STATISTICAL REPORT 2023

NATIONAL PROGRAM FOR TUBERCULOSIS CONTROL & CHEST DISEASES

Vision

Sri Lanka free of Tuberculosis and other respiratory diseases.

Mission

To contribute to the socio-economic development of the nation by committing ourselves to create a TB free Sri Lanka and to reduce the morbidity and mortality due to respiratory diseases by formulation of policies, planning, coordinating and monitoring of all TB and other respiratory disease control activities in the country.

Sustainable Development Goals & End TB Strategy

During the period of 2000 to 2015, national efforts to reduce the burden of tuberculosis (TB) were based on achieving the targets set in accordance with the Millennium Development Goals (MDGs). In 2016, MDGs were replaced by the new set of goals, known as the Sustainable Development Goals (SDGs) which focuses on broader areas. A goal for Health is included in SDG 3 “Ensure healthy lives and promote well-being for all at all ages” which has 13 targets set for the period of 2016-2030. TB is described in target 3.3: “By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases”

The post 2015, Global TB strategy aims to end the global TB epidemic by 2035 and is linked with sustainable development goals. The targets and milestones to End TB are as follows:

Table1: Targets and milestones to End TB

Indicator	Milestones for 2020	Milestones for 2025	End TB targets for 2035
Percentage reduction in the absolute number of TB deaths (baseline 2015)	35% reduction of deaths	75% reduction of deaths	95% reduction of deaths
Percentage reduction in the TB incidence rate (baseline 2015)	20% reduction of incidence	50 % reduction of incidence	90% reduction of incidence (10:100,000 cases)
Percentage of TB patients and their households experiencing catastrophic costs due to TB	0%	0%	0%

GOALS & OBJECTIVES

NPTCCD has revised the its National Strategic Plan (NSP) for TB control for the period of 2015-2020 to be in par with “End TB” global TB control strategies**.**

Goal: Decrease the prevalence of TB by 10 % by 2020 based on TB burden figures of 2014 as per the WHO estimates.

Objective 1:
To improve the TB control by detecting at least 80% of incident TB cases (all forms) by 2017 and 90% of incident cases by 2020

Objective 2:
To improve the outcome of enrolled TB patients,

a) By achieving 90% treatment success rate of all forms of non MDR TB patients and;
b) To maintain at least 75% of treatment success rate among MDR TB cases by 2017

Objective 3:
To integrate TB control activities in to general healthcare system by establishing TB diagnostic and treatment services in 40% of all hospitals up to the level of Divisional Hospitals Type B or above by 2017 and in 80% by 2020.

Objective 4:
To improve the accessibility to TB treatment and care by engaging 30% of all private health care providers (hospitals and General Practitioners) in TB control by 2017, and 50% by 2020

Objective 5:
Ensure that quality TB services in line with current international standards are provided by qualified and regularly supervised personnel at 100% of all implementation sites by 2017 and thereafter.

Surveillance of TB

Notification system

➢ TB Case Notification

TB is a notifiable disease since 1948. NPTCCD receives case notifications in a special form (Health 816 A) from District Chest Clinics, other government health institutions and from private health institutions. Once a TB patient is diagnosed at a chest clinic, he or she should be registered in the District TB Register and should be notified to Central unit of the NPTCCD and to National Epidemiological Surveillance System through Medical Officer of Health. Patients diagnosed at other institutions are also referred to the relevant chest clinics for registration, notification and further management.

➢ TB Death Notification

TB deaths are notified to the central unit by Health 814.A detailed report on deaths occurred among TB patients during the period of treatment are collected by form TB 17. Deaths due to TB are also notified to the Registrar General's Department through vital registration system.

Monthly and Quarterly Records and Returns

Data on case detection (TB-08), sputum conversion (TB-09), treatment outcome (TB-10), programme management (TB-12) and TB and Non-TB wards (TB-13) are collected quarterly from District Chest Clinics. The electronic patient information management system (ePIMS) was introduced to the system in 2018. The ePIMS constitute of five modules. At present, all the districts are entering data to the ePMIS in addition to maintaining paper-based records and returns.

TB screening activities in prisons and OPD returns on TB suspects are collected monthly on the standard data collection forms. Data on culture specimens are sent from NTRL to Central Unit. DTCOs are responsible for sending completed returns and reports accurately and timely.

Presentation of Data

NPTCCD analyses the data and compiles the national reports. Performance at district level is discussed at the review meetings held quarterly at NPTCCD as well as at the district reviews held annually in respective districts.

Dissemination of Data

NPTCCD provides information to government and international organizations such as Epidemiology unit and other units of Ministry of Health, Central Bank of Sri Lanka, WHO, SAARC, STAC, GFATM etc.

In addition, information on TB is provided to provincial and regional health authorities and to DTCOs for further reference and interventions.

WHO revised classification of TB

Sri Lanka adopted revised WHO classification of TB of 2013 from 1st of January 2015 and reporting of information was started with the cohort of patients registered in 2015.

A case of tuberculosis is defined as "A patient in whom TB has been either bacteriologically confirmed in laboratory or clinically diagnosed based on a clinician's decision taking into account clinical picture, results of other investigations and risk factors".

- **Bacteriologically confirmed TB**

  A patient whose sputum or another biological specimen is positive for AFB by smear microscopy or culture or WHO Approved Rapid Diagnostics (WRD) such as X-pert MTB/RIF.

- **Clinically diagnosed TB**

  A patient who does not fulfil the criteria for bacteriological confirmation but has been diagnosed with active TB by a clinician and after consultation with a Consultant Respiratory Physician and decided to treat the patient a with a full course of TB treatment

Classification based on anatomical site of the disease

- **Pulmonary tuberculosis (PTB)**

  Any bacteriologically confirmed or clinically diagnosed case of TB involving the lung parenchyma or the tracheobronchial tree with or without the involvement of any other organs in the body.

- **Extra pulmonary tuberculosis (EPTB)**

  Any bacteriologically confirmed or clinically diagnosed case of TB involving organs other than the lung parenchyma or tracheobronchial tree, e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, bones and joints, meninges.

Classification based on history of previous TB treatment

- **New patients**
  - A patient who has never taken treatment for TB

    OR
  - A patient who has taken anti-tuberculosis drugs for less than one month

New patients may have positive or negative bacteriology and may have disease at any anatomical site**.**

➢ **Previously treated patients**

Patients, who have received 1 month or more of anti-TB drugs in the past are classified under this category. They are further classified by the outcome of their most recent course of treatment.

- **Relapse**
  Patients who have previously been treated for TB, were declared cured or treatment completed at the end of their most recent course of treatment, and are now diagnosed with a recurrent episode of TB.

- **Treatment after failure**
  Patients who have previously been treated for TB and whose treatment failed during or at the end of their most recent course of TB treatment.

- **Treatment after loss to follow-up**
  Patients who have previously been treated for TB and were declared lost to follow-up at the end of their most recent course of treatment. (These were previously known as treatment after default patients.

- **Other previously treated patients**

  Patients who have previously been treated for TB but whose outcome after their most recent course of treatment is unknown or undocumented.

➢ **Patients with unknown previous TB treatment history**

Patients who do not fit into any of the categories listed above

Outcome indices

Indices

The main indices used to measure the progress in TB control are,

- Case notification Rate
- Case Detection Rate
- Treatment Success Rate
- Sputum Conversion Rate
- Lost to follow up Rate
- Death Rate

Notification rate of all TB cases

The notification rate of all TB cases is defined as number of all forms of TB cases notified in a given year out of the mid-year population of the country in the same year

$$\frac{\text{Number of all TB cases notified during the year}}{\text{Mid-year population for the same year}} \times 100{,}000 \text{ population}$$

Case Detection Rate

The term "*detection*" as used in this report, means that a patient is diagnosed as having TB and is reported to the NPTCCD by TB-08.

Case Detection Rate is defined as "*percentage of total number of incident TB cases notified out of the total number of estimated incident cases of TB during the given year*".

$$\text{Case Detection Rate} = \frac{\text{No. of all forms (new / relapse) of TB cases notified during the specified year}}{\text{Estimated total number of incidence cases of TB for the same year}} \times 100$$

Incidence of TB

The Incidence of TB is defined by the WHO as the number of new and relapse cases reported in a specified time period.

Estimation of TB Incidence

Estimation of TB incidence is calculated by WHO using a mathematical model which is revised annually. Accordingly, the case detection rate in this report is based on 2015 WHO estimates (65.0 per 100,000 population).

Treatment Success Rate

Treatment Success Rate is defined as the proportion of TB cases registered in a given year that **successfully completed** their entire course of treatment with or without bacteriological confirmation of cure ("cured" + "treatment completed").

$$\text{Treatment Success Rate} = \frac{\text{Number of patients who have successfully completed treatment in the given period}}{\text{Number of patients registered in the same period}} \times 100$$

Sputum Conversion Rate

Sputum Conversion rate is the percentage of smear-positive pulmonary TB cases registered in a specified period that converted from smear positive to smear negative at the end of intensive phase of treatment.

$$\text{Sputum Conversion Rate} = \frac{\text{Number of smear-positive pulmonary TB cases Registered in a specified period that are smear negative at the end of the intensive phase of Treatment}}{\text{Total number of smear-positive pulmonary TB cases registered for treatment in the same period}} \times 100$$

Results

Lost to follow up Rate

The Lost to follow up Rate is defined as the percentage of TB cases registered in a specified period that interrupted treatment for more than two consecutive months.

$$\text{Lost to follow up Rate} = \frac{\text{Number of TB cases registered in a specified period that interrupted treatment for more than two consecutive months}}{\text{Total number of TB cases registered in the same period}} \times 100$$

Death Rate

The Death rate is defined as the percentage of TB cases registered in a specified period that died from any reason during the course of treatment.

$$\text{Death Rate} = \frac{\text{Number of TB cases registered in a specified period that died from any reason during the course of the treatment}}{\text{Total number of TB cases registered in the same period}} \times 100$$

Surveillance of Tuberculosis

➢ TB Case Notifications

Cases of all forms of Tuberculosis should be notified to the NPTCCD using the H816-A form. a total of 9434 was notified to NPTCCD in 2022. In addition, all the TB cases registered at a district chest clinic for treatment and follow up are notified to the NPTCCD via TB-08. In 2022, this number was 8342. The difference is due to some cases not reporting to NPTCCD through 816A.

➢ TB Death Notification (H 814)

During the year 2021, 535 TB deaths were notified by H814 (Table 7).

Incidence of Tuberculosis

The incidence rate of TB in Sri Lanka for 2021 was 29.1 per 100,000 population. The incidence rate has dropped by 8.9% compared to the previous year (Figure 1). The proportion of relapse cases among detected TB patients in 2019 (4.6%) shows an increase compared to the same proportion in 2018.

