Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

Tuberculosis in the Americas 2018

Tuberculosis in the Americas, 2018. Washington, D.C. : PAHO, 2018
Document Number: PAHO/CDE/18-036

This document was prepared in close collaboration with the team of epidemiologists from the Emilio Coni National Institute of Respiratory Diseases in Argentina, a PAHO/WHO TB Collaborating Center.

This publication was made possible thanks to the support of the Office of Sustainable Development, Bureau for Latin America and the Caribbean, U.S. Agency for International Development (USAID) under Grant No. AID-OAA-IO-16-00.003. The opinions expressed here are solely the authors' and do not necessarily reflect the opinions of USAID.

CONTENT

Ending the tuberculosis epidemic is the objective of the End TB Strategy

The targets of the Strategy are tied to the **Sustainable Development Goals (SDGs)**, under three indicators (Table 1):

Reduce TB **deaths** [1]

Reduce TB **incidence**[1]

zero TB-affected families facing **catastrophic costs** due to TB.

Table 1: The End TB Strategy's global indicators, baseline, situation in 2017, targets, and milestones for the Region of the Americas

	BASELINE	CURRENT	MILESTONES		SDG TARGETS	END TB TARGETS
	2015	2017	2020	2025	2030	2035
			% reduction (absolute value)			
Reduction in number of TB deaths compared to 2015	25,100	24,000	35% (16,300)	75% (6,300)	90% (2,500)	95% (1,300)
Reduction in TB incidence rate* compared to 2015	27.3	28.0	20% (21.6)	50% (13.6)	80% (5.6)	90% (2.7)
Percentage of TB-affected families facing catastrophic costs due to TB	N/A	N/A	0%	0%	0%	0%

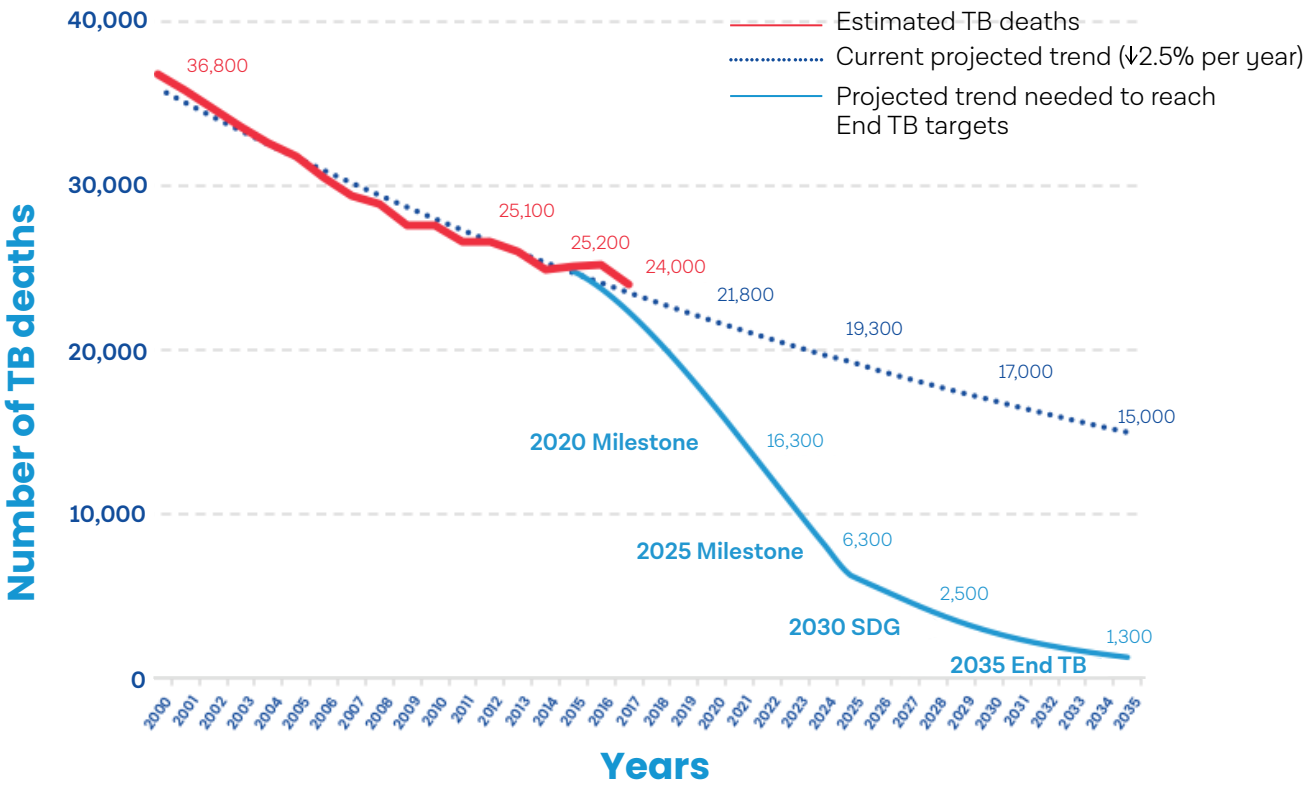
Note: *Rate per 100.000 population.
N/A = Not available
Source: WHO. Global Tuberculosis Report 2018.

ACHIEVEMENT OF THE END TB TARGETS IS AT RISK. IT IS ESSENTIAL TO ACCELERATE THE REDUCTION OF TB DEATHS AND NEW CASES.

[1] In comparison with 2015 figures.

Between 2000 and 2017, deaths decreased by an average of **2.5%** per year; to reach the 2020 milestone they must decrease by **12%** per year in the next three years, and continue to decline to achieve a **95%** reduction by 2035 as compared to 2015. (Figure 1)

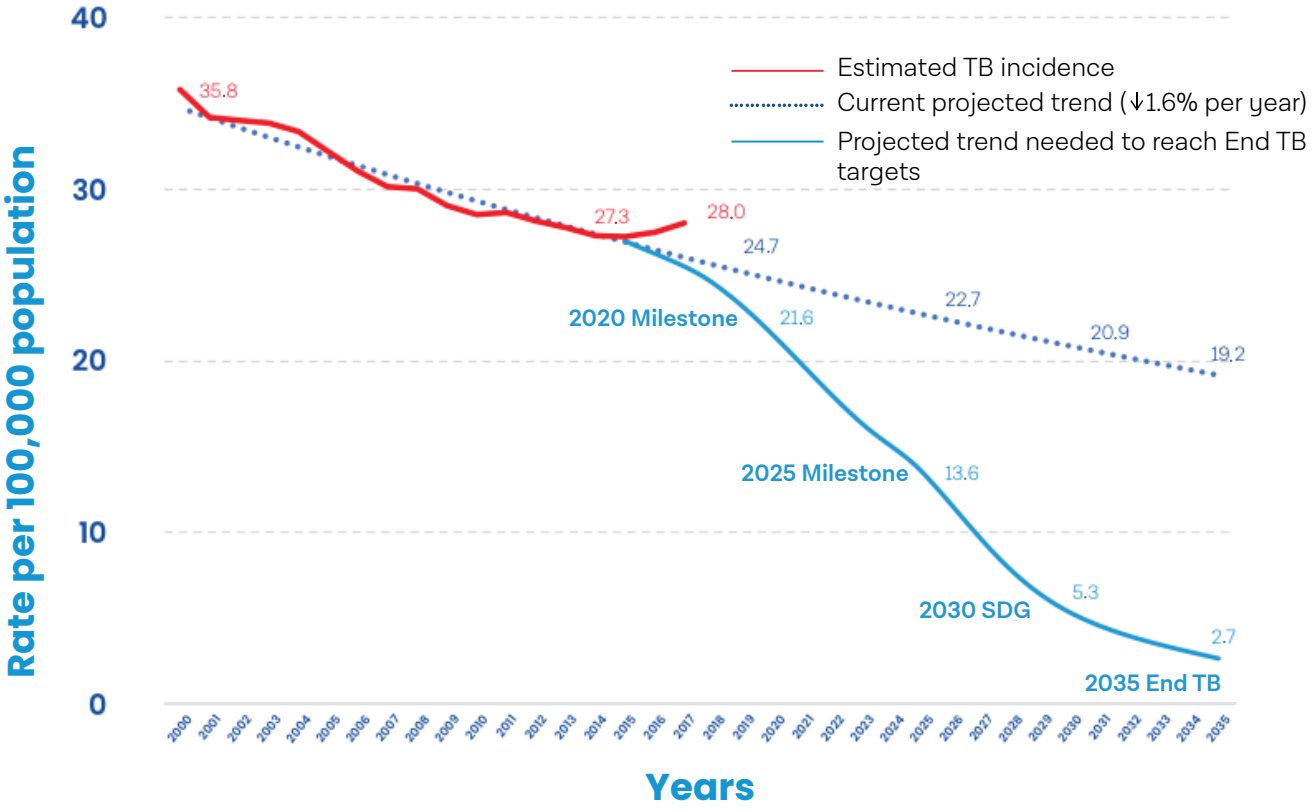
Figure 1: Trend and projection of the estimated number of TB deaths, and reduction needed to reach milestones and targets. The Americas, 2000-2035



Source: WHO. Global Tuberculosis Report 2018; Emilio Coni National Institute of Respiratory Diseases. Projections based on 2018 WHO estimates.

