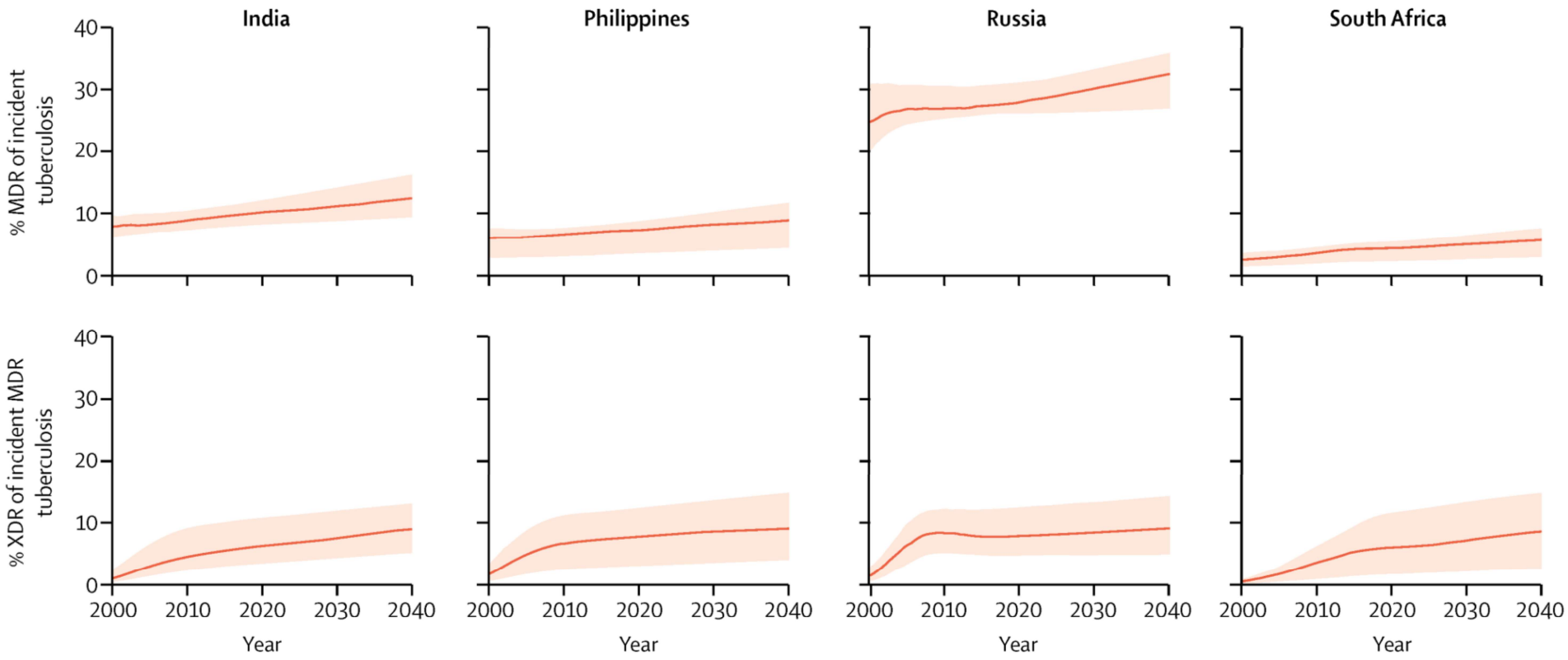
Projected trends of % of MDR-TB and % of XDR-TB



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Source: Lancet Infect Dis. 2017 Jul;17(7):707-715

