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THE TUBERCULOSIS REPORT
FOR HEADS OF STATE AND GOVERNMENTS

GLOBAL PLAN TO END TB 2016 - 2020

ACKNOWLEDGEMENTS

Valuable contribution and support is acknowledged from a number of colleagues at the Stop TB Partnership and partners around the world.

The 90-(90)-90 progress report is the product of collaborative work by members of the Executive Director's office of the Stop TB Partnership. The development of the report was coordinated by Fatima Kazi as the lead writer, data compiled and analysed by Sara Gonzalez Andino, and overall guidance and direction provided by Suvanand Sahu (Deputy Executive Director) and Lucica Ditiu (Executive Director). Jacob Creswell (TB REACH Team Leader) and Andrew Codlin (TB REACH) provided technical feedback on the data.

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CONTENT

ABBREVIATIONS

AMR
Antimicrobial resistance

ART
Antiretroviral therapy

CBO
Community-based organizations

DR-TB
Drug-resistant TB

DST
Drug-susceptibility testing

DS-TB
Drug-sensitive TB

ECDC
European Centre for Disease Prevention and Control

HIV
Human immunodeficiency virus

IDP
Internally displaced people

MDR
Multidrug-resistant

NGO
Nongovernmental organization

NTP
National tuberculosis programme

PLHIV
People living with HIV

PT
Preventive treatment

SADC
Southern African Development Community

TB
Tuberculosis

TIMS
TB in the Mining Sector in Southern Africa

UNAIDS
Joint United Nations Programme on HIV/Acquired Immune Deficiency Syndrome

UNOPS
The United Nations Office for Project Services

XDR-TB
Extensively drug-resistant TB

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FOREWORD

Tuberculosis (TB) remains a resilient nemesis. As the leading cause of death from an infectious disease and with approximately 11 million people developing TB yearly, this disease continues to be a public health threat and escalating emergency. Ending the TB epidemic is part of achieving the Sustainable Developmental Goals (SDGs), but eliminating TB requires a well-coordinated and innovative response. Now more than ever, however, we have the opportunity to end this disease once and for all.

The Global Plan to End TB 2016–2020, centred on the End TB strategy, set out the 90-(90)-90 targets for TB, providing an ambitious plan to drive bold action and determined change. The Plan demands that all TB stakeholders – governments, country programmes, civil society, communities, technical partners, international organizations and the private sector – work together to reach at least 90% of people with TB, including key and vulnerable populations, place them on appropriate treatment, and ensure that at least 90% of them have a successful completion.

2017 marks an important year for the Global Plan to End TB 2016–2020, as this is the year in which the first 90-(90)-90 report reveals the challenges and opportunities faced by countries in achieving these targets. The results presented in this report put all of us, including world leaders, on notice to alleviate the high rate of new infections that continue to fuel the epidemic. If we want to end TB and if we want to show remarkable progress, we must call for increased and sustained political attention, effective tools and innovative solutions to support the scaling up of TB prevention, diagnosis, treatment and care.

Let us take advantage of the interventions with proven efficacy that are currently available, while we continuously develop new ones to achieve the 90-(90)-90 targets. Achieving these targets will place us on the path to universal coverage and lead us towards the global goal of ending TB.

EXECUTIVE SUMMARY

Tuberculosis (TB) is a top infectious disease that continues to be a global threat. Despite the availability of effective diagnosis and treatment, about 2 billion people worldwide carry the infection. In 2015, 10.4 million became sick with TB and 1.8 million died of it, making TB the top infectious killer of humans.

Globally, advances have been made. However, progress has been slow and sub-optimal, as witnessed by the fact that the number of new people developing TB is not declining at a pace that would put us on the path to end TB by 2030, as envisaged under the Sustainable Development Goals (SDGs). Furthermore, the emergence and spread of drug resistance has made TB an essential topic under the Anti-Microbial Resistance (AMR) Agenda.

The Global Plan to End TB 2016–2020 calls for a paradigm shift in the approach to TB, demanding a scale-up of TB prevention and care services to unprecedented coverage levels. Without this paradigm shift, we cannot see the end of TB. Measuring progress towards the 90-(90)-90 targets will unveil the gaps at each stage of the TB care cascade, exposing the unacceptably high numbers of people who are being left behind and encouraging the mobilization of essential resources for countries to ensure the delivery of quality TB services.

This report is the first in a series produced by the Stop TB Partnership. The goal is to assess the status of country TB programmes in terms of the Global Plan's 90-(90)-90 targets and to provide a baseline for monitoring progress over the next 5 years. Currently, the 30 high TB and drug-resistant TB (DR-TB) burden countries (Annex A1) that account for almost 80% of the global burden exhibit the biggest gaps in the areas of diagnosis for TB and DR-TB, and the provision of preventive therapy (PT). Moreover, monitoring the uptake of TB services in key populations remains a challenge due to the limited availability and disaggregation of data.

In an effort to ensure that quality data will be available in the future, this report also highlights the existing gaps in data and knowledge. Due to inadequately defined indicators, insufficient disaggregation, and non-uniformity and incompleteness of data, countries are unable to effectively measure whether appropriate TB services are reaching people or evaluate progress in meeting the Global Plan targets.

In 2015, 6.1 million of the estimated 10.4 million people who developed TB were put on first-line treatment and, based on the latest available treatment success rate, only 5 063 000 (49%) people with TB were successfully treated (figure 1.1).

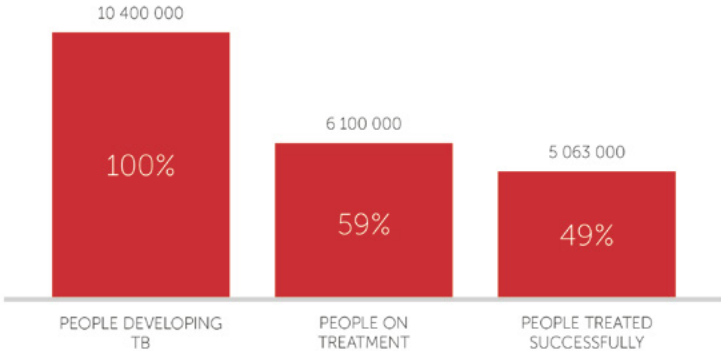


Figure 1.1: Global cascade of care for drug-sensitive TB, 2015

LESS THAN 50% OF PEOPLE DEVELOPING TB WERE SUCCESSFULLY TREATED.

THE BIGGEST GAP WAS IN DIAGNOSING AND PUTTING PEOPLE ON TREATMENT.

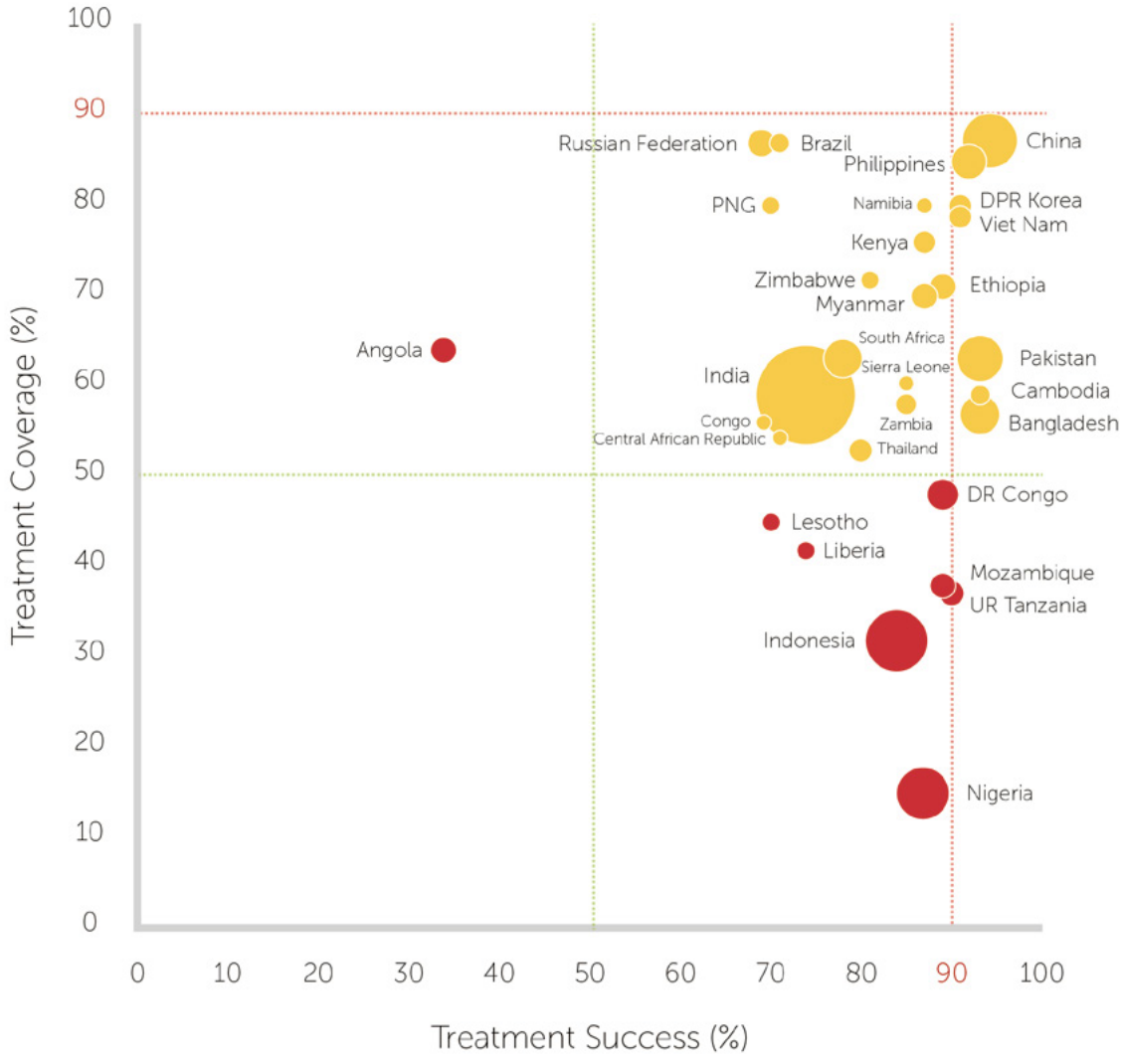


Figure 1.2: First-line treatment coverage versus treatment success in 30 high TB burden countries, 2015

NO COUNTRY ACHIEVED BOTH 90% TREATMENT COVERAGE AND 90% TREATMENT SUCCESS.

THE GREATEST GAP IN MOST COUNTRIES WAS IN TREATMENT COVERAGE.

Bubble size is proportionate to the size of the TB burden in the country. Bubble colours refer to countries that are below 50% (red), between 50% and 90% (yellow), and above 90% (green).

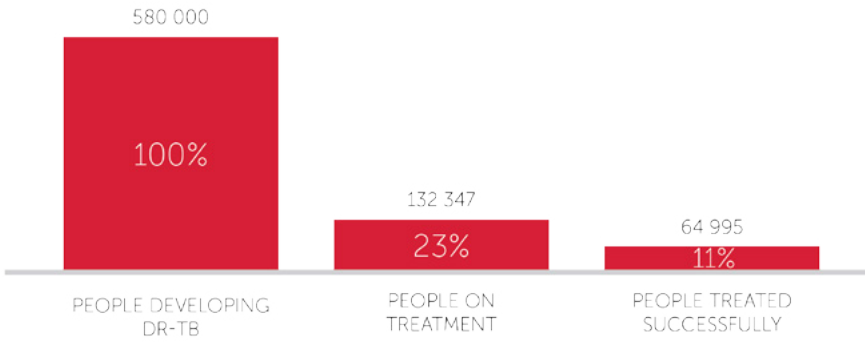


Figure 1.3: Global cascade of care for drug-resistant TB, 2015

ONLY 1 IN 5 PEOPLE DEVELOPING DR-TB WERE DIAGNOSED AND PUT ON TREATMENT.

ONLY 1 IN 10 PEOPLE DEVELOPING DR-TB WERE SUCCESSFULLY TREATED.

None of the high TB burden countries have reached 90% treatment coverage, although some are very close (figure 1.2). Even though some high TB burden countries have exceeded 90% treatment success, none of them have managed to achieve both targets of 90% treatment coverage and 90% treatment success. It is evident that the greatest gap in the cascade of care is in access to diagnosis.

The situation is worse for DR-TB. In 2015, only 23% of people developing DR-TB were enrolled on second-line treatment, and only 11% successfully completed the course [1] (figure 1.3).

