



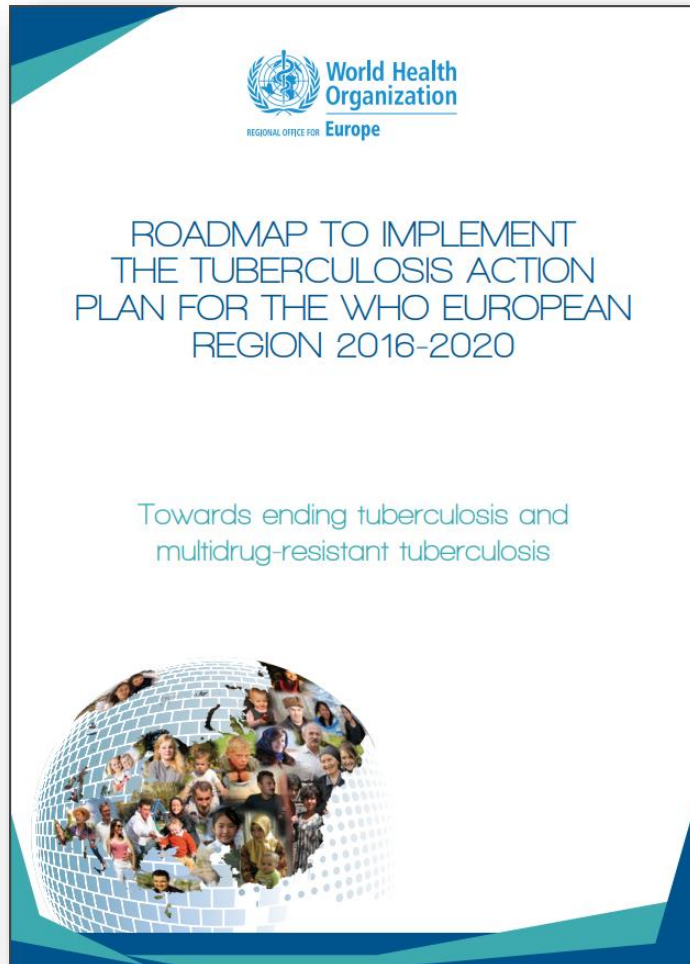
# Epidemiology of TB in WHO European Region And current operational research

Askar Yedilbayev

WHO Regional Office for Europe

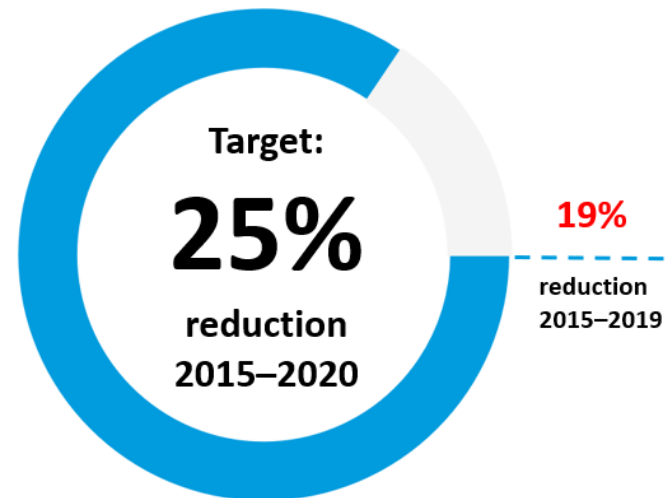
# Overview of the progress towards Regional commitments

## Regional TB Action Plan 2015-2020

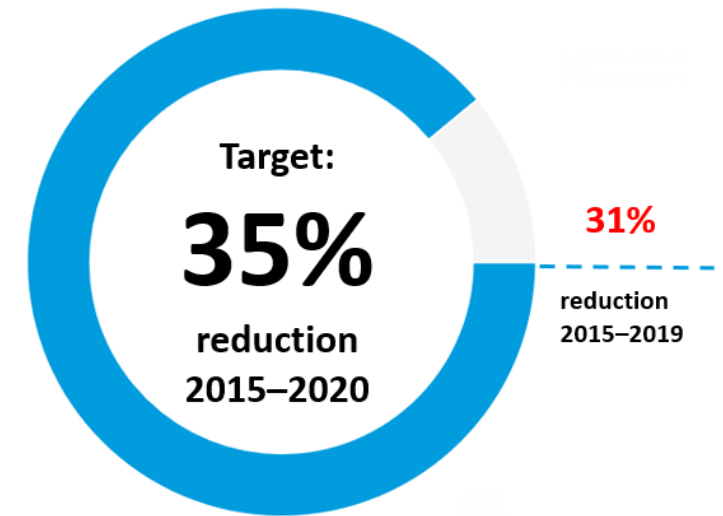


## WHO European Region

TB incidence rate



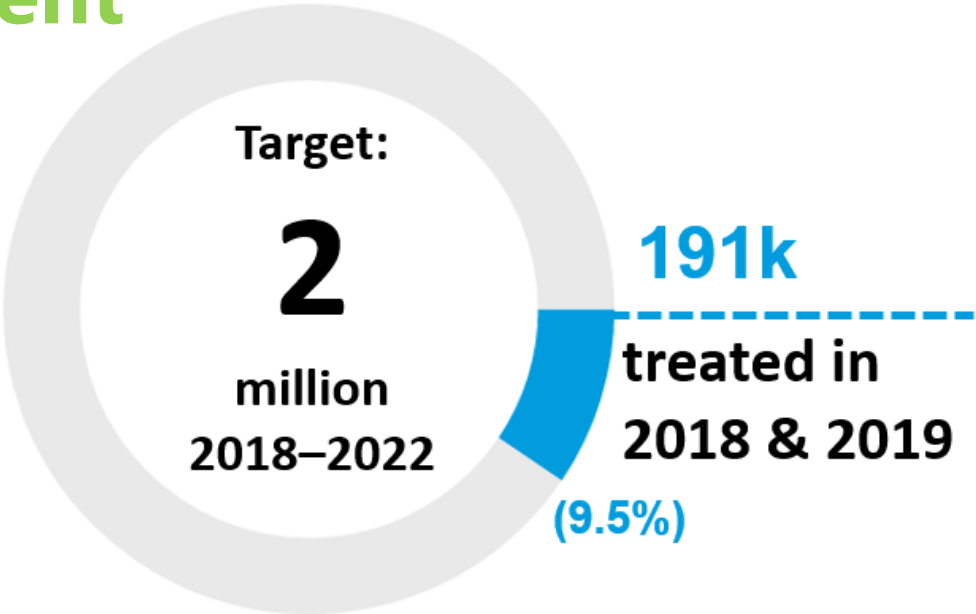
Number of TB deaths



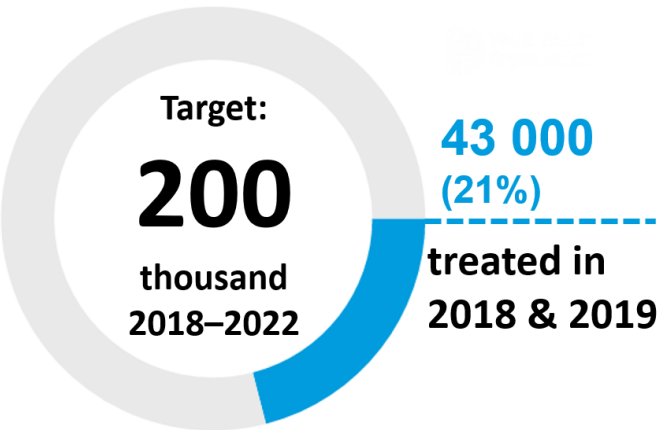
# Regional Progress Towards UNHLM targets:

## TB preventive treatment

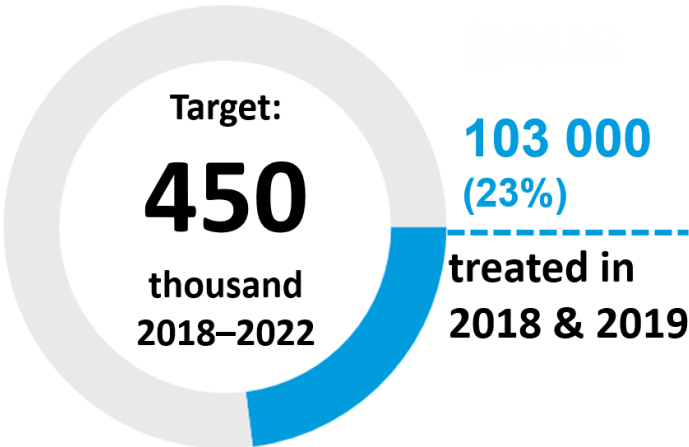
TB preventive treatment  
(all ages)