The estimated incidence rate also declined, albeit slowly, with an average annual decline of **1.6%** between 2000 and 2017 and an increase in the last year. To achieve the 2020 milestone, the rate of decline would have to be **8%** annually in the next three years. (Figure 2)

Figure 2: Trend and projection of estimated TB incidence rate, and reduction needed to reach milestones and targets. The Americas, 2000–2035



Source: WHO. Global Tuberculosis Report 2018; Emilio Coni National Institute of Respiratory Diseases. Projections based on 2018 WHO estimates.

Most of the countries lack information on the percentage of households that face catastrophic costs due to TB. To monitor this indicator, countries should conduct national surveys following the recommendations of the World Health Organization (WHO).

Analysis of tuberculosis incidence in the Americas

WHO estimated **282,000** new and relapse TB cases for the Region of the Americas in 2017, **3%** of the global TB burden (10 million cases), and an incidence rate of **28** per **100,000** population. In the Americas, the highest incidence rate was observed in the Caribbean (61.2 per 100,000 population), followed by South America (46.2), Central America and Mexico (25.9) and North America (3.3).

2017	ESTIMATED CASES	ESTIMATED DEATHS
TB (ALL FORMS)	282,000 (262,000-302,000)	24,000 (22,500 – 25,700)
TB/HIV	30,000 (28,000 – 33,000)	6,000 (5,500 – 6,700)
RR/MDR-TB	11,000 (9,900 – 13,000)	> 500

Source: WHO. Global Tuberculosis Report 2018.

As of 2017 it was estimated that **87%** of TB cases were found in ten countries. Slightly more than half are concentrated in Brazil, Peru, and Mexico. (Table 2)

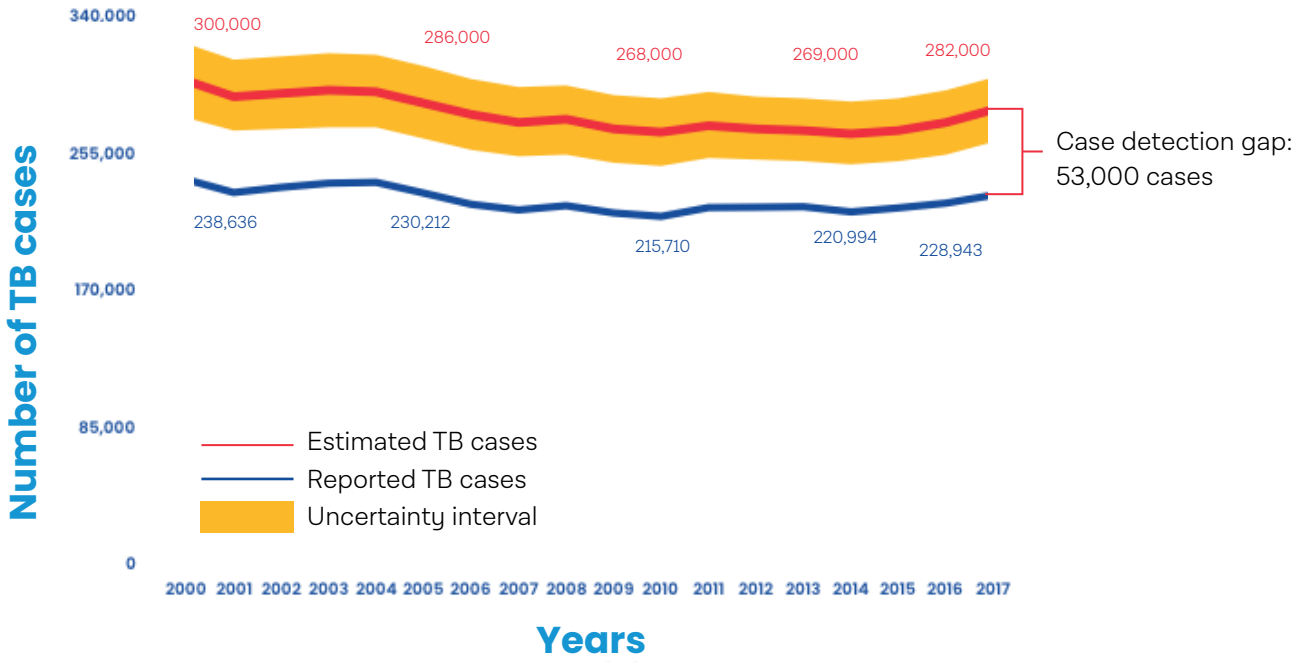
Table 2: Countries with the highest estimated number of TB cases in the Americas 2017

N°	COUNTRY	ESTIMATED CASES	PERCENTAGE OF TOTAL CASES	CUMULATIVE PERCENTAGE
1	Brazil	91,000	32%	32%
2	Peru	37,000	13%	45%
3	Mexico	28,000	10%	55%
4	Haiti	20,000	7%	62%
5	Colombia	16,000	6%	68%
6	Venezuela	13,000	5%	73%
7	Argentina	12,000	4%	77%
8	Bolivia	12,000	4%	81%
9	United States	10,000	4%	85%
10	Ecuador	7,200	3%	87%
Rest of the Americas		35,800	13%	100%
Total		282,000	100%	100%

Source: WHO. Global Tuberculosis Report 2018.

There were **228,943** reported cases of TB (new and relapse) in 2017 in the hemisphere, or **82%** of the total estimated cases. The case detection gap has not narrowed in recent years, remaining at around **50,000** cases, with a slight increase of **3,000** cases between 2016 and 2017. (Figure 3)

Figure 3: Trends in the number of estimated and reported cases of TB* The Americas, 2000-2017



Note: *New and relapse cases.
Source: WHO. Global Tuberculosis Report 2018.

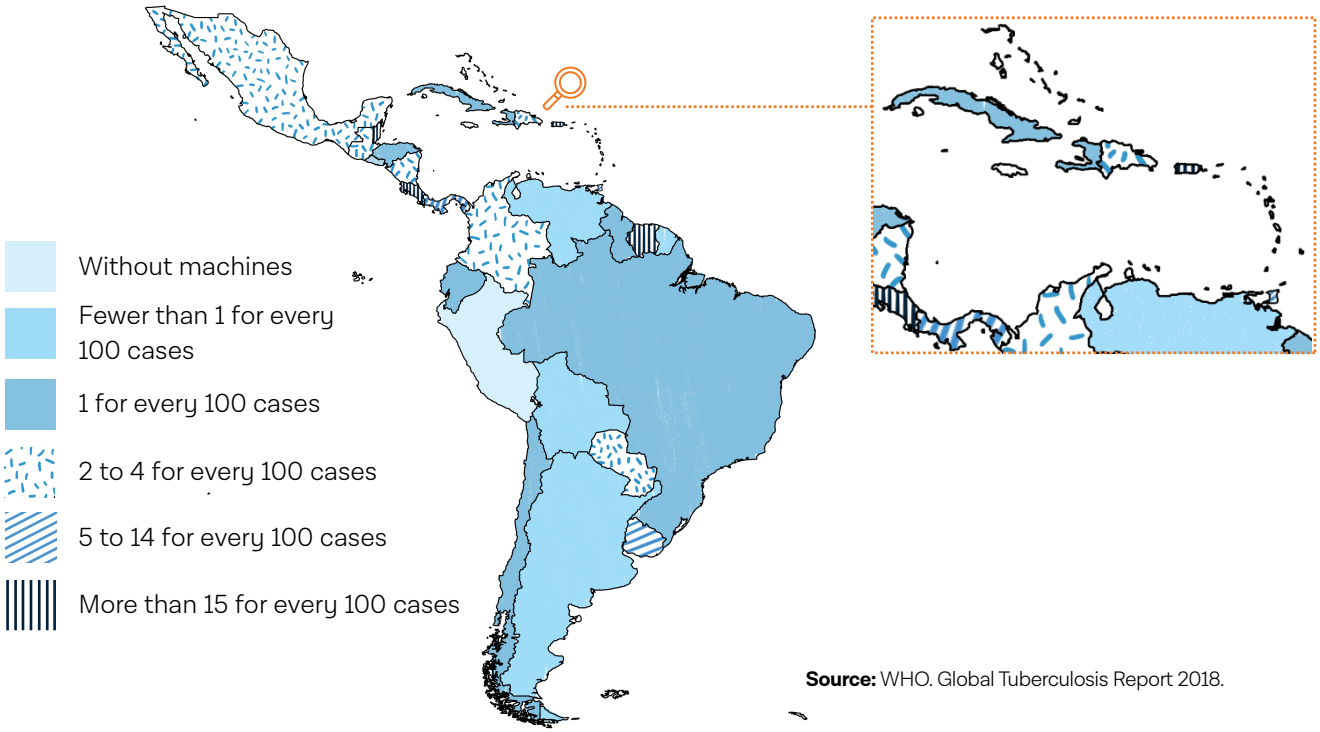
Transition toward new rapid methods for early TB diagnosis

THE EXPANSION OF RAPID DIAGNOSTIC METHODS HAS NOT RESULTED IN A PROPORTIONAL EXPANSION OF TB DIAGNOSIS.