[1] *Using the latest treatment success rate available for people with DR-TB who started treatment in 2013.*

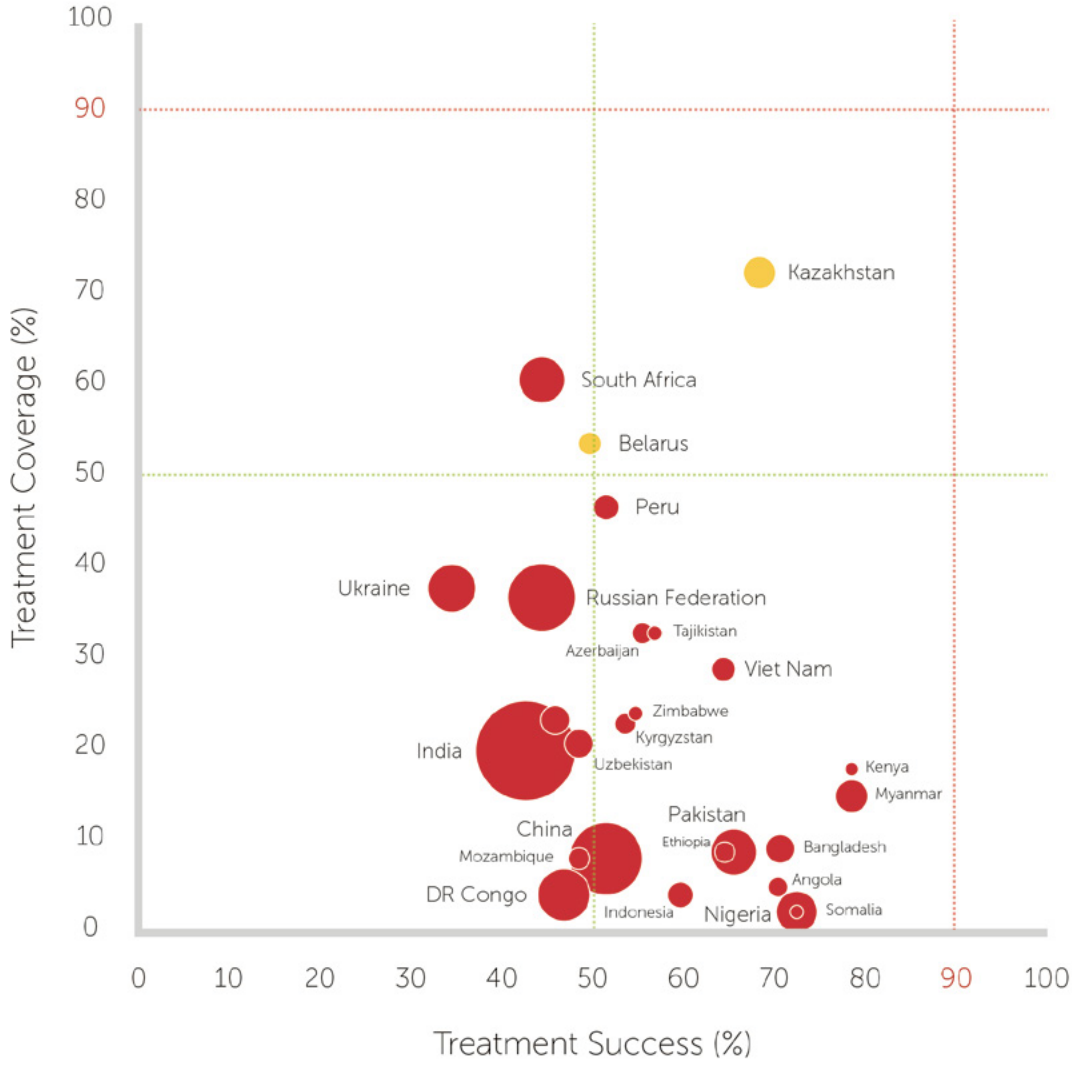


Figure 1.4: Second-line treatment coverage versus treatment success in 30 high DR-TB burden countries, 2015

No high DR-TB burden country is close to reaching any of the 90% targets. Most of the countries are below 50% treatment coverage, and a number of them range between 50% and 85% in treatment success rate (figure 1.4). In fact, countries that rank high in terms of DR-TB burden appear to have poor coverage of diagnosis and access to treatment, as well as limited support for successfully completing treatment.

Bubble size is proportionate to the size of the TB burden in the country. Bubble colours refer to countries that are below 50% (red), between 50% and 90% (yellow), and above 90% (green).

WHERE ARE WE IN TERMS OF THE 90-(90)-90 TARGETS?

REACHING 90% OF PEOPLE WITH TB AND PUTTING THEM ON TREATMENT

• There remains a huge gap between the estimated number of people who become ill with TB and DR-TB and the number of people who are diagnosed, put on treatment and notified. In 2015, globally only 59% of people who developed TB (6.1 million out of 10.4 million) and 23% people who developed DR-TB (132 347 out of 580 000) were diagnosed and put on treatment.

• None of the high TB or DR-TB burden countries have achieved 90% treatment coverage for first-line or second-line TB treatment.

• At a time when the world is uniting to combat AMR, nearly 4 out of 5 people with DR-TB remain undiagnosed, and 9 out of 10 people are not being treated successfully.

• In 2015, approximately 1 million children were estimated to have developed TB, yet only 40% (383 704) were put on treatment for TB. Disaggregated data for young children (0–5 age group) were missing in 33 countries.

• Despite TB being one of the major causes of mortality among women worldwide, only 56% of women developing TB in 2015 were diagnosed and put on treatment.

• In 2015, only 7% of the child contacts of people with laboratory-confirmed TB and 38% of people living with HIV (PLHIV) who were newly enrolled in HIV care were started on TB Preventive Therapy.

• There are no laboratory data available on the numbers of people tested for TB at the global level, and in many countries this information is not captured at the national level. Without data on numbers screened, tested and diagnosed, it is not possible to adequately address the gaps in the cascade of care related to diagnosis and initiation of treatment.

REACHING 90% OF THE KEY POPULATIONS

• TB data on key populations are limited, lacking a standardized approach to collection, collation, analysis and programmatic use across countries.

• At the global level, national TB data are routinely reported for only one key population group – PLHIV.

• In 2015, only 33% of the estimated 1.2 million people who developed TB and were coinfected with HIV were started on both TB treatment and antiretroviral therapy (ART).

• At the regional level, data are available for prison inmates in the European and Central Asian region and for mining-affected communities in the Southern African region.

• At the national level, data on key population groups are variable and lack uniformity of approach.

ACHIEVING 90% TREATMENT SUCCESS

Globally, first-line TB treatment success is at 83%. It has not reached 90% and has shown a declining trend over the last 2 years. Only eight high TB burden countries have reached 90% first-line treatment success.

• The very low second-line treatment success rate of 50% is a major concern. None of the high DR-TB burden countries have reached 90% in second-line treatment success.

• No global data are available on the successful completion of Preventive Therapy.

• Data on TB treatment outcomes disaggregated by age and sex are not being reported at the national or global level.

Reaching the 90-(90)-90 targets ensures optimal coverage for the cascade of care for TB treatment that is needed in order to move towards ending TB. However, as illustrated in this report, most countries are struggling to achieve these levels. Therefore, it is a critical time for world leaders, heads of states, and governments and parliamentarians to note the shocking numbers of people who are currently missing from TB care. They should demonstrate leadership and engage in the fight against TB in order to achieve universal access to TB prevention, treatment, care and support, including for people belonging to vulnerable key populations.

For world leaders and decision makers this report provides information on current status and highlights the enormous gaps that must be addressed through their leadership, vision, allocation of resources and bold action.


What is TB?

INTRODUCTION

TB is the leading cause of death by an infectious disease

An estimated 2 billion people have TB infection

More than 10 million people newly develop active TB every year

Over half a million people develop drug-resistant TB every year

The current trend in the decline of TB is not enough to meet the SDG target

WHAT IS THE MAGNITUDE OF THE TB PROBLEM GLOBALLY ?

With 2 billion people infected with TB, 10 to 11 million developing the active form of the disease each year, and 1.8 million dying of it each year, TB is the biggest infectious killer today. Historically, TB has killed more people than any other infectious disease. Moreover, it is now known that the scale of the global TB burden is even greater than was previously believed. Recent prevalence surveys have shown that TB rates in several high-burden countries are much greater than previous estimates. In 2014, when the World Health Assembly (WHA) endorsed the WHO End TB Strategy, it noted that globally TB was affecting a little over 100 people per population of 100 000. Now, the latest estimates show that, in 2015, TB was affecting 142 people per population of 100 000 (figure 1.5). These figures make the targets to be achieved under the Sustainable Development Goals (SDGs) and End TB Strategy even more daunting, requiring the faster scale-up of existing tools and urgent research on new tools to fight TB.

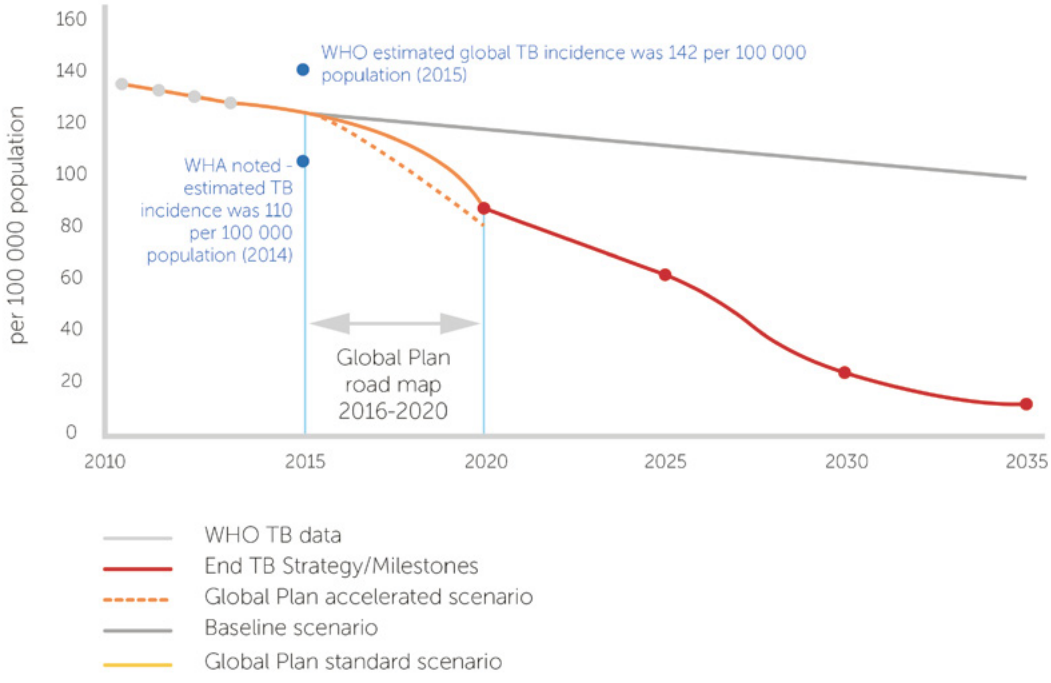


Figure 1.5: Projected global TB incidence to meet the targets for ending the TB epidemic

Despite incremental efforts over the last several years by countries and partners, the current approach to providing care for TB is not enough to end the epidemic by 2030. Large numbers of people with the disease who are unable to access services are consistently being left behind – a major reason for the slow decline of TB. The Global Plan to End TB 2016–2020 calls for a paradigm shift in the mindsets and strategies being implemented as well as introducing the "90-(90)-90" targets. The first target ensures that at least 90% of all people affected by different forms of TB are diagnosed and started on appropriate treatment. The second target promotes equity and social justice to ensure that 90% of at-risk, vulnerable and underserved populations are not left behind. The third target ensures that treatment is effective and people are cured of TB by achieving at least 90% successful completion.

THE GLOBAL PLAN TO END TB (2016–2020) TARGETS

Reach at least

90%

OF ALL PEOPLE WITH TB

and place all of them on appropriate therapy—first-line, second-line and preventive therapy as required

As a part of this approach, reach at least

(90)%

OF THE KEY POPULATIONS

the most vulnerable, underserved, at-risk populations

Achieve at least

90%

TREATMENT SUCCESS

for all people diagnosed with TB through affordable treatment services, adherence to complete and correct treatment, and social support.

ABOUT THIS REPORT

The impact of reaching the Global Plan scale-up targets has been modelled to show that the 2020 milestones of the End TB Strategy (to reduce TB incidence by 20% and mortality by 35%) are achievable. In an effort to support countries in meeting these milestones and moving towards ending TB, Stop TB Partnership will monitor progress against the targets and recommendations laid out in the Global Plan.

This is the first of a series of progress reports that will be published to provide regular updates and facilitate effective communication on how the world is doing in terms of tackling TB. The objective is to highlight the current status, identify key gaps for action and promote a scaled-up TB response that will ensure the better delivery of TB services to people in need.

DATA SOURCE

To measure the first and third 90% targets, national-level TB data were extracted primarily from the WHO database to which 217 member states routinely report programmatic data on a yearly basis and from other international organizations[2]. To assess the second 90% target for the TB response among key populations, multiple other sources were used, as stated in the respective sections.

DATA ANALYSIS AND PRESENTATION

Data were extracted and analysed between October 2016 and May 2017. These data were then compiled in an internal database for assessing indicators in the context of the 90-(90)-90 targets (table 1.1). Data are presented here at the global level, regional level, and also for countries that bear the heaviest burden of TB and DR-TB based on the WHO list (see Annex A1 for list of countries). Another set of analyses was performed for the nine country settings of the Global Plan (see Annex A2), which reflect different TB epidemics, health care systems and socioeconomic conditions. Data are presented disaggregated by age, gender, different vulnerable groups, drug-sensitive TB (DS-TB), DR-TB and TB infection. In the case of key populations, countries were assessed based on the availability of data, for instance TB data on prisoners and migrants were based on data from all European and Central Asian States.

GLOBAL PLAN 90-(90)-90 TARGETS	DEFINITION OF TARGET	INDICATORS TO MEASURE TARGETS
FIRST 90% TARGET	Reach at least 90% of all people with TB and place all of them on appropriate therapy: first-line, second-line and preventive therapy, as required.	Number and percentage of people that are diagnosed, started on treatment and notified out of the total numbers estimated to have developed TB or DR-TB – disaggregated as needed based on availability of data. Number and percentage of people receiving preventive TB treatment out of those who are eligible. This report includes the latest available 2015 data on people who started TB treatment.
SECOND 90% TARGET	As part of this approach, reach at least 90% of the key populations – the most vulnerable, underserved and at-risk populations.	Treatment coverage and treatment success for key populations – the at-risk, vulnerable or underserved groups.
THIRD 90% TARGET	Achieve at least 90% treatment success for all people diagnosed with TB through affordable treatment services, adherence to complete and correct treatment, and social support.	Percentage of people who successfully complete treatment for TB or DR-TB (first-line or second-line treatment) among those who were notified as starting treatment. This report includes the latest available treatment success data at the global level for the cohort of people starting treatment for TB and DR-TB in 2014 and 2013, respectively.

Table 1.1: Global Plan recommended targets and indicators for measuring progress towards the 90-(90)-90 targets.

TARGET AUDIENCE

This document has been written for a wide audience: political leaders, heads of governments, ministries of health and finance, national TB programmes, policy developers, donors, civil society, nongovernmental organizations (NGOs), community-based organizations (CBOs) and all relevant stakeholders who work towards ending TB.