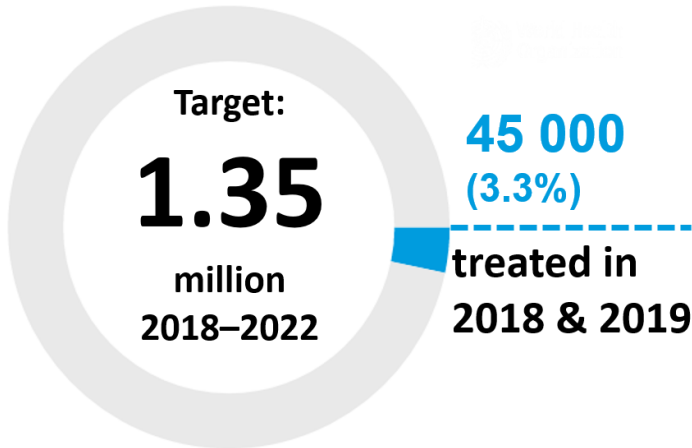
Household contacts  
Aged <5 years



Household contacts  
Aged ≥5 years

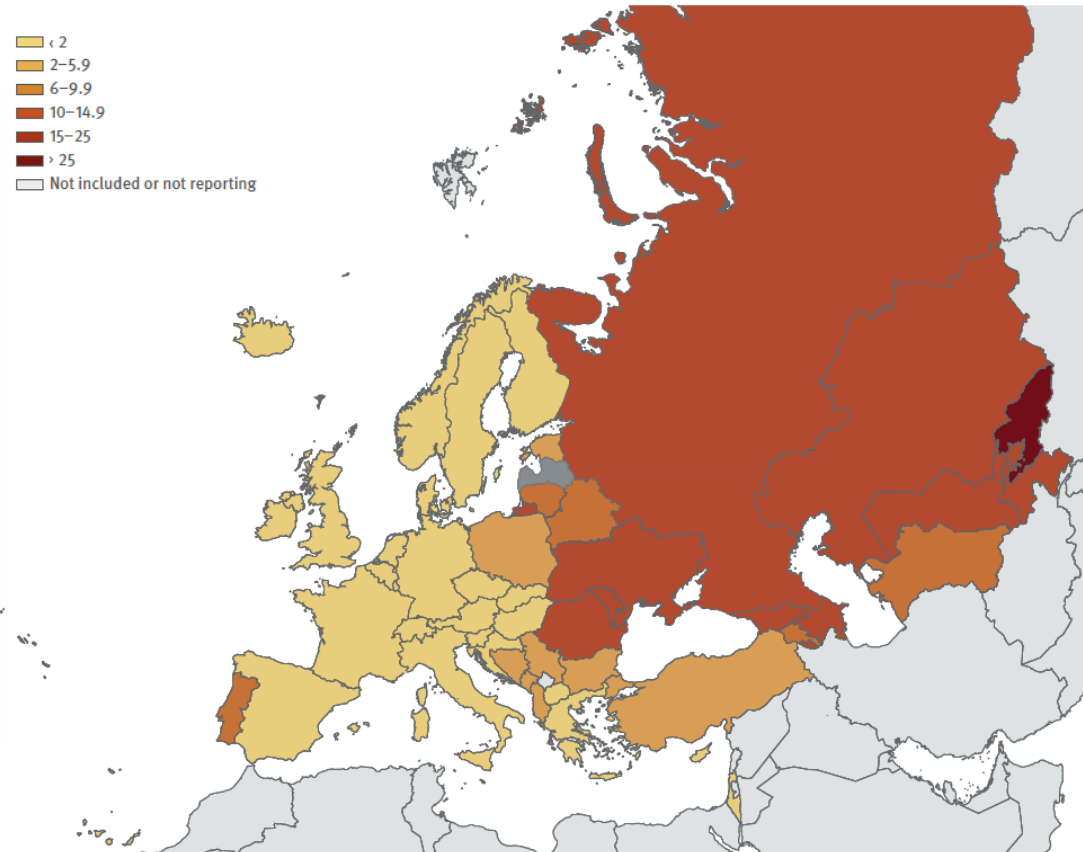
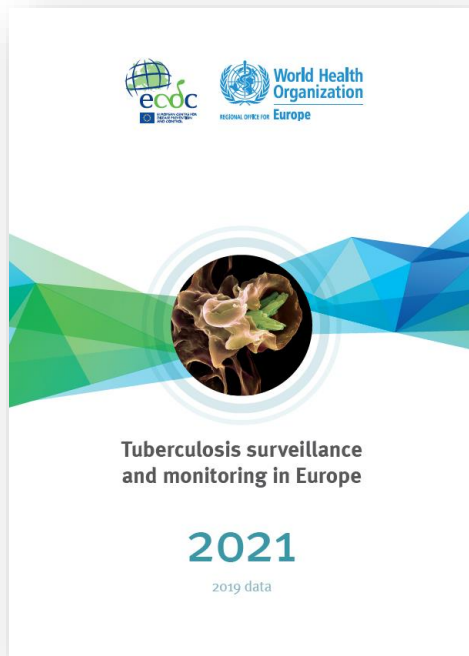


People living with HIV



# TB in the WHO European Region

246 000 fell ill with TB (5% are children and 35% are women) in 2019.

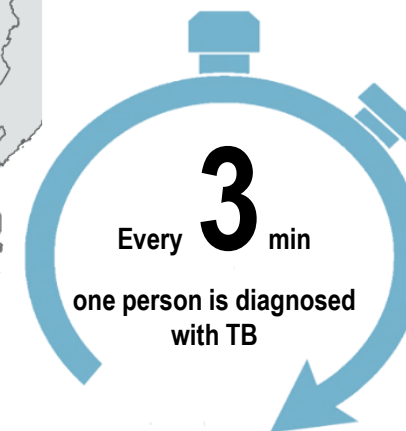


30 000 TB/HIV

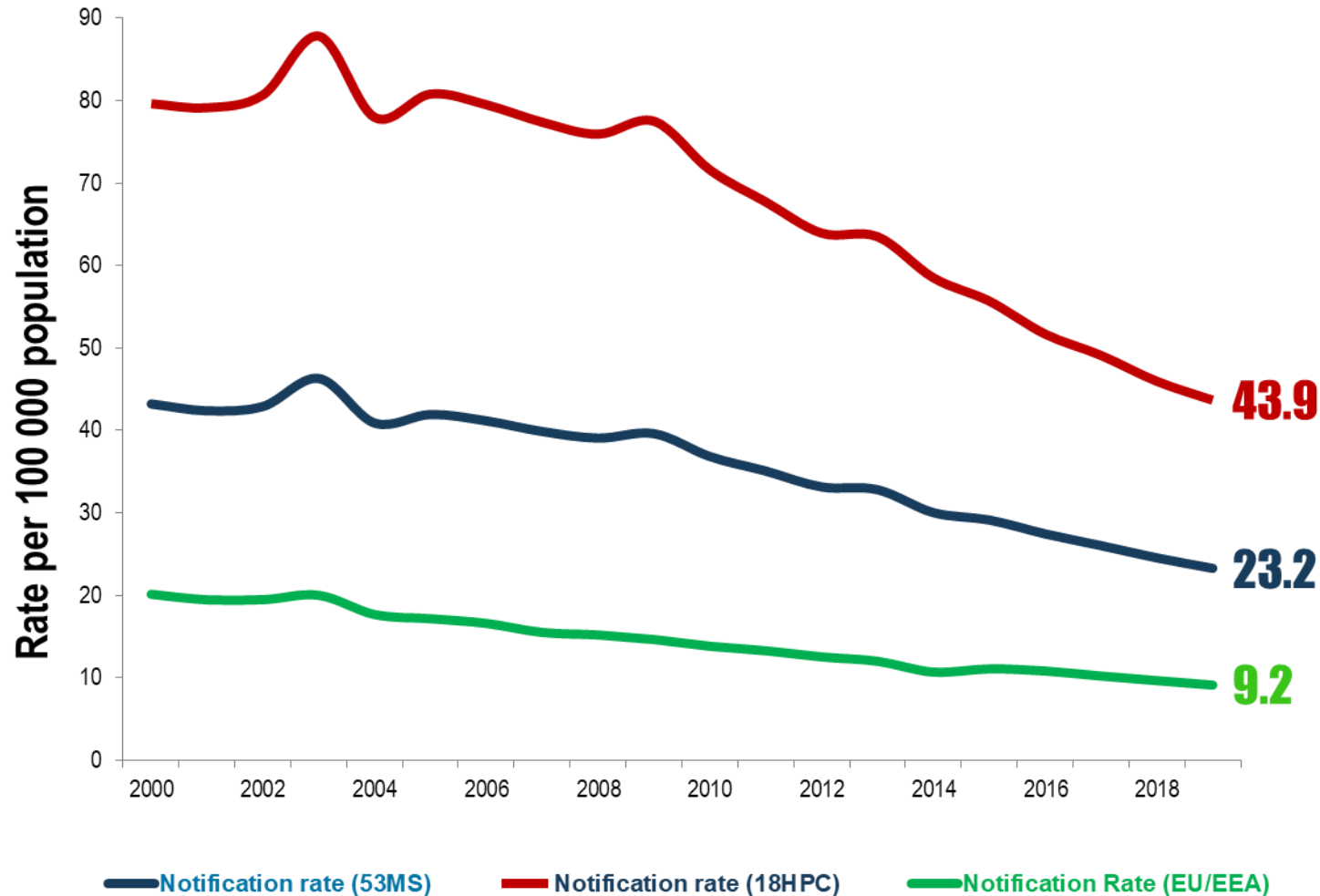
70 000 RR/MDR-TB

20 000 people DIED FROM TB

1 in 11 new TB patients notified in 2019 was HIV+



# TB burden unequally distributed among countries



**82%** of TB cases found in the 18 high-priority countries for TB control in the Region

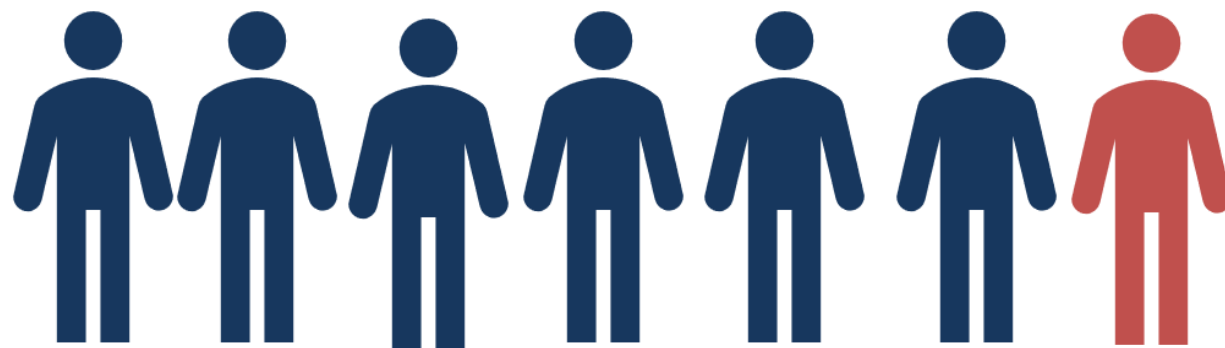
Rate of TB cases almost **5** times higher in HPCs than the rest of the Region