Early diagnosis can be strengthened through rapid diagnostic tests such as Xpert® MTB/RIF. The expansion of rapid diagnostic infrastructure in the Region has been significant, although heterogeneous (Map 1), increasing from 11 machines in **2011** to more than **400** in 2017. However, diagnostic processes need to be improved since their use is still limited; only **13%** of cases in 2017 were diagnosed using this technique—a small improvement over the previous year (**9%** in 2016). Similar coverage was observed in the Caribbean and South America (**14%**), while in Central America and Mexico the percentage of those diagnosed with this method was **9%**.

A critical factor in driving the use of rapid diagnostic tests is for countries to have policies in place that indicate their use as an initial test for all suspected TB cases. Only **40%** of countries (14 out of 35) have such updated policies or regulations.

Map 1: Xpert® MTB/RIF rapid diagnosis machines in relation to reported TB cases. The Americas, 2017



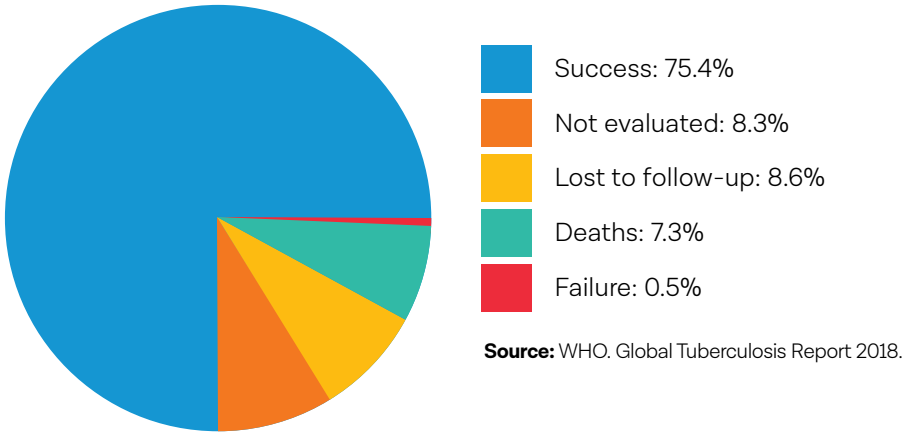
Source: WHO. Global Tuberculosis Report 2018.

Tuberculosis treatment outcomes

SUCCESS OF TB TREATMENT REMAINS UNCHANGED IN THE LAST FIVE YEARS. AROUND 75% OF PATIENTS ARE CURED.

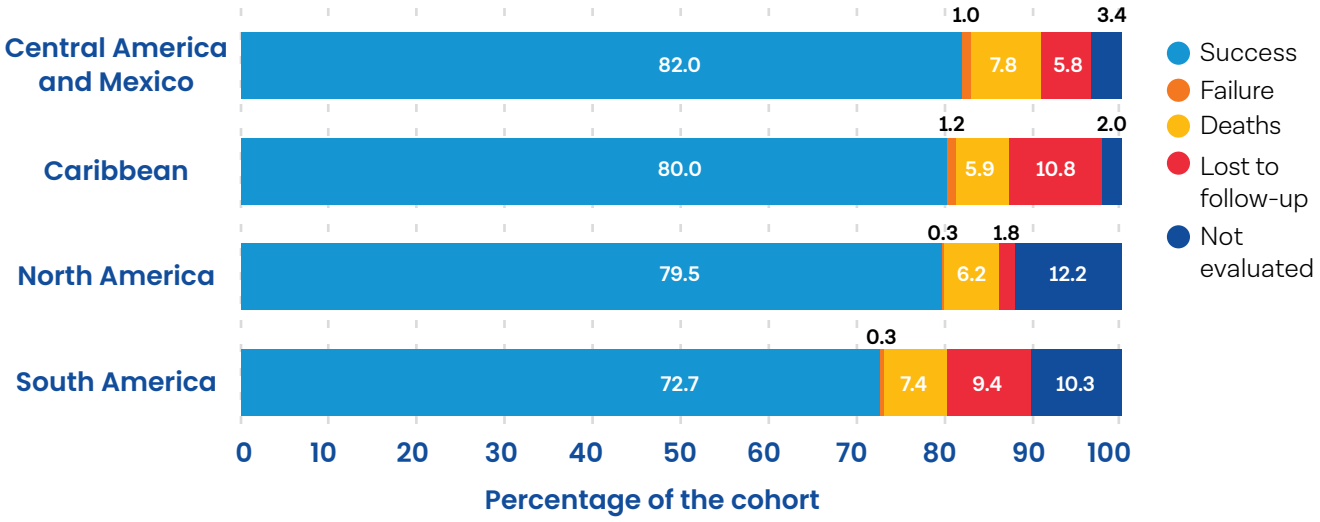
To reach the target of treatment success (**≥ 90%**), countries must step up their efforts to closely monitor patients, work with affected communities and their social determinants (e.g., incorporating technology for directly observed treatment, addressing barriers to transportation and inclusion of TB patients in social welfare programs), and improve comprehensive care for TB and its comorbidities. (Figures 4 and 5).

Figure 4: Treatment outcome for TB cases. The Americas, 2016



Source: WHO. Global Tuberculosis Report 2018.

Figure 5: TB treatment outcome, by subregion. The Americas, 2016



Source: WHO. Global Tuberculosis Report 2018.

Drug-resistant tuberculosis

NEARLY 7,000 CASES OF DRUG-RESISTANT TUBERCULOSIS WENT UNDIAGNOSED AND UNTREATED. ONLY 33% OF TB PATIENTS RECEIVED A DRUG SUSCEPTIBILITY TEST—3,000 FEWER PATIENTS THAN IN THE PREVIOUS YEAR.

In 2017, it was estimated that some **11,000** TB cases would be resistant to rifampicin (RR-TB) or rifampicin and isoniazid (MDR-TB); of these, only **37%** were reported, leaving **6,900** RR/MDR-TB cases **undiagnosed and untreated.**

Seventy percent of the estimated number of RR/MDR-TB cases are concentrated in five of the Region's countries. (Table 3)

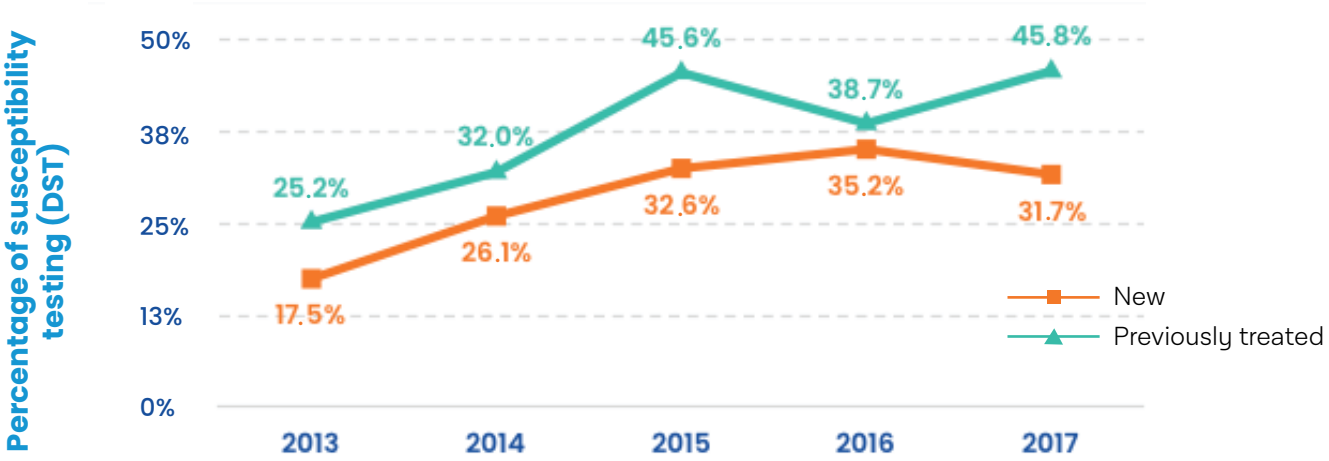
Table 3: Countries with the highest estimated RR/MDR-TB burden. The Americas, 2017