[2] *World Health Organization (WHO) (http://www.who.int/tb/country/data/download/en/, accessed March 2017); The Joint United Nations Programme on HIV/AIDS (UNAIDS) (http://aidsinfo.unaids.org/, accessed March 2017); European Centre for Disease Prevention and Control (ECDC) (http://ecdc.europa.eu/en/publications/Publications/ecdc-tuberculosis-surveillance-monitoring-Europe-2017.pdf, accessed April 2017); The Regional Global Fund and Mining Project (TIMS) (https://www.timssa.co.za/Documents/Studies/Epidemiological%20Baseline%20Study%20-%20PHRU%20(FINAL).pdf, accessed May 2017); India NSP (http://tbcindia.gov.in/WriteReadData/NSP%20Draft%2020.02.2017%201.pdf, accessed May 2017).*

PROGRESS IN REACHING 90% OF PEOPLE WITH TB

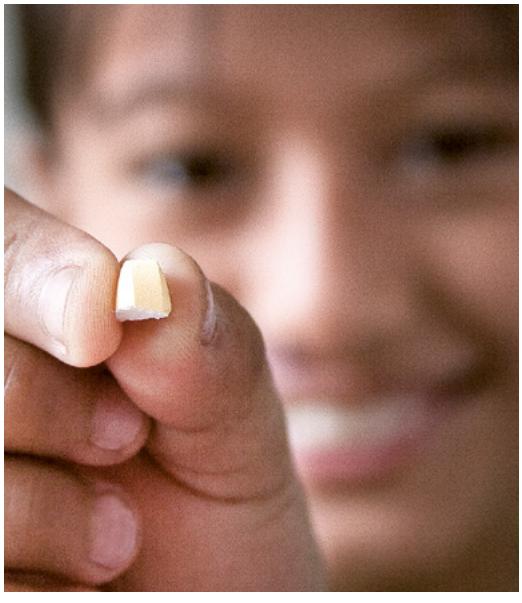
FIRST 90% TARGET: REACH AT LEAST 90% OF ALL PEOPLE WITH TB AND PLACE ALL OF THEM ON APPROPRIATE THERAPY: FIRST-LINE, SECOND-LINE AND PREVENTIVE THERAPY, AS REQUIRED.

Where are we now?

Despite progress due to years of effort and investment, globally we are far from reaching the 90% target

More than 40% of people with TB are missed, almost 80% with DR-TB are missed, and we lack data to properly measure progress on appropriate treatment for TB infection

ACCESS TO FIRST-LINE TB TREATMENT



TB is curable. Early diagnosis and treatment of TB prevents further airborne transmission to others. The predominant variety of TB is DS-TB, which can be cured using first-line TB medicines over a period of 6 months. Each year, 10 to 11 million people in the world newly develop TB. Despite progress in diagnostic tools and effective treatment regimens, a huge gap persists in access to quality TB services.

In 2015, 4.3 million people who developed TB were missing from care; this means that only 59% of the estimated 10.4 million people who developed TB were diagnosed, put on treatment and notified (figure 2.1). This gap of over 4 million people each year who are missing from care is a major reason for the slow progress in the fight against TB. Furthermore, since 2014, there has been an increase in notification after more than 5 years of stagnation.

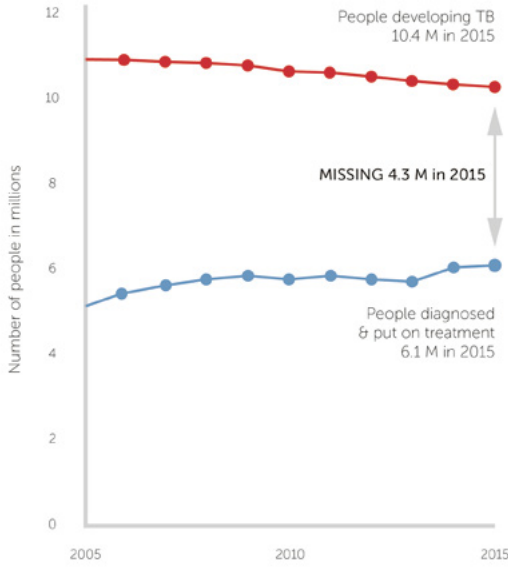


Figure 2.1: Global gap in reaching people with TB who are eligible for first-line treatment, 2000–2015

Many parts of the world are still far from reaching the 90% target of placing people with TB on first-line treatment (figure 2.2). Most of these countries are in regions of Africa, South-East Asia and Western Pacific. It is evident that there is a wide disparity between the mainly high TB burden countries (low-income and resource-limited settings) that contribute to almost 80% of the global TB epidemic compared to the rest of the world.

Over the last 10 years, many countries have remained stagnant in their ability to increase treatment coverage, suggesting that there has been a lack of improvement in access to diagnosis. The nine country settings of the Global Plan (figure 2.3) demonstrate different levels of treatment coverage, reflecting the diversity of health care systems, variation of TB epidemics and differences in socioeconomic capacity that impact the quality of TB care and support delivered. In the case of India, a steep rise in people with TB being put on treatment has been observed since 2013, with notifications increasing by approximately 7.4 million; at the same time, India has only managed to place 59% of people with TB on first-line treatment.

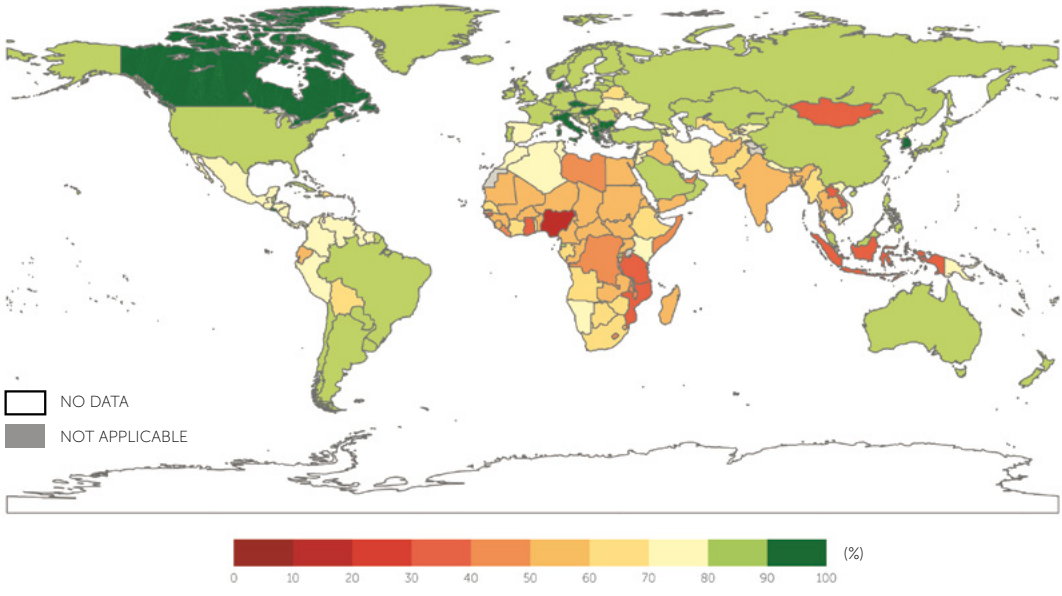


Figure 2.2: First-line treatment coverage (in percentage), 2015

Figure 2.3: Trend in treatment coverage for the nine settings of the Global Plan, 2005-2015.

Treatment coverage among the 30 high TB burden countries ranges from the lowest level of 15% in Nigeria to 87% in Russian Federation (figure 2.4). None of the 30 high TB burden countries have reached the 90% target for first-line treatment coverage: four countries (Brazil, China, Philippines and Russian Federation) are above 80%, 19 countries are between 50% and 80%, and seven countries are below 50% treatment coverage.

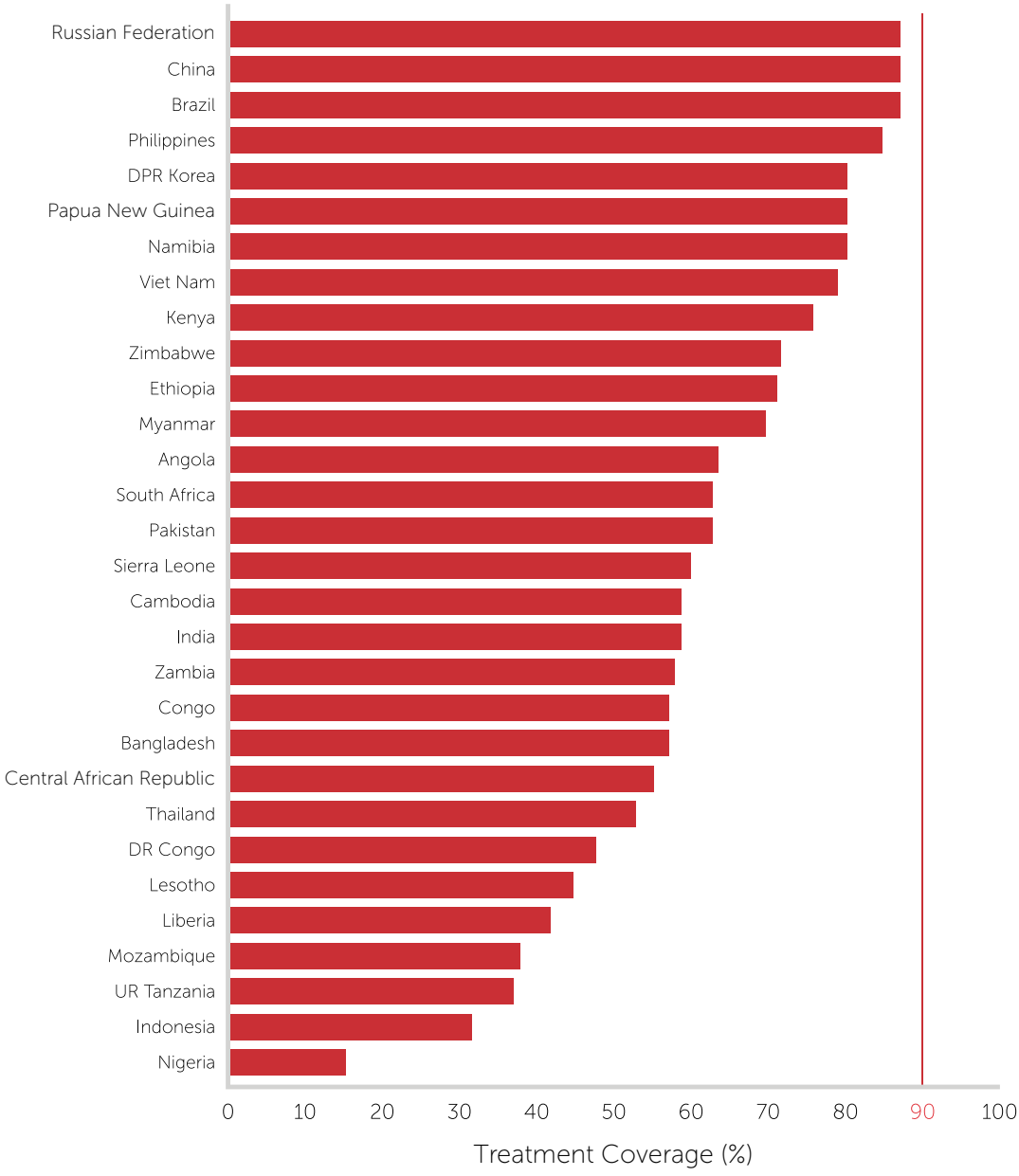


Figure 2.4: First-line treatment coverage among the 30 high TB burden countries, 2015

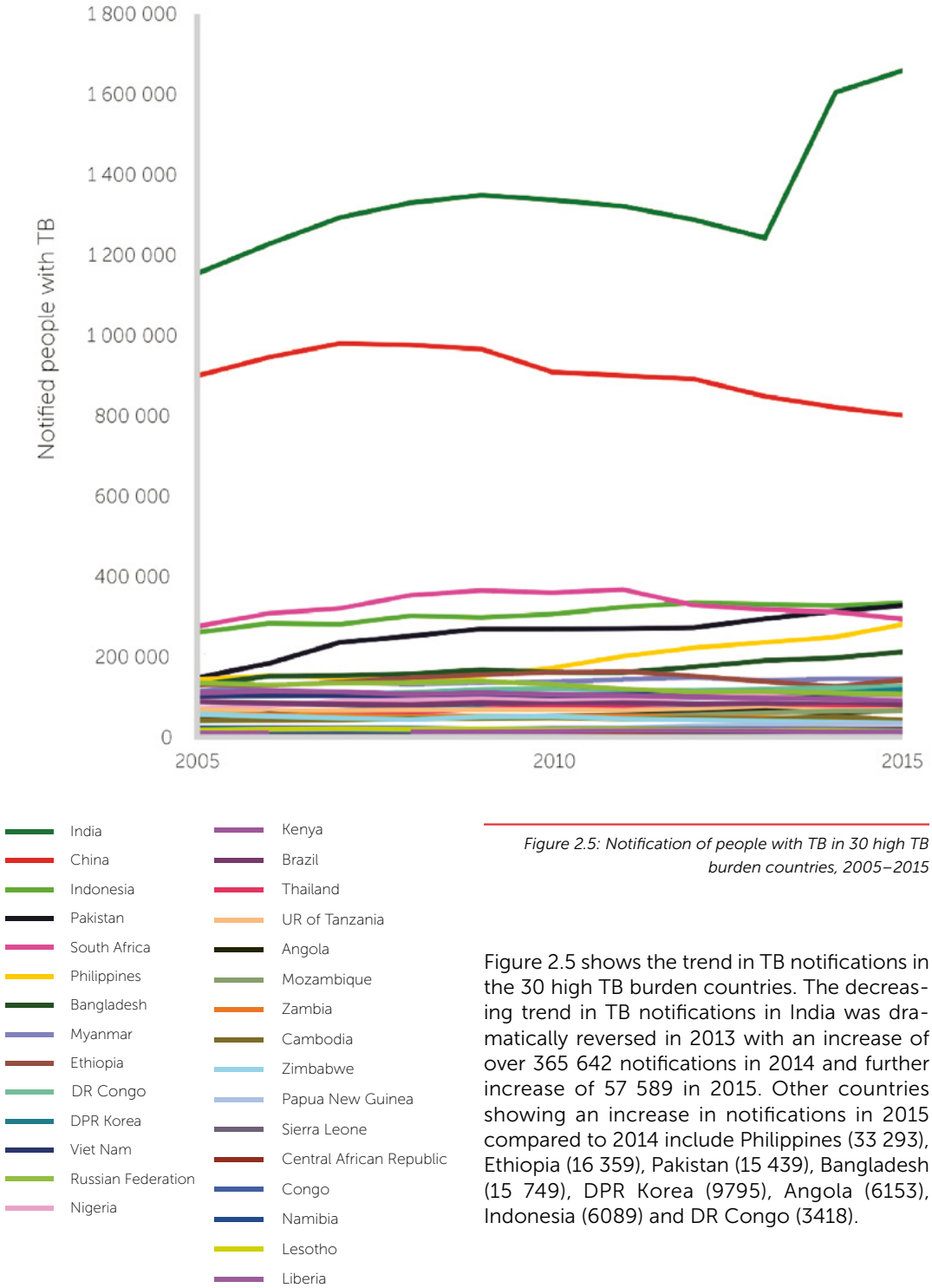


Figure 2.5: Notification of people with TB in 30 high TB burden countries, 2005–2015

Figure 2.5 shows the trend in TB notifications in the 30 high TB burden countries. The decreasing trend in TB notifications in India was dramatically reversed in 2013 with an increase of over 365 642 notifications in 2014 and further increase of 57 589 in 2015. Other countries showing an increase in notifications in 2015 compared to 2014 include Philippines (33 293), Ethiopia (16 359), Pakistan (15 439), Bangladesh (15 749), DPR Korea (9795), Angola (6153), Indonesia (6089) and DR Congo (3418).