\*18 high priority countries (HPC):

Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Rep. Moldova, Romania, Russia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan

In 2019  
**246,000** people  
**FELL ILL**  
with TB in  
**WHO European  
Region**

- **216,000** were officially notified by health systems
- **30,000** people were undiagnosed, or detected but not reported



Of the estimated  
**246,000** new TB  
cases in 2019 in WHO  
European Region

**8,800** child TB  
cases were notified  
by health systems

**12,000**  
(5%)

  
**were children**  
(0-14 years)



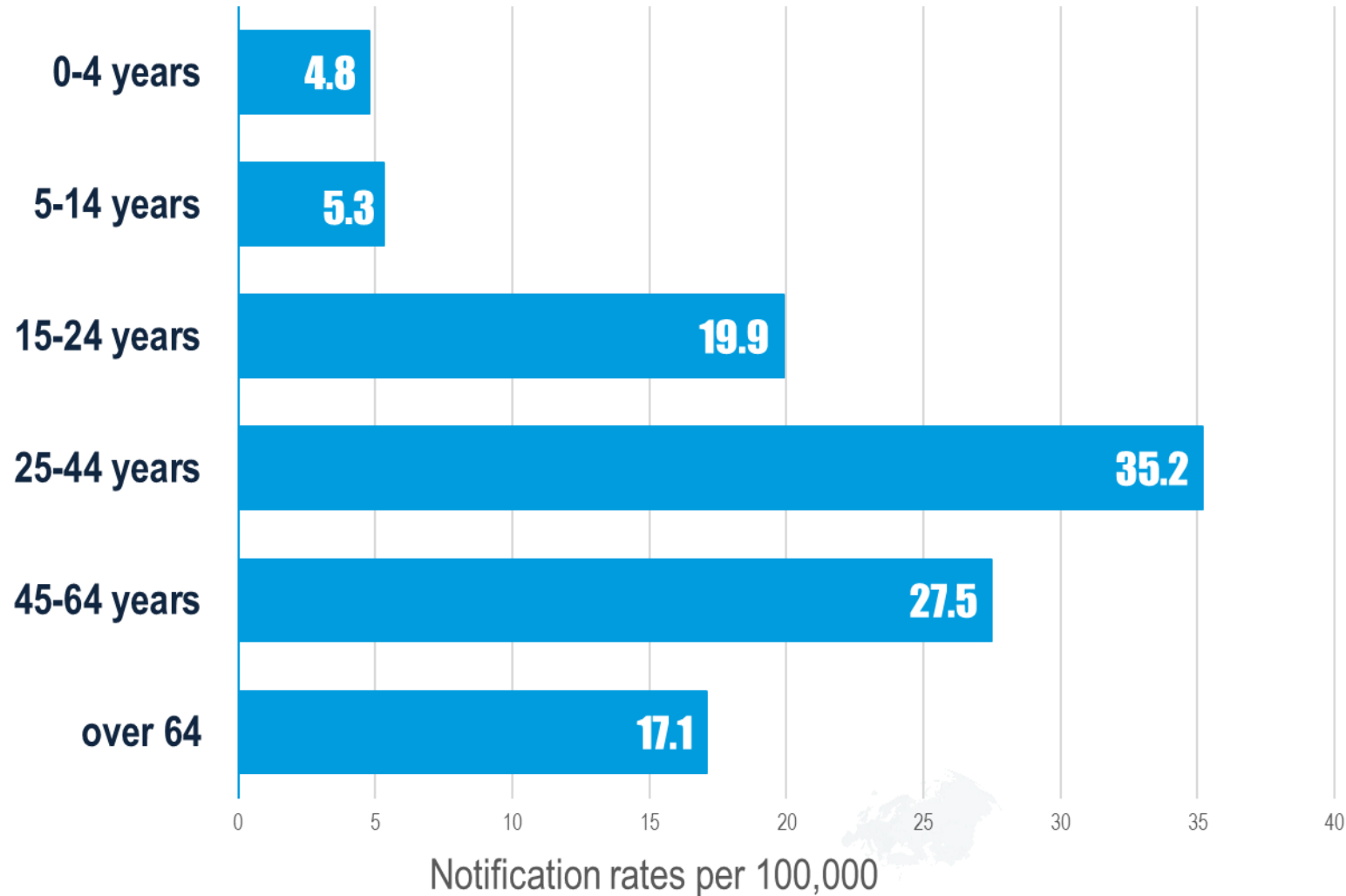
**4,200** were  
**undiagnosed, or detected  
but not reported**

**2,800**



**were under 5**

# Most frequently TB affects young people at economically the most productive age



People aged 25–44 years have the highest risk of contracting with TB, affecting:

- households' economic well-being;
- national economies through the direct loss of productivity.



# The WHO European Region is one of the most affected areas by MDR-TB Globally

Of **30** countries with high burden of MDR-TB hold 87% of new MDR/RR-TB cases

**9** are in EURO:

Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Ukraine and Uzbekistan



# Multidrug-resistant TB (MDR-TB) remains a public health crisis and a health security threat



IN 2019

**ABOUT 70,000**  
**PEOPLE FELL ILL WITH DRUG**  
**RESISTANT TB\***  
**AND 89% PEOPLE**  
**ACCESSED TREATMENT**

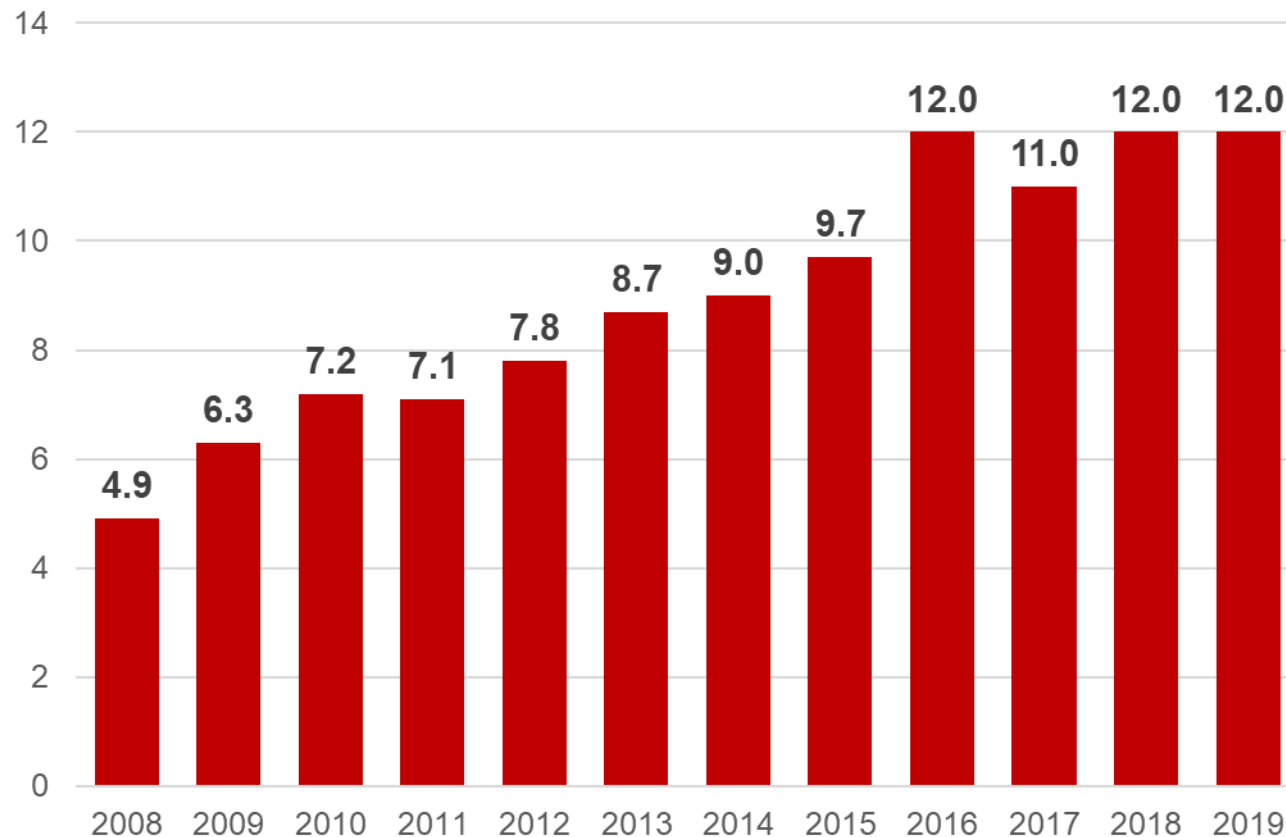
RR/MDR-TB is much difficult to cure...