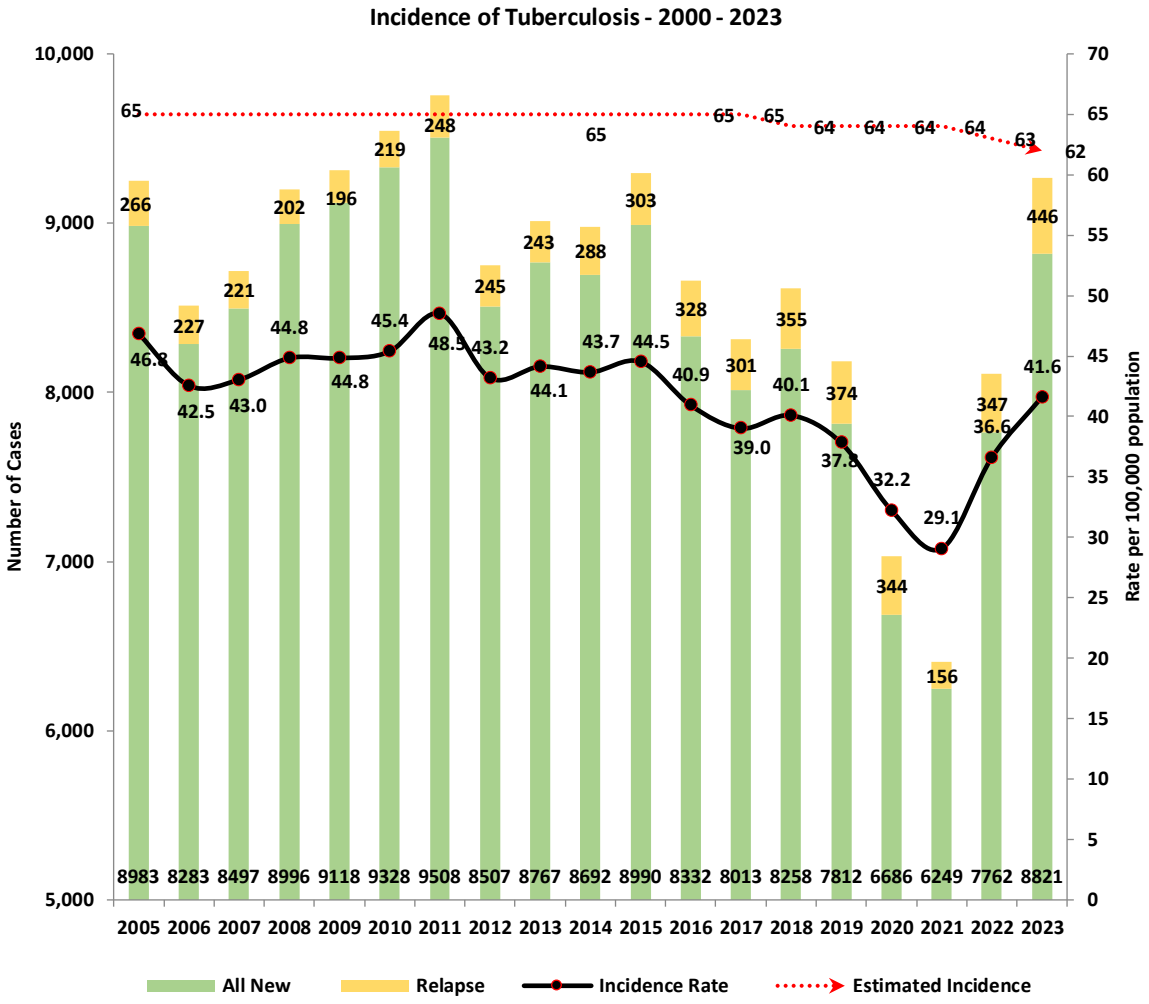


Figure 1: Tuberculosis incidence rates from 2005 to 2023

Case Detection

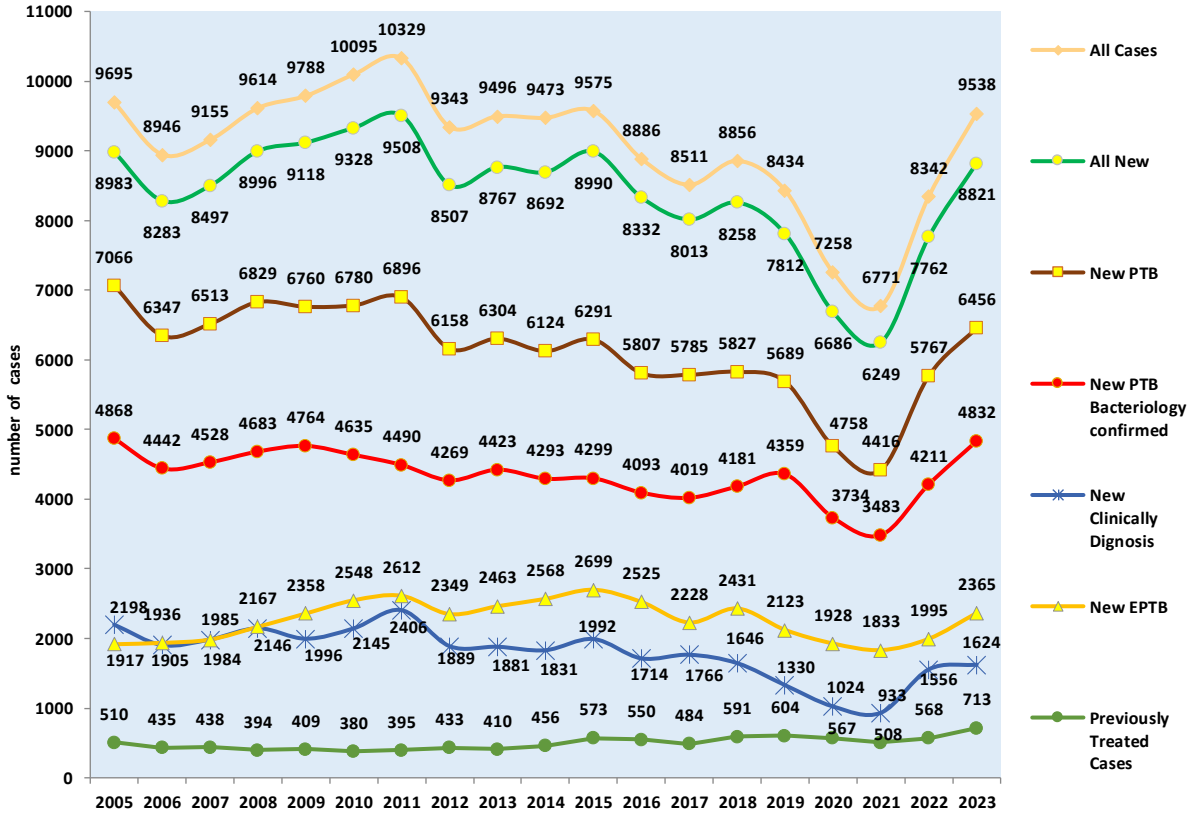


Figure 2: Case Detection of TB by Type in 2005 - 2023

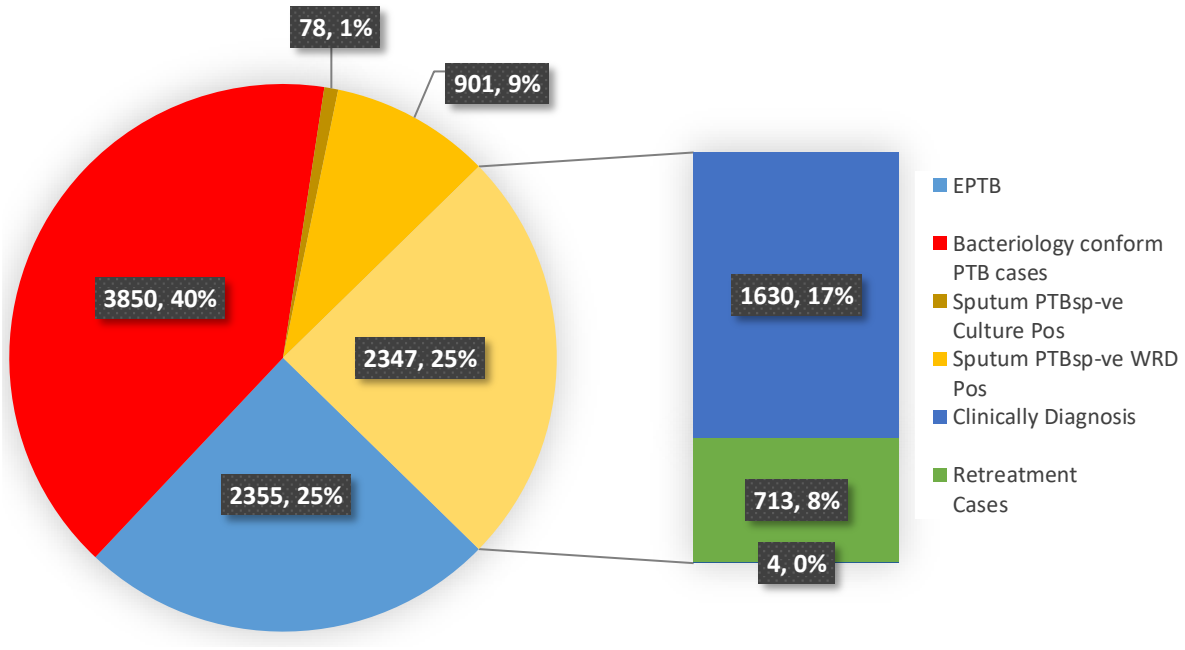


Figure 4: TB Case Detection by District of Registration in 2023

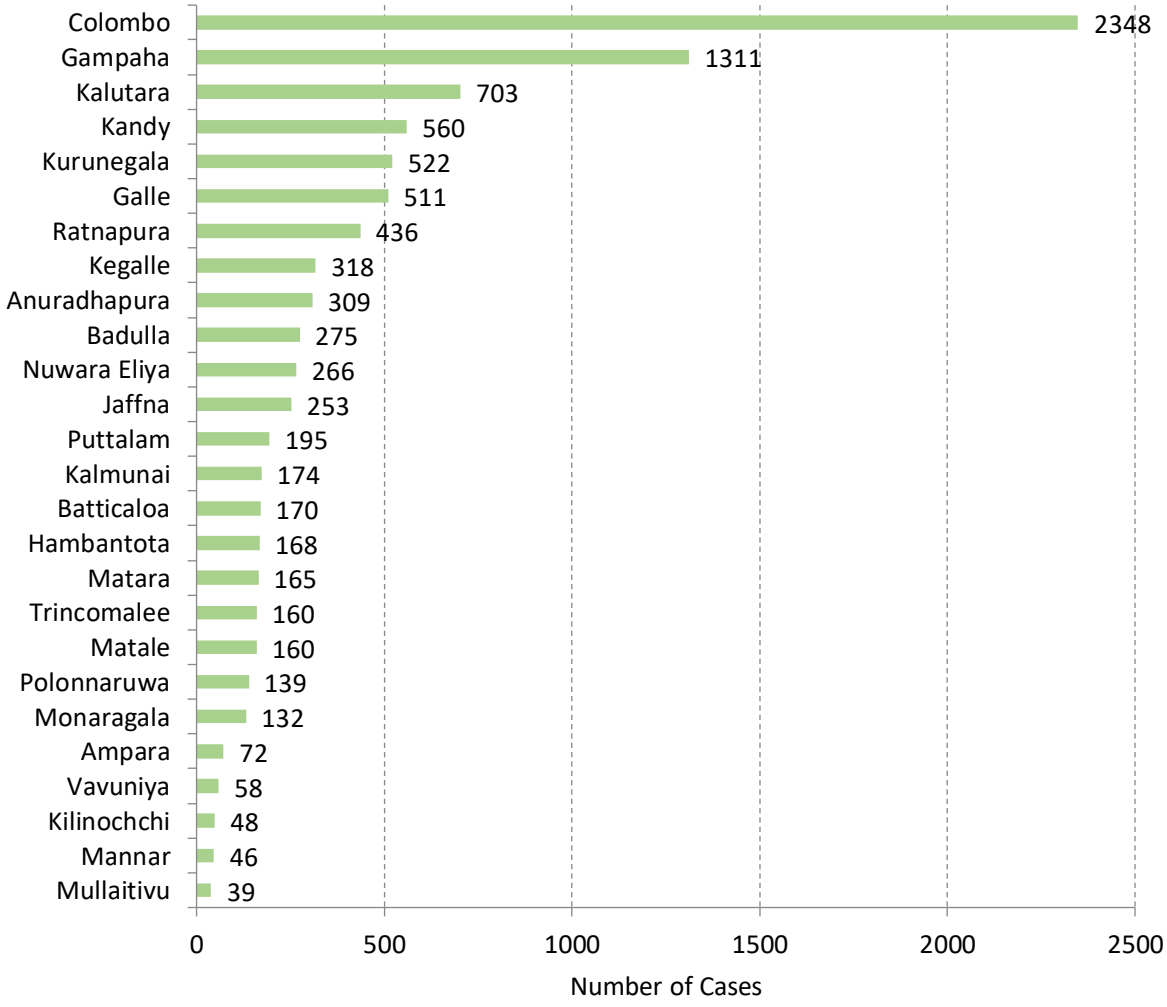
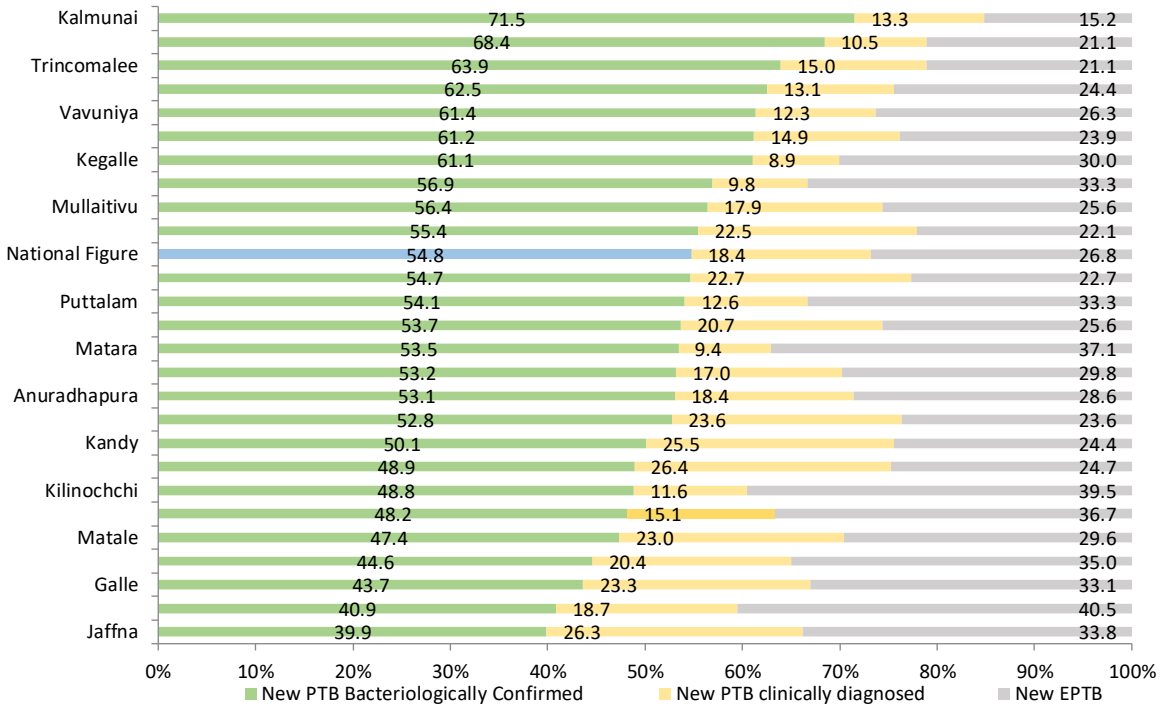


Figure 5: The Map of Sri Lanka with TB Case Detection by District - 2023