Diagnosis and treatment coverage among children with TB remains tremendously poor. Of the 217 reporting countries, data disaggregated by age and sex for people who developed TB were only available for 169 countries (figure 2.6). In 2015, of 957 090 children estimated to have developed TB, 383 704 (40%) were started on treatment. In the 169 countries with appropriate data, treatment coverage among girls (39%) and women (56%) was slightly lower than treatment coverage among boys (41%) and men (57%). However, children have substantially less chance of accessing TB care compared to adults.

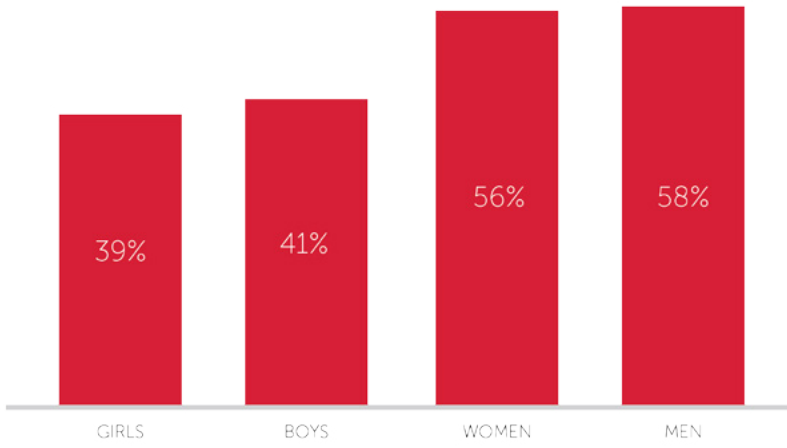


Figure 2.6: Proportion of children and adults with TB receiving first-line treatment, 2015

In 2015, three countries (India, Indonesia and Nigeria) accounted for more than 50% of the 4.3 million people with TB who did not have access to TB care (figure 2.7). In 14 of the high TB burden countries, the number of people with TB missed by the health care system seems to be decreasing. In the other 16 countries, this number is either increasing or has remained stagnant over the last 10 years, implying that huge barriers exist in people getting tested and started on treatment.

Figure 2.7: Missing people with TB in the 30 high TB burden countries, 2005–2015.

The trend lines illustrate a decrease (green), increase (red) or minimal (amber) change in missing cases over time. The values refer to the absolute number of missing cases in 2015.

ACCESS TO SECOND-LINE TB TREATMENT

In 2015, an estimated 579 924 people developed DR-TB worldwide, but only 132 347 (23%) of them were diagnosed and started on second-line treatment. This means 1 in 5 people with DR-TB had access to second-line treatment (figure 2.8). The gap in estimated DR-TB incidence and notification has remained substantial over the last 5 years, implying that current strategies for managing this lethal form of TB disease remain insufficient. One of the major reasons for the poor coverage of second-line treatment is the underutilization of drug-sensitivity testing (DST). In 2015, only 12% of people with newly diagnosed TB were offered DST to diagnose DR-TB.

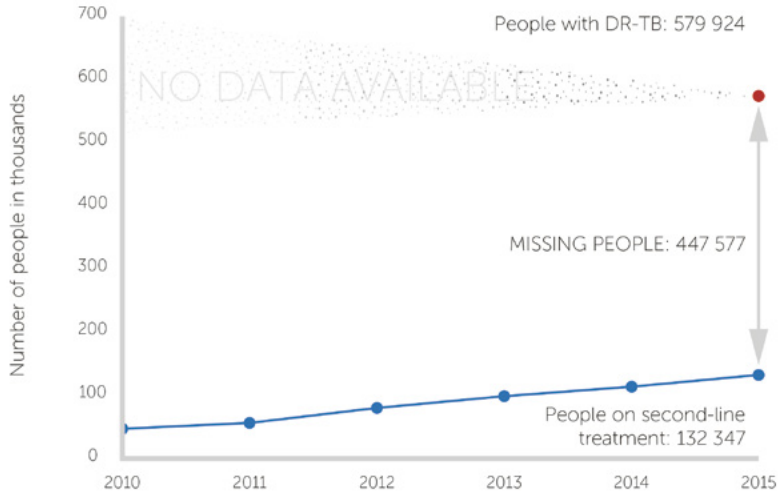


Figure 2.8: Global gap in reaching people with DR-TB who are eligible for second-line treatment, 2010–2015

In 2009, recognizing the global threat of DR-TB, a ministerial meeting of the 27 high DR-TB burden countries was convened in order to generate political commitment for scaling up action, addressing bottlenecks and strengthening national TB programmes to tackle this resistant form of TB[3]. The main target proposed was that, by 2015, the global community should have enrolled up to 1.6 million people on second-line treatment for DR-TB[4]. So far, not even half of this target has been reached.

[3] *Meeting report: a ministerial meeting of high M/XDR-TB burden countries, 1–3 April 2009 – Beijing, China. Geneva: World Health Organization; 2009 (http://apps.who.int/iris/bitstream/10665/70100/1/WHO_HTM_TB_2009.415_eng.pdf, accessed July 2017).*

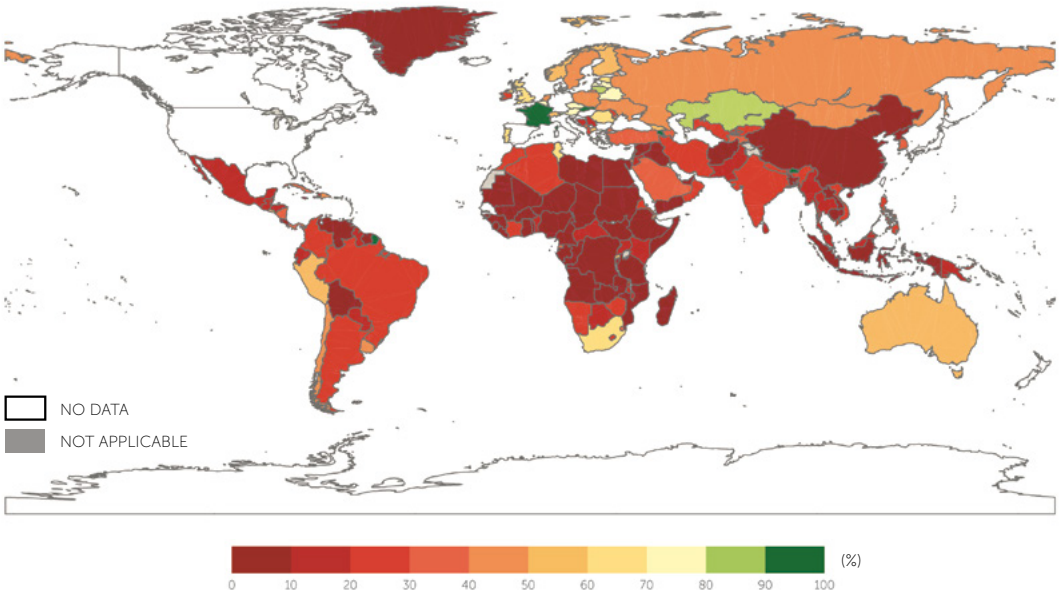


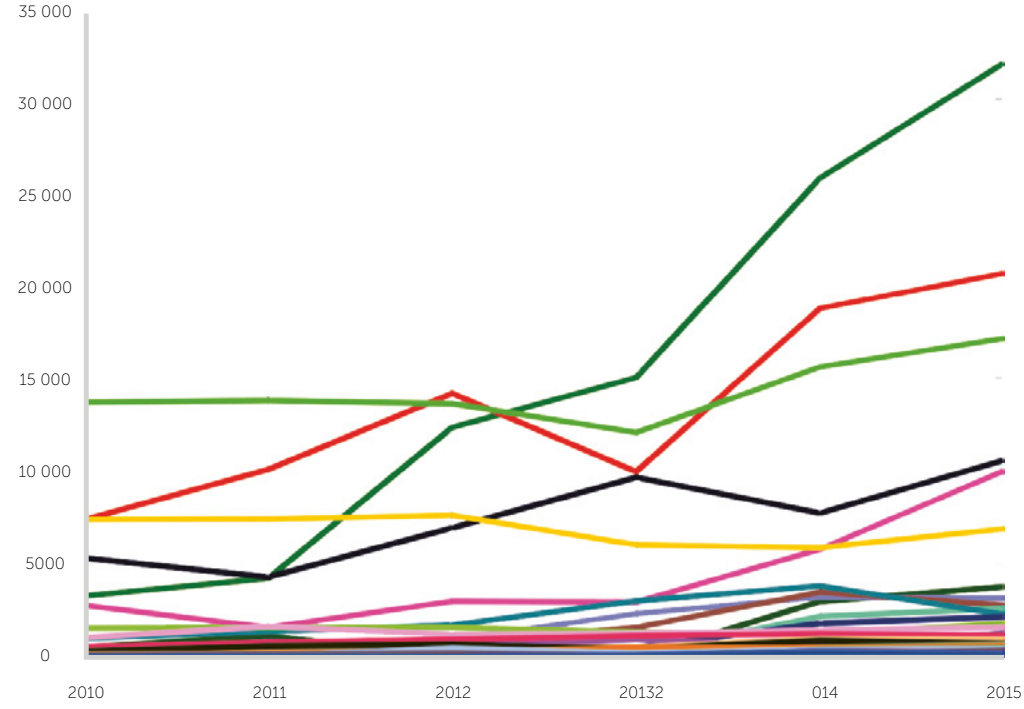
Figure 2.9: Second-line treatment coverage (in percentage), 2015

Globally, four countries (India, China, Russian Federation and Indonesia) account for more than half of the 447 577 people with DR-TB estimated to have not been reached. India (130 000), China (70 000) and Russian Federation (60 000) have the highest estimated incidence of DR-TB (figure 2.9).

Over the last 5 years, the notification of people with DR-TB has been gradually increasing, with 21 out of 30 high DR-TB burden countries showing a rise in the number of people diagnosed with DR-TB since 2014 (figure 2.10). Countries that have shown an increase include: China (3855), India (3729), Ukraine (2857), Russian Federation (1547), South Africa (1355), Philippines (785), Azerbaijan (701), Kazakhstan (620), Nigeria (443), Viet Nam (415), Indonesia (346), Kenya (197), Republic of Moldova (106), Mozambique (116), Ethiopia (96), Belarus (176), Peru (145), DRC (53), Zimbabwe (60), Thailand (26) and DPR Korea (12).

[4] *The Beijing "call for action" on tuberculosis control and patient care: together addressing the global M/XDR-TB epidemic. Geneva: World Health Organization; 2009 (http://www.who.int/tb_beijingmeeting/media/en_call_for_action.pdf?ua=1, accessed July 2017).*

The Beijing "call for action" on tuberculosis control and patient care: together addressing the global M/XDR-TB epidemic. Geneva: World Health Organization; 2009 (http://www.who.int/tb_beijingmeeting/media/en_call_for_action.pdf?ua=1, accessed July 2017).



India
South Africa
Russian Federation
Ukraine
China
Kazakhstan
Philippines
Pakistan
Myanmar
Viet Nam
Uzbekistan
Indonesia
Belarus
Peru
Azerbaijan
Nigeria
Kyrgyzstan
Bangladesh
Tajikistan
Mozambique
Ethiopia
DR Congo
Zimbabwe
Thailand
Kenya
Papua New Guinea
Angola
Somalia
Rep. of Moldova
DPR Korea

Figure 2.10: Notification of people with DR-TB in 30 high TB burden countries, 2010-2015.

Despite the increase in notification, second-line treatment coverage is still below the 90% target for all 30 high DR-TB countries (figure 2.11), with 11 countries at less than 10% and four countries over 50% (Kazakhstan, Belarus, South Africa and Peru). The biggest numbers of DR-TB globally are among people newly diagnosed with TB for whom the DST coverage is extremely low (12%). Poor DST coverage is a major reason for the large number of missing people with DR-TB.