**OF THOSE TREATED, ONLY**  
**59% WERE TREATED SUCCESSFULLY**

\*The 95% uncertainty interval for the incidence of rifampicin-resistant TB is 55000 – 87000, with majority of these cases having multidrug-resistant TB

# HIV co-infection among TB patients

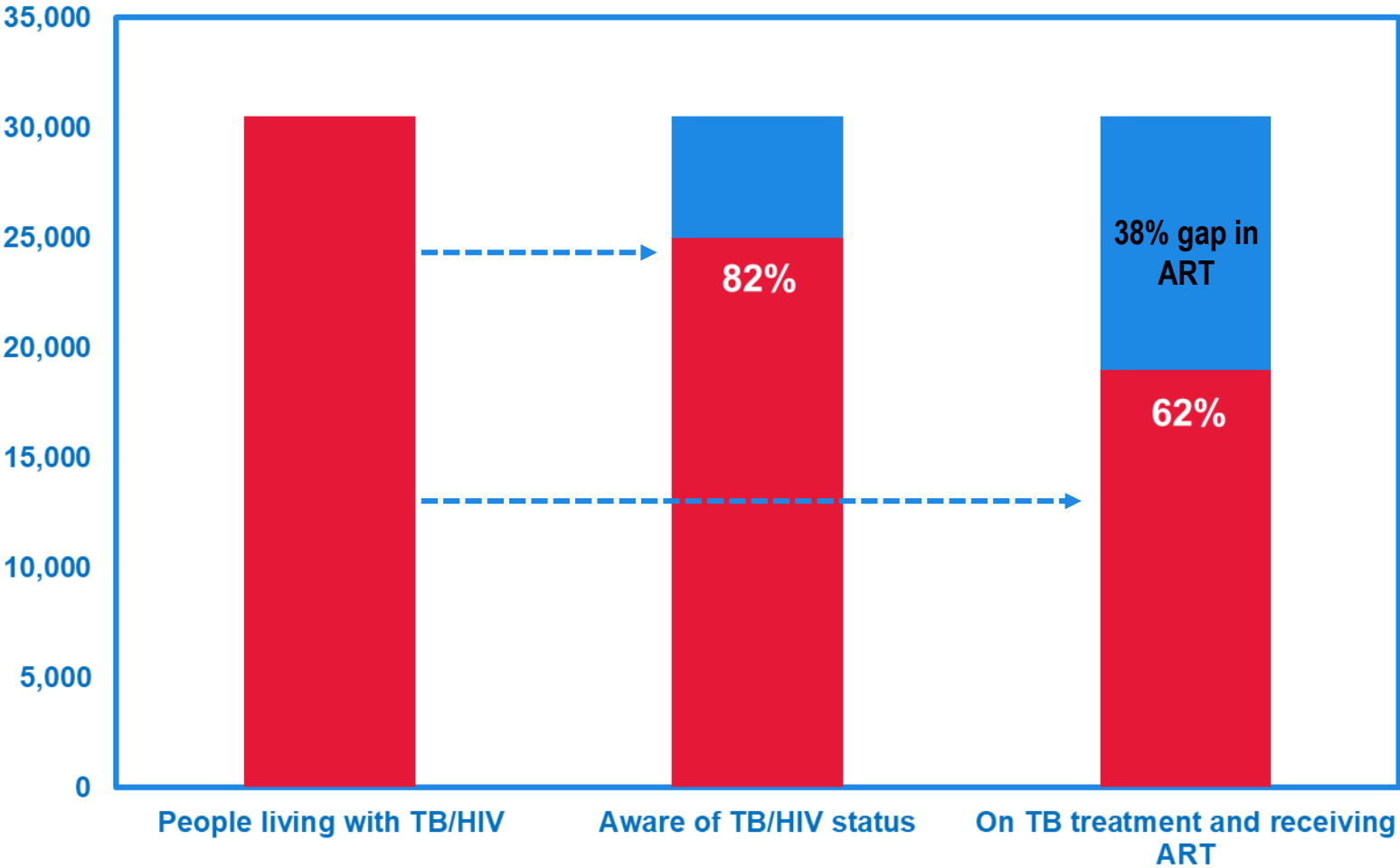
Estimated percent of HIV infection among new  
TB cases, WHO European Region,  
2008-2019



Percentage of TB cases coinfectd with HIV almost **DOUBLED** over the last decade.

People suffering from TB/HIV co-infection have **7times** higher risk of failing treatment and **3times** higher risk of loosing their lives than people suffering from TB only.

# TB/HIV co-infection diagnosis and treatment cascade (WHO European Region)

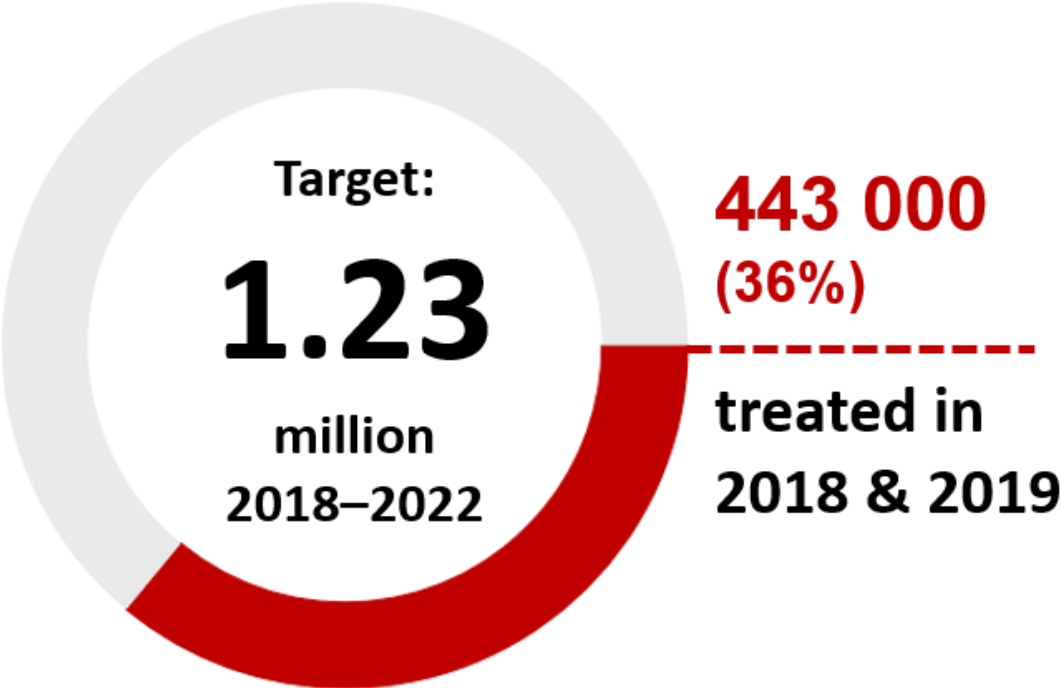


Source: ECDC/WHO (2021). Tuberculosis surveillance and monitoring in Europe 2021–2019 data

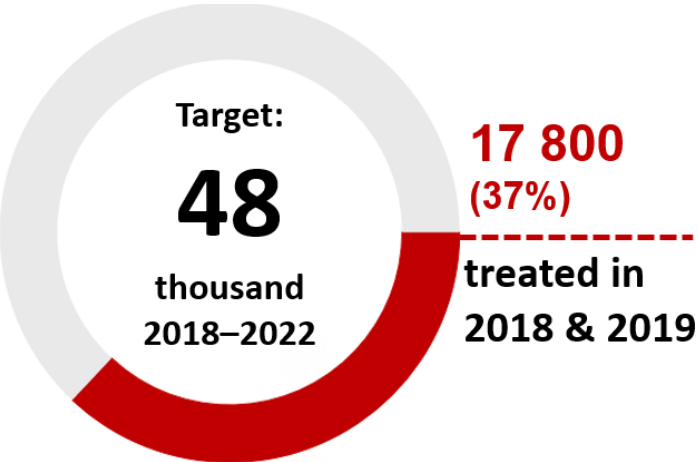
# Regional Progress Towards UNHLM targets The Number of People Treated for TB in 2018 and 2019



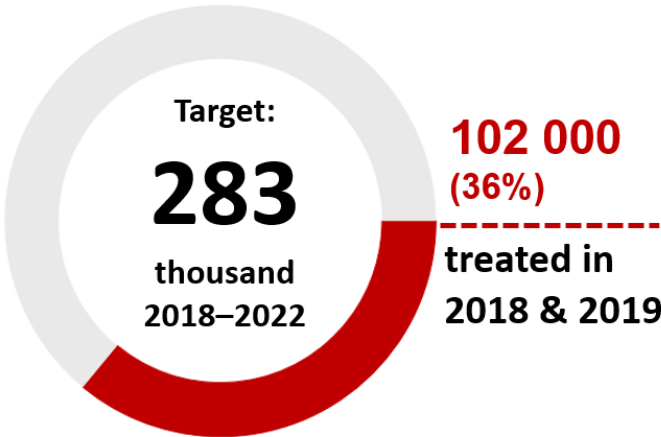
TB treatment  
(all ages)



TB treatment  
(children)



MDR-TB treatment  
(All ages)



Source: [Political declaration of the UN General-Assembly High-Level Meeting on the Fight Against Tuberculosis](#)





# Туберкулез и COVID-19

# Questions included in the WHO global survey

## **The survey included three main questions\*:**

1. Have any changes been made to how TB treatment services are delivered due to the COVID-19 pandemic?
2. Have TB patients been asked to self-isolate at home?
3. Has there been any reallocation of resources from TB services to COVID-19 testing and treatment?