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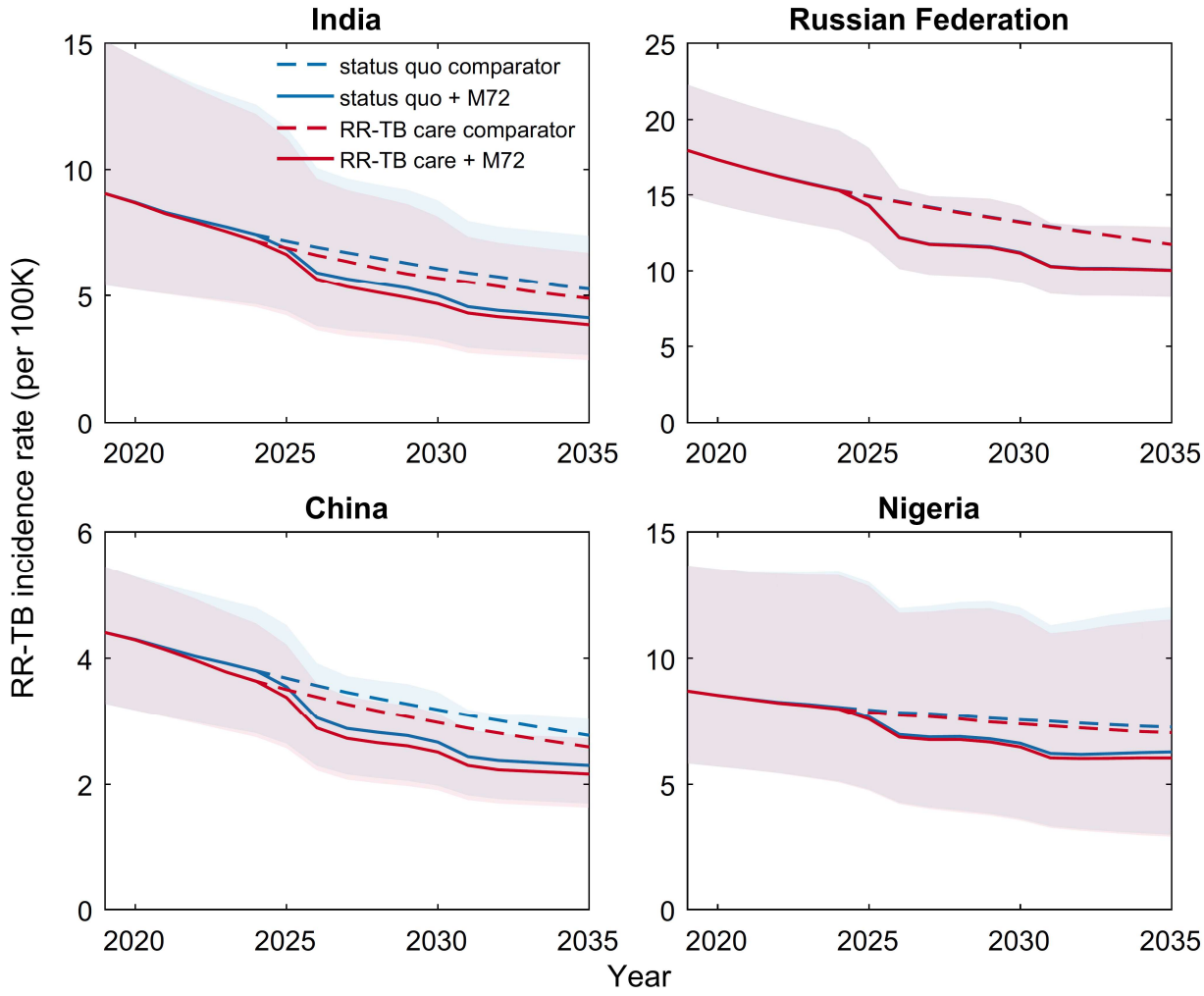
Projected impact of post-exposure vaccine on RR-TB