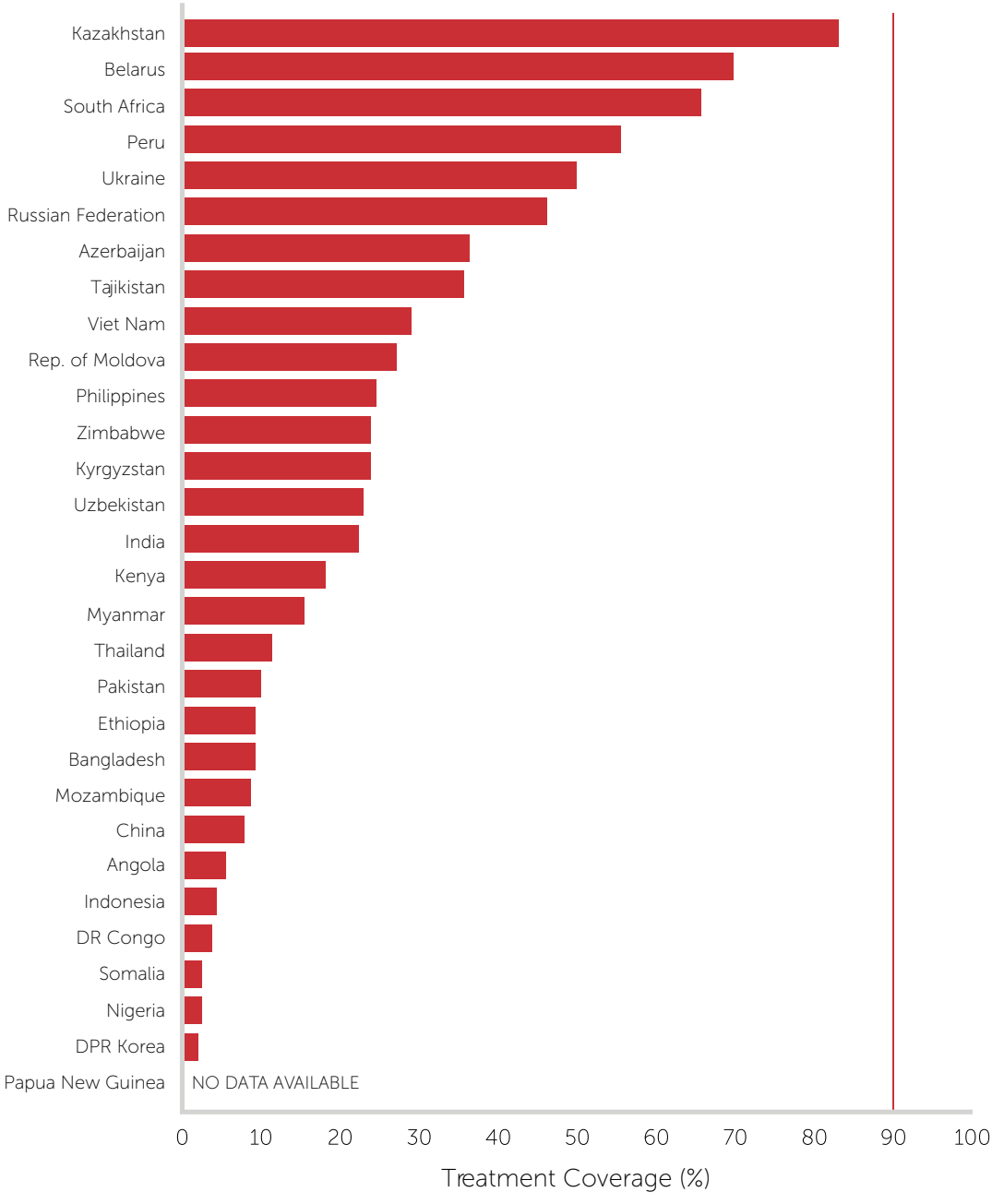


Figure 2.11: Second-line treatment coverage among the 30 high DR-TB burden countries, 2015

ACCESS TO PREVENTIVE TB THERAPY

An estimated one quarter of the world's population has TB infection. Current global WHO policy for high TB burden settings recommends preventive TB therapy (PT) for only two groups: people living with HIV (PLHIV) and child contacts of people with TB.

Children living in the same household as a person with TB have increased risk of becoming infected and developing serious forms of TB. In 2015, WHO estimated that globally 1.2 million child contacts of people with TB were in need of PT. This was already a conservative estimate, as it did not include child contacts of people with TB who were missing from care or child contacts of people notified with smear-negative TB. Only 77 out of 217 countries reported on PT (figure 2.12), and the global total of child contacts who had received PT was only 87 027 (7% of the 1.2 million). Fifteen countries reported to WHO more than or equal to 100% PT coverage, probably due to a number of child contacts being put on PT that was greater than the underestimated denominator.

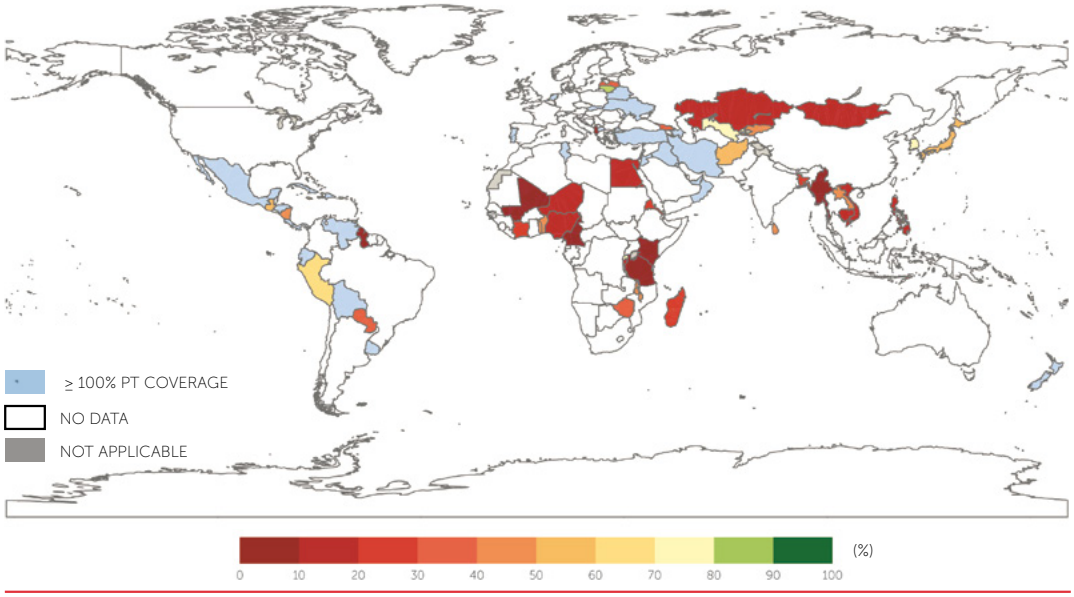


Figure 2.12: Preventive TB treatment coverage among child household contacts (in percentage), 2015

At least one third of the estimated 37 million PLHIV worldwide are believed to have TB infection that can develop into active TB disease. PT of PLHIV can prevent TB infection from breaking down into active TB disease. In 2015, an estimated 2.4 million PLHIV newly enrolled in HIV care were considered eligible for PT. Only 68 countries reported on PT for PLHIV (figure 2.13), and the global total of PLHIV started on PT was 910 689 (38% of the 2.4 million). This is an alarming figure, as the estimated need is much higher with 37 million PLHIV worldwide.

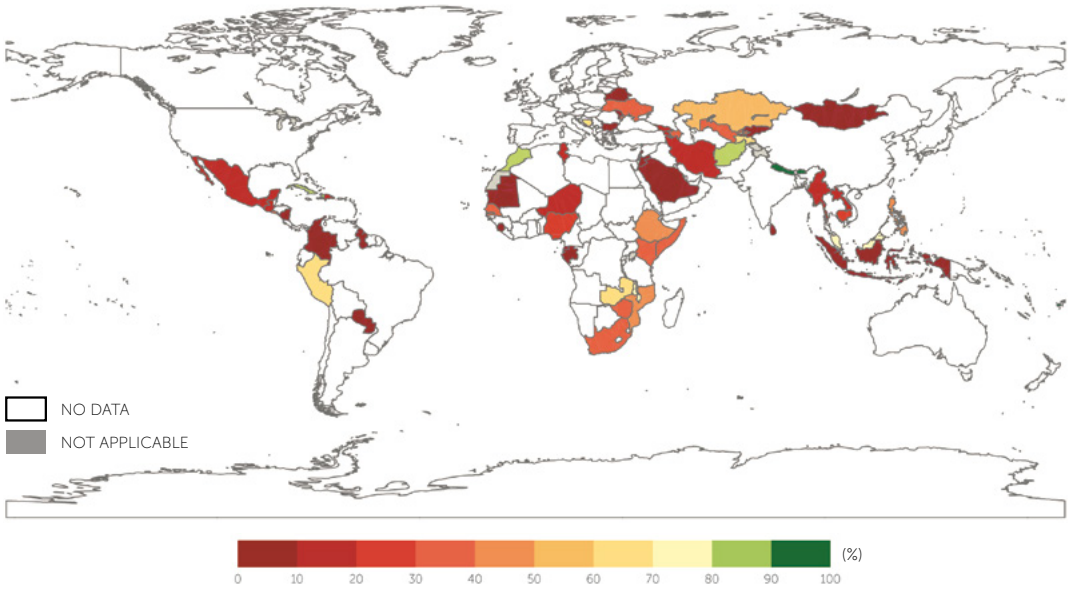


Figure 2.13: Preventive TB treatment coverage for PLHIV newly enrolled in HIV care (in percentage), 2015

UNAIDS evaluates treatment coverage for TB infection among the global population of PLHIV (figure 2.14). Although availability of these data is limited, the data indicates poor level of treatment coverage.

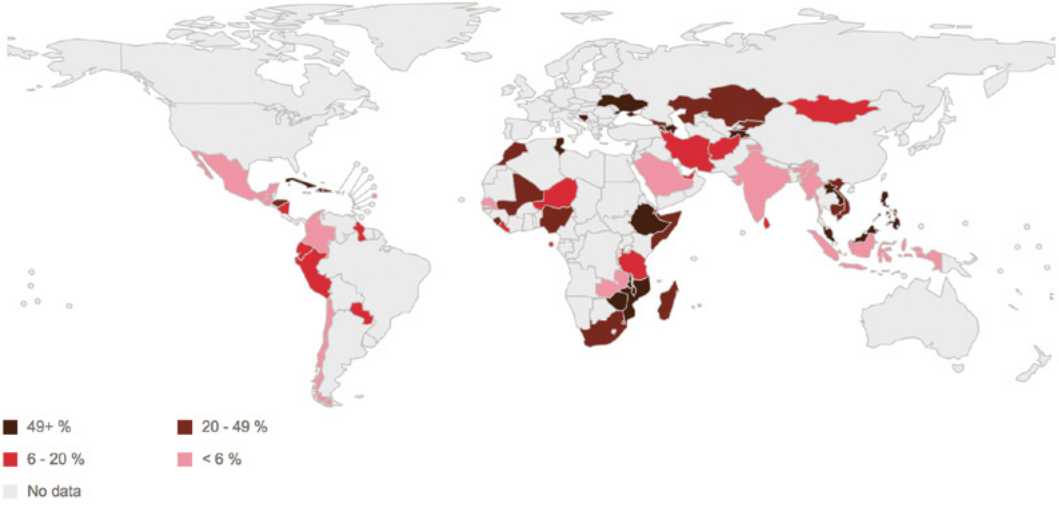


Figure 2.14: Preventive TB treatment coverage among PLHIV in countries, 2016

Current WHO recommendations prioritize specific target populations for receiving PT based on TB burden and income level; people in countries with high TB burden and low income level, child contacts and PLHIV are expected to receive PT regardless of whether or not they have TB infection. For countries with low TB burden (less than 100 per 100 000 population) and high or medium income level, WHO recommends PT for a wide range of key populations. This type of recommendation must be revised to avoid any inequity and to ensure that all people who are at increased risk of developing TB have access to PT.

REACHING 90% OF KEY POPULATIONS

SECOND 90% TARGET: REACH AT LEAST 90% OF THE KEY POPULATIONS WHO ARE MOST VULNERABLE, UNDERSERVED AND AT-RISK OF DEVELOPING TB.

Are the most vulnerable, underserved and at-risk populations with TB being reached?

Data on most key populations are virtually non-existent at the global level, limited at the regional and national levels, and generated in small quantities at the subnational level for special projects and initiatives.

There is no standard approach to the collection, collation, analysis and programmatic usage of data.

People who have **INCREASED EXPOSURE** to TB **due to where they live or work**	Prisoners, sex workers, miners, hospital visitors, health care workers and community health workers **PEOPLE WHO:** ⌖ live in urban slums ⌖ live in poorly ventilated or dusty conditions ⌖ are contacts of TB patients, including children ⌖ work in environments that are overcrowded ⌖ work in hospitals or are health care professionals
People who have **LIMITED ACCESS TO QUALITY TB SERVICES**	Migrant workers, women in settings with gender disparity, children, refugees or internally displaced people, illegal miners, and undocumented migrants **PEOPLE WHO:** ⌖ are from tribal populations or indigenous groups ⌖ are homeless ⌖ live in hard-to-reach areas ⌖ live in homes for the elderly ⌖ have mental or physical disabilities ⌖ face legal barriers to access care ⌖ are lesbian, gay, bisexual or transgender
People at **INCREASED RISK** of TB because of **biological or behavioural factors** that compromise immune function	**PEOPLE WHO:** ⌖ live with HIV ⌖ have diabetes or silicosis ⌖ undergo immunosuppressive therapy ⌖ are undernourished ⌖ use tobacco ⌖ suffer from alcohol-use disorders ⌖ inject drugs

Table 3.1: A general overview of the types of TB key populations as described in the Global Plan

The second 90 is about reaching key populations by ensuring their access to TB services through education, diagnosis, improved screening and prompt initiation of appropriate treatment. Key populations are defined as individuals who are "vulnerable, underserved or at increased risk" (table 3.1.).