**And additionally 15 sub-questions linked to the three main questions**

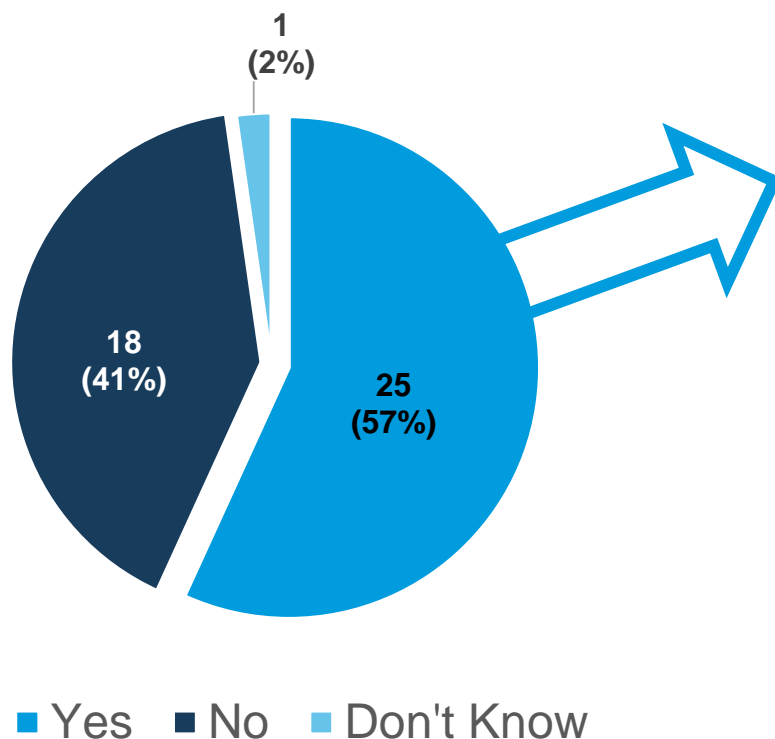
\*Status reported as of June 2020



# WHO Survey Results:

44/53 member states of the WHO European Region responded to the survey (83%)

Have any changes been made to how TB treatment services are delivered due to the COVID-19 pandemic? (n=44)



## Challenges

32% reported reduction of outpatient TB facilities for drug susceptible and RR-TB

28% reported reduction of inpatient TB facilities for drug susceptible and RR-TB

6 countries (24%) reported reduction in both, outpatient and inpatient TB facilities for susceptible and RR TB

## Solutions

76% expanded the use of remote advice and support

72% allowed >1 month of TB drugs to take home

68% introduced home delivery service for TB drugs

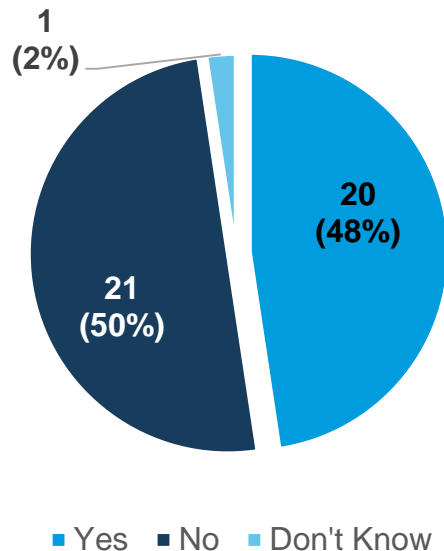
48% allowed household members to collect TB drugs

20 countries (80%) introduced/scaled-up at least two services from above list and 8 countries (32%) scaled-up all four services

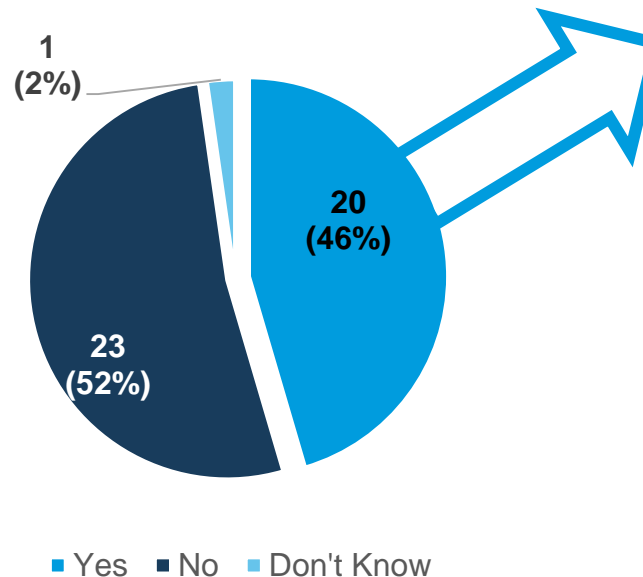


# WHO Survey Results: (cont.)

Have TB patients been asked to self-isolate at home? (n=42)



Reallocation of resources from TB services (n=44)



- ❑ 6 countries (30%) reported **GeneXpert machines** being reassigned for COVID-19 testing
- ❑ 17 countries (85%) reported **NTP staff** at the national or subnational level being reassigned to other duties
- ❑ 10 countries (50%) reported **TB budget** being reallocated to the COVID-19 response

# Indicators included in the WHO/Europe data collection

## 1. TB diagnosis and detection:

Number of notified cases of all forms of TB (i.e. bacteriologically confirmed plus clinically diagnosed), new and relapse cases

## 2. Initiation of TB treatment:

Number of patients that began TB treatment

Number of cases with RR-TB and/or MDR-TB that began second-line treatment\*

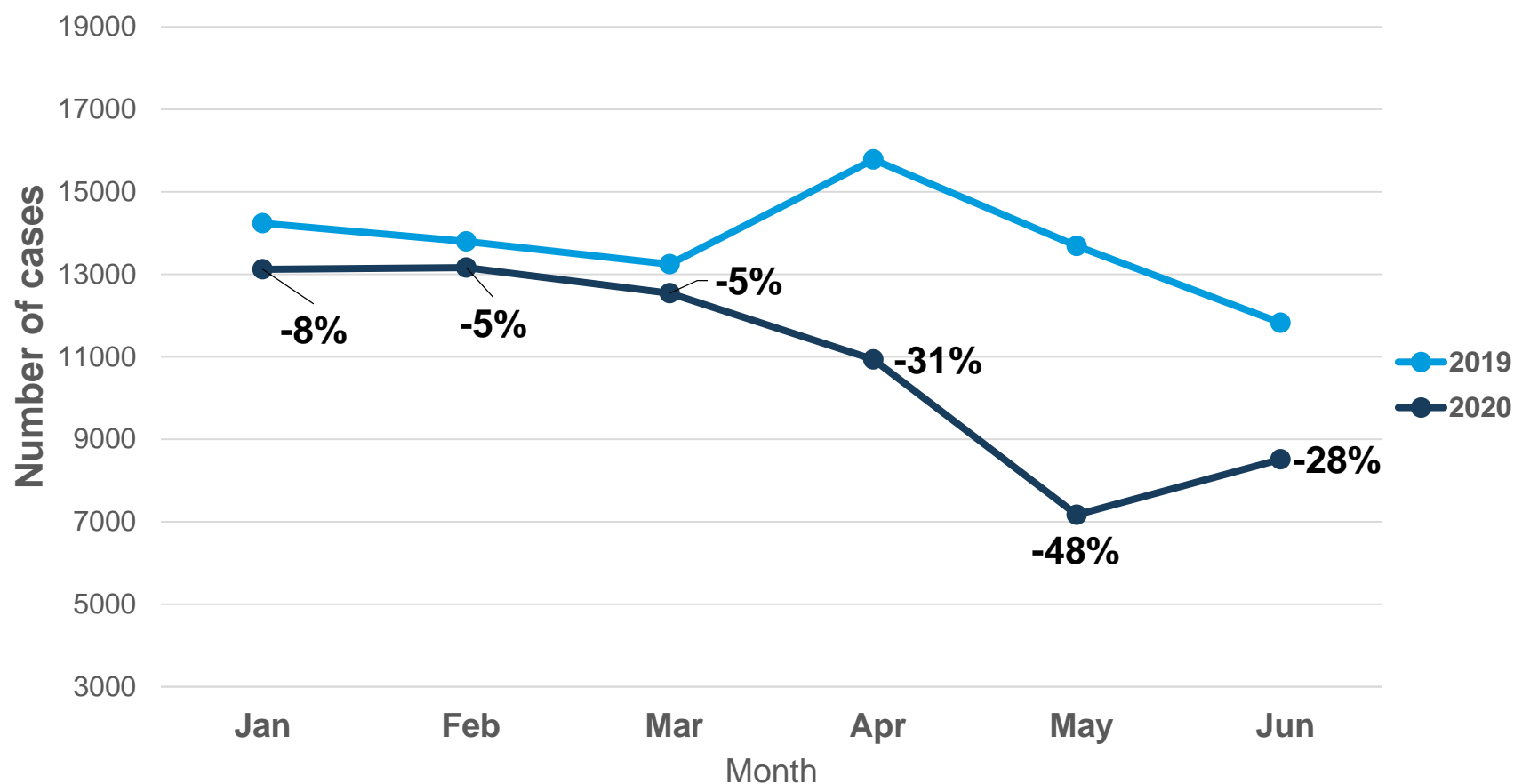
## 3. Retention in care:

Percentage of patients reported on TB treatment at the end of the reporting period

\*Only 18 high priority countries were asked to report on RR/MDR-TB treatment initiation