Bacteriology confirmed New Pulmonary TB cases

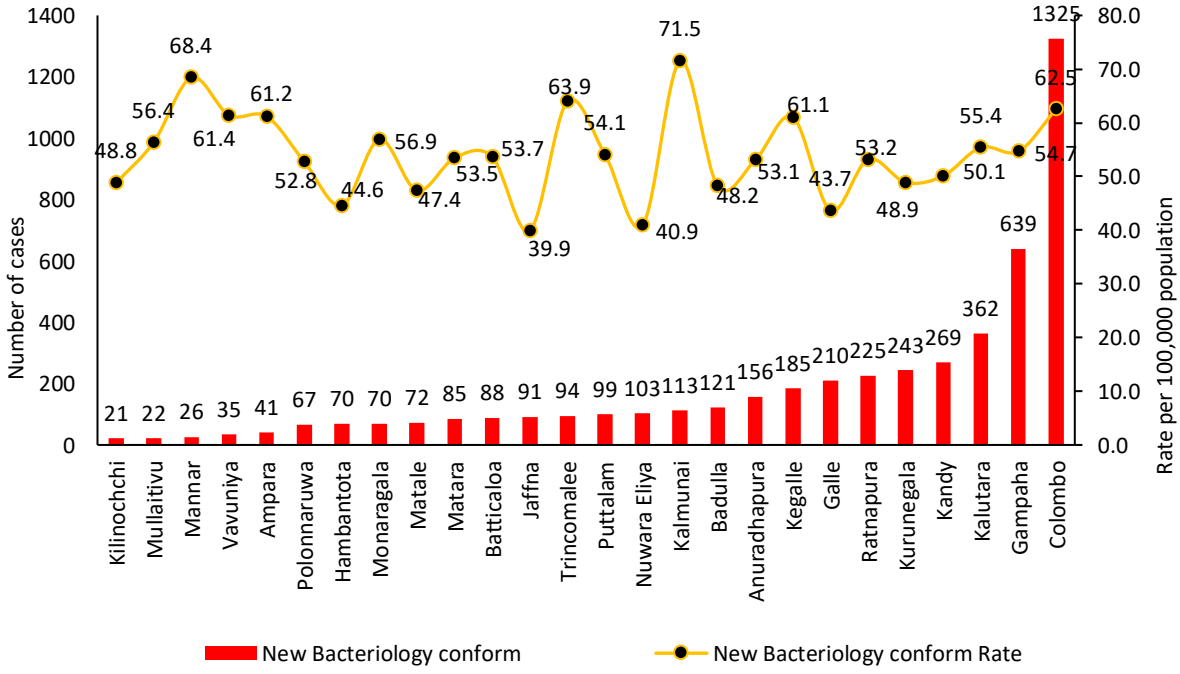


Figure 8: Distribution of Bacteriology confirmed New Pulmonary TB case detection by Districts - 2023

Clinically Diagnosed New Pulmonary TB

Figure 7: Percentage Distribution of New Cases of TB by Type and District in 2019

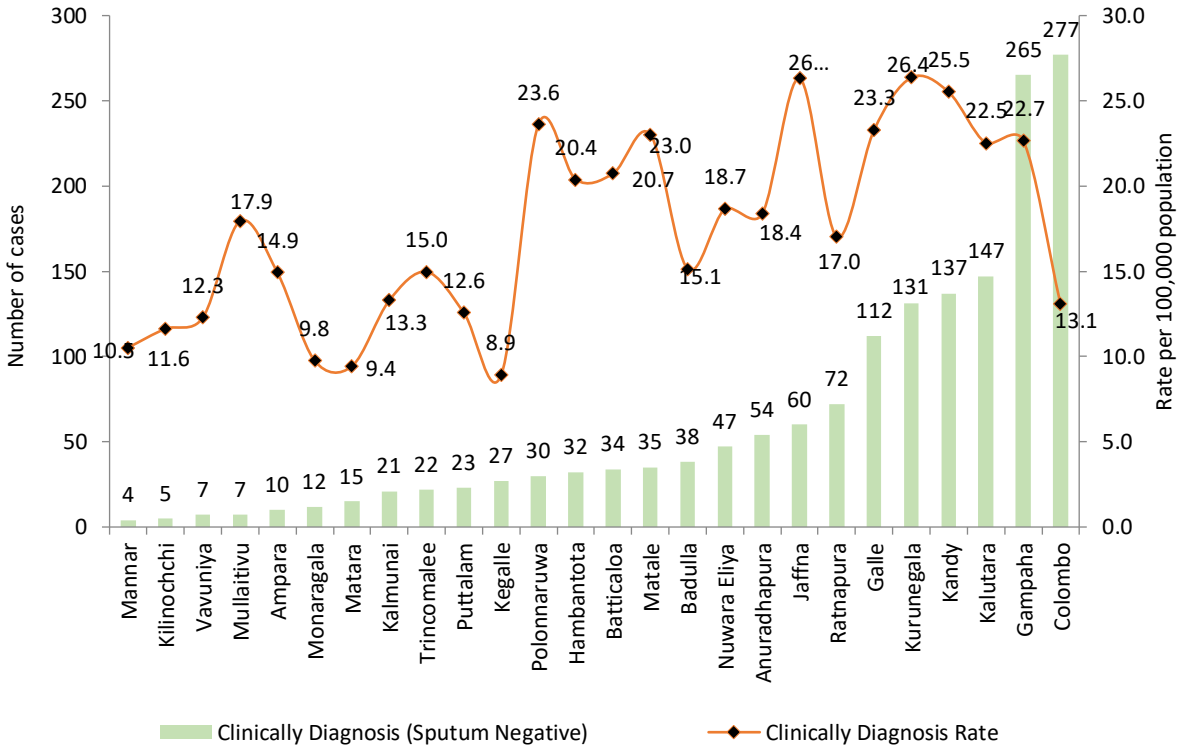


Figure 9: Distribution of Clinically Diagnosed New PTB Cases Detection by Districts in 2023