Vulnerable, marginalized key populations experience specific challenges in accessing health care. Therefore, it is essential to scale up access to quality TB services for these individuals, as this will significantly reduce the global health inequities that exist. At present, there are limited data available on key populations, and the TB recording and reporting system does not disaggregate notification data by key population.

GLOBAL LEVEL

Conventionally, national TB programmes collect aggregated national-level TB data based on a standard set of indicators for clinical, demographic, bacteriological and treatment outcome information. These data are then notified to WHO for monitoring global and country-level estimates and intervention strategies. Currently, data on PLHIV are being reported to the two global agencies WHO and UNAIDS, with the former using HIV-related indicators in TB health care settings and the latter using TB-related indicators in HIV health care settings. As described in the previous chapter, data on PT for PLHIV are incomplete and coverage is poor.

People coinfected with TB and HIV need diagnosis and treatment for both diseases. Of the 10.4 million people who developed TB in 2015, an estimated 1.17 million (11.3%) were coinfected with HIV, but only 43% (500 564) of them were diagnosed as HIV-positive TB and put on first-line TB treatment; 33% (390 630) were given both TB treatment and ART (figure 3.1). Hence, in 2015, more than half a million people believed to be coinfected with TB and HIV did not have access to appropriate diagnosis and treatment.

In 2015, only 145 out of 217 countries reported TB treatment outcomes separately for people coinfected with HIV and TB. In 2014, the global treatment success for HIV-positive people with TB on first-line treatment was 75%. In both the WHO European (41%) and Eastern Mediterranean (53%) regions, the figures for treatment success were even lower than treatment outcomes for DR-TB, indicating a much worse situation.

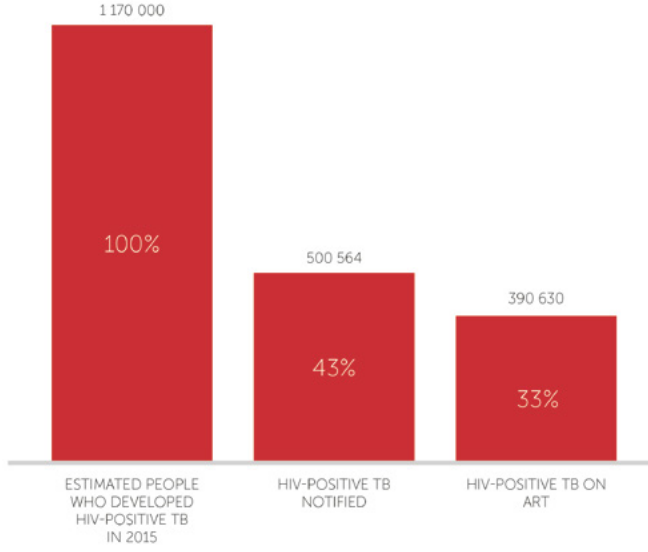


Figure 3.1: Treatment cascade for people living with HIV and TB worldwide, 2015

REGIONAL LEVEL

At the regional level, systematic data collection is currently being undertaken in only two regions.

The European Centre for Disease Prevention and Control (ECDC) and WHO EURO collect data on migrants and prisoners in Europe and Central Asia. An estimated 1 billion people worldwide are migrants, i.e., people who have moved from their place of origin to a new geographic destination for a variety of reasons and factors[5]. In Europe and Central Asia from 2005 to 2015, TB among migrants escalated. In 2015, 19 658 foreign-born people in Europe and Central Asia developed TB – a figure that represents 6.3% of the total number of TB cases notified in the region.

The prevalence of TB among prisoners is known to be much higher than in the general population. In 2015, of a total of 1.5 million prisoners in Europe and Central Asia, 13 845 (1%) were reported to have developed TB. This represents 5.9% of all TB cases notified in the region. Given this situation, prisoners in the region are 24 times more likely to develop TB than the general population. Russian Federation accounted for more than two thirds of prisoners with TB. In 2013, only 33 out of 56 reporting countries provided data on treatment outcomes (figure 3.2); of 16 152 prisoners who started first-line treatment, treatment success was 59.3% compared to 75.8% of all TB patients in the region.

The country programmes working under the regional Global Fund TB and mining project known as TB in the Mining Sector in Southern Africa (TIMS) collect data on TB among mining communities in the Southern African Development Community (SADC) region comprised of Botswana, Lesotho, Namibia, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe[7]. An estimated 7 million people worldwide are working in the industrial mining sector, and there are approximately 100 million artisanal miners[8]. The incidence of TB in the mining community is much greater than in other working populations and the general population[9].

Between November 2016 and March 2017, the TIMS project screened 107 430 people for TB in the mining-affected community of the SADC region, including 33 845 (31.5%) miners with families, 49 057 (45.7%) ex-miners with families and 24 528 (22.8%) community members. This screening led to the detection of 208 additional people with TB, of whom 159 were started on treatment. It is believed that there is more undetected TB among this population, and thus screening and diagnostic approaches are currently being improved in order to find all people with TB.

The TIMS project reviewed existing sources of epidemiological data from the eight countries in the SADC region[10], estimating the total size of the mining population to be 2 182 868 (1.5% of the total population). In these eight countries, out of the 366 148 people detected with TB, 12 608 (3.4%) were from the mining community. In addition, out of a total of 20 867 people detected with DR-TB, 469 (2.2%) were from the mining community.

[5] *Dhavan P, Dias HM, Creswell J, Weil D. An overview of tuberculosis and migration, 2017. Int J Tuberc Lung Dis. 2017;21(6):610–23.*

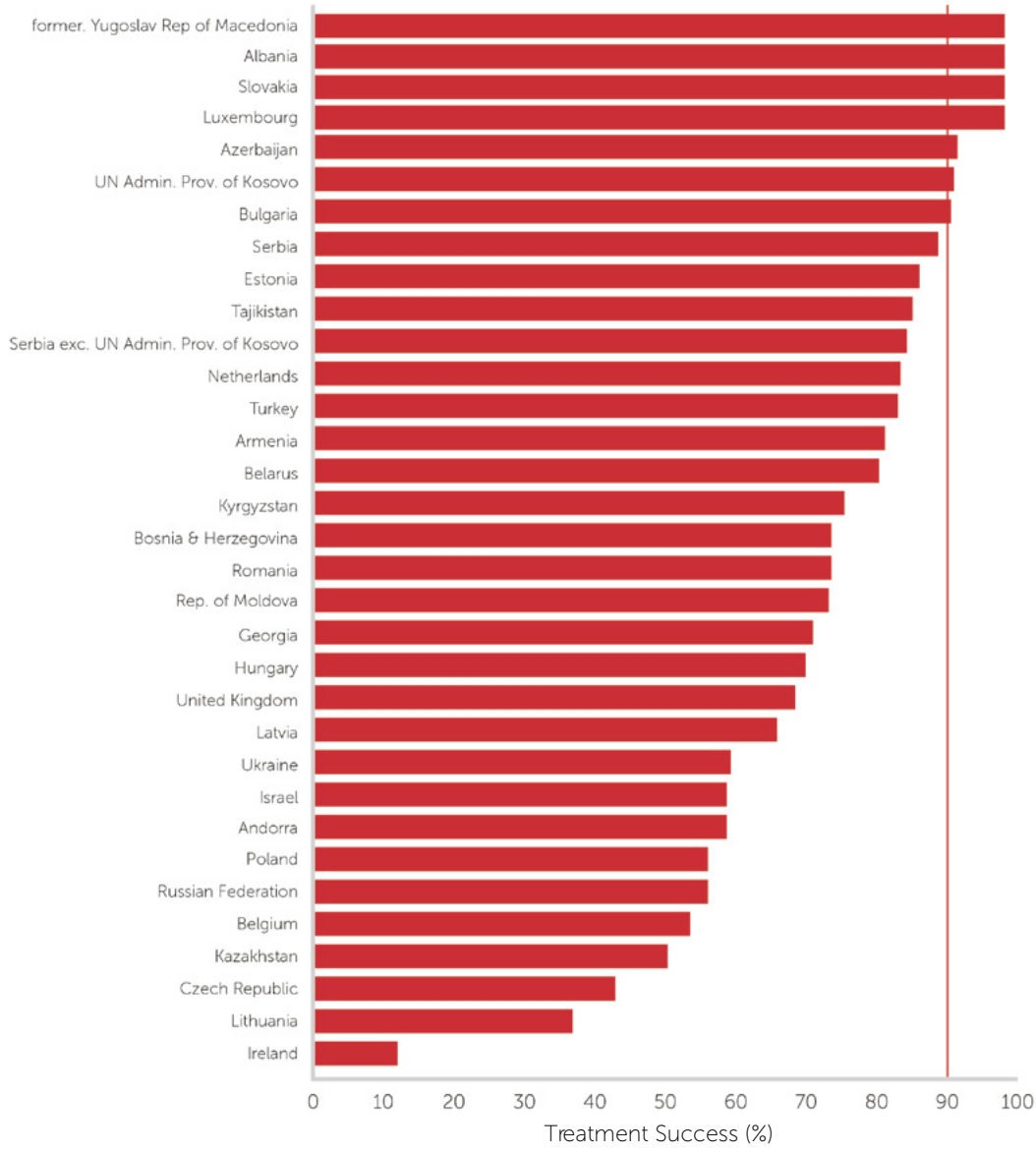


Figure 3.2: First-line TB treatment success rate among prisoners in selected countries of Europe and Central Asia, 2013 [6]

[6] *European Centre for Disease Prevention and Control, WHO Regional Office for Europe. Tuberculosis surveillance and monitoring in Europe, 2017. Stockholm: European Centre for Disease Prevention and Control; 2017 (http://ecdc.europa.eu/en/publications/Publications/ecdc-tuberculosis-surveillance-monitoring-Europe-2017.pdf, accessed April 2017).*

[7] *Perinatal HIV Research Unit, University of the Witwatersrand. TB, HIV and silicosis in miners: epidemiological data on tuberculosis, multi-drug resistant TB, silicosis and HIV among miners and ex-miners in Southern Africa (https://www.timssa.co.za/Documents/Studies/Epidemiological%20Baseline%20Study%20-%20PHRU%20(FINAL).pdf, accessed August 2017).*

NATIONAL AND SUBNATIONAL LEVELS

Local TB micro-epidemics differ in terms of their intensity, risk factors and key characteristics. Such micro-epidemics result in "hotspots" of concentrated and higher rates of TB that require local response and intervention. These include urban settlements, rural villages and targeted key populations. Some countries have been able to use TB data and trends generated at the subnational level to appropriately adapt and modify strategies for providing enhanced quality TB care and support to specific populations.

In South Africa, active case finding has been implemented in prisons and the mining community. In Russian Federation in 2015, almost half of the TB burden was detected by actively screening 68% of the population. In the Brazil prison system in 2015, there were 920 006 prisoners of whom 6021 were diagnosed with TB, accounting for 8.2% of total TB cases notified in the country. The incidence rate of TB among prisoners was 654 per 100 000 – a figure that is 16 times higher than the estimated national TB incidence of 41 per 100 000.

In India, there is a campaign to find missing people with TB through active case finding three times a year among targeted high-risk or underserved communities living in 184 districts, four metropolitan cities and one state. In 2017, 2 weeks of active case finding was conducted in 50 districts, resulting in 26 000 people who were in need of TB testing; of those, TB disease was identified among 1800 people who would otherwise have remained undetected. In addition, a number of specific key populations have been identified in urban, rural and tribal areas who are in need of improved access and targeted active case finding.

[8] *Artisanal and small-scale mining, 21 November. Washington, DC: World Bank; 2013 (http://www.worldbank.org/en/topic/extractiveindustries/brief/artisanal-and-small-scale-mining, accessed August 2017).*

[9] *Stuckler D, Basu S, McKee M, Lurie M. Mining and risk of tuberculosis in sub-Saharan Africa. Am J Public Health. 2011;101(3):524–30 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3036676/, accessed August 2017).*

[10] *The Regional Global Fund and Mining Project (TIMS) (https://www.timssa.co.za/Documents/Studies/Epidemiological%20Baseline%20Study%20-%20PHRU%20(FINAL).pdf, accessed May 2017).*

LOCAL TB DATA

The Stop TB Partnership's TB REACH initiative, together with international and national partners, funds and implements innovative strategies to increase the detection and treatment of TB among people who have limited or no access to TB services.

In Afghanistan, access to quality TB health services is poor, with an estimated 631 000 internally displaced people (IDPs) living in poor conditions. In 2012, as part of a TB REACH project, 306 205 IDPs were actively screened in six provinces. From this screening, 653 people were diagnosed with TB – a rate of 213 per 100 000 population among IDPs, which is higher than the national rate (189/100 000).

In 19 local TB REACH projects, contact investigation was implemented in 11 high TB burden countries across Africa, Asia and the Middle East, specifically in rural and urban settings where there is less access to TB services. Out of 139 052 household contacts that were actively screened, 2498 (1.8%) contacts were diagnosed with TB – a rate of 1796 per 100 000 population among contacts. This figure is drastically higher than the national rates in all 11 countries.

There is a need to expand the standard collection and routine reporting of data at the national level beyond the existing benchmarks in order to collect data on key populations, especially as the global TB response shifts towards ending the epidemic. To accelerate this movement, as recommended by the Global Plan, a framework for key, vulnerable and underserved populations has been developed to address gaps and challenges in accessing quality TB services. The purpose of the framework is to identify key populations relevant to the local context, estimate their population size and disease burden, identify barriers to access and plan relevant programmatic initiatives.

ACHIEVING 90% TB TREATMENT SUCCESS

THIRD 90% TARGET: ACHIEVE AT LEAST 90% TREATMENT SUCCESS FOR ALL PEOPLE DIAGNOSED WITH TB THROUGH AFFORDABLE TREATMENT SERVICES, ADHERENCE TO COMPLETE AND CORRECT TREATMENT, AND SOCIAL SUPPORT.