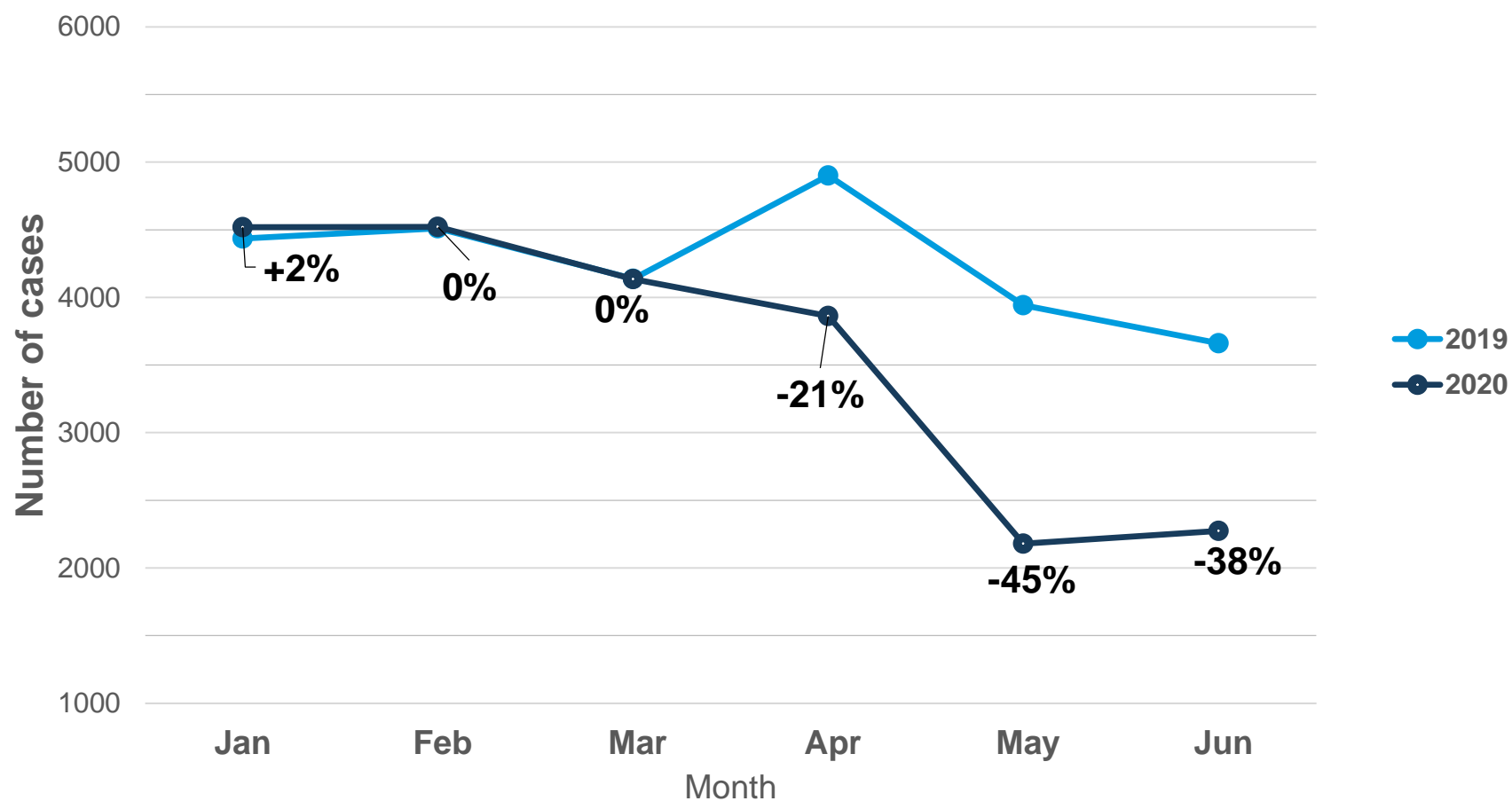
# Monthly TB notifications in WHO European Region

29 member states of the WHO European Region submitted monthly data



# Monthly enrollment on RR/MDR-TB treatment in WHO European Region

14 member states of the WHO European Region submitted monthly data



# Impact of COVID-19 on TB response

## Modelling done by WHO


- Temporary decrease in TB case detection:
  - 25% over a period of 3 months ➡ 13% increase in TB deaths
  - 50% over a period of 3 months ➡ 26% increase in TB deaths
- 3,600 to 7,200 additional deaths in WHO European Region
- TB deaths could be back to 2016-2017 level ( $\approx$  30 000 deaths)

## Stop TB partnership modelling

- An additional 26 500 TB deaths could be registered in WHO European Region between 2020 and 2025 as a direct consequence of the COVID-19 pandemic (1.4 million deaths globally)


# Data entry screen in the WHO Global TB Database

## Extra request!

 Please provide the preliminary number of new and relapse TB cases (all forms) that were notified each month or quarter in 2020 and early 2021.

Please provide the preliminary number of RR/MDR-TB patients that were started on MDR-TB treatment each month or quarter in 2020 and early 2021.

## Дополнительный запрос!

 Пожалуйста, укажите предварительное количество новых и рецидивирующих случаев туберкулеза (все формы), о которых сообщалось каждый месяц или квартал в 2020 году и в начале 2021 года.

Пожалуйста, укажите предварительное количество пациентов с РУ- и/или МЛУ-ТБ, которые начали лечение по МЛУ схемам о которых сообщалось каждый месяц или квартал в 2020 году и в начале 2021 года.

➤ We introduced a data entry screen in the system to allow reporting of data about monthly (or quarterly) TB notifications and enrolments on treatment for RR-TB/MDR-TB for 2020

➤ Same online data collection form will be used for continuous monitoring of the monthly (or quarterly) data for the same indicators starting January 2021 and onward

# World Health Organization (WHO)

## Information Note on Tuberculosis and COVID-19



Released by the WHO Global TB Programme on 20 March 2020 and updated on 4 April and 12 May 2020 with the aim to:

*“...assist national TB programmes and health personnel to urgently maintain continuity of essential services for people affected with TB during the COVID-19 pandemic, driven by innovative people-centred approaches, as well as maximizing joint support to tackle both diseases...”*



### World Health Organization (WHO) Information Note

#### Tuberculosis and COVID-19

Date: 12 May 2020

#### COVID-19: Considerations for tuberculosis (TB) care

As the world comes together to tackle the COVID-19 pandemic, it is important to ensure that essential services and operations for dealing with long-standing health problems continue to protect the lives of people with TB and other diseases or health conditions. Health services, including national programmes to combat TB, need to be actively engaged in ensuring an effective and rapid response to COVID-19 while ensuring that TB services are maintained.

Modelling work suggests that if the COVID-19 pandemic led to a global reduction of 25% in expected TB detection for 3 months – a realistic possibility given the levels of disruption in TB services being observed in multiple countries – then we could expect a 13% increase in TB deaths, bringing us back to the levels of TB mortality that we had 5 years ago. This may even be a conservative estimate as it does not factor in other possible impacts of the pandemic on TB transmission, treatment interruptions and poorer outcomes in people with TB and COVID-19 infection(1). Between 2020 and 2025 an additional 1.4 million TB deaths could be registered as direct consequence of the COVID-19 pandemic(2).

The World Health Organization (WHO) is advising Member States that are leading the response to the unfolding COVID-19 pandemic(3). The WHO Global TB Programme, along with WHO regional and country offices, has developed an information note, in collaboration with stakeholders. This note is intended to assist national TB programmes and health personnel to **urgently maintain continuity of essential services for people affected with TB during the COVID-19 pandemic**, driven by innovative people-centred approaches, as well as maximizing joint support to tackle both diseases. It is important that the progress made in TB prevention and care is not reversed by the COVID-19 pandemic. Finding and treating people with TB remain the fundamental pillars of TB prevention and care and those would require maintained attention.

The COVID-19 pandemic has provoked social stigma and discriminatory behaviours against people of certain ethnic backgrounds as well as anyone perceived to have been in contact with the virus. Stigma can undermine social cohesion and prompt social isolation of groups, which might contribute to a situation where the virus and TB are more likely to spread. This can:

- Drive people to hide the illness to avoid discrimination
- Prevent people from seeking health care immediately
- Discourage them from adopting healthy behaviours.

Stigma and fear around communicable diseases like TB hamper the public health response. What works is building trust in reliable health services and advice, showing empathy with those affected, understanding the disease itself, and adopting effective, practical measures so people can help keep themselves and their loved ones safe (4). Governments, citizens, media and communities have an important role to play in preventing and stopping stigma. We all need to be intentional and thoughtful when communicating on social media and other communication platforms, showing supportive behaviours around COVID-19, as well as older diseases like TB.

#### 1. Are people with TB likely to be at increased risk of COVID-19 infection, illness and death?

While experience on COVID-19 infection in TB patients remains limited, it is anticipated that people ill with both TB and COVID-19 may have poorer treatment outcomes, especially if TB treatment is interrupted.

TB patients should take precautions as advised by health authorities to be protected from COVID-19 and continue their TB treatment as prescribed.

People ill with COVID-19 and TB show similar symptoms such as cough, fever and difficulty breathing. Both diseases attack primarily the lungs and although both biological agents transmit mainly via close contact, the incubation period from exposure to disease in TB is longer, often with a slow onset.

#### 2. What should health authorities do to provide sustainability of essential TB services during the COVID-19 pandemic? What services can be leveraged across both diseases?

**All measures should be taken to ensure continuity of services** for people who need preventive and curative treatment for TB. Health authorities should maintain support to essential TB services, including during emergencies such as COVID-19. People-centred delivery of TB prevention, diagnosis, treatment and care services should be ensured in tandem with the COVID-19 response.