➢ Age and Sex Distribution of New TB Cases

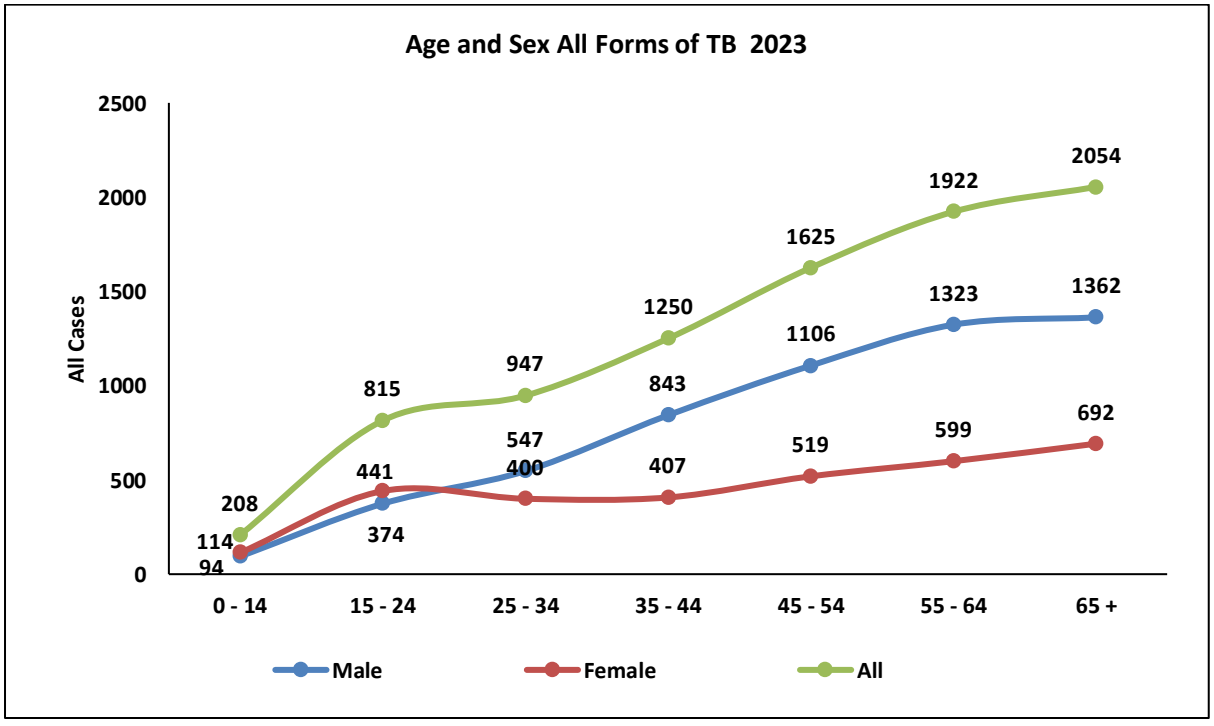


Figure 10: Distribution of All New Cases of TB by Age Groups and Sex in 2023

Extra Pulmonary TB

New EPTB Case Detection

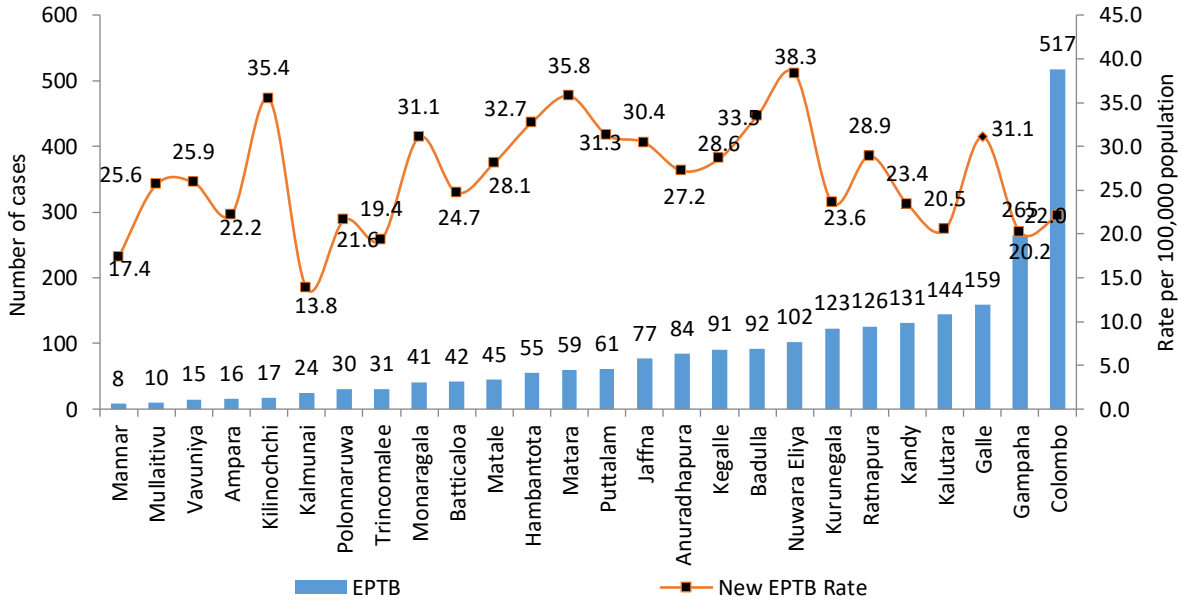


Figure 11: Distribution Pulmonary TB Cases of New Extra Detection by Districts in 2023