What has been achieved so far?

Treatment success for TB has declined from 86% to 83% since 2014. Only 8 of the 30 high TB burden countries have achieved the 90% target for treatment success

Treatment success for DR-TB is poor (50%). None of the 30 high DR-TB burden countries have reached 90% treatment success rate

No national-level data are available on the completion of Preventive Therapy for TB infection

The gap is in reality even greater, as treatment success reported by countries does not account for people who go undetected, have dropped out after diagnosis or prior to starting treatment, or have not been notified.

COMPLETING FIRST-LINE TB TREATMENT

Completing treatment for TB is key to ensuring cure and preventing transmission and the development of drug-resistant disease. However, adherence to treatment is difficult and the patient requires support. Monitoring adherence to and completion of therapy in the treatment cascade is crucial to ensure that high-quality support is provided to people who start treatment, existing barriers are minimized, side-effects of medicines are addressed, and everyone on treatment completes the full course of therapy.

For the cohort of people starting TB treatment in 2014, global treatment success was 83%. Of the remaining 17% of people who did not successfully complete treatment, 8% were not evaluated, 4% died, 4% were lost to follow-up and 1% failed (figure 4.1). Although treatment success was still high, the figure actually dropped by 3% from 2013 (86%). This decline was mainly due to a greater number of people on treatment whose outcome was not evaluated. In fact, considering that treatment coverage is 59%, a success rate of 83% indicates that less than half of the 10.4 million people who develop TB each year are being successfully treated.

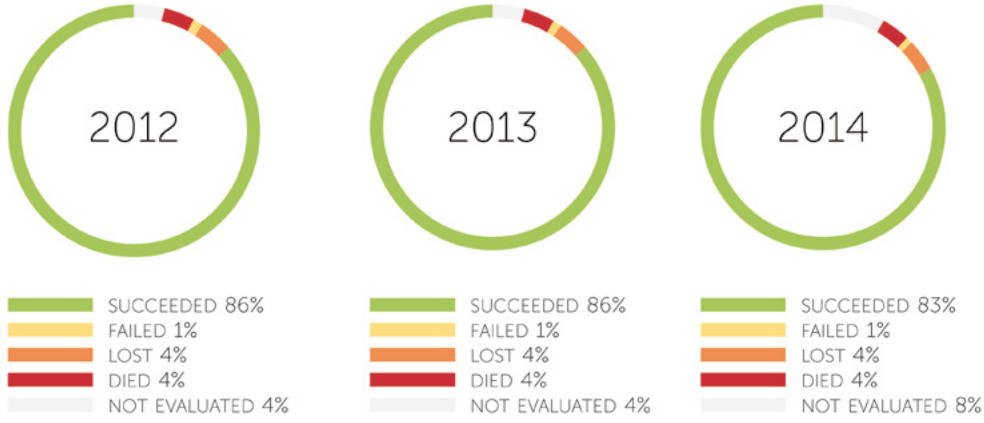


Figure 4.1: First-line TB treatment outcomes, 2012–2014

Differences in health care systems can have an impact on the provision of and adherence to TB medication, with many constraints faced in resource-limited settings. This is reflected in the wide diversity of treatment success rates observed across the globe (figure 4.2). The map in figure 4.2 shows several countries that are above 80% treatment success, some already achieving 90% to 100% success, and a few that are at less than 40%.

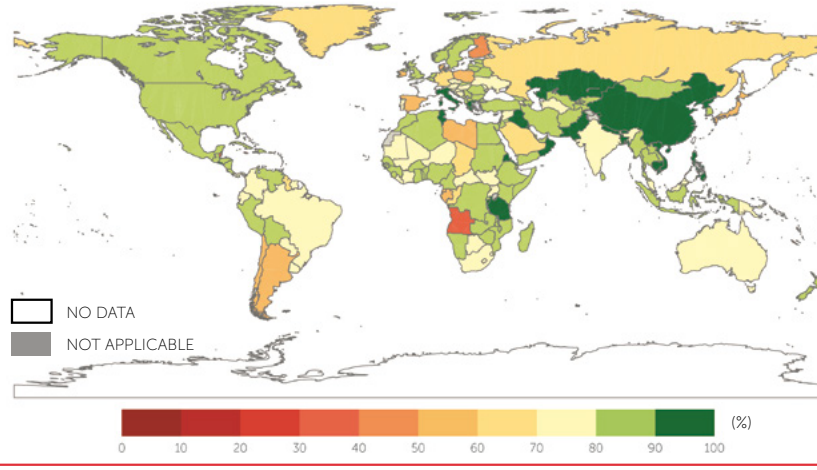


Figure 4.2: First-line treatment success (in percentage), 2015

The Global Plan has grouped countries based on a dynamic impact model that takes into account multiple parameters and factors affecting the programmatic implementation of TB services in the cascade of care [11]. Therefore, assessing treatment outcomes in terms of the nine settings of the Global Plan provides an additional dimension to understanding the issues faced in the quality of treatment, support and follow-up for people undergoing TB treatment.

Among the nine settings, India has the lowest rate of treatment success, mainly because treatment outcomes are not evaluated for patients in the private sector (figure 4.3). A few years ago, treatment success in India was 86%; however, as notifications have increased over the last 2 years (mainly from the private sector), the treatment success rate has decreased, primarily due to the limitations in tracking the large proportion of patients who receive treatment in the private sector.

Many low-burden and high-income countries are close to reaching a TB incidence of 10 per 100 000 population (the goal of the End TB Strategy). Nevertheless, in this setting, the treatment success rate in 2014 was low at 75%; of the remaining 25%, 4% died, 8.4% failed treatment and 12.6% were not evaluated. The TB rates in most of these countries are disproportionally higher among vulnerable and marginalized populations such as migrants compared to the local population. These populations face several barriers that could be contributing to this low success rate.

Eastern European and Central Asian countries (included in the "High MDR-TB burden, centralized care" setting in figure 4.3 below) have had low treatment success consistently over several years. A relatively large proportion of patients in this setting fail treatment and are lost to follow-up during treatment. High and increasing drug-resistance levels, increasing proportion of HIV-associated TB and a centralized care delivery model may be the contributing factors in this setting.

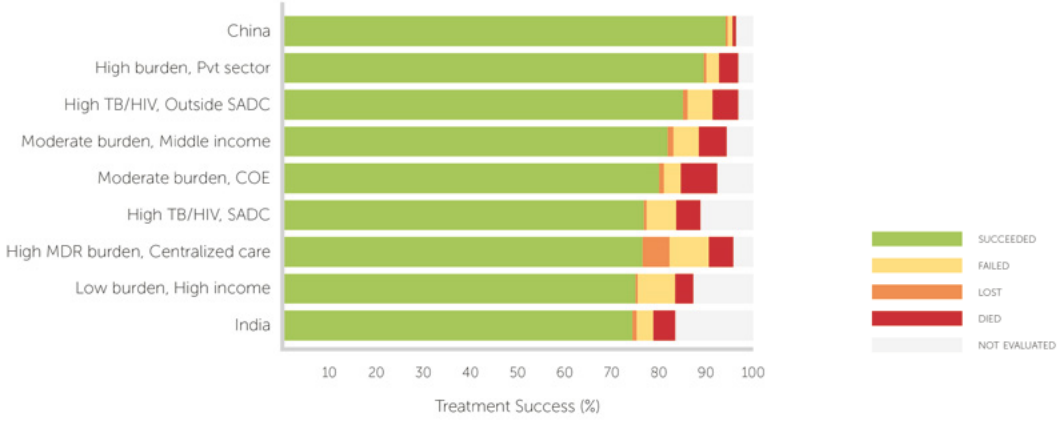


Figure 4.3: First-line treatment outcomes in nine country settings, 2014

Eight of the high TB burden countries have reached the 90% target for first-line treatment success (figure 4.4); 22 countries are below the 90% target.

Globally, 5 million people were successfully treated in the latest year for which treatment success data are available. This means that less than 50% of the 10 to 11 million people developing TB in a year are being successfully treated. For a curable disease, this is a big gap and a major cause of slow impact.

[11] *Stop TB Partnership, Avenir Health. Annex 2: modelling the impact of the 90-(90)-90 strategy. Geneva: Stop TB Partnership; 2015 (http://www.stoptb.org/global/plan/plan2/annexes.asp, accessed May 2017).*

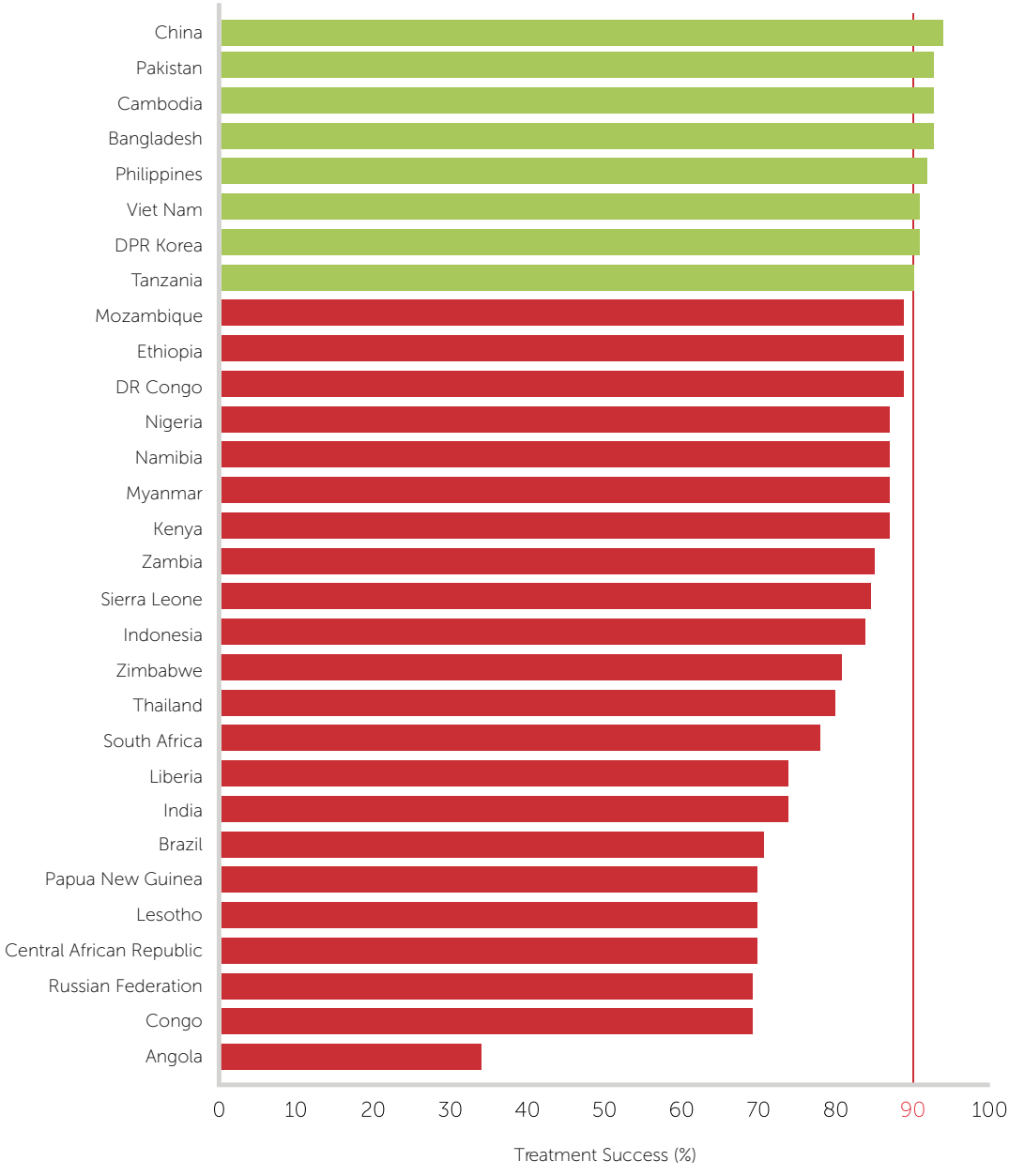


Figure 4.4: First-line treatment success among the 30 high TB burden countries, 2015

COMPLETING SECOND-LINE TREATMENT

Treatment of DR-TB is complex, and treatment outcomes have been poor in most countries. Currently, treatment of DR-TB takes 2 years, but as the shorter treatment regimen is scaled up, the treatment duration could be reduced to 9 months.

Globally, of the estimated 580 000 people who became ill with DR-TB in 2015, the treatment coverage was 23%; only 67 498 people (51%) were successfully treated (people who started a DR-TB regimen in 2013 and completed the course in 2015). Among the remaining 49% of people who were not successfully treated, 17% died, 16% were lost to follow-up, 9% failed and 7% were not evaluated (figure 4.5). A 28% treatment success rate was registered among people with XDR-TB – a form of TB caused by bacteria that have developed extensive drug resistance to multiple first- and second-line medicines.

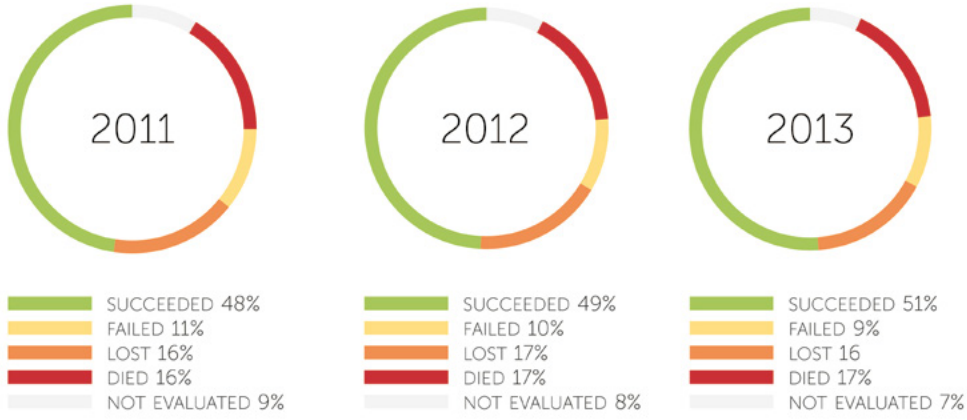


Figure 4.5: Second-line TB treatment outcome, 2011-2013

Worldwide, only 30 countries achieved more than 90% treatment success for DR-TB in 2013 and none of them are among the high DR-TB burden countries (figure 4.6). DR-TB continues to be poorly detected and treated across the world, particularly within the Eastern European region, parts of the African region, China and India.