ESTIMATED CASES OF RR/MDR-TB			
COUNTRY	ESTIMATED NUMBER	RR/MDR-TB CASES AS A PERCENTAGE OF TOTAL TB CASES, BY COUNTRY	CUMULATIVE PERCENTAGE OF TOTAL CASES IN THE AMERICAS
Peru	3,500	9%	30.9%
Brazil	2,400	3%	52.1%
Mexico	970	3%	60.6%
Ecuador	650	9%	66.3%
Haiti	600	3%	71.6%
Colombia	570	4%	76.7%
Argentina	540	5%	81.4%
Venezuela	420	3%	85.1%
Bolivia	380	3%	88.5%
United States	290	3%	91.0%
Rest of the Americas	1,000	3%	100.0%
The Americas	11,000	4%	100.0%

Note: figures are rounded and may not add up.
Source: WHO. Global Tuberculosis Report 2018.

Universal access to drug susceptibility testing (DST) is key to improving RR/MDR-TB case detection. In 2017, **only 33%** of TB patients received DST, down 3,000 from the year before. In previously treated patients, 45.8% had access to this test (an **18%** improvement over 2016); however, in new cases, access decreased by **11%**. (Figure 6).

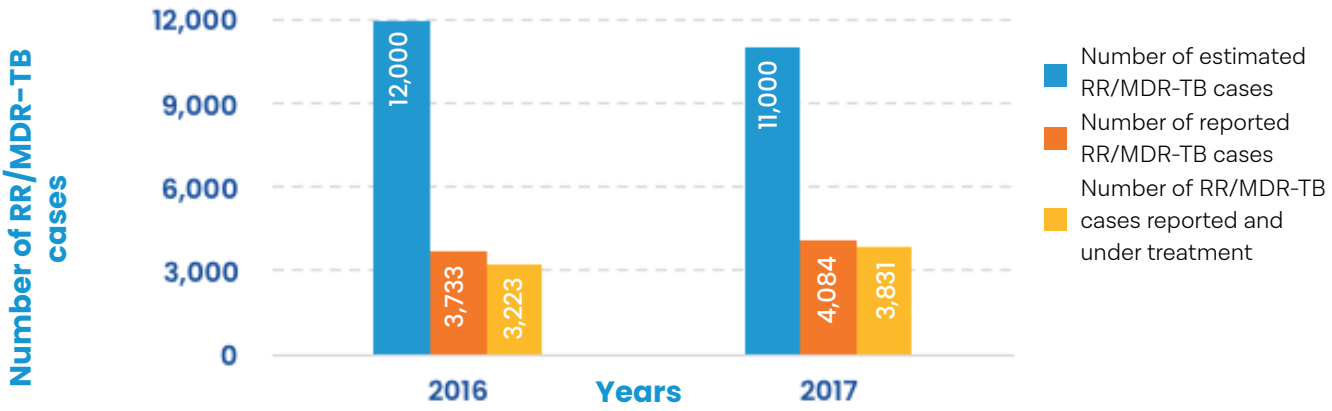
Figure 6: Proportion of tuberculosis drug susceptibility testing performed in new* and previously treated TB cases. The Americas, 2013-2017



Note: *Includes new cases and cases with unknown history of previous treatment.
Source: WHO. Global Tuberculosis Report 2018.

Of the total reported cases of RR/MDR-TB, **94%** started treatment that year, up slightly from **86%** in 2016. (Figure 7).

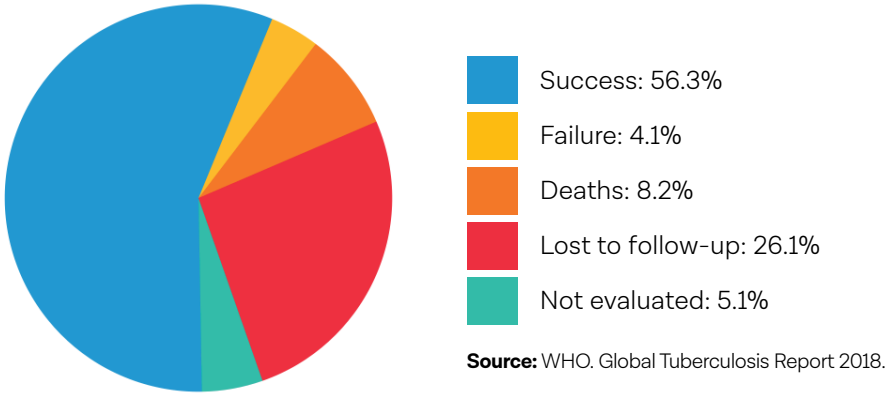
Figure 7: RR/MDR-TB cases: estimated, reported, and under treatment. The Americas, 2016-2017



Source: WHO. Global Tuberculosis Report 2018.

Treatment outcome for patients with RR/MDR-TB in 2015 showed a success rate of only **56%** and high loss to follow-up (**26%**) (Figure 8). The incorporation of shorter MDR-TB drug regimens is key to achieving better treatment outcomes.

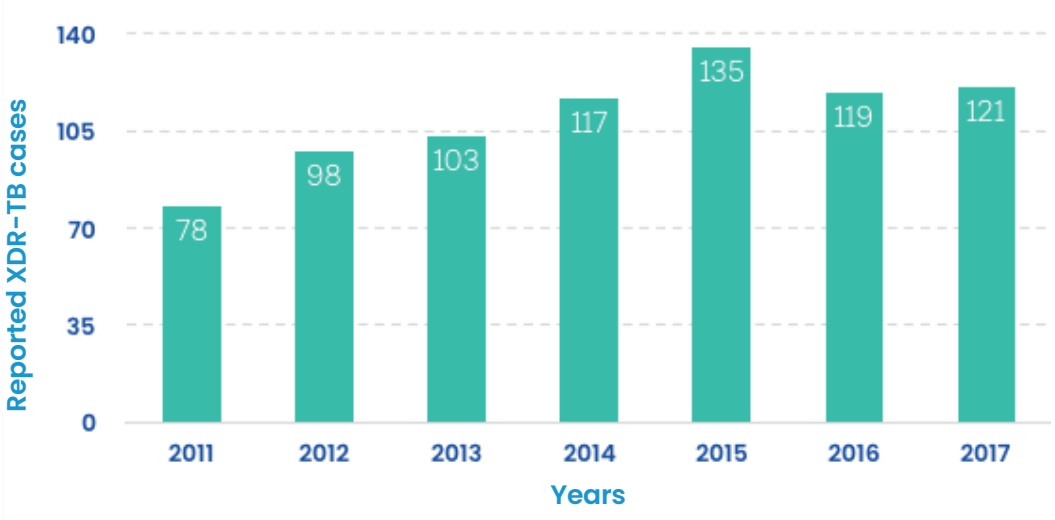
Figure 8: RR/MDR-TB treatment outcomes. The Americas, 2015



Source: WHO. Global Tuberculosis Report 2018.