Milliary TB

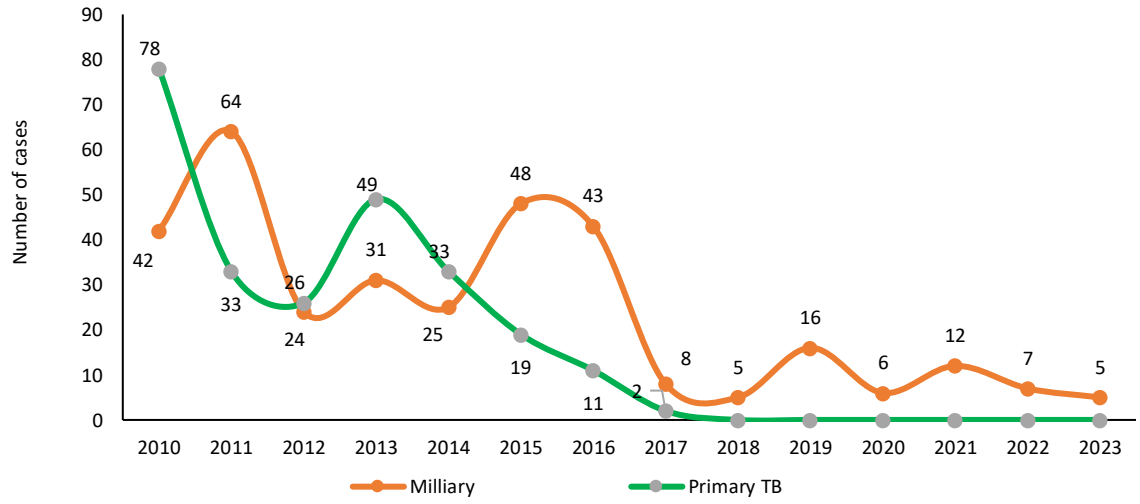


Figure 12: Distribution of Miliary and Primary TB cases from 2010-2023

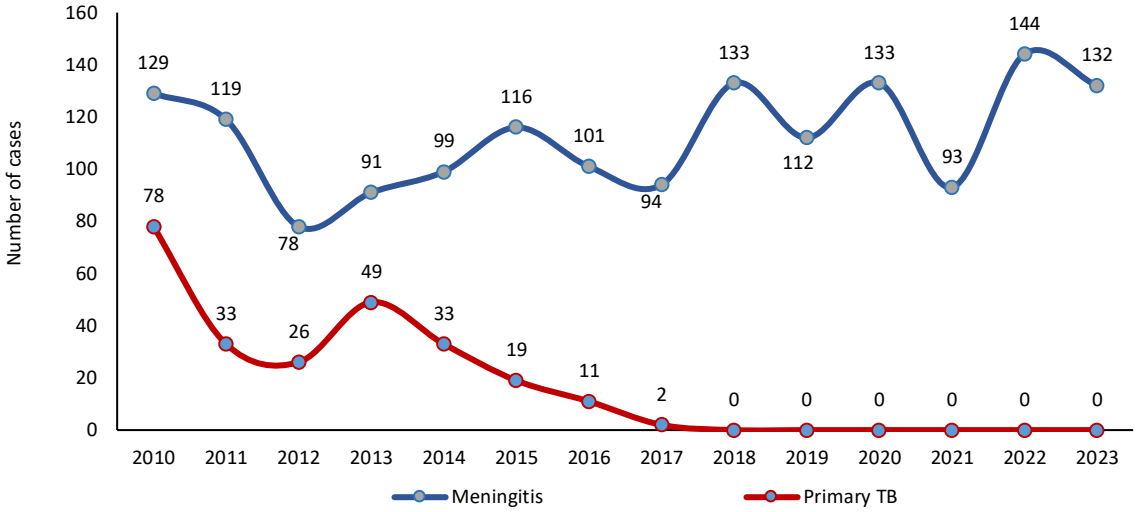


Figure 12: Distribution of Meningitis and Primary TB cases from 2010-2023

Previously treated TB Cases

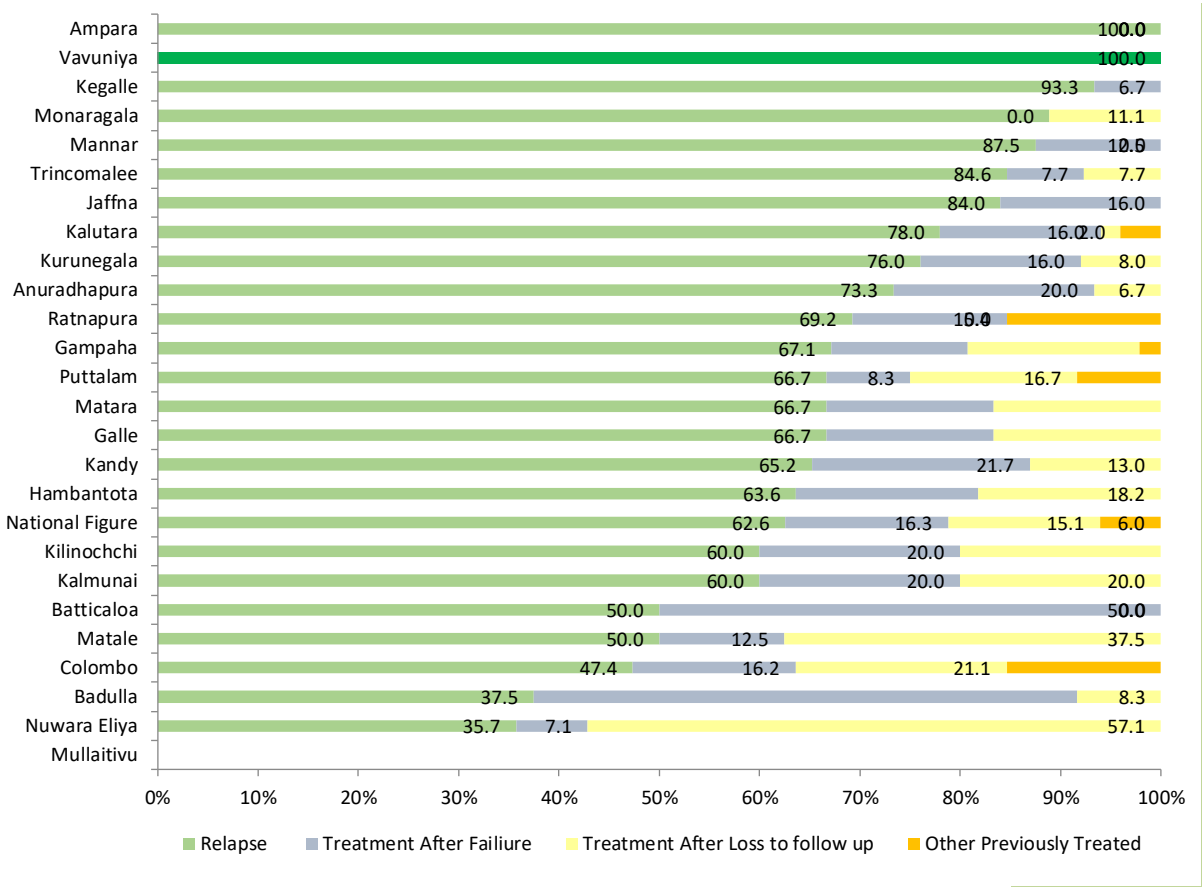


Figure 13: Proportion of Re-Treatment Categories by District in 2023

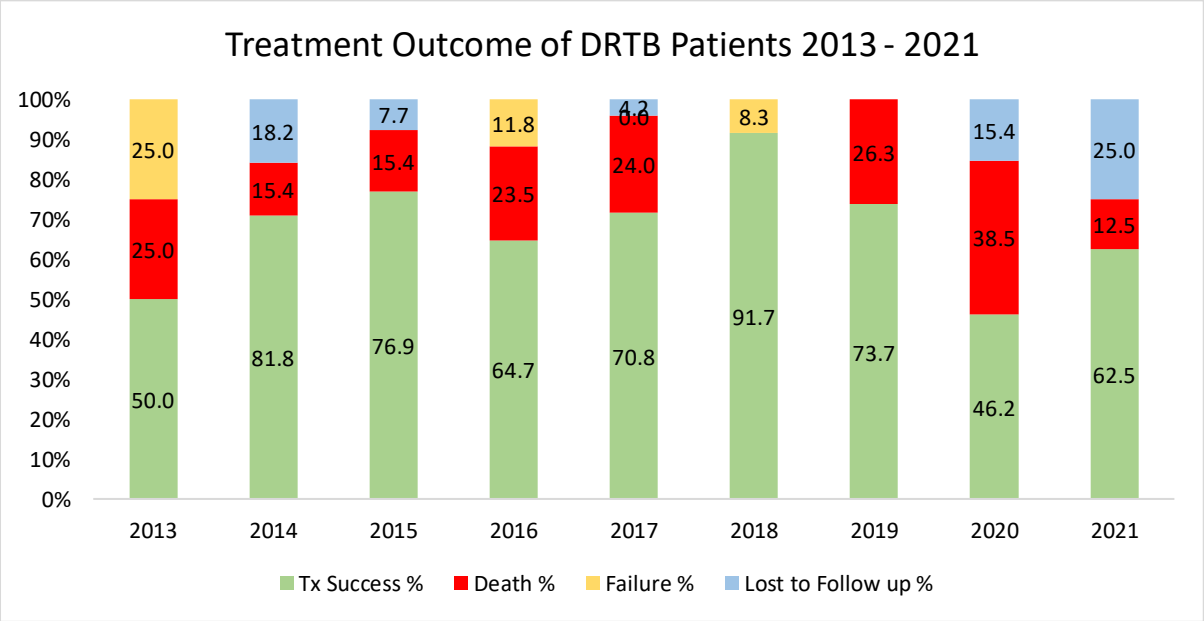
Multi Drug Resistant Tuberculosis (MDR-TB)

Table 3: MDR patients reported and their treatment enrollment 2011 - 2023

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Number of laboratories that confirmed	5	4	13	13	17	25	12	21	14	10	16	28
Number enrolled in treatment in	4	4	11	13	17	24	12	21	14	10	15	27
Number enrolled in treatment in	1	-	-		-	-	-	-	-	-	-	
Total number enrolled in treatment	5 100 %	4 100 %	11 85%	13 100 %	17 100 %	24 96%	12 100 %	21 100 %	14 100 %	10 100 %	15 94%	27 96%

Outcome of MDR-TB for previous years

Year	Total Registered	Treatment Started	Tx Success	Tx Success %	No. of Deaths	Death %	Failure / Rx with held	Failure %	Lost to Follow up	Lost to Follow up %
2018	12	12	11	91.7	0	0.0	1	8.3	0	0.0
2019	**21**	19	14	73.7	5	26.3	0	0.0	0	0.0
2020	**18**	13	6	46.2	5	38.5	0	0.0	2	15.4



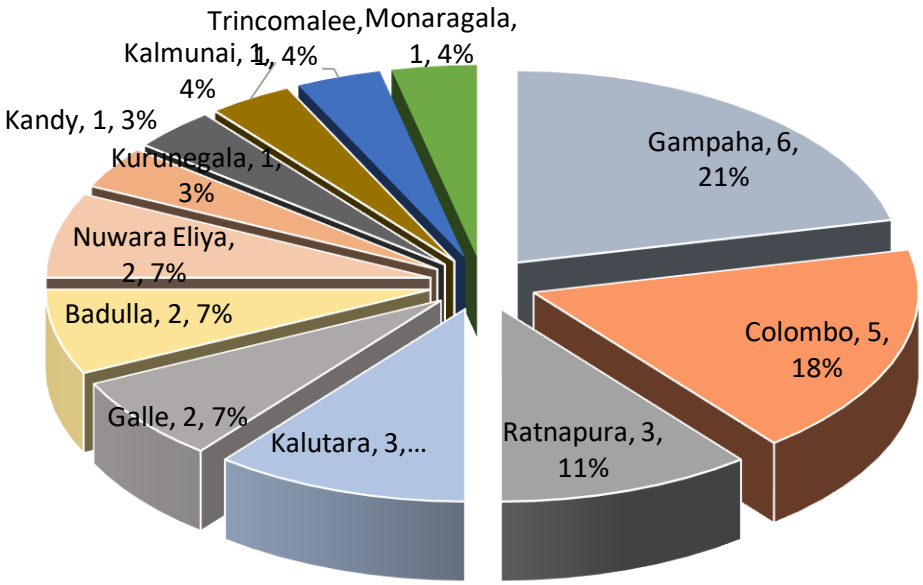


Figure 14: District distribution of Multi Drug Resistant Tuberculosis by District in 2023

TB/HIV Co-Infection

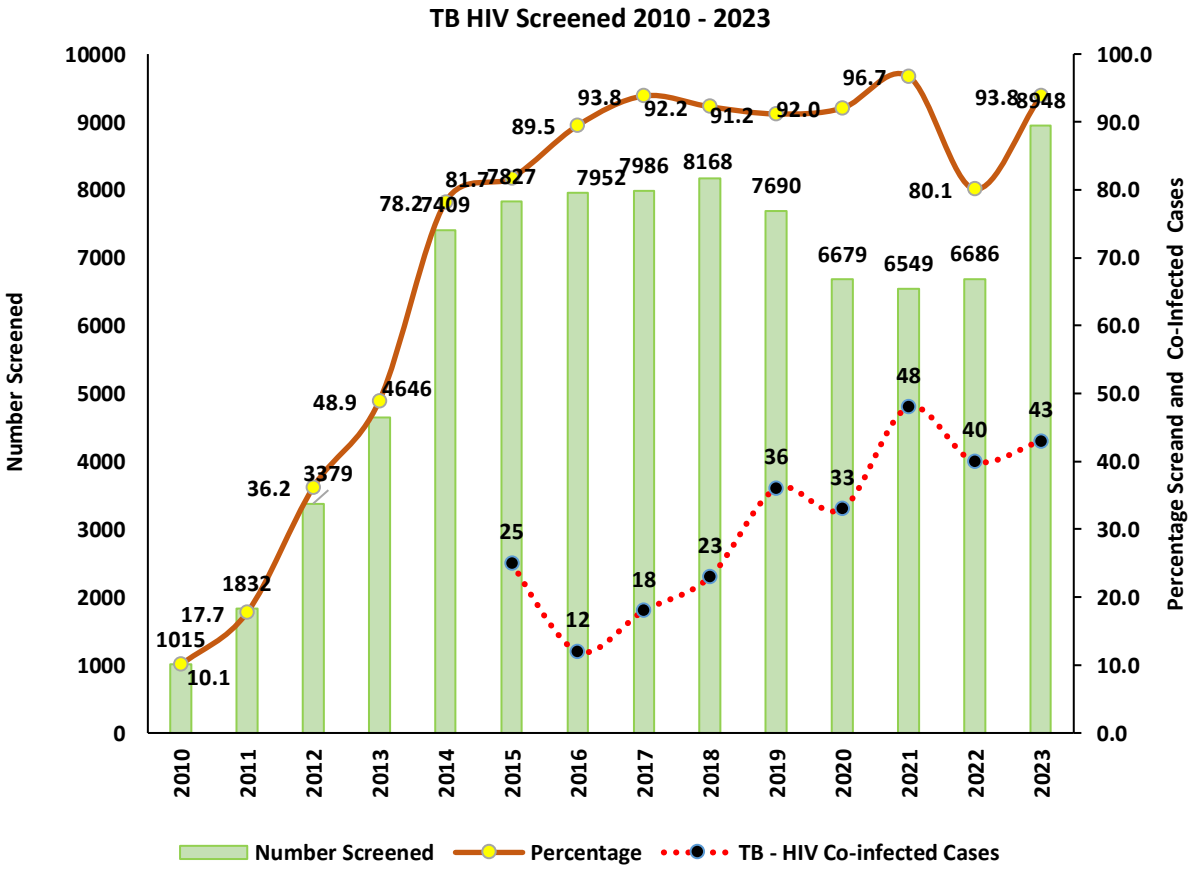
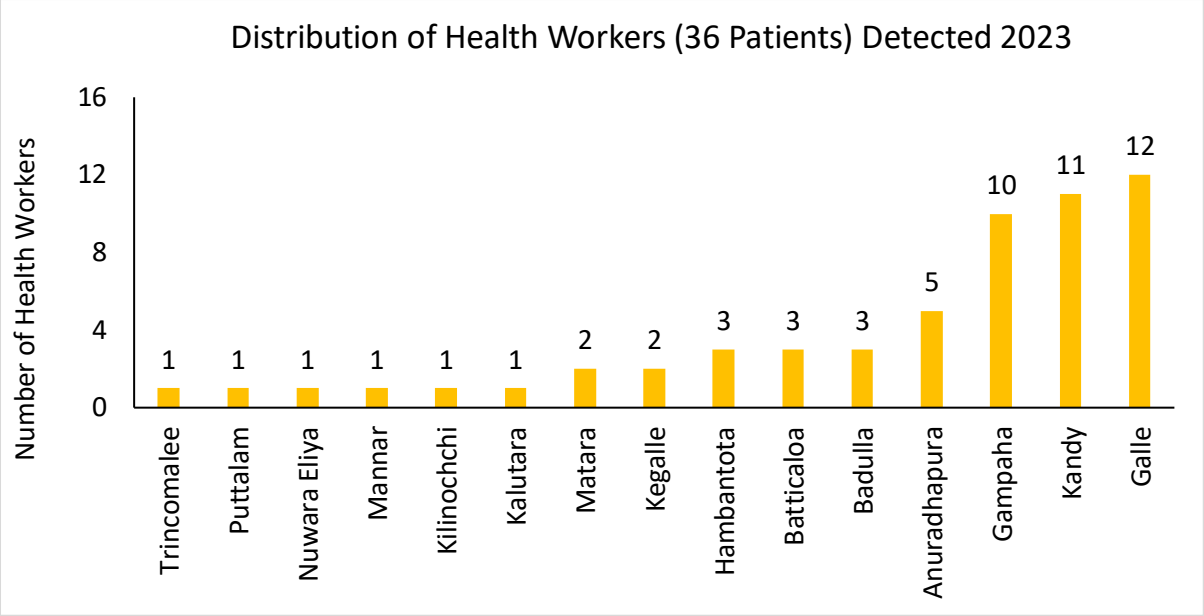