Source: Nat Commun. 2021 Jan 18;12(1):424

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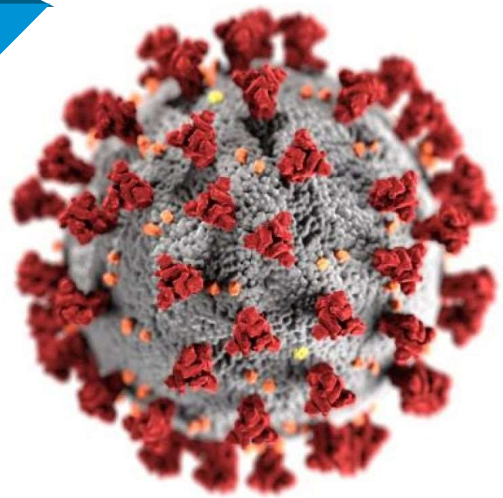
Challenges for TB control

- COVID-19
- diagnosis
- treatment



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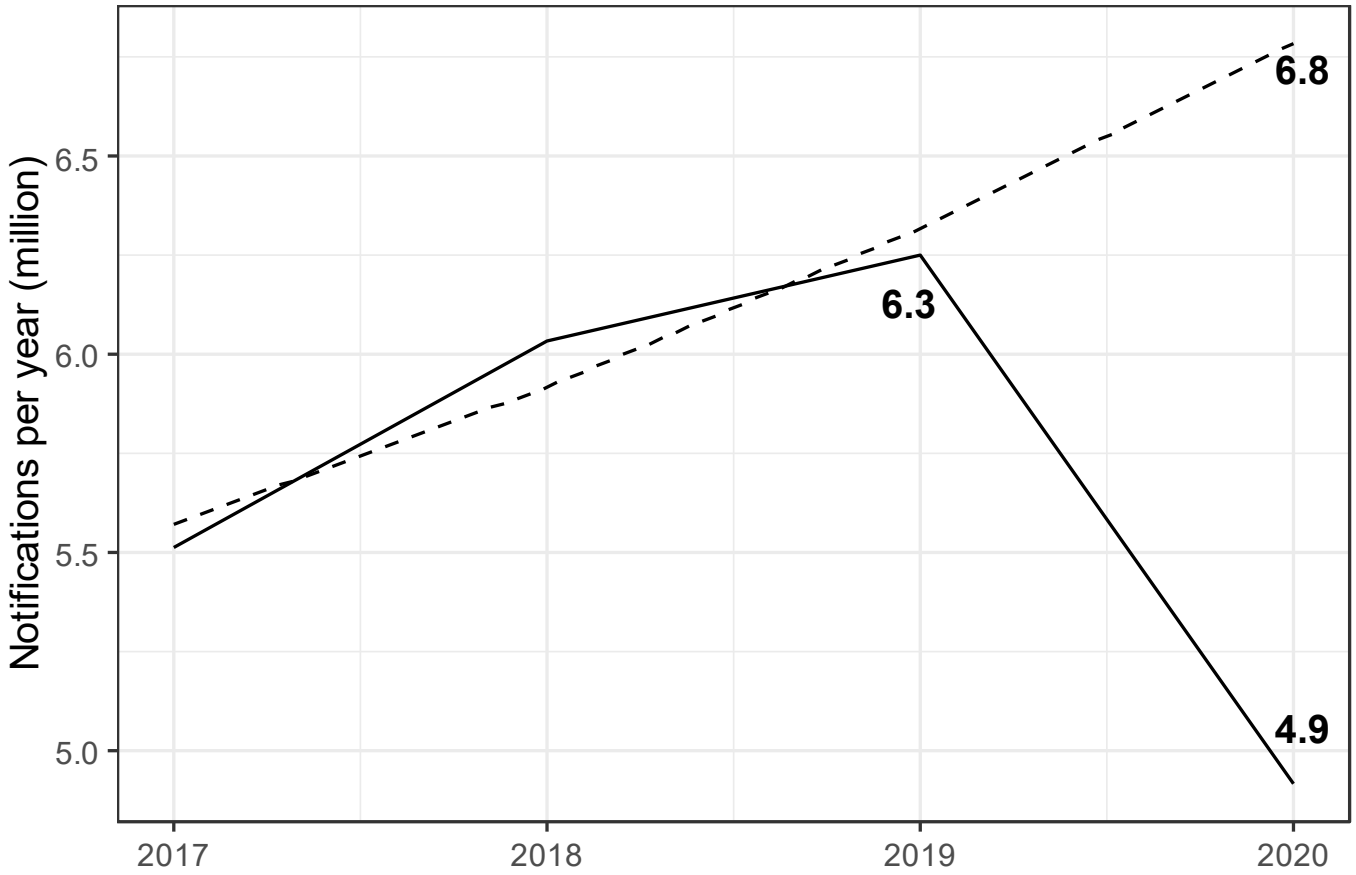
Impact of COVID-19 on TB notifications

