

LEBANON ANNUAL TUBERCULOSIS REPORT 2023



MINISTRY OF PUBLIC HEALTH
NATIONAL TUBERCULOSIS PROGRAM



REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH

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Abbreviations

DHIS2	District Health Information Software 2
EPTB	Extra-Pulmonary Tuberculosis
HBC	High Burden Countries
HCW	Healthcare Worker
IOM	International Organization for Migration
LRM	Laboratoire Rodolphe Mérieux
MDR-TB	Multi Drug-Resistant Tuberculosis
MER	Middle East Response to Syrian Crisis
MOPH	Ministry of Public Health
NSP	National Strategic Plan
NTP	National Tuberculosis Program
NTRL	National Tuberculosis Reference Laboratory
PTB	Pulmonary Tuberculosis
RR-TB	Rifampicin-Resistant-Tuberculosis
TB	Tuberculosis
TBI	Tuberculosis Infection
TRS	Tuberculosis Registration System
USJ-FP	Université Saint Joseph-Faculté de Pharmacie
WHO	World Health Organization

Background

Lebanon remains a low TB burden country with an estimated total TB incidence of 11 per 100000 populations, an estimated HIV-negative TB mortality of 0.88 per 100000 populations and a treatment coverage of 87% (*WHO Global Tuberculosis Report for 2023*).

In alignment with the WHO Framework for TB Elimination in Low Incidence Countries and the latest Lebanon Health Strategy, the new NSP to End TB in Lebanon was developed in 2022 for the period between 2023-2030. The plan included one goal and four objectives, all focused on TB elimination. The NSP was designed to tackle the priorities identified in Lebanon, which included among others the consequences of the economic crisis and the transition from a vertical system into an integrated one, the issues of poverty and other social determinants, the issue of migrants and refugees, the management of TBI and the expansion of TB surveillance.

In this context, the program achieved numerous milestones in 2023, marking progress toward fulfilling the objectives of the National Strategic Plan such as the Integration of the TB center in Tripoli within Tripoli governmental to optimize use of resources and sustain services delivery; Integration of some TB services in selected PHC centers; Enhancing TB surveillance through the full implementation of the DHIS2 tracker-based in all the TB centers falling under the NTP and the NTRL.

TB Epidemiology in Lebanon

The trend of TB notification which increased from 2012 onwards due to the influx of Syrian refugees and to the migrant workforce present in the country drastically dropped in 2021 as a consequence to the multifaceted crisis in the country and the COVID19 Pandemic and the drop was noticed among the different population subgroups and mainly among migrants (Figure 1). This trend was reversed as of 2022 with a 9% increase in the overall TB notification in 2022 and 2023. Figure 2 shows that the percentage of foreign born TB cases which gradually increased from 2007 to 2020 dropped to around 50% during the past 3 years.

Figure 1): Trends in notified TB cases by Population Subgroups, 2007-2023

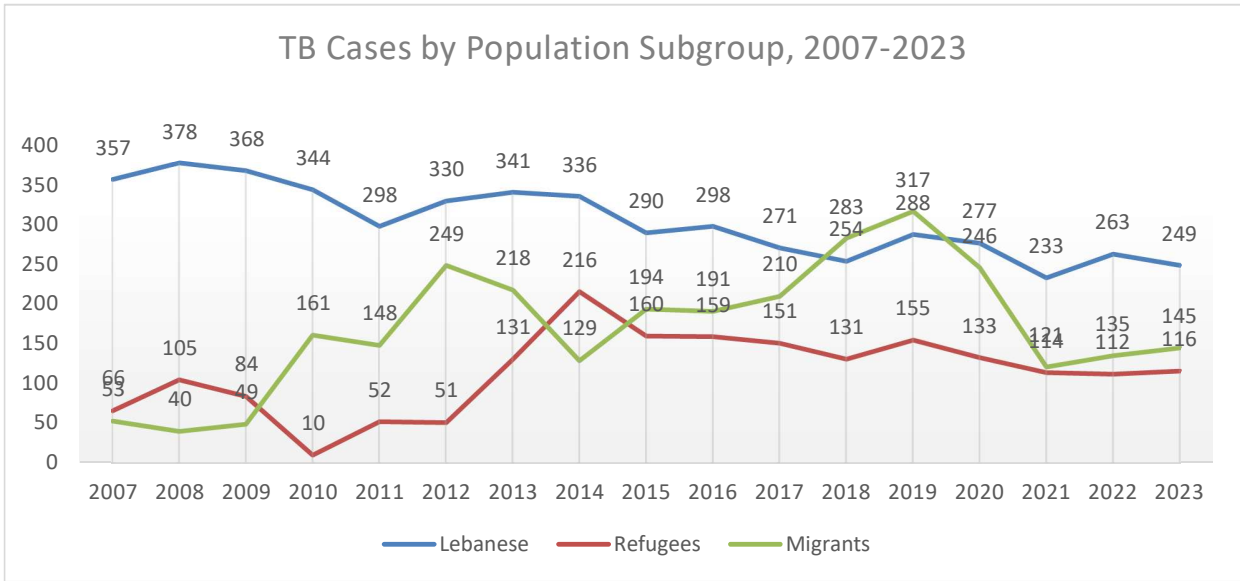
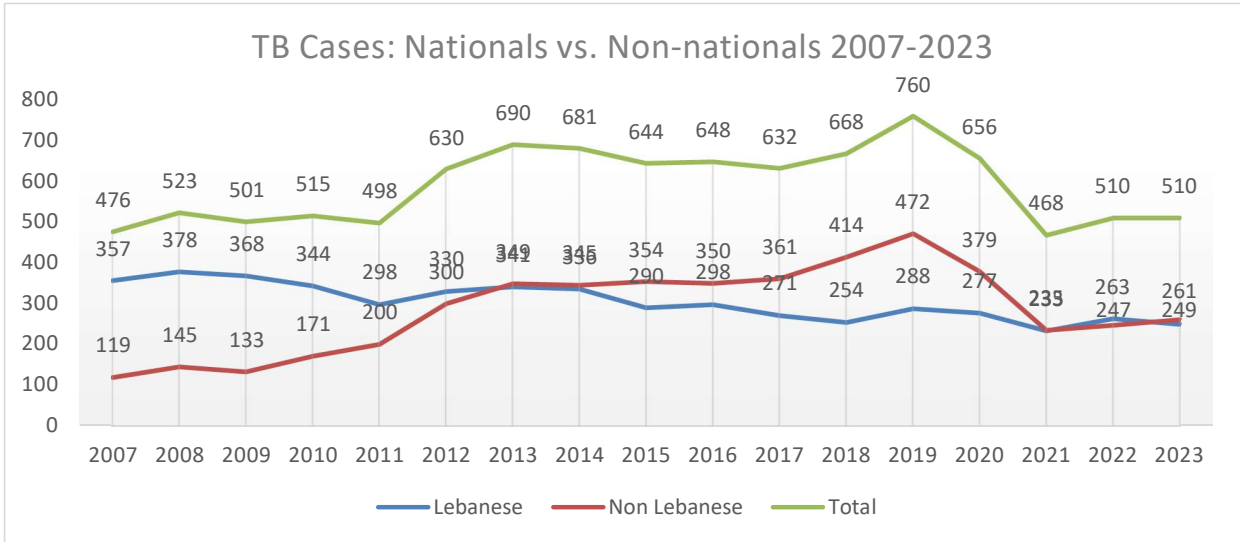