Figure 16: Percentages and Numbers of TB/HIV screening 2010-2023



TB Among Foreign Nationals

Treatment Outcome

Treatment Outcome of All Forms TB Cases (pulmonary & extra pulmonary TB)

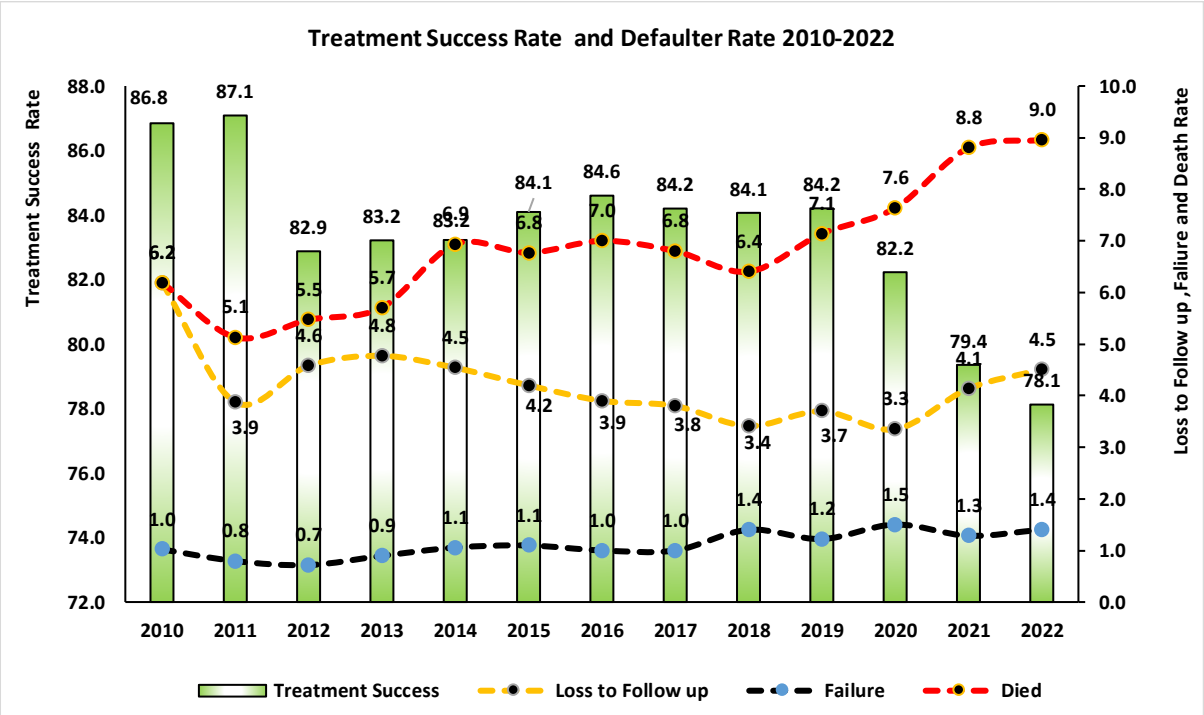


Figure 17: Treatment Success Rate of All Forms of TB According by Districts in 2022

➢ Treatment Success Rate

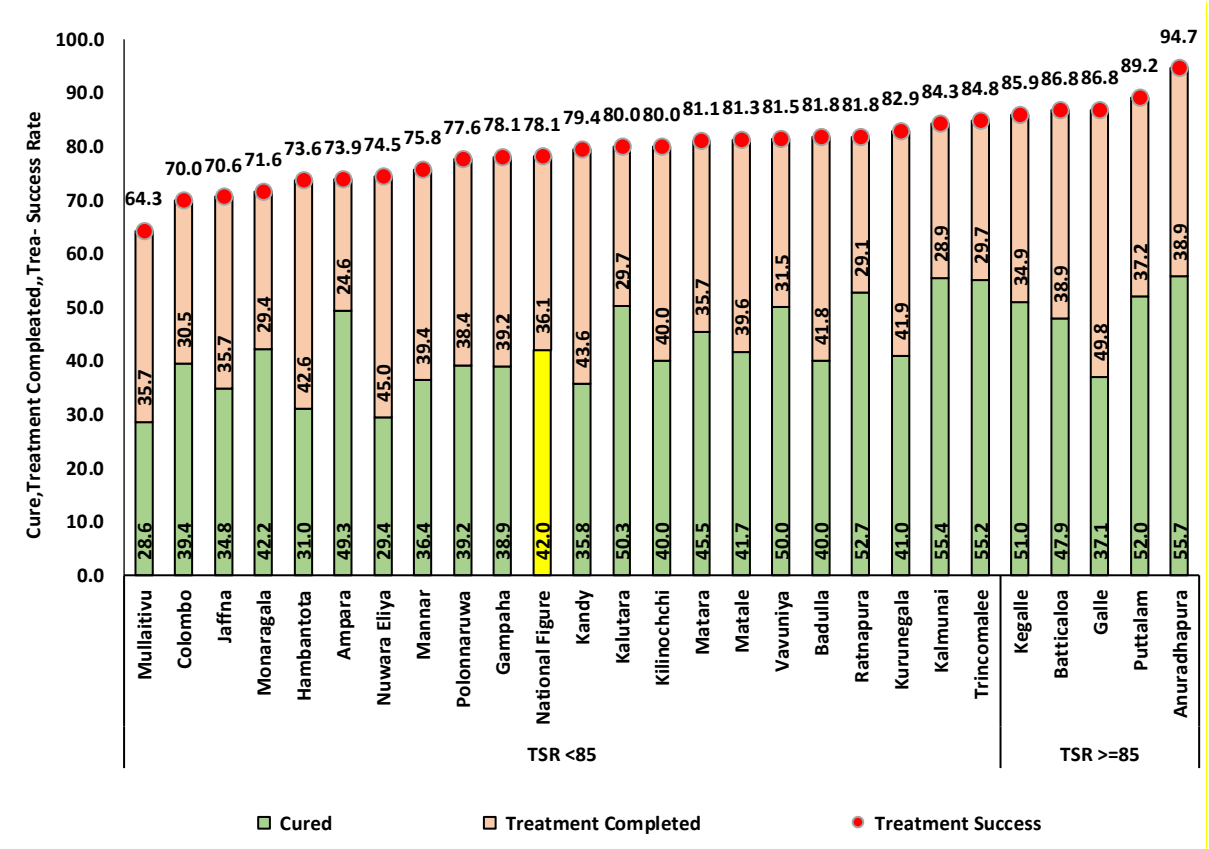
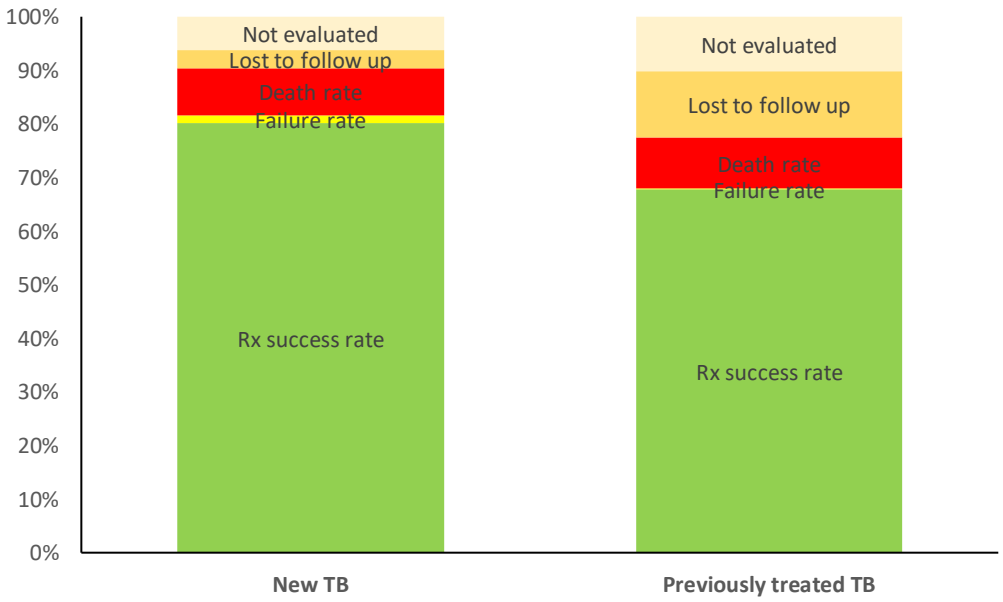


Figure 18: Treatment Success Rate of All Forms of TB by Districts in 2022

Outcomes 2022

	New TB	Previously treated TB
Rx success rate	80.2	**67.8**
Failure rate	**1.4**	**0.2**
Death rate	**8.8**	**9.4**
Lost to follow up	**3.4**	**12.4**
Not evaluated	**6.2**	**10.2**