84 countries reporting all 2020 months/quarters

- 4.9m notified in 2020
- 6.3m notified in 2019
- 6.8m expected*
- Shortfall vs expected = 28%
- Shortfall vs 2019: 21%

*predictive binomial regression of annual notification rates 2017-2019



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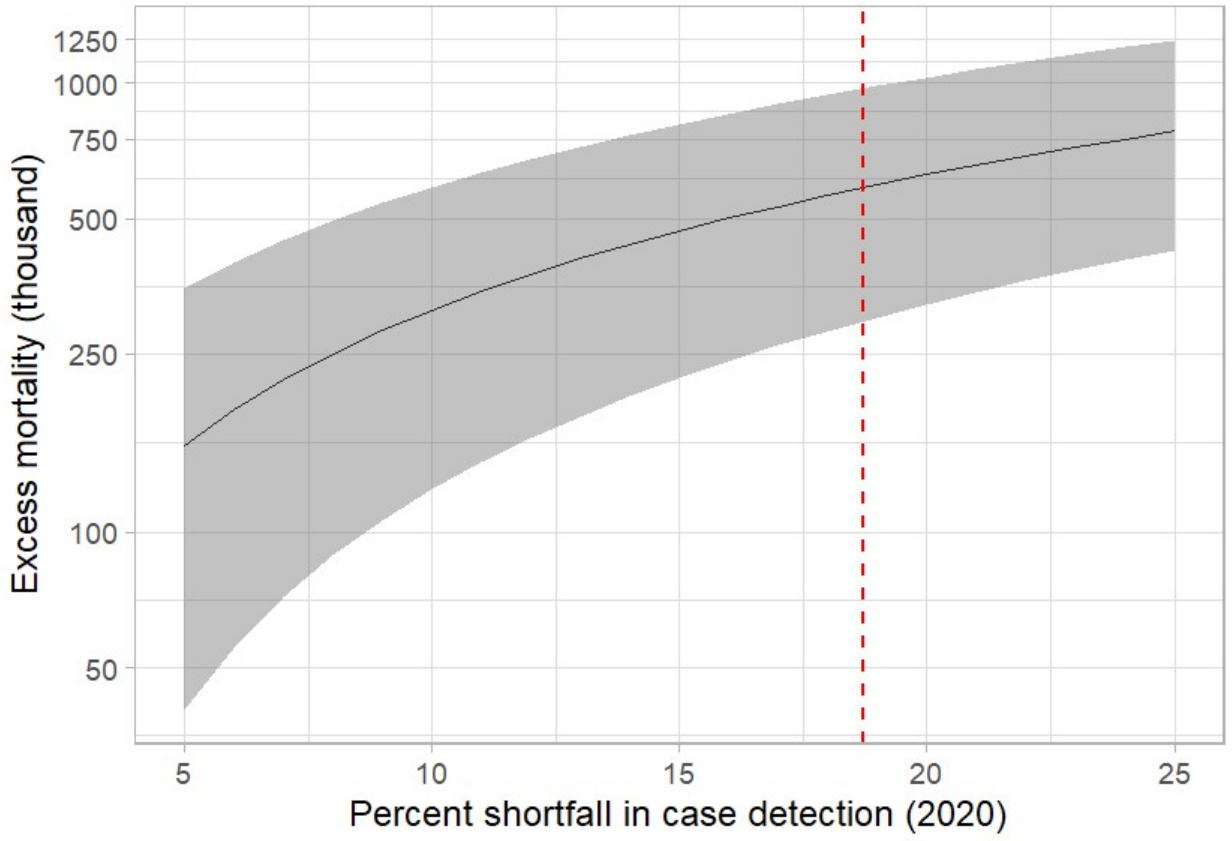
Impact on COVID-19 on TB mortality

