

# Tuberculous Portals in Kazakhstan, Kyrgyzstan and Georgia





# Expanding global knowledge of tuberculosis by establishing the Tuberculosis Portal in Georgia, Kazakhstan, Kyrgyzstan



Funded by the USA

SDGs



The TB Portals Program actively collects international TB patient case data, including clinical, imaging, and bacterial genomic information, from both drug-sensitive and resistant cases. These de-identified and integrated data are made publicly available after quality checks and physician-verification. Data within the TB Portals are also linked to case-associated sputum samples stored locally. These samples can be used in additional research studies.

Introduction

Purpose

Scope Of Activities

Outcome

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# Current global tuberculosis (TB) trend

Death toll in 2023

**1.25**million

According to WHO, a total of **1.25 million people died from tuberculosis (TB) in 2023** (including 161 000 people with HIV). Worldwide, TB has probably returned to being the **world's leading cause of death from a single infectious agent**, following three years in which it was replaced by coronavirus disease (COVID-19). It was also the leading killer of people with HIV and a major cause of deaths related to antimicrobial resistance.

Number of patients

**10.8**million

♂ Man

**6.0**  
million

♀ Woman

**3.6**  
million

👤 Child

**1.3**  
million

In 2023, an estimated **10.8 million** people fell ill with TB worldwide, including **6.0 million men**, **3.6 million women** and **1.3 million children**. TB is present in all countries and age groups. TB is curable and preventable.

Treatment participation rate

**40%**

**Multidrug-resistant TB (MDR-TB)** remains a public health crisis and a health security threat. Only about **2 in 5 people** with drug resistant TB accessed treatment in 2023.

**MDR-TB**  **XDR-TB**

The recent global escalation of the occurrence of the TB has been complicated due to the appearance and development of **multidrug-resistant tuberculosis (MDR-TB)** or **extensively drug-resistant tuberculosis (XDR-TB)**.

# Tuberculosis in Georgia

Population in 2022: 3.76 million

## Total TB incidence

Quantity of new TB cases per year



Number

2 200

(1 800-2 700)



Rate per 100 000  
population

60

(48-73)

	Number	Rate per 100 000 population
<b>HIV-positive TB incidence</b> Quantity of new TB cases co-infected with Human Immunodeficiency Virus (HIV) per year	64 (42-90)	1.7 (1.1-2.4)
<b>HIV-negative TB mortality</b> mortality among HIV-negative TB cases	67 (51-85)	1.8 (1.4-2.3)
<b>HIV-positive TB mortality</b> mortality among HIV-positive TB cases	20 (13-29)	0.53 (0.34-0.77)
<b>MDR/RR-TB incidence**</b> Quantity of new Rifampicin-Resistant/Multidrug-Resistant TB cases per year	360 (270-440)	9.5 (7.2-12)
<b>New cases</b> TB patients without previous history of treatment		12% (11-13)
<b>Previously treated cases</b> TB patients with previous history of treatment		29% (27-32)



# Tuberculosis in Kazakhstan

## Population in 2023: 20 million

### Total TB incidence

Quantity of new TB cases per year



Number

**15 000**

(10 000-21 000)



Rate per 100 000  
population

**78**

(52-108)

	Number	Rate per 100 000 population
<b>HIV-positive TB incidence</b> Quantity of new TB cases co-infected with Human Immunodeficiency Virus (HIV) per year	990 (660-1 400)	5.1 (3.4-7.1)
<b>HIV-negative mortality</b> mortality among HIV-negative TB cases	300 (190-420)	1.5 (0.99-2.2)
<b>HIV-positive mortality</b> mortality among HIV-positive TB cases	120 (68-180)	0.61 (0.35-0.95)
<b>MDR/RR-TB cases incidence</b> Quantity of new Rifampicin-Resistant/Multidrug-Resistant TB cases per year	5 900 (3 700-8 100)	30 (19-42)
<b>New cases</b> TB patients without previous history of treatment		34% (33-34)
<b>Previously cases</b> TB patients with previous history of treatment		51% (48-50)

# Tuberculosis in Kyrgyzstan

**Population in 2022: 3.6 million**

## Total TB incidence

Quantity of new TB cases per year



Number

**8 600**

(7 100-10 000)



Rate per 100 000  
population

**130**

(106-152)

	Number	Rate per 100 000 population
<b>HIV-positive TB incidence</b> Quantity of new TB cases co-infected with Human Immunodeficiency Virus (HIV) per year	240 (190-310)	3.7 (2.8-4.6)
<b>HIV-negative TB mortality</b> mortality among HIV-negative TB cases	390 (350-440)	5.9 (5.2-6.7)
<b>HIV-positive TB mortality</b> mortality among HIV-positive TB cases	98 (56-150)	1.5 (0.85-2.3)
<b>MDR/RR-TB incidence**</b> Quantity of new Rifampicin-Resistant/Multidrug-Resistant TB cases per year	3 000 (2 400-3 600)	45 (36-54)
<b>New cases</b> TB patients without previous history of treatment		26% (24-27)
<b>Previously treated cases</b> TB patients with previous history of treatment		55% (53-58)