Treatment Outcome of PTB Cases 2022

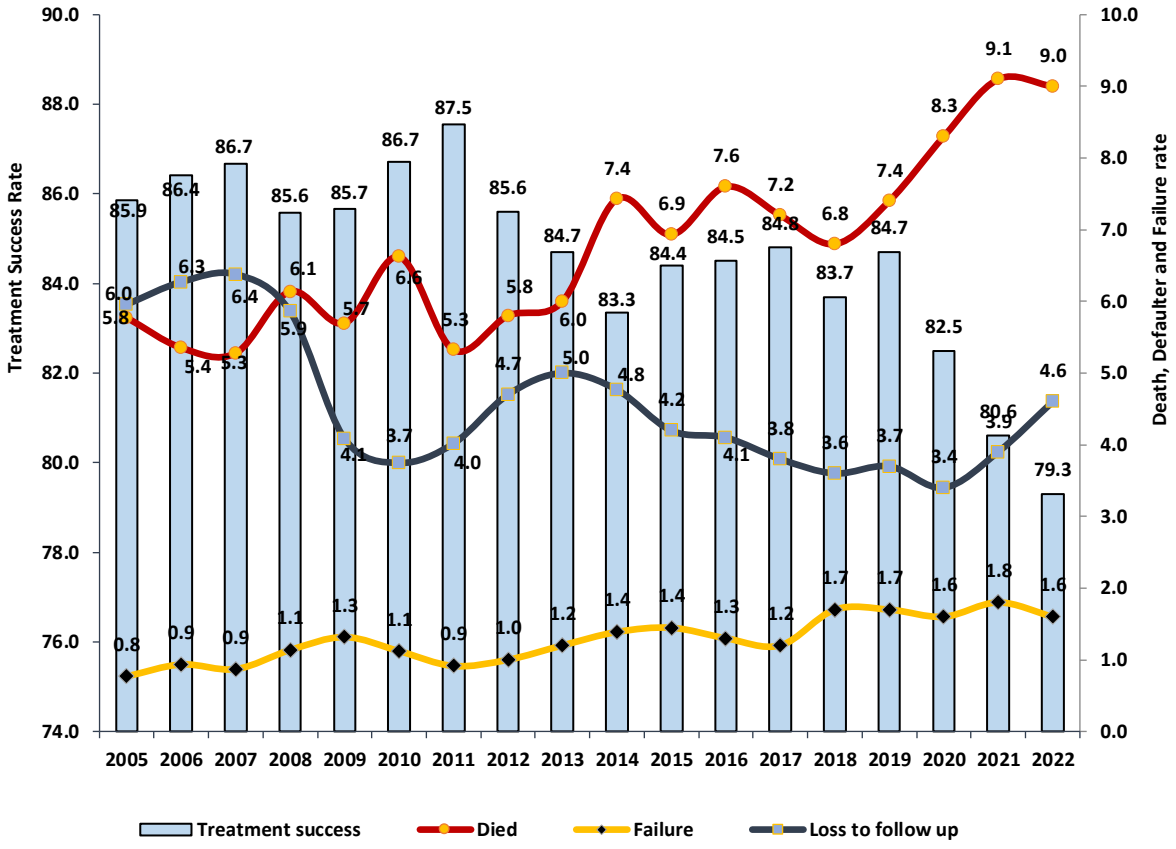


Figure 19: Treatment Outcome of Pulmonary TB Cases from 2005-2022

Treatment Outcome of New Bacteriology confirmed PTB cases

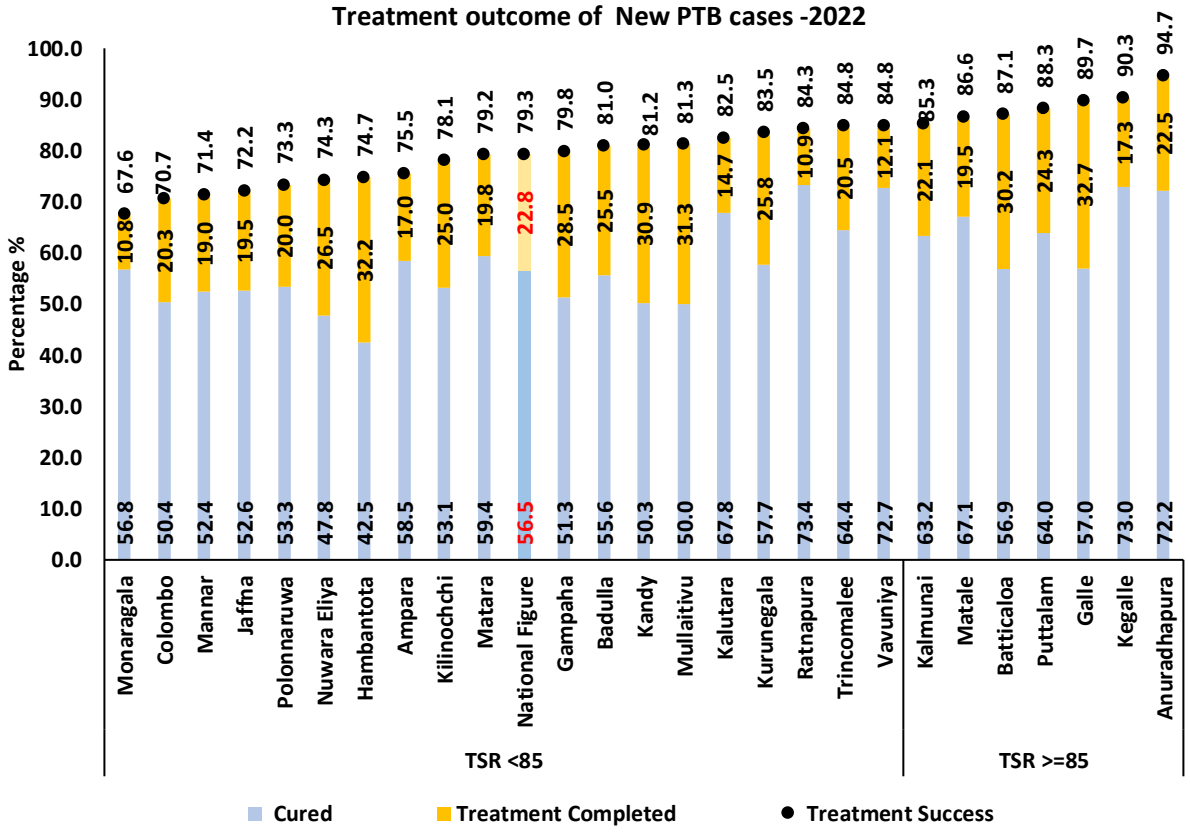


Figure 20: Treatment Success Rates of New Bacteriologically confirmed PTB Cases by Districts in 2022

Treatment Outcome of clinically diagnosis cases 2022 chart

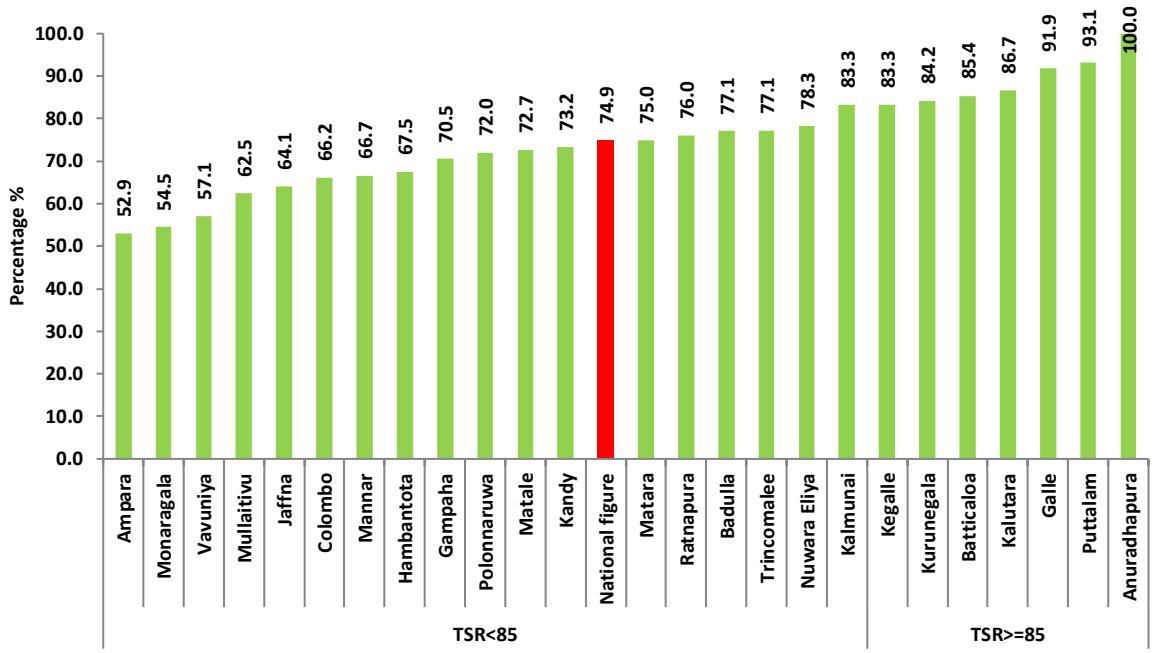


Figure 21: Treatment Success Rates of New clinically diagnosis cases by Districts in 2022

Treatment Outcome of WRD cases 2022 chart

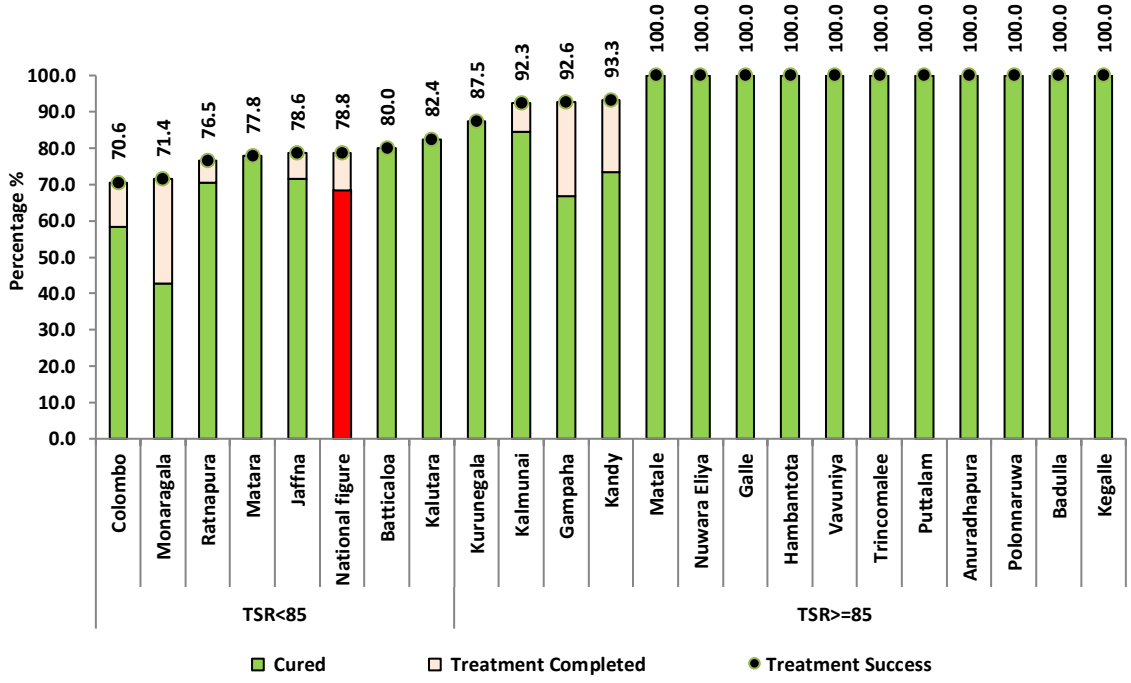


Figure 21: Treatment Success Rates of WRD cases by Districts in 2022

Treatment Outcome of previously treated Patients

Figures 21-24 illustrates the treatment outcomes of different categories of TB patients in the year 2021.