84 countries reporting all 2020 months/quarters



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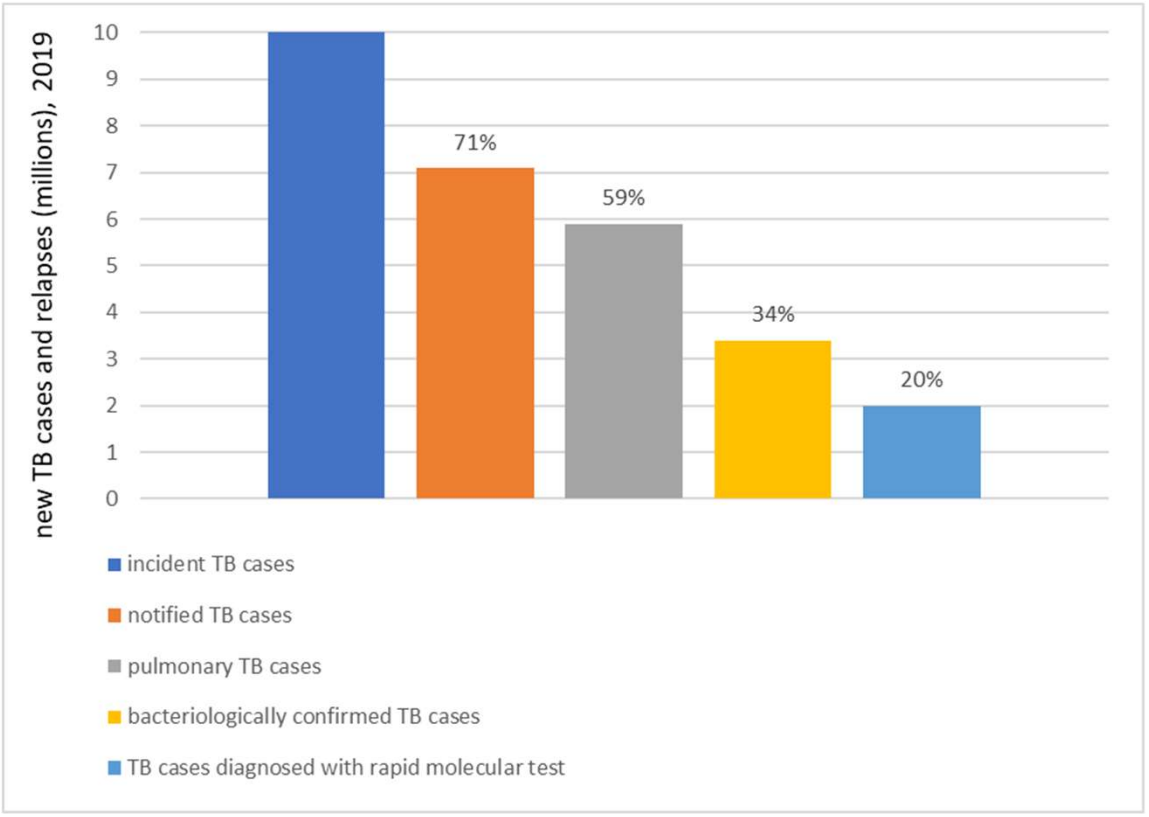
Limited access to molecular tests to detect TB and MDR



RIF-resistance testing coverage in 2019 among bacteriologically confirmed TB cases:

- 59% in new cases
- 80% in previously treated

FQL-resistance testing coverage in 2019 among RR-TB cases: 71%

Point of care test not available for TB!