**Prevention:** Measures must be put in place to limit transmission of TB and COVID-19 in congregate settings and health care facilities, as per WHO guidelines (5), (6). Although modes of transmission of the two diseases are slightly different, administrative, environmental and personal protection measures apply to both (e.g. basic infection prevention and control, cough etiquette, patient triage). Provision of TB preventive treatment should be maintained as much as possible.

**Diagnosis:** Accurate diagnostic tests are essential for both TB and COVID-19. Tests for the two conditions are different and both should be made available for individuals with respiratory symptoms, which may be similar for the two diseases. TB laboratory networks have been established in countries with the support of WHO and international partners. These networks as well as specimen transportation mechanisms could also be used for COVID-19 diagnosis and surveillance.

# Steps to undertake to ensure continuity of essential TB services

**Prevention:** Provision of TB preventive treatment should be maintained as much as possible.

**Diagnosis:** Tests for two conditions are different and both should be made available for individuals with respiratory symptoms, which may be similar for two diseases. Established TB laboratory networks as well as specimen transportation mechanisms could also be used for COVID-19 diagnosis and surveillance.

## **Treatment and care:**

- People-centered outpatient and community-based care should be strongly preferred over hospital treatment for TB patients to reduce opportunities for transmission;
- Provision of anti-tuberculosis treatment must be ensured for all TB patients, including those in COVID-19 quarantine and those with confirmed COVID-19 disease;
- Use of digital health technologies should be intensified to support patients and programmes through improved communication, counselling, care, and information management, among other benefits.

**Proactive planning, procurement, supply and risk management:** Appropriate planning and monitoring are essential to ensure that procurement and supply of TB medicines and diagnostics are not interrupted.



# Introduction of fully-oral modified shorter treatment regimens for MDR/RR-TB under operational research conditions

Progress since September 2020

## 14 high-priority countries of WHO European Region



## Ensuring people-centeredness of service delivery



9 months

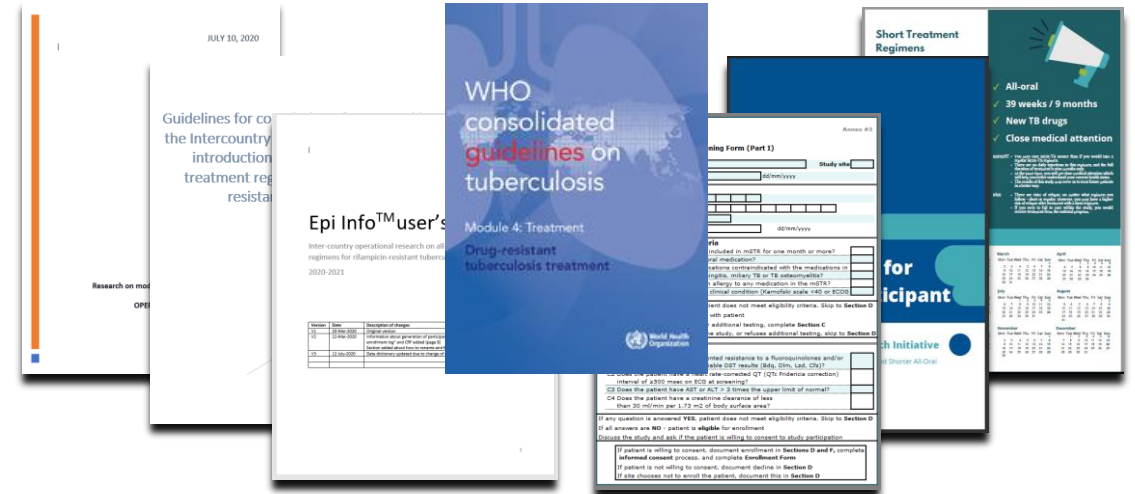


Fully oral



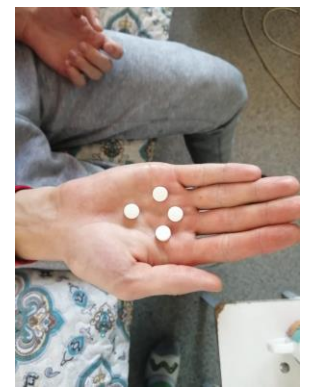
6 times less  
pill burden

## Regional Operational Research Package in line with WHO guidelines on DR-TB



## Progress of new regional initiative

- **820 patients** started on treatment with mSTR
- Focus on improving treatment outcomes of MDR/RR-TB and ensuring UHC
- Generation of quality evidence for next WHO recommendations



# Treatment regimens

In this study, three all-oral shorter RR-TB treatment regimens are proposed, based on knowledge of their safety and efficacy as of 2020.

For adult patients:

**Regimen 1: 39 weeks Lfx + Bdq + Lzd + Cfz + Cs**

**Regimen 2: 39 weeks Lfx + Bdq + Lzd + Cfz + Dlm**

Treatment regimen 1 is preferred in adults as it includes all Group A and Group B anti-TB drugs. In patients with suspected resistance or intolerance of Cs, regimen 2 should be considered as primary choice of therapy.

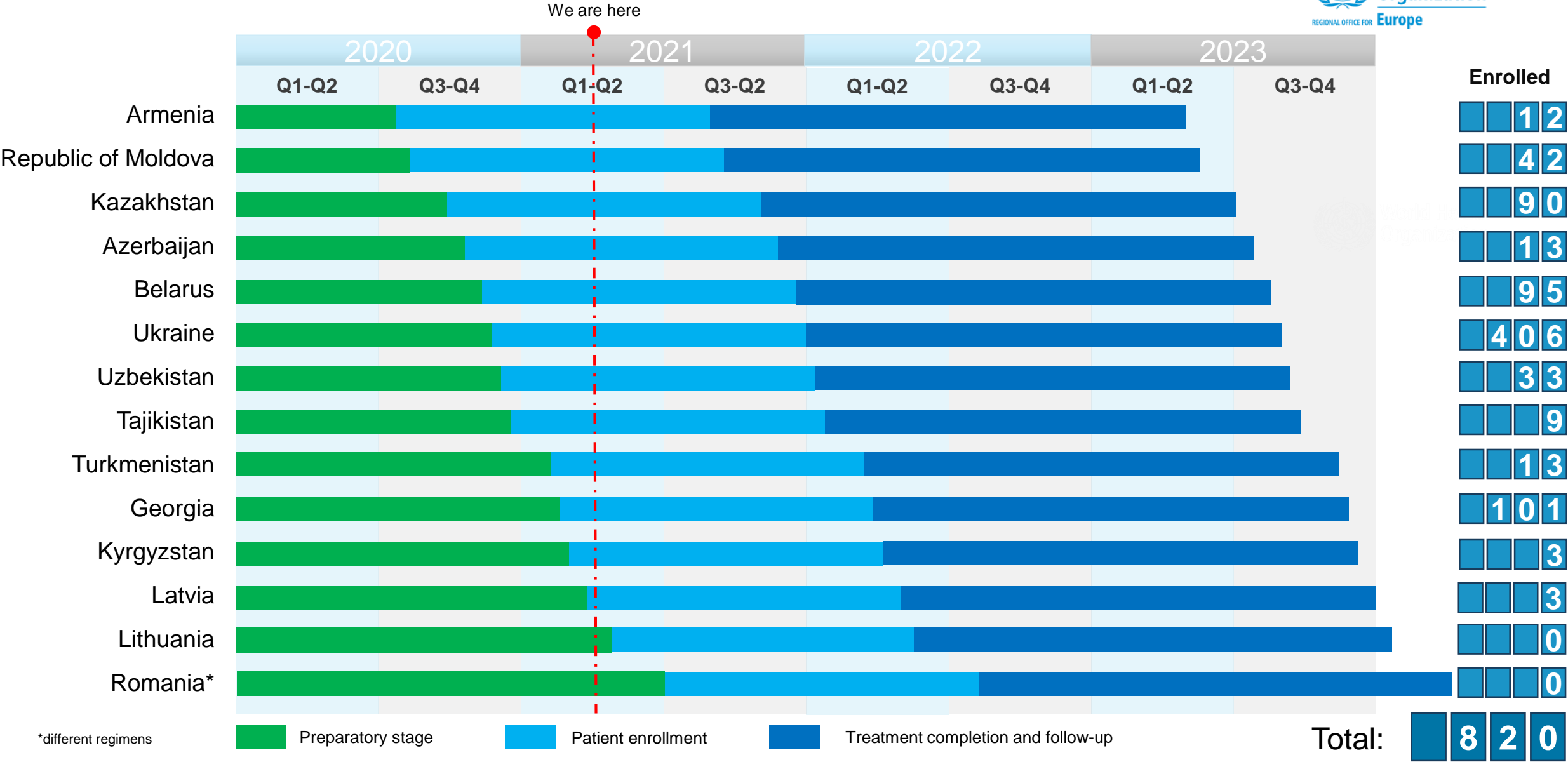
For children under 6 years of age:

**Regimen 3: 39 weeks Lfx + Dlm + Lzd + Cfz**

**Table 3.1. Grouping of medicines recommended for use in longer MDR-TB regimens<sup>a</sup>**

Groups and steps	Medicine	Abbreviation
Group A: Include all three medicines	Levofloxacin <i>or</i> moxifloxacin	Lfx Mfx
	Bedaquiline <sup>b,c</sup>	Bdq
	Linezolid <sup>d</sup>	Lzd
Group B: Add one or both medicines	Clofazimine	Cfz
	Cycloserine <i>or</i> terizidone	Cs Trd
	Ethambutol	E
	Delamanid <sup>e</sup>	Dlm
	Pyrazinamide <sup>f</sup>	Z
Group C: Add to complete the regimen and when medicines from Groups A and B cannot be used	Imipenem–cilastatin <i>or</i> meropenem <sup>g</sup>	Ipm–Cln Mpm
	Amikacin <i>(or streptomycin)</i> <sup>h</sup>	Am (S)
	Ethionamide <i>or</i> prothionamide <sup>i</sup>	Eto Pto
	<i>P</i> -aminosalicylic acid <sup>j</sup>	PAS