Figure 2): Trends in notified TB Cases-Nationals vs. Non-nationals, 2007-2023



TB Notification in 2023

514 TB cases, including 510 DS-TB and 4 DR-TB (2 RR-TB and 2 MDR-TB) were notified, diagnosed and enrolled under TB treatment in 2023. Overall, there were 0.4% DR-TB among new notified TB cases and 18% among previously treated cases.

The total number of notified drug susceptible TB cases was 510, out of which 70% had pulmonary TB (Figure 3). Figure 4 shows the distribution of EPTB cases by site of disease with around half of the extra-pulmonary cases having TB lymphadenopathy.

Regarding gender and age distribution, 29% of the cases were aged between 25 and 34 years; two thirds of cases in this age group being females mainly from the migrant community. Overall, 55% of the total cases were females and 10% were below the age of 15, including 15 children below the age of 5 (Figure 5).

Figure 3: Distribution of TB Cases by Type of Disease

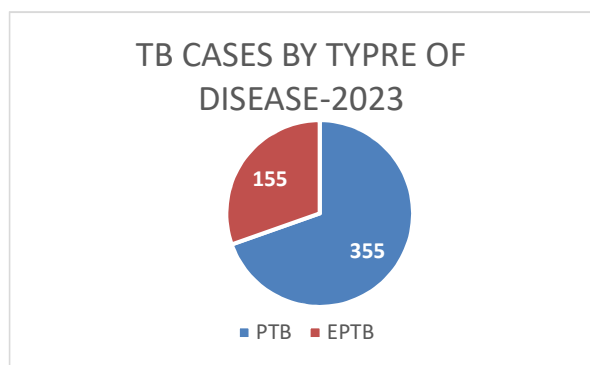


Figure 4: Distribution of EPTB Cases by Site of Disease

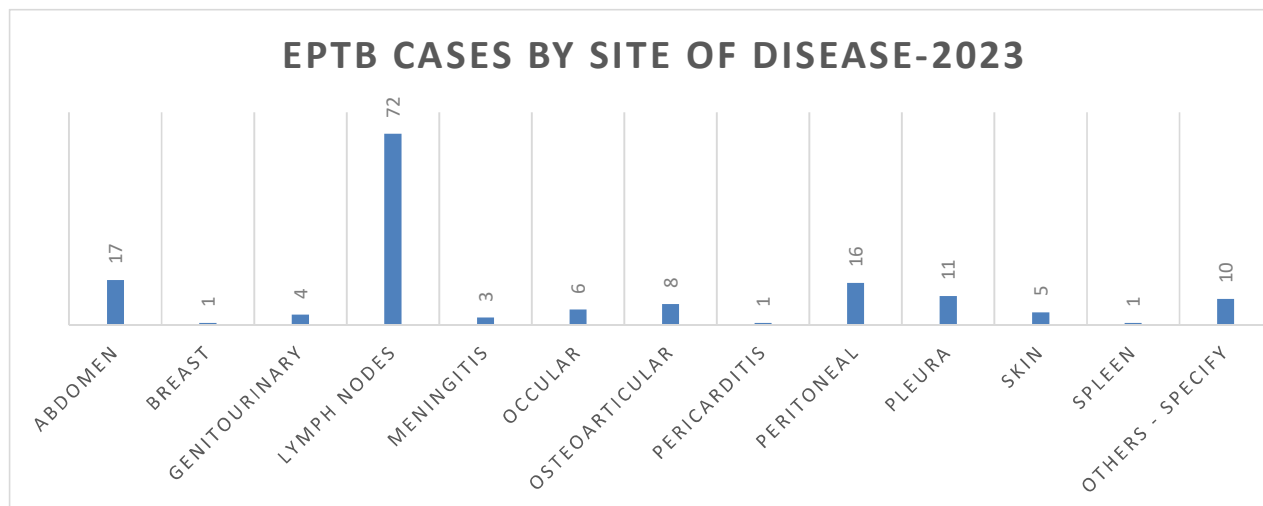
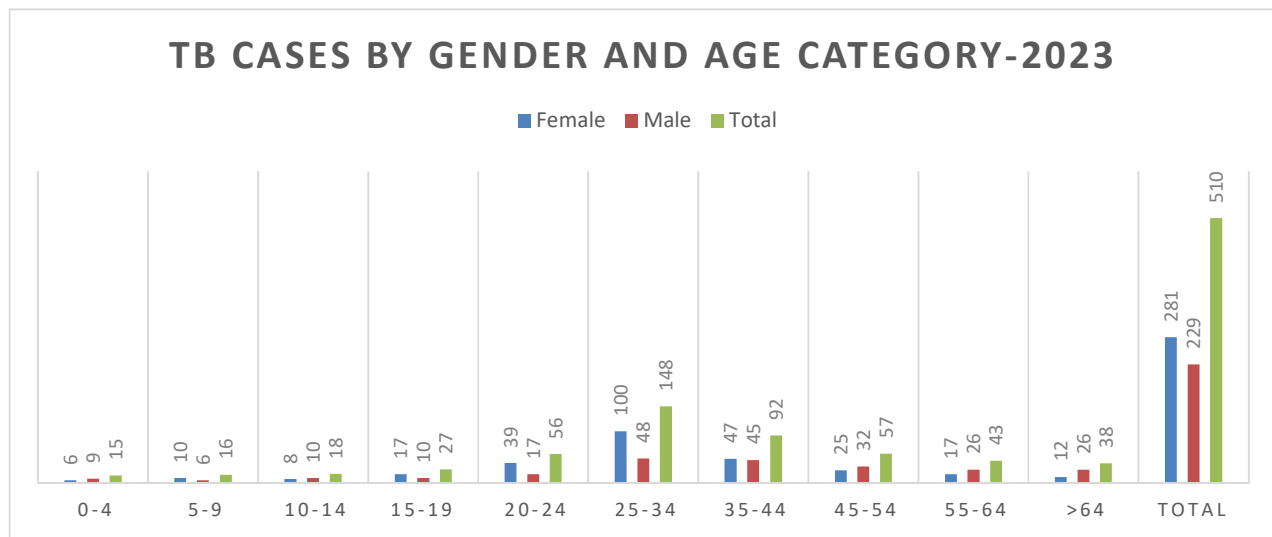
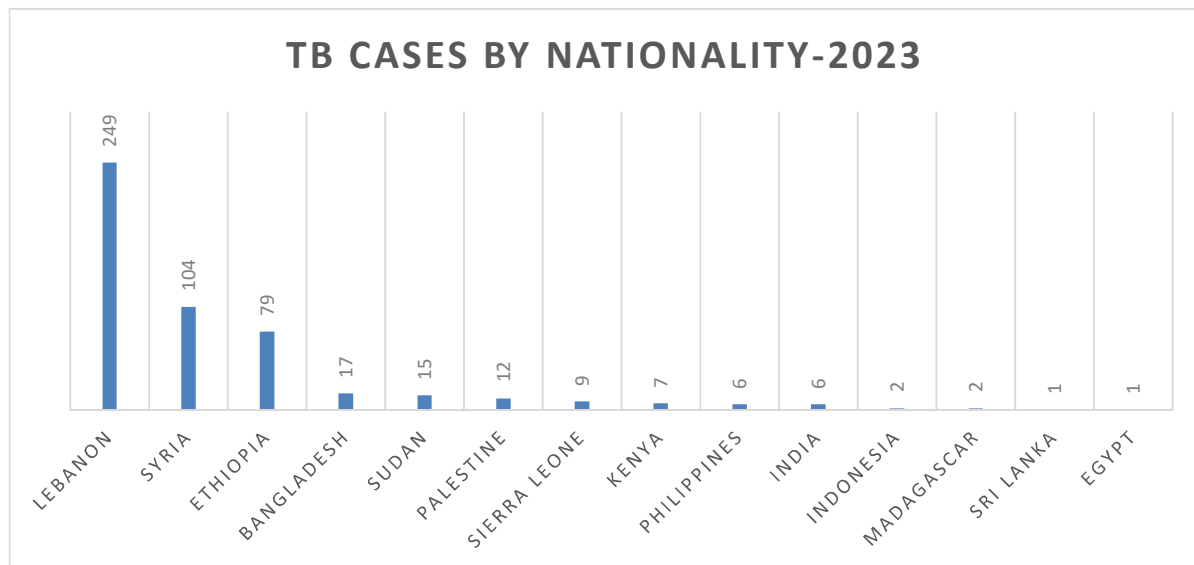


Figure 5: Distribution of TB Cases by Gender and Age Category



Besides, half of the notified TB cases were Lebanese and the majority of cases among non-Lebanese were from Syrian and Ethiopian nationalities with 104 and 79 notified cases respectively (Figure 6).