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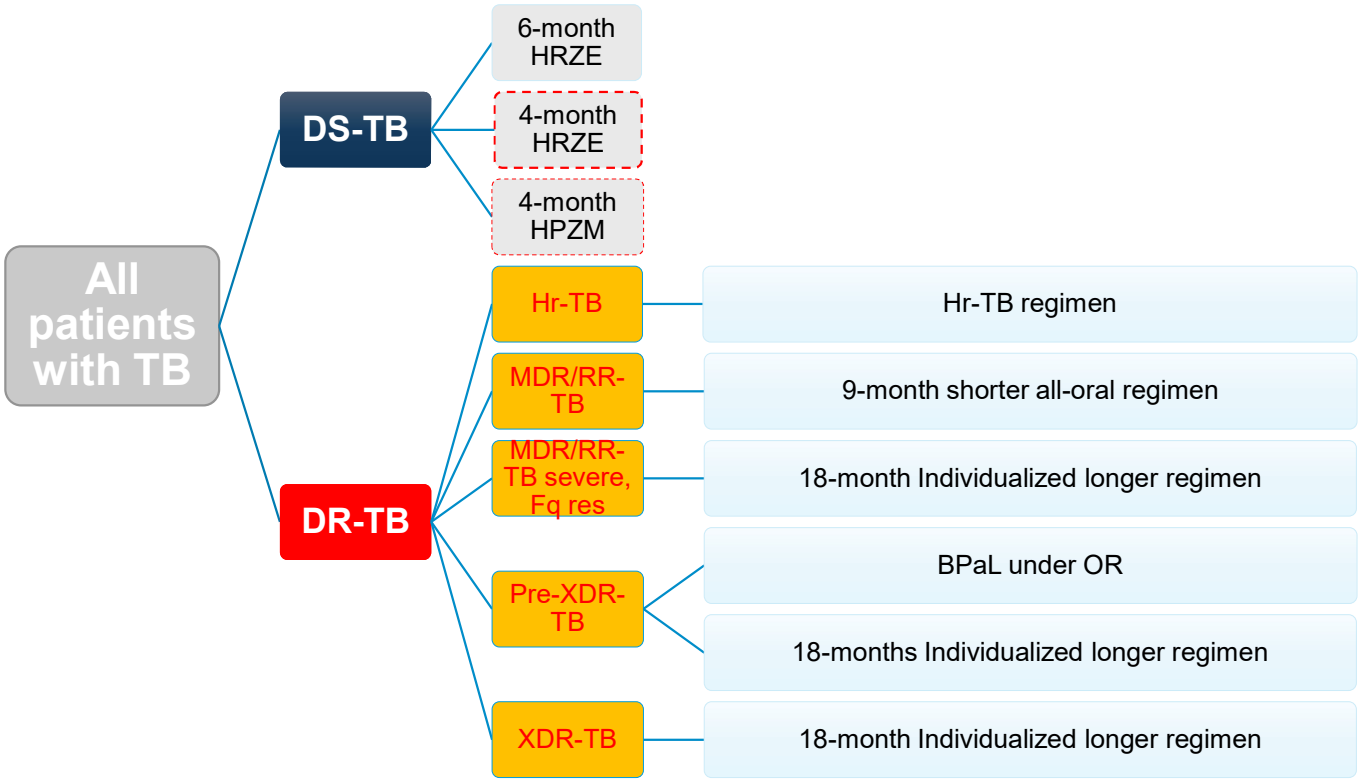
Treatment regimens



Challenges

- Timelines of implementation of new regimens
- Some countries require evidence generated in the local context
- Registration of new drugs
- Supply issues

Opportunities

- Shortening trend for all regimens
- New medicines
- Increasing interest of countries for research