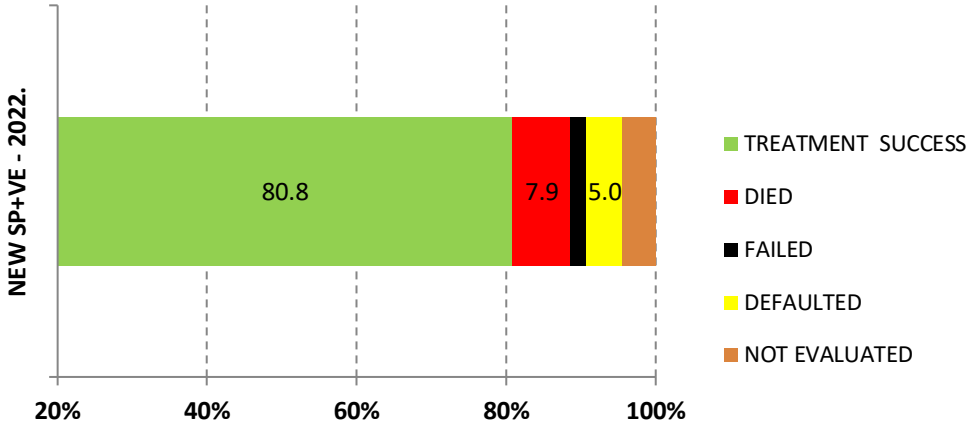


Figure 21: Treatment Outcome Summary of Bacteriologically Diagnosed TB Patients in 2022

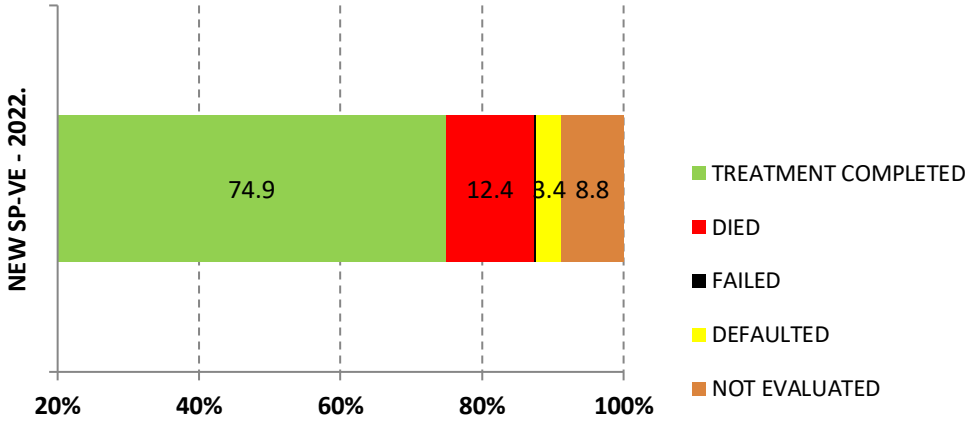


Figure 22: Treatment Outcome Summary of Clinically Diagnosed TB Patients in 2022

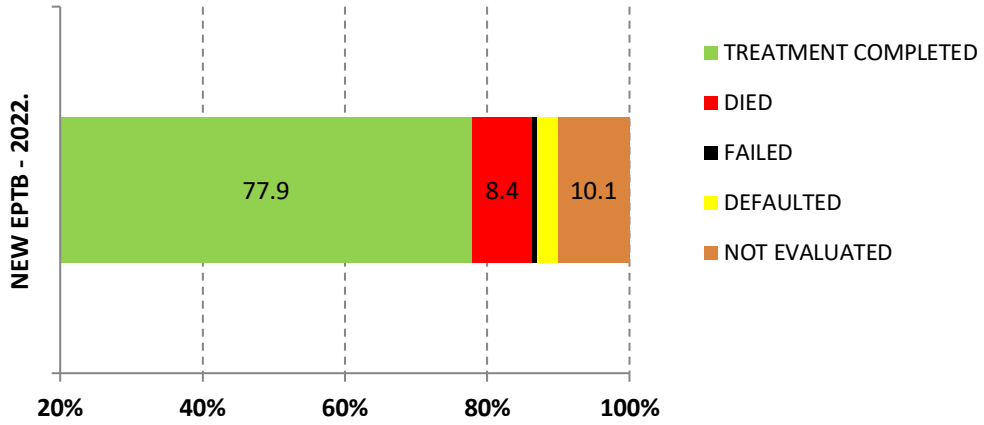


Figure 23: Treatment Outcome Summary of Extra Pulmonary TB Patients in 2022

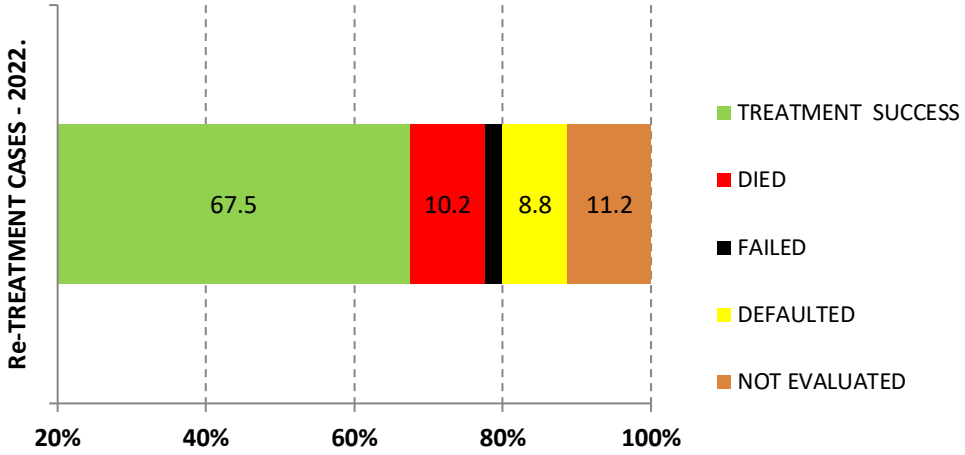


Figure 24: Treatment Outcome Summary of Re-Treatment TB Patients in 2022

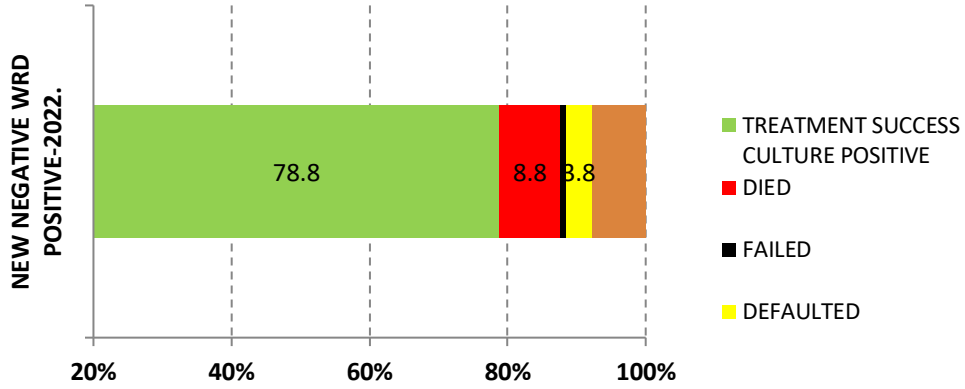


Figure 26: Treatment Outcome Summary of PTB Negative WRD Positive TB Patients in 2022

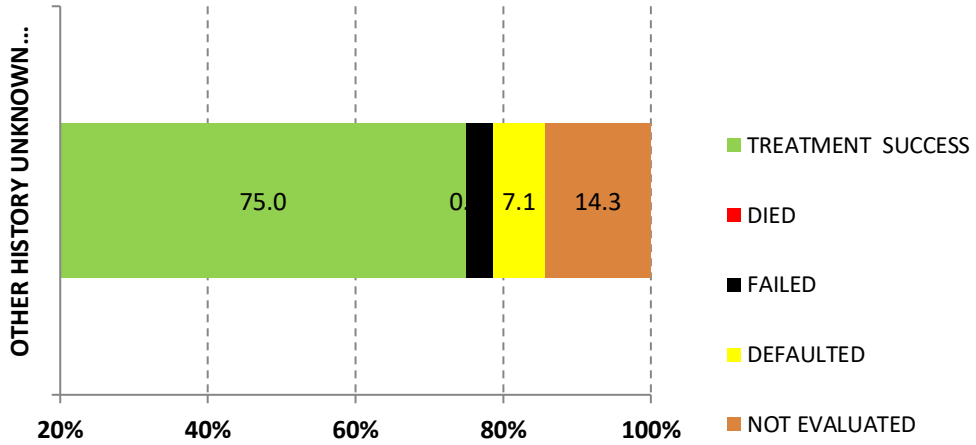


Figure 25: Treatment Outcome Summary of Treatment History Unknown TB Patients in 2022

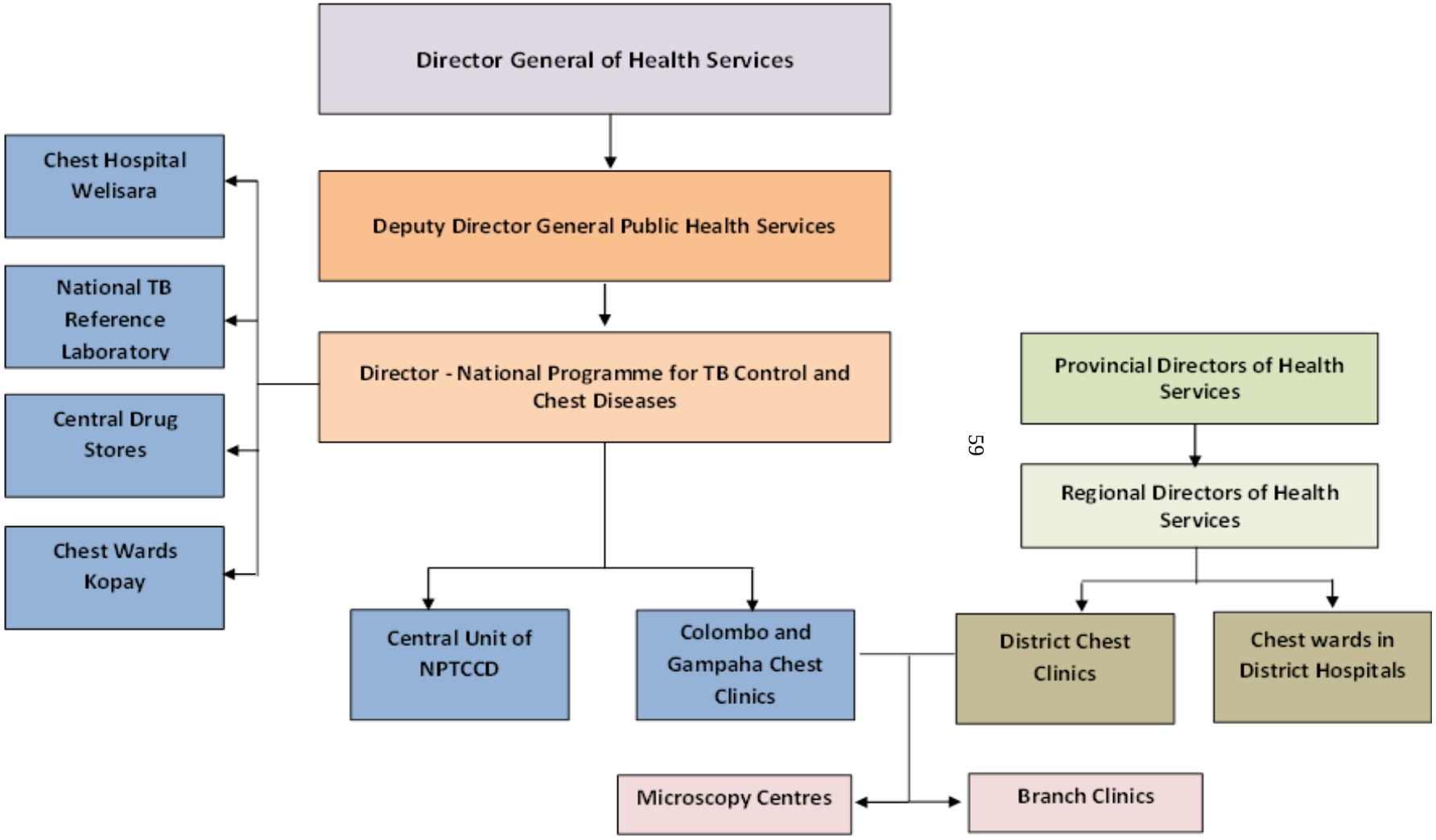


Figure 25: Organizational Structure of National TB Control Program (2017)