Figure 6: Distribution of TB Cases by Nationality



Concerning the geographical distribution of TB patients, half of the notified cases lived in Beirut and Mount Lebanon. The North, Akkar, Baalbek-Hermel and the South accounted for around 10% of the total cases each. 9 cases were among prisoners (Figure 7).

The Figures numbered 7 show the distribution of notified TB cases by nationality at district level.

Figure 7: Distribution of TB Cases by Governorate

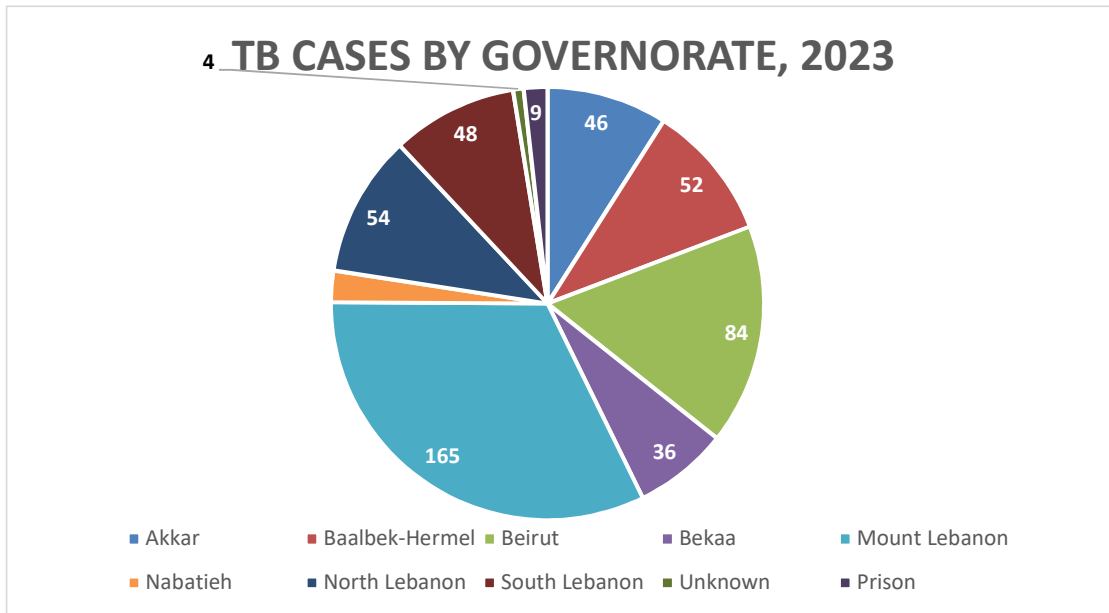


Figure 7.a: Distribution of TB cases by Nationality-Akkar

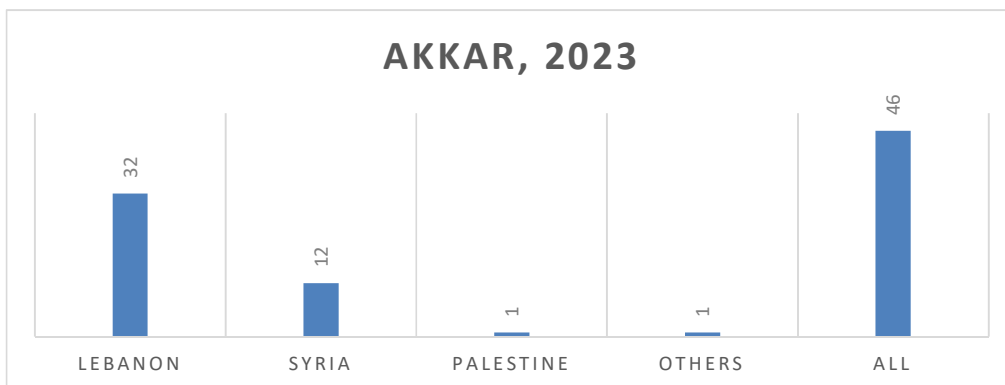


Figure 7.b: Distribution of TB cases by Nationality at District Level-Baalbek-Hermel