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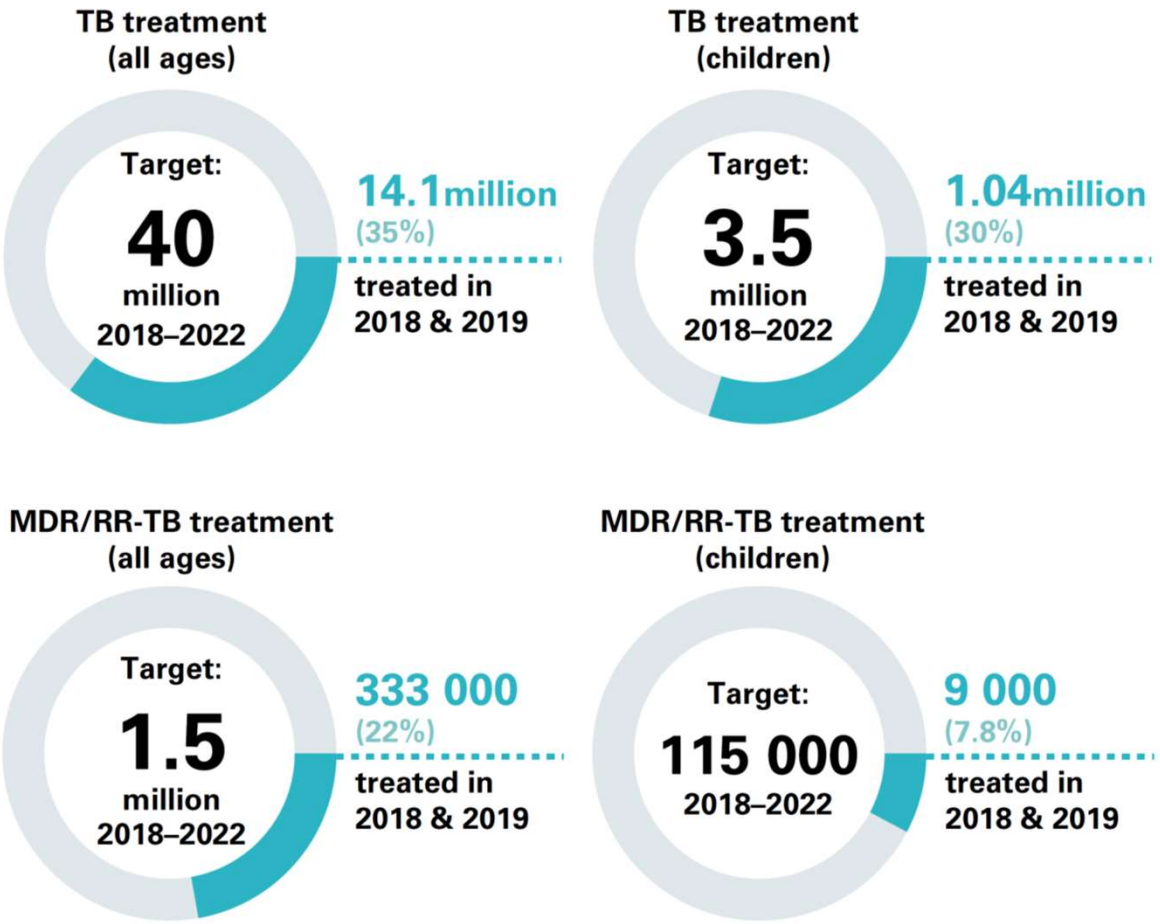
Global progress in the number of people treated for TB



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Source: 2020 WHO global TB report

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Conclusions

- DR-TB represents a major global health threat globally
- Limited data to allow accurate projections of global trends of DR-TB
- In general, % of DR-TB are increasing but absolute numbers are decreasing
- The situation is expected to worsen as a result of the COVID-19 pandemic
- TB and DR-TB testing is insufficient → urgent need for a point-of-care test!
- More and shorter treatment regimens are becoming available but slow uptake in countries
- UN HLM MDR/RR-TB treatment targets for 2018-2022 are very far from being achieved

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