In 2017, nine countries reported a total of 121 cases of extensively drug-resistant TB (XDR-TB)[2], **94%** of them in South America. (Figure 9)

Figure 9: Reported XDR-TB cases. The Americas, 2011-2017



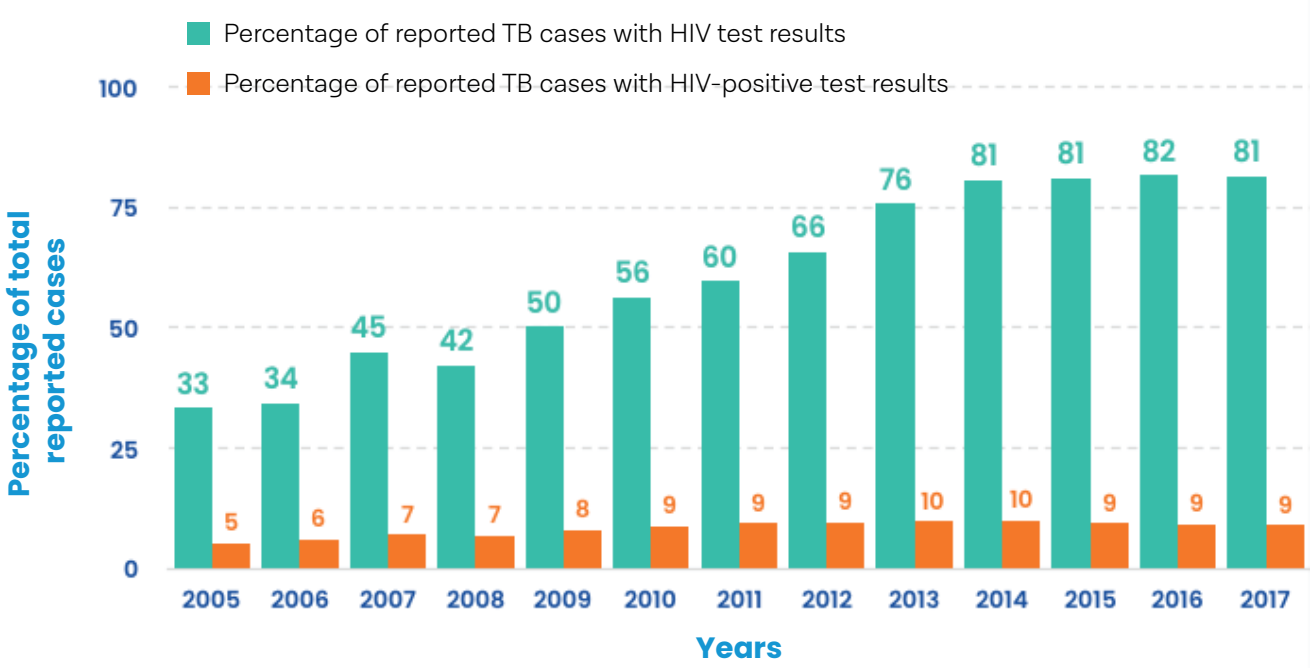
Source: WHO. Global Tuberculosis Report 2018.

Collaborative TB/HIV activities

In 2017 there were an estimated **30,000** cases of TB associated with HIV (**11%** of the total TB cases), of which **20,487** were reported; **81.4%** of TB cases had an HIV test result, with no improvement in coverage observed over the past four years. Among the cases tested for HIV, **8.9%** presented TB/HIV co-infection. (Figure 10).

[2] In addition to being isoniazid- and rifampicin-resistant, also resistant to any fluoroquinolone and second-line line injectables.

Figure 10: Proportion of reported TB cases tested for HIV and percentage co-infected with HIV. The Americas, 2005-2017

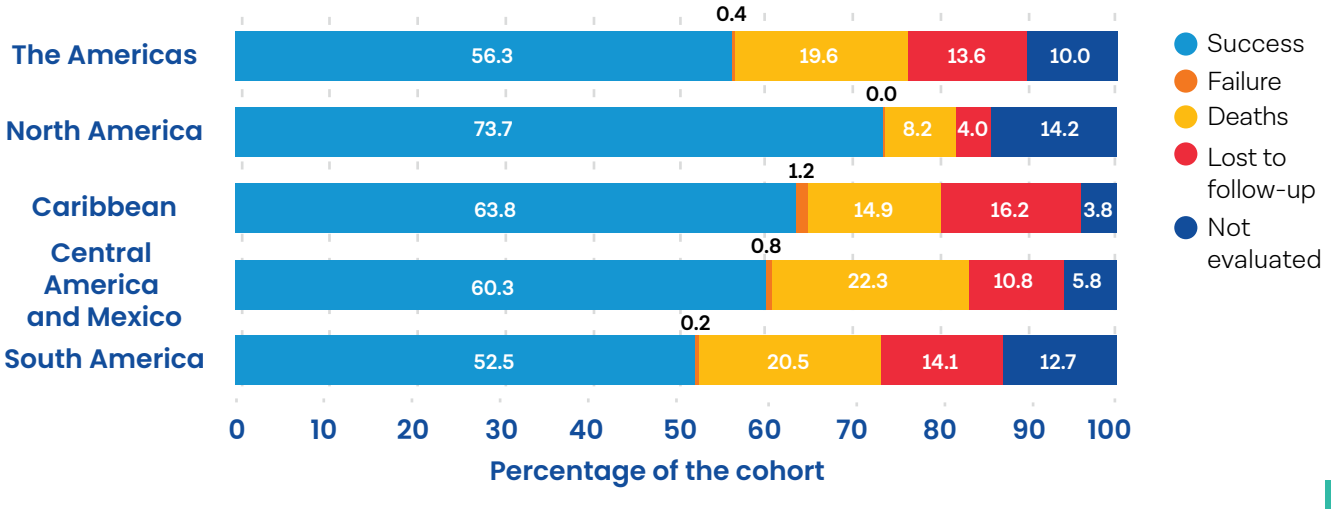


Source: WHO. Global Tuberculosis Report 2018.

By subregion, South America had the lowest proportion of TB cases that knew their HIV status (**77%**), while in the other subregions it was over 90%. The Caribbean had the highest proportion of TB/HIV co-infection (**12%**).

The treatment success rate in this group of patients at the regional level was only **56%**. (Figure 11).

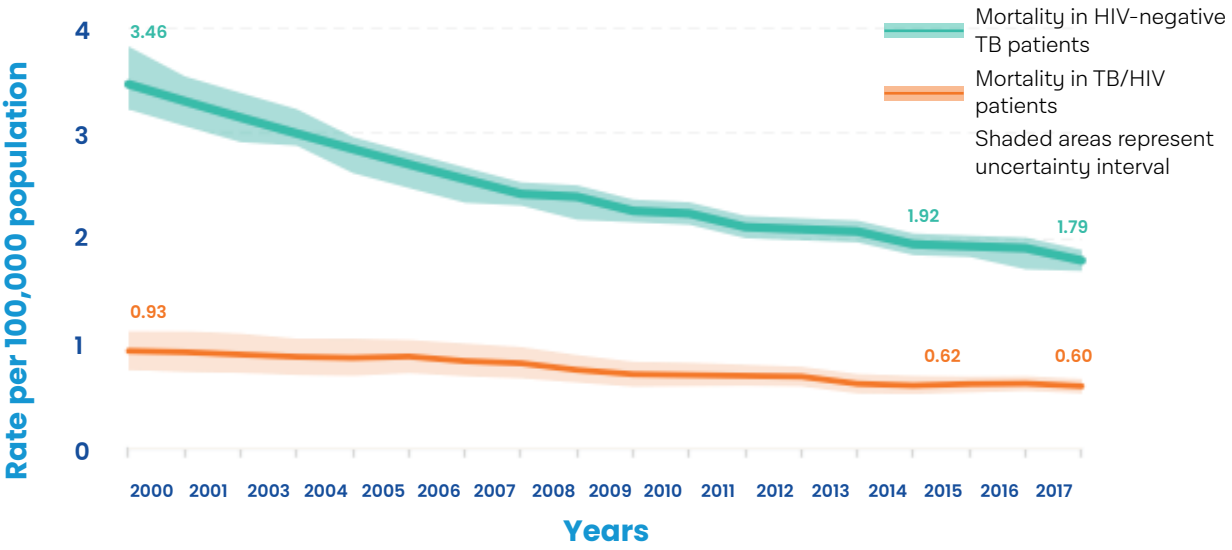
Figure 11: Treatment outcomes in TB/HIV co-infection, by subregion. The Americas, 2016



Source: WHO. Global Tuberculosis Report 2018.

Of the estimated deaths in 2017 (**24,000**), **25%** were associated with HIV infection. The reduction in the mortality rate in coinfected patients has been **50%** lower than in non-HIV patients in the last 3 years (Figure 12). Many of these deaths are preventable and due to late diagnosis, contributing to the persistence of TB mortality in general. Greater efforts must be made to prevent these deaths from occurring.

Figure 12: Trend in the estimated TB mortality rate. The Americas, 2000-2017



Source: WHO. Global Tuberculosis Report 2018.

Vulnerable Populations

TB IS A MARKER OF INEQUALITY AND PREDOMINANTLY AFFECTS THE MOST VULNERABLE POPULATIONS.

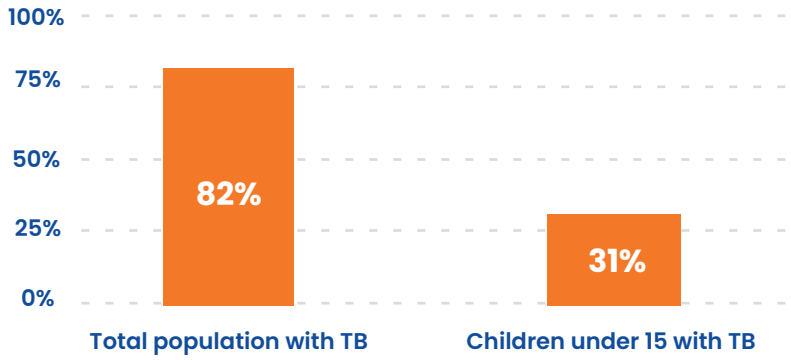
Among the most affected populations are the economically disadvantaged, children, ethnic minorities, migrants, persons deprived of their liberty (PDL), and people with certain health conditions such as those living with HIV, diabetes, drug or alcohol addiction, or mental disorders.