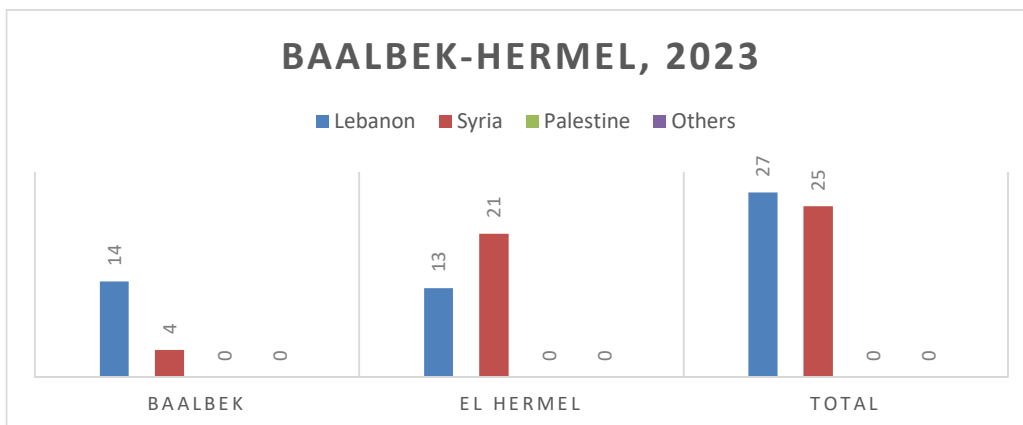


Figure 7.c: Distribution of TB cases by Nationality at District Level-Beirut

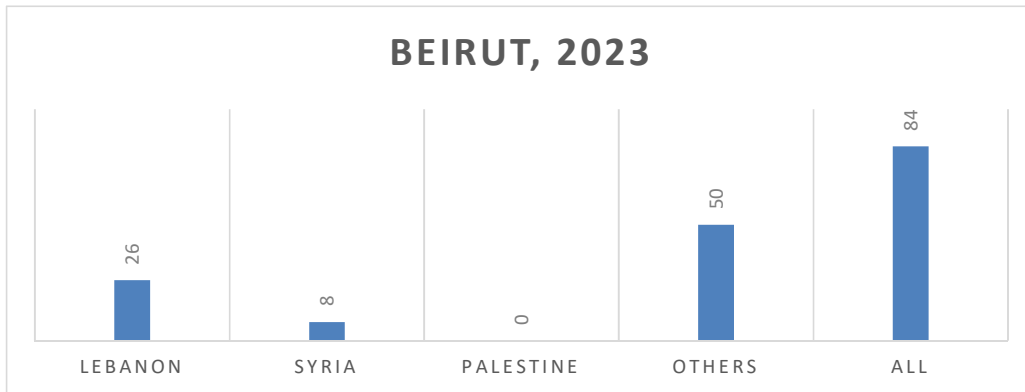


Figure 7.d: Distribution of TB cases by Nationality at District Level-Bekaa

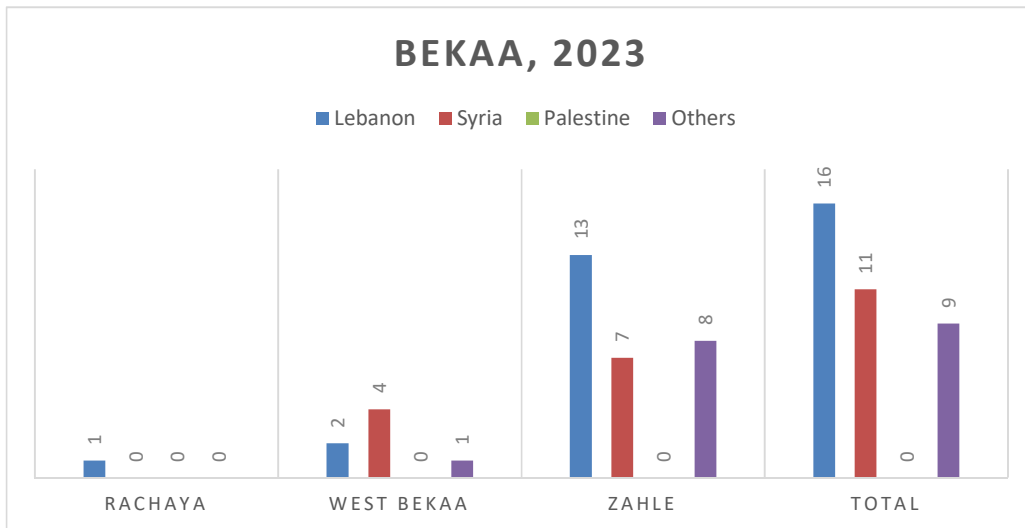


Figure 7.e: Distribution of TB cases by Nationality at District Level-Mount Lebanon