# Country timelines



# mSTR Virtual Medical Consilium

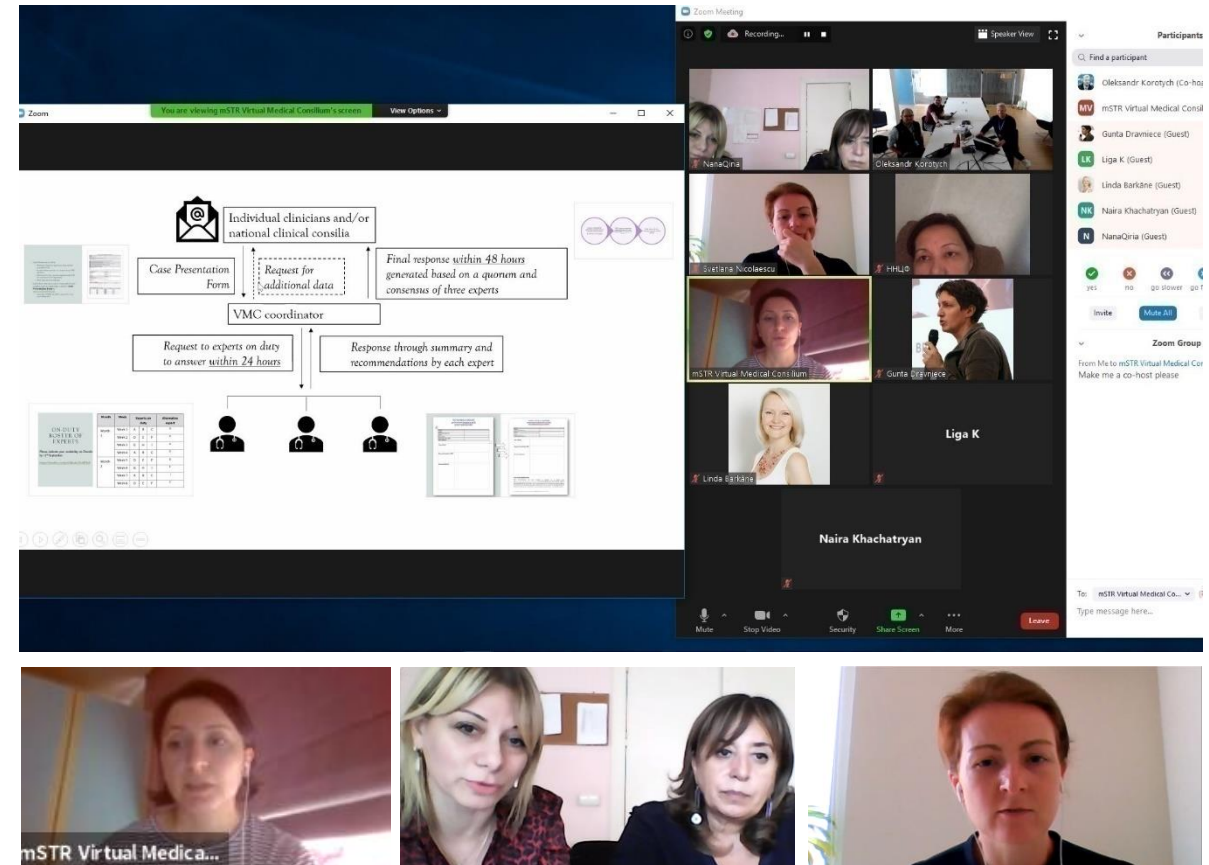
## The aims of the VMC are:

- Support of enrolment procedures for complicated case discussions and providing advises on treatment adjustment/discontinuation;
- Documentation of regional experience;
- Development of clinical and programmatic capacity;
- Fostering good clinical care in the region.

## VMC Members:

Linda Barkane  
Elmira Berikova  
Kai Blondal  
Gunta Dravniece  
Elmira Gurbanova  
(Coordinator)

Nana Kiria  
Naira Khachatryan  
Liga Kuksa  
Nino Lomtadze  
Alena Skrahina



# Towards ending TB in Europe

- Maintain TB services during the COVID-19 pandemic
- Allocate financial resources to ensure implementation and sustainability of national TB action plans and strengthen multisectoral coordination and accountability
- Transition to latest WHO guidance on TB prevention, systematic screening, diagnosis and treatment
- Optimize treatment regimens for TB and DR-TB, especially with transition to fully-oral regimens
- Scale up people-centered models of care and intensify the use of digital health solutions and tools to support patients throughout treatment
- Tailor interventions to vulnerable population groups, particularly prisoners, migrants, people living with HIV, diabetes and other health conditions
- Involve civil society in TB response
- Ensure robust surveillance and monitoring of the response to TB

# mSTRs: six times less pill burden for patients

Standard treatment regimen  
for DR-TB (before 2019)



24 months



14 600 pills



280 daily  
injections



x3 times lower  
pill burden

Fully-oral standard treatment  
regimen for DR-TB (2020)



18-20 months



4 500 pills



0 injections



x2 times lower  
pill burden

Fully-oral modified shorter  
treatment regimen for DR-TB



9 months



2 300 pills



0 injections





# Quick Guide to Video Supported Treatment of TB



[RU and EN versions  
available online](#)

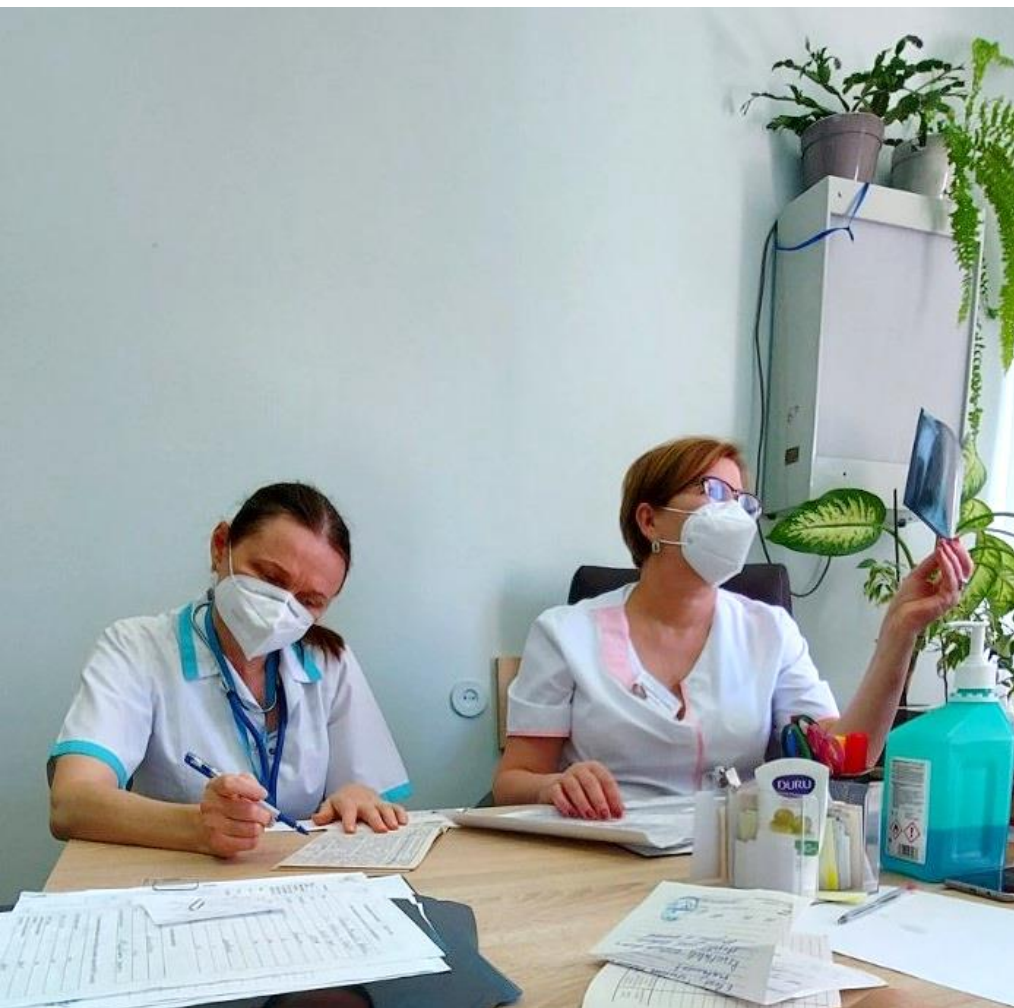
## **What** are the digital health solutions for video- supported treatment

- ❖ Concept
- ❖ Interaction types
- ❖ Mobile software applications
- ❖ Management platforms
- ❖ Available options in EECA (comparison of available mobile solutions)

## **How** can video-supported treatment solutions be of use to the TB programme

- ❖ Resources needed
- ❖ Implementation considerations

# Team making modified shorter treatment a reality in the Republic of Moldova, September 2020





# Казахстан: лечение пациентов с МЛУ-ТБ мКРЛ – Октябрь 2020 года



# Towards ending TB in Europe

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# Thank you!

Contact: [eurotb@who.int](mailto:eurotb@who.int);

WHO Regional Office for Europe

UN City  
Marmorvej 51  
Copenhagen Ø  
Denmark



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Weltgesundheitsorganisation  
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Всемирная организация  
здравоохранения  
Европейское региональное бюро