Children under 15

IT IS ESTIMATED THAT THERE ARE NEARLY 23,000 CHILDREN WITH UNDIAGNOSED AND UNTREATED TB IN THE AMERICAS.

As of 2017, there were an estimated 33,200 TB cases (**12%** of the total) in children under 15 years of age. However, only 10,240 cases were reported (Figure 13). In terms of treatment in this age group, the success rate was **79%** in 2016, with a **7%** loss to follow-up rate, and with **10%** of children not evaluated.

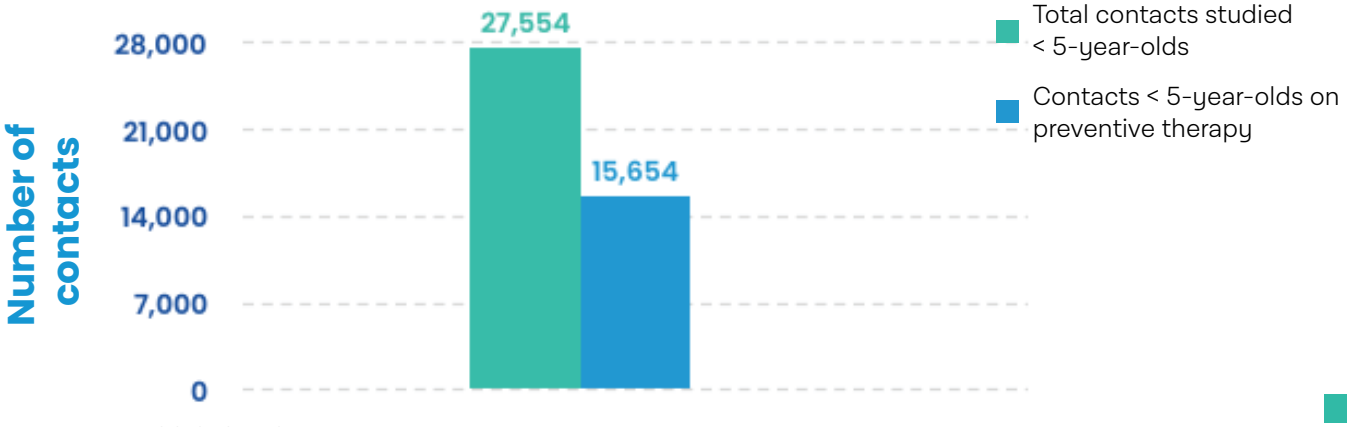
Figure 13: TB case detection rates: total and children <15 years, 2017



Source: WHO. Global Tuberculosis Report 2018.

The study of TB contacts is critical to breaking the disease transmission chain. In children under 5 years of age—a particularly vulnerable group—it allows for new TB cases to be identified and for the rest to be given preventive therapy with isoniazid. Of the 27,554 children studied in 2017, only **56.8%** were started on preventive therapy. In addition, 482 cases of TB were diagnosed among them. (Figure 14)

Figure 14: Contacts studied for TB in children under 5. The Americas 2017

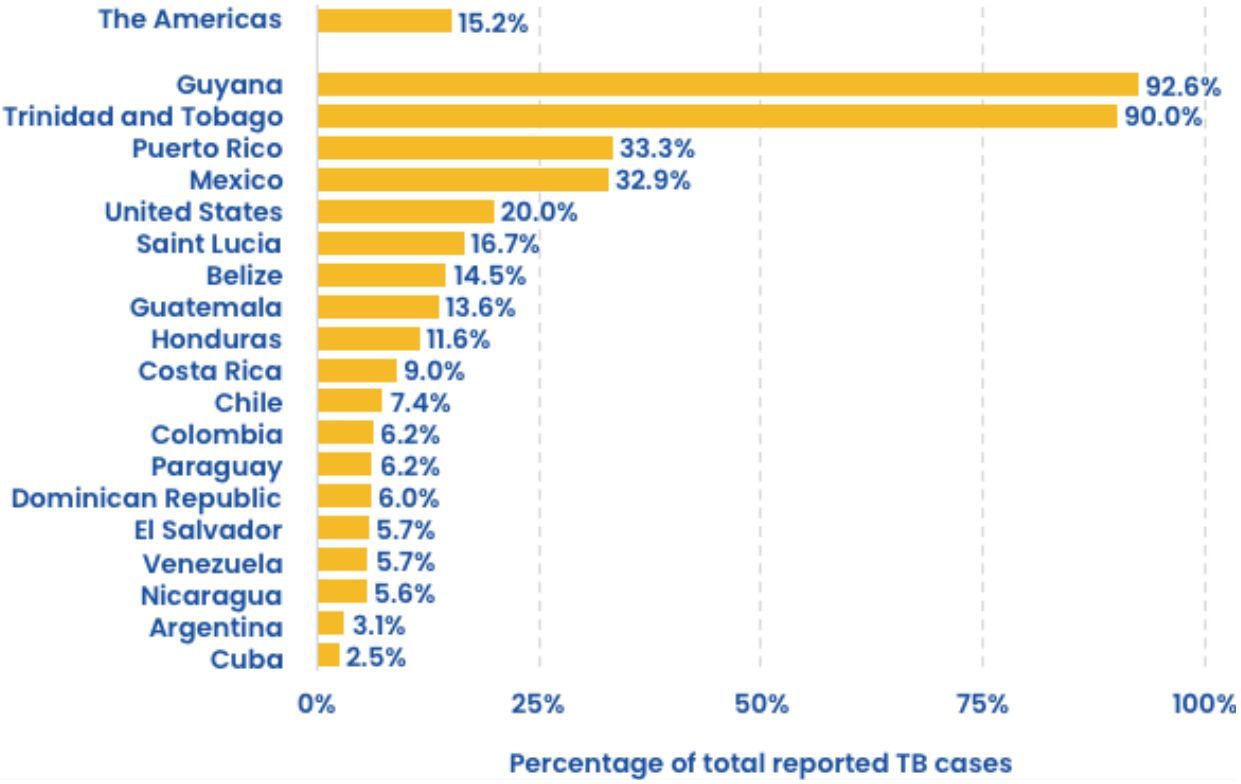


Source: WHO. Global Tuberculosis Report 2018.

TB-Diabetes Comorbidity

In 2017, nineteen countries reported **15,439** TB cases that were screened for diabetes[3] (**15%** of all reported cases). (Figure 15). The countries of the Region continue to improve their information systems and therefore there may be some underreporting of 2017 data.

Figure 15: Percentage of reported TB cases studied for diabetes at time of diagnosis. The Americas, 2017



Note: This includes people with tuberculosis screened for diabetes or who already know their diabetes status.
Source: WHO. Global Tuberculosis Report 2018.

Other vulnerable populations: Persons deprived of their liberty and indigenous communities

The incidence of TB is much higher—up to **100 times** higher—in persons deprived of their liberty (PDL) than in the general population. (Table 4)

[3] or knew their diabetes status

Table 4: Situation of TB in PDL. Selected countries of the Americas

COUNTRY	REPORTING YEAR	TB INCIDENCE REPORTED IN GENERAL POPULATION X 100,000	TB INCIDENCE IN PRISONS X 100,000	RELATIVE RISK OF TB IN PDL
Argentina	2015	24.4	420.9	17.2
Bolivia	2017	68.8	986.8	14.3
Brazil	2016	36.3	883.7	24.3
Ecuador	2016-2017	33.0	1,674.0	50.7
El Salvador	2016-2017	48.2	4,765.7	99.0
Guatemala	2016-2017	19.0	91.2	4.8
Guyana	2017	15.7	487.8	8.5
Haiti	2017	139.1	3,202.7	23.0
Honduras	2016-2017	32.1	1,223.6	38.2
Jamaica	2016-2017	3.6	0.0	
Mexico	2016-2017	17.3	195.0	11.2
Peru	2016-2017	135.2	2,812.0	20.8
Dominican Republic	2016-2017	38.5	989.1	25.7
Suriname	2016-2017	20.4	43.7	2.1

Source: PAHO. National TB control program survey, 2018

The indigenous population has seen a rise in TB detection in recent years and an incidence up to nine times higher than in the general population. (Table 5)

Table 5: Situation of TB in the indigenous populations of six countries of the Americas, 2016