# What are the Tuberculous Portals?



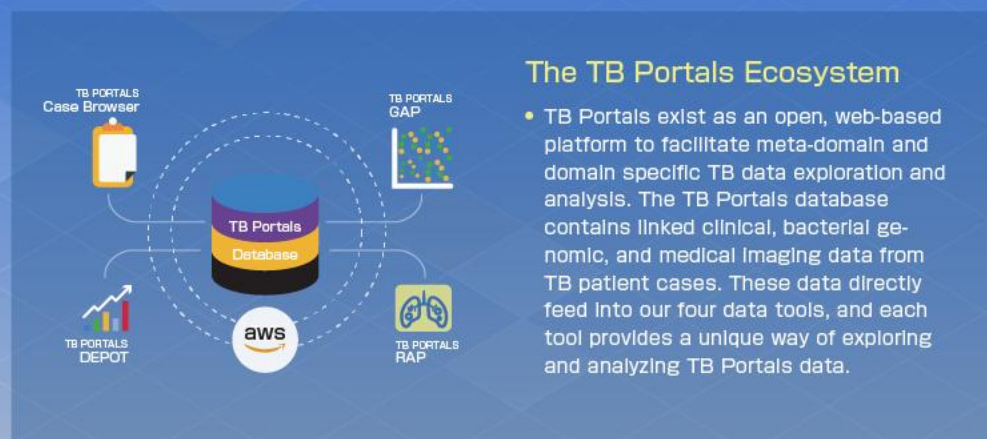
- Tuberculous Portals in **Kazakhstan, Kyrgyzstan** and **Georgia** aim to introduce a common database containing patients' medical images, treatment information, lab work, and clinical data which will enhance the ability of researchers and specialists to understand the nature of Tuberculosis(TB) globally.



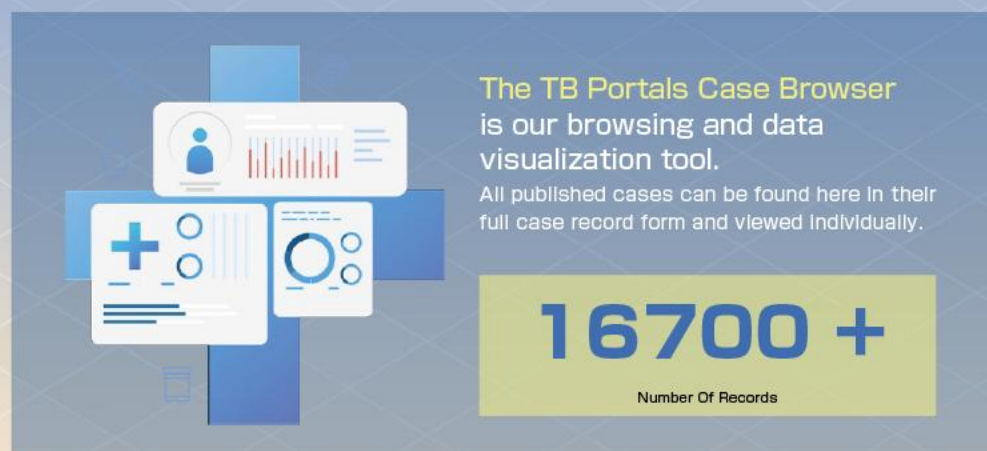
- The National TB Portals are aimed to facilitate research in diagnosis and treatment of drug-resistant tuberculosis (DR-TB) and to improve global research capabilities of the TB researchers.
- The TB Portals program is an international consortium of physicians, radiologists, and microbiologists from countries with a heavy burden of drug-resistant tuberculosis(DR-TB) working with data scientists and information technology professionals.



# How TB Portals work?



- The National TB Portals are collecting medical images, microbiology lab results, treatment information, bacterial genome, as well as the social-economic and clinical data from the anonymized records of the TB patients (mostly with Multi-Drug Resistant (MDR-) and Extensively-Drug Resistant (XDR-) TB) and will make the data available to the worldwide community of TB researchers.
- Clinical data is collected and stored in Portal's database for computer-aided analysis of factors contributing to the development of the disease.



- Information on the diverse genetic mutations that cause Drug Resistant (DR-) TB is available from the TB Portal, facilitating treatment of patients and facilitate patient care.



# Project achievements



Introduction of up-to-date research methodologies for data and samples collection has further stimulated drug discovery efforts and advancements towards genomics and quantitative image analysis.



The TB Portals improved existing diagnostics while also serving as a valuable resource for researchers and clinical providers.



Established collaborations with researchers in US and EU institutions.



Expand TB Portals Program to Ukraine and Nigeria through targeted technical assistance.

## Technical Assistance to Nigeria TB Portal Program, April 2023





# Georgia TB portal Project Team

Georgia TB portal Project Team



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Scientific leader  
Microbiology



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Surgery



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# Kazakhstan TB Portal Project Team





# Kyrgyzstan TB Portal Project Team