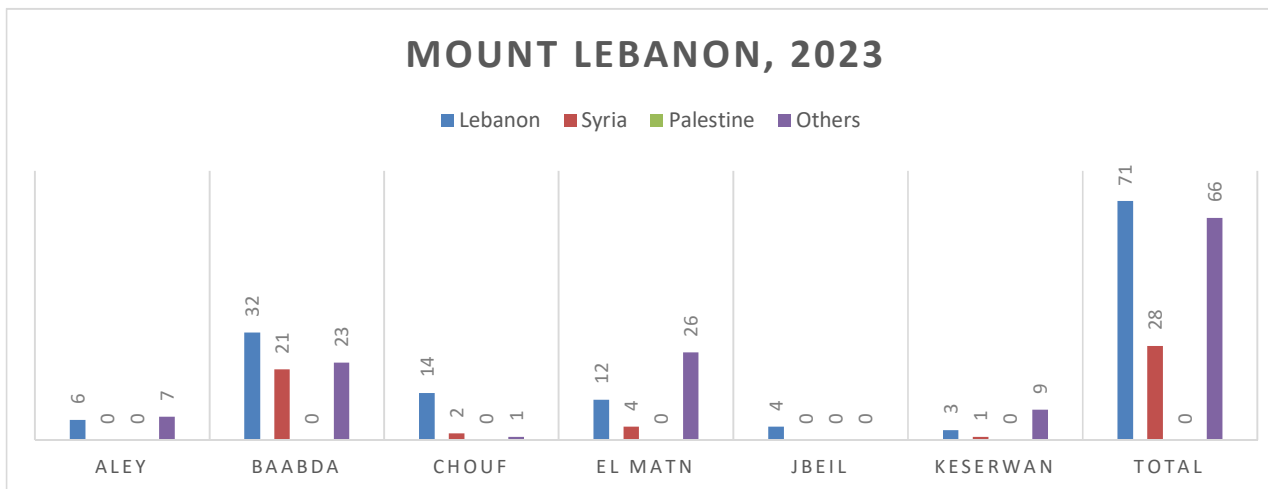


Figure 7.f: Distribution of TB cases by Nationality at District Level-Nabatieh

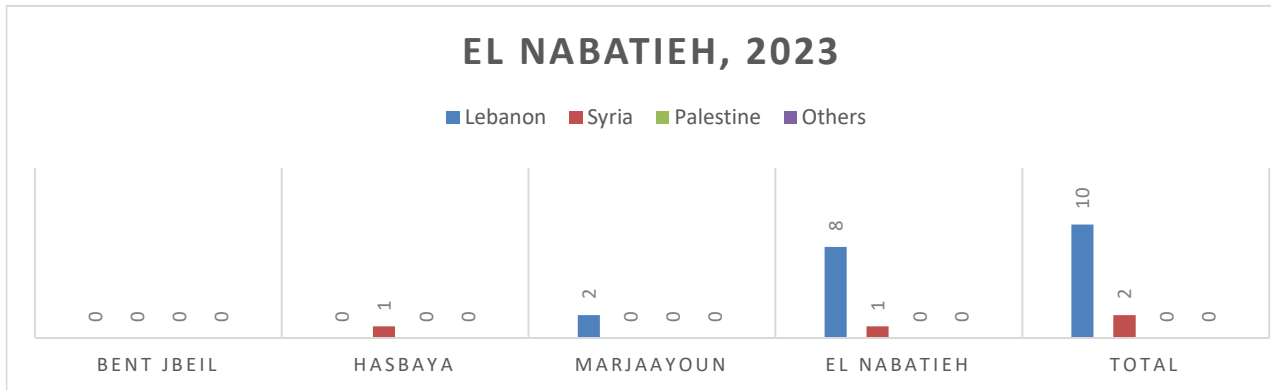


Figure 7.g: Distribution of TB cases by Nationality at District Level-North Lebanon

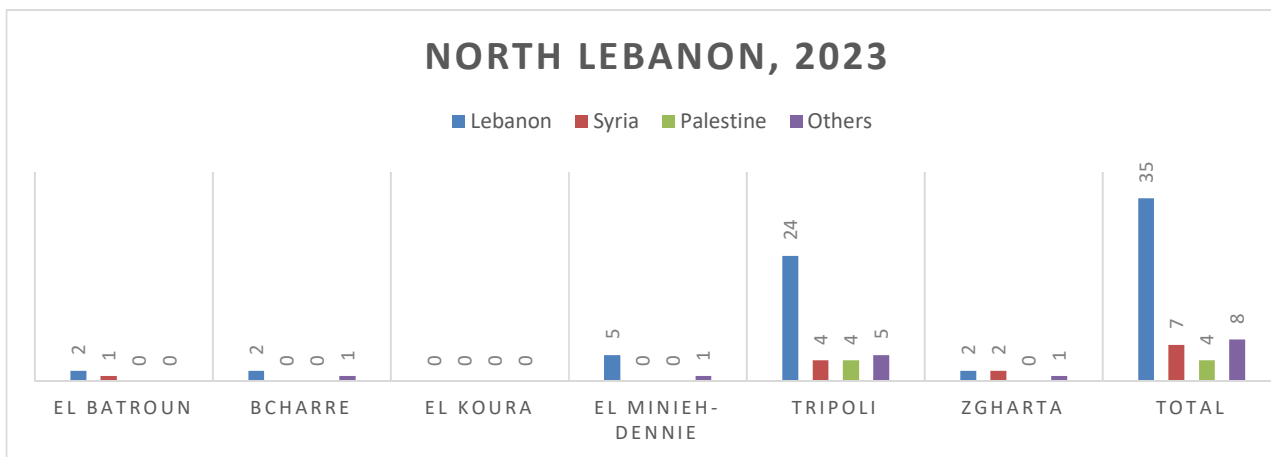
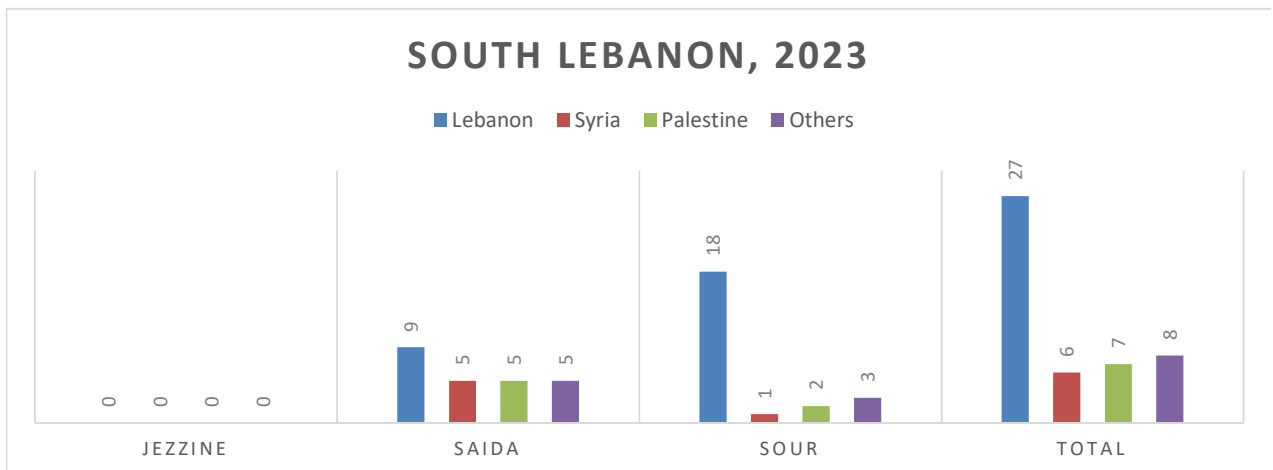