COUNTRY	% INDIGENOUS POPULATION	NATIONAL TB INCIDENCE X 100,000	TB INCIDENCE INDIGENOUS POPULATION X 100,000	RELATIVE RISK
Paraguay	1.9%	36.3	335.3	9.3
Brazil	0.4%	36.3	111.6	3.1
Venezuela	2.7%	26.0	81.3	3.1
Panama	1.0%	25.9	79.0	3.1
Colombia	2.4%	25.9	71.7	2.8
Mexico	9.6%	17.4	12.0	0.7

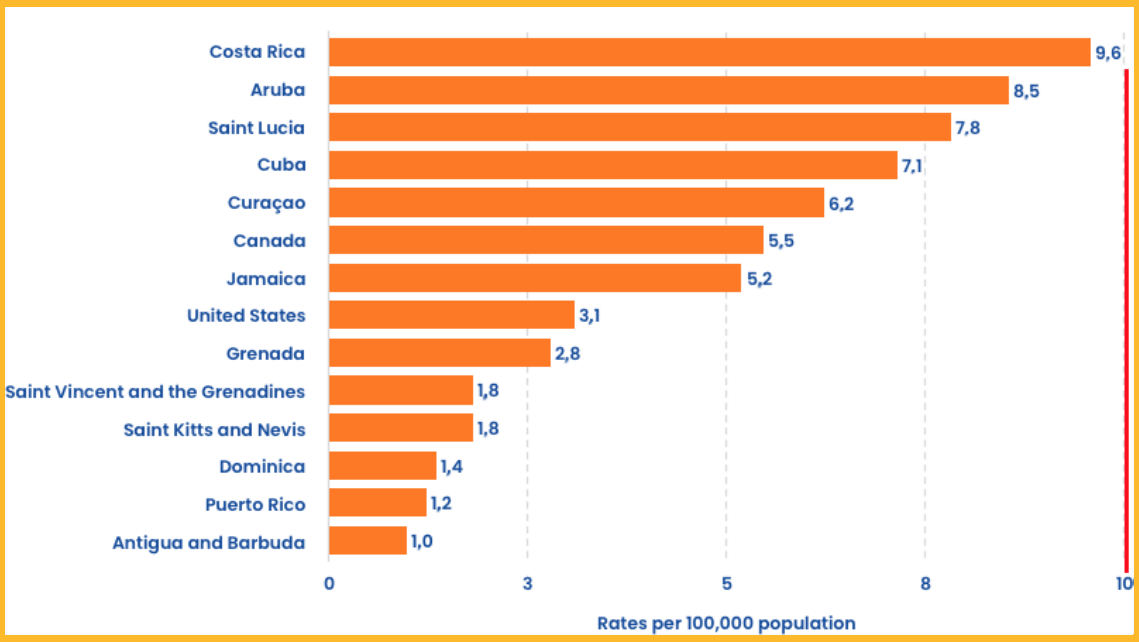
Source: PAHO. National TB control program survey, 2018

A comprehensive and effective approach to these populations is vitally important in moving toward TB elimination, with innovative strategies, inter-programmatic and intersectoral work, and the participation of affected communities.

Toward the Elimination of TB in The Americas

The countries of the Region are working to make the Americas the first region in the world to achieve the elimination of tuberculosis as a public health problem. Currently, 15 countries have a low incidence of tuberculosis (**<10** cases per **100,000** inhabitants), which is the first step towards achieving TB elimination (Figure 16).

Figure 16: Low TB-incidence-countries. The Americas, 2017



Source: Source: WHO. Global Tuberculosis Report 2018.

To accelerate progress toward TB elimination, the framework establishes the following priority areas for action: securing political commitment and funding, addressing vulnerable and hard-to-reach populations, including migrants, management of latent TB infection, prevention and management of DR-TB, epidemiological surveillance, research, and incorporation of new tools.

Special approaches to TB elimination in the Americas

1. Tuberculosis control initiative in large cities

Implementation of this initiative began in 2013, and so far, interventions have been carried out with PAHO/WHO support in Guarulhos (Brazil), Bogotá, Cali, and Barranquilla (Colombia), Lima (Peru), Montevideo (Uruguay), Guatemala City (Guatemala), Tijuana (Mexico), Guayaquil (Ecuador), Asunción (Paraguay), Santo Domingo (Dominican Republic), San Salvador (El Salvador), and Buenos Aires (Argentina). The social determinants of health that have an impact on TB are addressed through coordinated approaches with sectors other than the health sector.

2. Parliamentary Front against Tuberculosis in the Americas

Established in March 2016, the Front advocates with governments and their technical and financial partners to ensure full funding of TB prevention and control activities and to promote the inclusion of patients and their families in social protection programs, the adaptation and/or development of a legal framework to help end TB in the Region, and the establishment of accountability mechanisms for stakeholders involved in the response.

3. Strengthening operational research

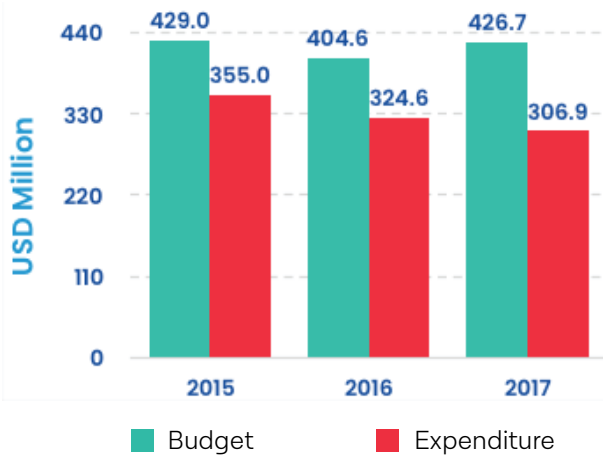
Operational research can support the understanding and analysis of the TB situation, as well as strengthen knowledge for the effective application of technological changes and innovations and guide decision-making.

Funding to end tuberculosis

Progress in TB prevention, diagnosis, and treatment requires adequate and sustained funding over years. Fifteen countries reported their TB budgets and expenditures in the last three years, showing a widening gap that needs to be bridged. (Figure 17)

Twenty-five countries in the Region reported complete financial information for 2017. They budgeted around USD 455 million, but received and executed USD 323 million, with a 29% gap. Dependence on external funds

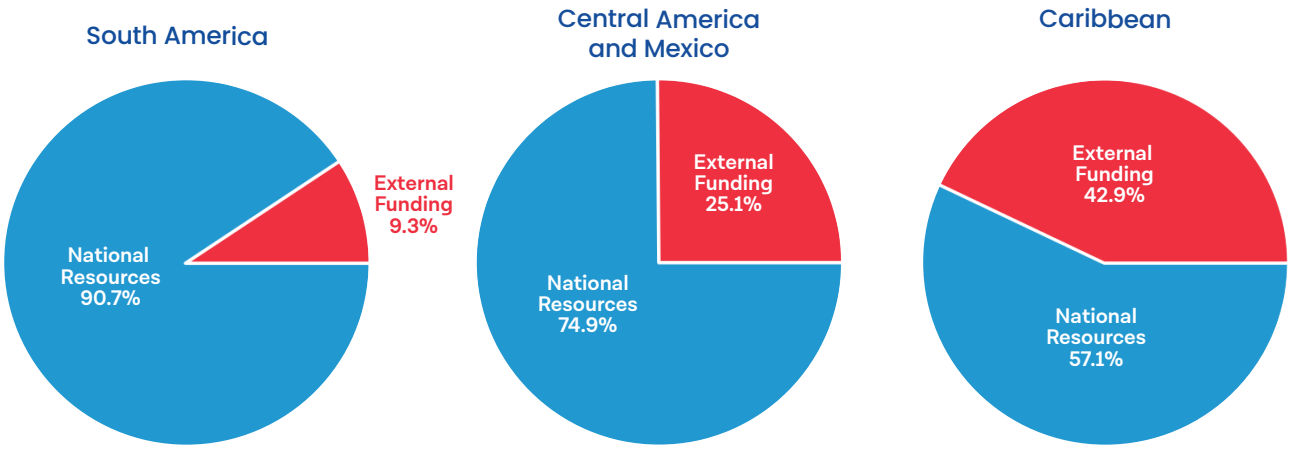
Figure 17: TB budget and expenditure. The Americas, 2015-2017



Source: WHO. Global Tuberculosis Report 2018.

in Latin America and the Caribbean was 16% in 2017, with subregional variations (Figure 18).

Figure 18: Funding source of expenditure for TB diagnosis and treatment, by subregion. Latin America and the Caribbean, 2017



Source: WHO. Global Tuberculosis Report 2018.