Figure 7.h: Distribution of TB cases by Nationality at District Level-South Lebanon



Trends in Bacteriological Confirmation

90% of PTB cases were bacteriologically confirmed in 2023. However, the bacteriological confirmation among EPTB cases remained low with 21% of the cases having a confirmatory test result. The main challenge is related to the low referral of EP specimens to NTP and NTRL for testing. Figure 8 shows the trends in bacteriological confirmation by TB Type from 2017 to 2023

Table 1 represents the TB laboratory data for 2023 as shared by the National TB Reference Laboratory, Laboratoire Rodolphe Mérieux (USJ-FP), supported by Fondation Mérieux.

Figure 8: Trends in Bacteriological Confirmation by TB Type, 2017-2023

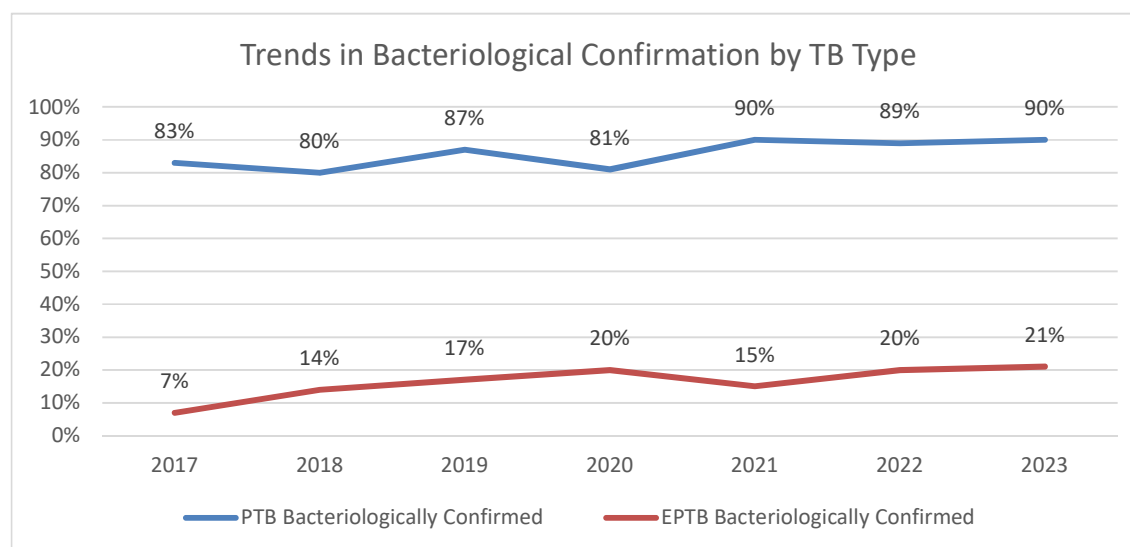


Table 1: TB Laboratory Data-LRM, 2023

Number of specimens referred to LRM for TB testing	1446
Number of positive cultures-MTB	183
Number of positive cultures-NTM	44
Number of FL-DST	161
Number of SL-DST	108
Number of FL-LPA	25
Number of SL-LPA	33

TB treatment Outcomes in 2022

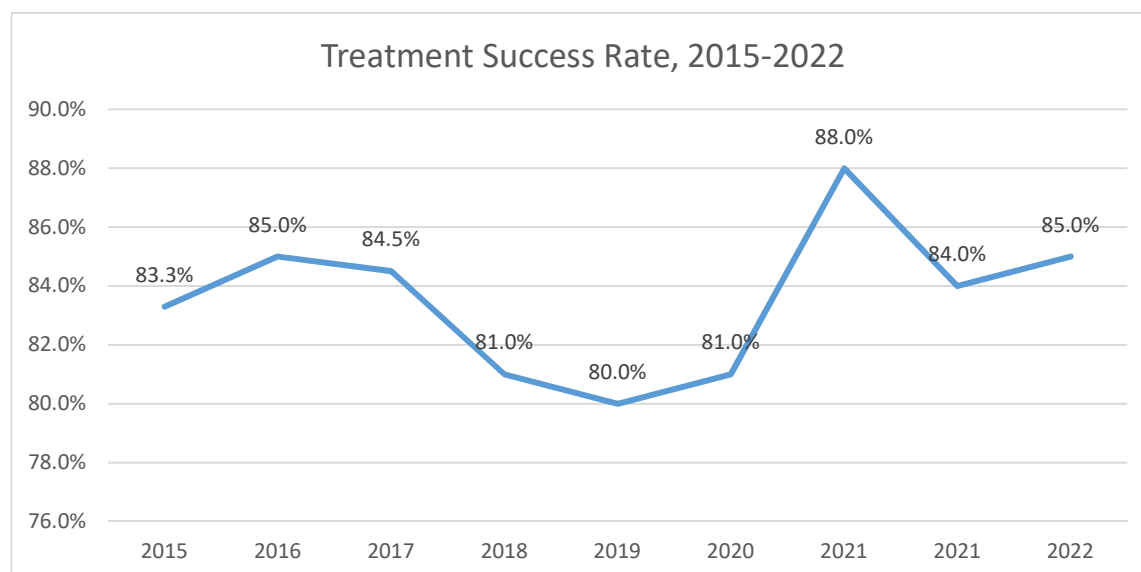
Table 2: Treatment Outcomes - Distribution by Nationality (2022)

Outcome	Lebanese	Syrian	Palestinian	Others	Total
Cured	66	44	6	50	166
Treatment Completed	166	41	9	50	266
Treatment Success Count*	232	85	15	100	432
Treatment Success Rate (%)	88	90	100	72	85
Treatment Failure	2	0	0	0	2
Death	17	1	0	3	21
Left the Country	2	4	0	21	27
Transferred Out**	0	2	0	5	7
Lost to Follow-Up	10	2	0	9	21
Total	263	94	15	138	510

*Treatment Success Count= Cured + Treatment Completed

**Cases registered at NTP Lebanon and transferred out to another NTP in a different country to continue TB treatment

Figure 9: Trends in TB Treatment Success Rate 2015-2022



TB Screening Activities in High Risk Groups

A. TB Screening among Prisoners

The intervention was launched in January 2023 in the three most crowded prisons in the country: Roumieh prison, Tripoli al Kobe prison and Zahleh prison.

Screening was done using a symptom screening questionnaire and by performing the PPD test.

Simultaneously, systematic pre-entry screening for new comers/ prisoners was done by performing PPD and Chest Xray.

The intervention was expanded to the peripheral prisons and detention centers in the country during the month of June; A total of 24 prisons/ detention centers were included.

Training sessions related to screening, testing and data collection were delivered for the outreach team selected to conduct this intervention. In addition, awareness and training sessions about TB facts and SOPs for TB management were delivered to Roumieh prison staff

Intervention results:

- A total of 5844 prisoners were screened for symptoms and by PPD; around 10% of those screened had a positive PPD result
- 314 performed CXR out of which 7.5% showed abnormalities
- A total of 39 Xpert tests were performed; 3 cases were diagnosed with Active TB and enrolled under treatment
- TB preventive treatment was provided to prisoners having a positive PPD

B. TB Contacts Screening

Contact investigation remains one of the ongoing active case finding activities conducted by the program. Contact screening data for 2023 are represented in Table 3.

Table 3: TB Contact Screening Data, 2023

	Count	%
Total Contacts	1328	
PPD Done	1109	84%
PPD Positive	277	25%
CXR Done	464	
CXR Positive	37	8%
Contacts>5y Eligible for TPT	241	
Contacts>5y took TPT out of eligible	177	73%
Contacts<5y	146	
Contacts<5y took TPT	88	60%
Active TB	24	

C. TB Screening in migrants from HBC

Systematic TB screening of migrants upon entry to Lebanon is done at governmental hospitals since 2017 following a joint decision between the Ministry of Labor and the Ministry of Health for the purpose of providing work permits for migrant workers from high TB burden countries.

Screening is done by performing a tuberculin skin test and a chest radiography. Migrants with positive TST and to whom active TB is ruled out are provided with a preventive TB treatment. Presumptive TB cases are referred to the NTP for further investigations

Table 4: TRS Data, 2018-2023

Year	Number of Migrants (new comers)*	Number of Migrants Screened	Number of Migrants who Received TPT
2018	86894	16532 (19%)	7330 (44%)
2019	43825	27463 (62.6%)	11138 (41%)
2020	7781	7360 (94.5%)	2552 (35%)
2021	NA*	3066	1042 (34%)
2022	NA*	2925	844 (29%)
2023	NA*	2040	928 (45.5%)

*Data not available

Coordination Meetings and Training Sessions

Three training sessions on Laboratory activities were conducted by personnel of the Laboratoire Rodolphe Mérieux, in collaboration with the National Tuberculosis Program, and with the support of the International Organization for Migration.

Pre-analytical process for TB & COVID-19

The training covered information about sample collection, reception, labelling, packaging and transport for TB and COVID-19, which will help the NTP staff master the pre-analytical requirements for TB and COVID-19 testing.

Pre-analytical process for TB testing on EP specimens

The training focused on the diagnostic challenges of EPTB; the pre-analytical requirements for sample collection, reception, labelling, packaging and transportation to the NTRL; the updated TB algorithms; and the new recommendations for EPTB.

Towards an Improvement in the Bacteriological Confirmation of EPTB

The training covered information about the pre-analytical requirements for TB testing on extrapulmonary specimens; Referral of patients with EPTB using the referral mechanism adopted by the National TB Program; and the diagnostic challenges of EPTB. Targeted audience included operation room staff (Doctors, Nurses) from governmental hospitals, members of the Syndicate of Clinical Biologists of Lebanon and technicians from private laboratories engaged in TB testing.

Moreover, several coordination meetings and training sessions were carried out for NTP physicians and HCW by the National Tuberculosis Program with the support of the International Organization for Migration.

Meeting with NTP Physicians

Following the update of the TB guidelines and related SOPs the NTP with the support of IOM conducted a coordination meeting with physicians working at the TB centers. The meeting focused on the latest updates in treatment and management of latent TB, Drug susceptible TB and TB in Children.

Refresher Training on DHIS2 for TB

The training was provided to NTP staff involved in data collection including lab technicians, nurses and DOT officers. The session included a demo and a practical aspect.

Training on the new TB package for PHC staff November

The training was provided to representatives from six selected PHCCs where the TB package would be integrated. It covered the components of the TB package, the updated TB algorithms and the referral pathways to the NTP.