Recommendations to accelerate progress toward TB elimination in the Americas

1. Improve and/or accelerate the implementation and expansion of early diagnosis with new rapid molecular tests.
2. Promote the study of contacts, mainly among children under 15.
3. Accelerate the implementation of shortened MDR-TB treatment regimens and the introduction of dispersible pediatric drugs to improve TB treatment outcomes.
4. Increase work with vulnerable populations and on social determinants with interprogrammatic and intersectoral activities focused on people and communities.
5. Promote special approaches such as the Large Cities Tuberculosis Control Initiative, the Parliamentary Front against Tuberculosis, and the expansion of operational research.
6. Cover existing funding gaps with sustainable resources, reducing dependence on external funding.

Annex 1

INDICATOR		2016 FIGURES	2017 FIGURES	2025 TARGET
Tuberculosis treatment coverage*		82%	81.2%	≥ 90%
Treatment success rate**	New and relapse	74%	75%	≥ 90%
	RR-MDR	54%	56.3%	
Percentage of TB-affected households that face catastrophic costs due to TB		ND***	ND***	0%
Percentage of new TB patients diagnosed using WHO-recommended rapid tests		9%	13.2%	≥ 90%
Latent TB infection treatment coverage	children under 5	68%	56.8%	≥ 90%
	HIV	30%	16.3%	≥ 90%
Contact investigation coverage		ND***	ND***	≥ 90%
TB patients with drug-susceptibility testing (DST) results		36%	33.4%	100%
New TB drug treatment coverage		ND***	ND***	≥ 90%
Percentage of TB patients who know their HIV status		82%	81.4%	100%
TB case fatality rate		6.5****		≤ 5%

*Calculated based on the estimated number of incident cases

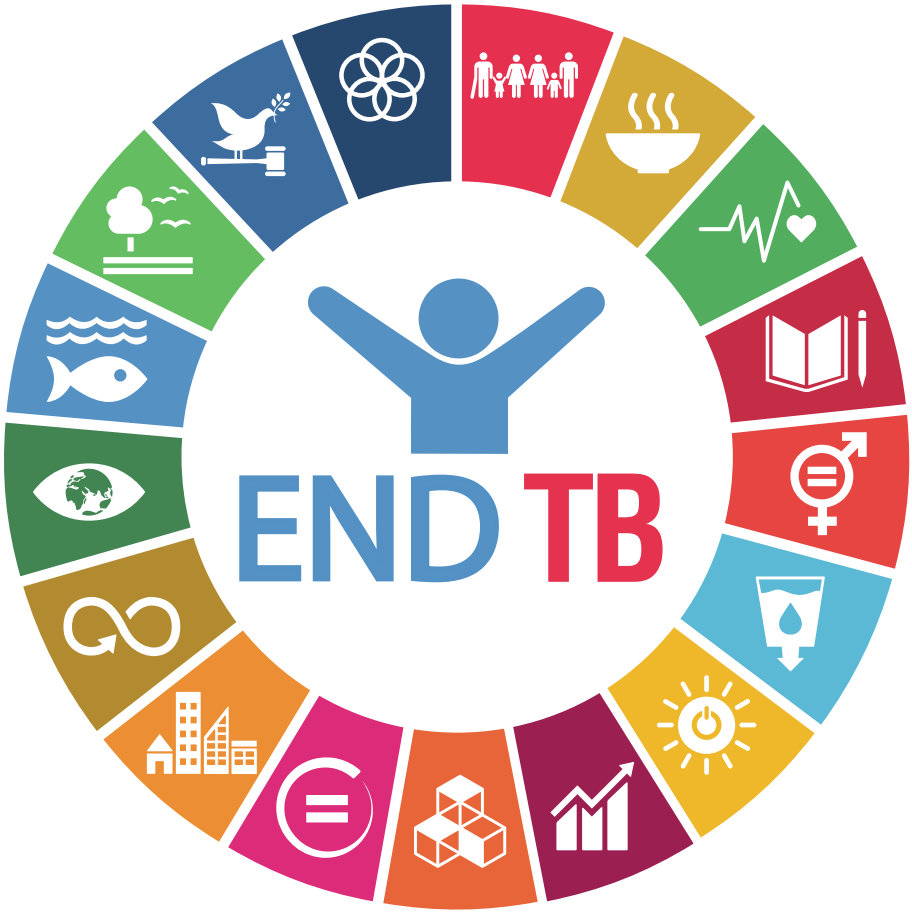
**2016 includes cohort of new and relapse TB cases (2015) and RR/MDR/XDR (2014)
2017 includes cohort of new and relapse TB cases (2016) and RR/MDR/XDR (2015)

*** Not available

**** 2015 rate

Annex 2

Country	Tuberculosis treatment coverage*	Treatment success rate		Percentage of new TB patients diagnosed using WHO-recommended rapid tests	Latent TB infection treatment coverage		Coverage of TB patients with drug-susceptibility testing (DST) results	Percentage of TB patients who know their HIV status	TB case fatality rate
	2017	New and relapse 2016	MDR 2015	2017	Under 5 2017	HIV 2017	2017	2017	2015
Antigua and Barbuda	100%			0%		0%	0%	0%	0%
Argentina	84.8%	53.5%	20.9%	0%			22.6%	21.7%	6.3%
Aruba	88.%			0%			0%	0%	15.4%
Bahamas	86.4%	66.3%	66.7%	0%	100%		31.4%	80.4%	
Barbados	Sin casos	100%				0%			
Belize	90%	61.7%	100%	44.4%	3.8%		40.2%	100%	14.4%
Bolivia	63.1%	85.5%	65.9%	5.0%	100%		19.8%	87.2%	0%
Brazil	87.1%	69%	60%	26.4%			31.9%	78%	7.1%
Canada				No information					
Chile	85.6%	78.9%	36.8%	2.6%			62.3%	83.4%	9.3%
Colombia	81.3%	58.6%	39.5%	12.1%	100%		16.3%	89.9%	8.3%
Costa Rica	80.6%	84.4%		0%	100%		96.1%	91%	
Cuba	86.8%	80.8%	25%	16.9%	100%	71.3%	48.6%	13.8%	6.1%
Curaçao	90%	50%		0%			88.9%	88.9%	
Dominica	100%	100%		0%		0%	0%	100%	0%
Dominican Republic	80.2%	72.8%	62.1%	4.3%	94.6%	25.5%	10.3%	86.5%	
Ecuador	79.5%	72.1%	48%	0%	66.8%		24.6%	87.9%	8.9%
El Salvador	79.7%	90.2%	88.9%	33.9%	42.5%	95.4%	33.9%	98.1%	
Grenada	100%	100%		0%			33.3%	100%	33.3%
Guatemala	80.1%	86.5%	51.2%	19.8%	68%	27.8%	29.6%	94%	8.3%
Guyana	80.1%	66.7%	40%	0%	72.7%	14.2%	53%	86%	
Haiti	74.8%	81.5%	83.3%	15.8%	100%		31.9%	95.1%	
Honduras	79.9%	87.7%	66.7%	0%	100%	45.3%	45.3%	95.1%	
Jamaica	78.7%	23.3%		14.4%	100%		14.3%	81.4%	
Mexico	81.3%	78.2%	71.3%	1.9%	58.3%	2.3%	8.5%	90.6%	9.2%
Nicaragua	80.5%	85.7%	65.0%	38.8%	100%	21.3%	1.6%	94.2%	4.9%
Panama	80.8%	80.2%	28.6%	0%	100%	11.2%	29.8%	94.8%	13.3%
Paraguay	86%	65.5%	46.2%	31.8%	48.4%	9.8%	48.4%	85.3%	
Peru	80.6%	84%	55%	0%	51%	16.1%	70.2%	88%	4%
Puerto Rico	86.7%	75.4%	100%	41%	100%		75%	92.3%	11.7%
Saint Kitts and Nevis	100%			100%		0%	100%	100%	0%
Saint Lucia	85.7%	66.7%		75%	100%	6.7%	75%	100%	0%
Saint Vincent and the Grenadines	100%	71.4%		0%			0%	0%	12.5%
Saint Maarten	83.3%			0%			0%	0%	
Suriname	80.6%	67.2%		89.1%			59.9%	103.1%	
Trinidad and Tobago	87%	73.9%	0%	58%	100%	0.5%	53.5%	100%	
United States	86.6%	79.4%	68.6%	0%			71.9%	92.5%	5%
Uruguay	84.8%	71.7%	100%	20.6%	95.9%		55.2%	94%	8.6%
Venezuela	81.9%	81.4%	71%	0%	13.1%		7.7%	60%	
The Americas	81.2%	75.4%	56.3%	13.2%	56.8%	16.3%	33.4%	81.4%	6.5%



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