At country level, treatment success for DR-TB varies among the high DR-TB countries (figure 4.7). No country has achieved 90% treatment success for second-line treatment, five countries are below 50%, 22 countries are between 50% and 80%, and three countries are between 80% and 85%.

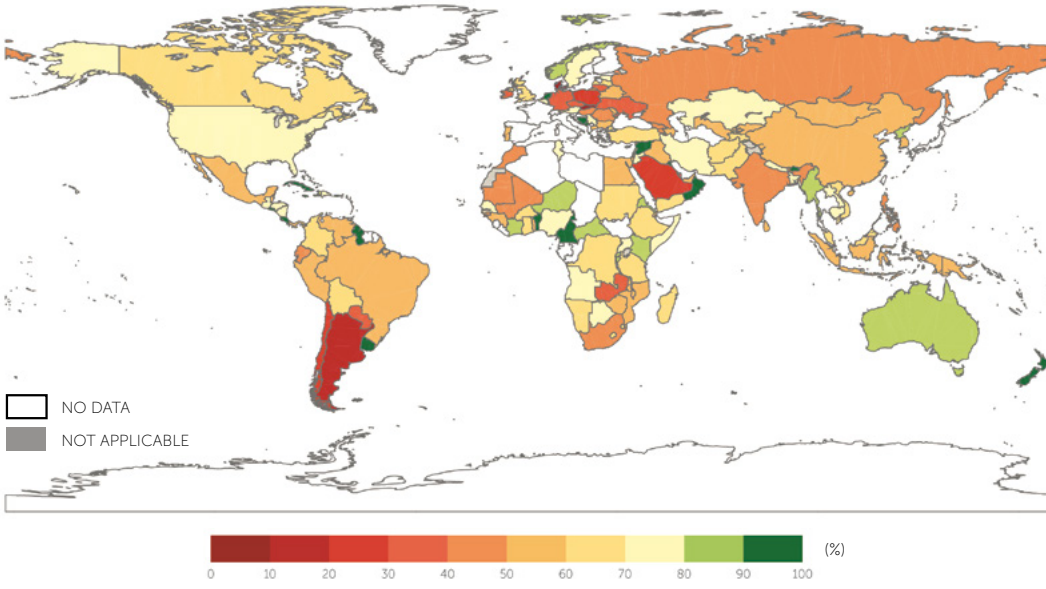


Figure 4.6: Second-line treatment success (in percentage), 2013

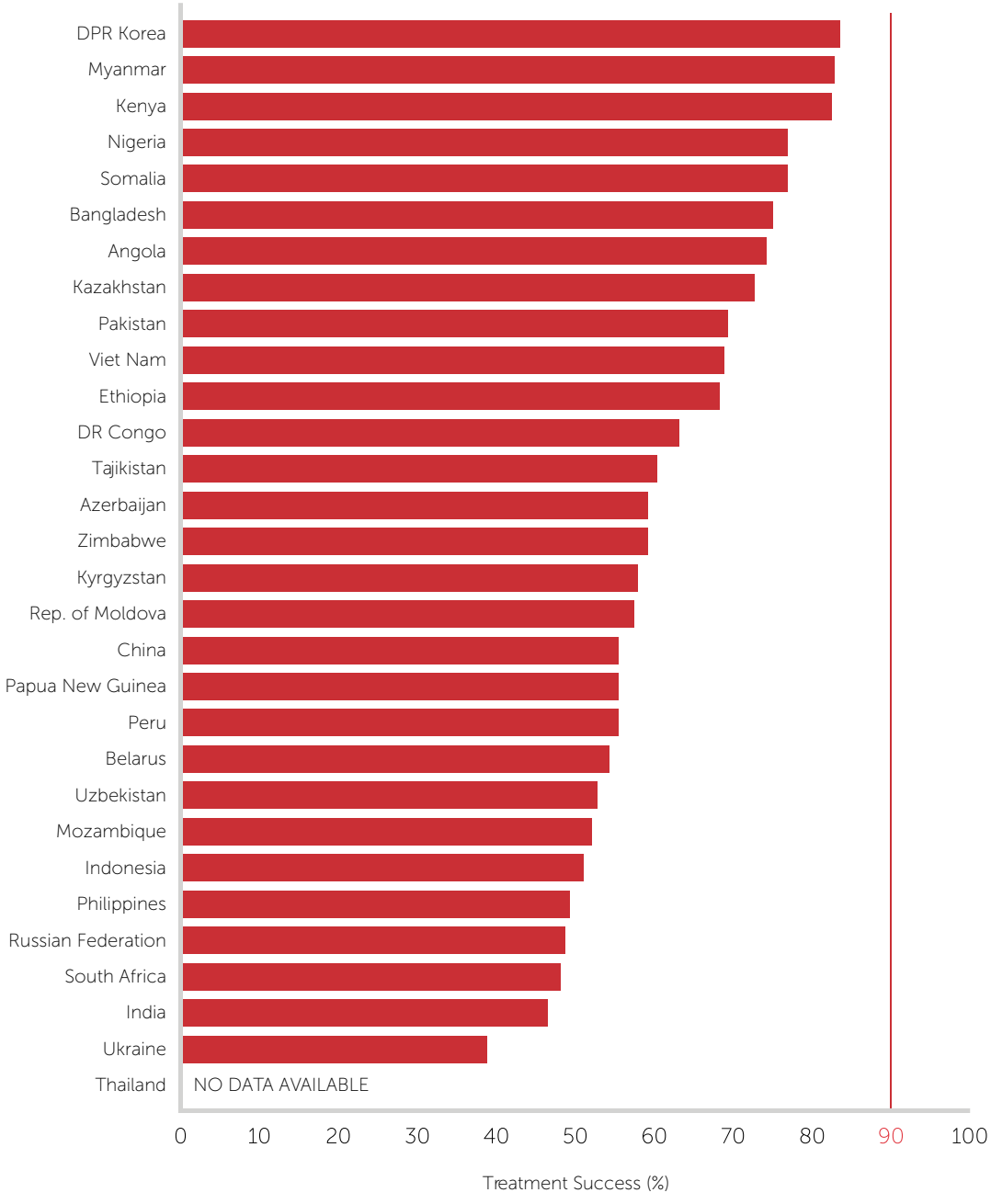


Figure 4.7: Second-line treatment success among the 30 high TB burden countries, 2013

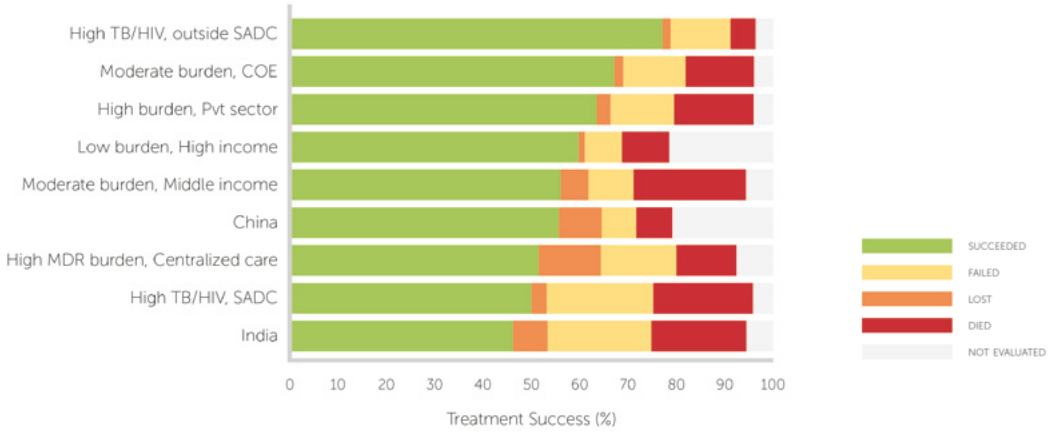


Figure 4.8: Second-line treatment outcomes in nine country settings, 2013

Figure 4.8 shows the treatment outcomes for DR-TB in the nine country settings of the Global Plan. Even though countries that belong to the high MDR burden setting contribute to at least 80% of the total global DR-TB burden, all nine settings are performing inadequately in terms of treatment outcomes.

GAPS IN DATA AND KNOWLEDGE

There are gaps in the data needed to measure progress against the 90-(90)-90 targets at the global and national levels.

These data gaps are glaring, particularly with respect to testing and diagnosis, private sector care, key populations and Preventive Therapy.

Data gaps continue to exist, contributing to the lack of visibility for people suffering because of TB and the lack of evidence needed to address programmatic gaps. In order to end TB, find the missing people with TB, leave no one behind and successfully treat everyone, it is important to address the "missing data" in the TB care cascade and related information systems. The recording and reporting of comprehensive data is essential for ensuring that all people affected by TB have universal and equitable access to quality TB services.

In assessing the progress of countries towards the Global Plan's 90-(90)-90 targets, gaps and inadequacies in the current reporting of TB data have been identified. While there are reasonably good data on people notified to have started treatment and on their treatment outcomes, these data would benefit from greater disaggregation at the national and global levels in order to ensure that access to treatment and treatment outcomes are measured separately for boys, girls, men, women, key population groups and subnational sites.

The areas where data gaps are significant include:

- Care cascade data prior to the start of treatment and notification, including care-seeking data, people being tested for TB, and people who are diagnosed with TB but not put on treatment;

- Data related to diagnosis and treatment for people receiving care in the private sector;

- Data on key populations, including their size, TB burden, notifications and care delivery systems;

- Data on TB PT.

While some of these data are collected at the local level, their use is limited, and they are not systematically collated and compiled at the national and global levels.

Table 5.1 provides a summary of the data gap analysis, emphasizing the urgent need and value added in addressing these gaps.

	GAPS	BENEFITS OF ADDRESSING THE GAPS
REACHING 90% OF ALL PEOPLE WITH TB		
1	Data on the diagnosis of DS-TB are missing. The steps in the cascade of care for DS-TB are incomplete at the global level and not prioritized at the national level for: > Number of people with presumptive TB; > Laboratory data on the number of people tested for TB and the number identified as positive; > Number of people diagnosed with TB.	Complete data on the spectrum of care is critical for: > Monitoring gaps in the care cascade, such as initial drop-outs during the diagnosis process or between diagnosis and treatment; > The change in policy from treatment-based notification to diagnosis-based notification as recommended by the Global Plan; > Data on diagnosis from the public as well as private sector in order to provide a comprehensive assessment of access to TB services.
2	Age and sex disaggregation of notification data is incomplete. > 0–5 year age group with notified TB is missing in 33 countries; > Age and sex disaggregation is missing for DR-TB notifications.	Data disaggregated by age and sex are required to assess access to treatment for boys, girls, men and women. This is crucial for: > Monitoring first-line TB treatment coverage among young children, adolescents and the elderly; > Monitoring second-line treatment coverage among men, women, children, adolescents and the elderly.
3	Incidence trends for DR-TB are incomplete. > The estimated incidence for DR-TB is only available for 2015.	Monitoring of time trends provides information on the direction of progress. This is especially useful to assess the trend in the numbers of people with DR-TB missing from care.
4	Data on PT are incomplete. > 77 out of 217 countries reported on PT for child contacts; > 68 out of 217 countries reported on PT for PLHIV; > Quality of the data reported by a number of countries is sub-optimal.	Collecting complete and high-quality data, including appropriate denominators that reflect the true needs of the population, will enable effective monitoring of PT coverage.
5	Policy on appropriate use of denominators to assess programmatic coverage of TB treatment. > For treatment coverage and treatment success for DS-TB and DR-TB, the denominators should reflect all people who are in need of treatment and not only a subset of the population that has been enrolled in TB care.	Denominators used in indicators for monitoring progress should reflect the full need for TB prevention and care, including incidence of TB, incidence of DR-TB and all people in need of PT. This will ensure scale-up and impact. Focusing only on easy-to-measure subsets of the denominators may lead to a false sense of progress and will not translate into impact.

Table 5.1: Summary of TB data gaps

GAPS		BENEFITS OF ADDRESSING THE GAPS
REACHING 90% OF KEY POPULATIONS		
1	Missing data on key populations at the global level. > Apart from PLHIV, there are no other key populations in which TB is being monitored and tracked at the global level.	Standardized and routine collection of data, including disaggregated notification data on key populations, will enable more effective monitoring of progress towards greater access to services for key populations.
2	Data on key populations are incomplete at the regional level. > Only two regions are collecting data on priority key populations (Europe & Central Asia and Southern Africa).	
3	Lack of standardized approach in data collection at the national level. Although data on key populations exist in a number of countries, there is no standard approach to the recording and reporting of the information.	
ACHIEVING 90% TREATMENT SUCCESS		
1	Data on treatment outcomes disaggregated by age and sex are not available at the global level and national level in many countries.	Disaggregated data will help to identify barriers and challenges associated with specific groups of people, which may require additional attention during treatment in order to improve treatment outcomes.
2	Data on treatment completion of PT are not available.	Without data to monitor treatment outcomes and adherence for people who are receiving PT, the global impact will remain unknown. As treatment regimens become shorter and more effective, monitoring treatment completion will be crucial for impact and advocacy purposes.

Table 5.1: Summary of TB data gaps

A1: LIST OF TB AND DR-TB HIGH-BURDEN COUNTRIES – WHO CLASSIFICATION

The list of 30 high-burden countries developed by WHO for 2016–2020 [12]

	HIGH DS-TB BURDEN	HIGH DR-TB COUNTRIES
1	ANGOLA	ANGOLA
2	BANGLADESH	AZERBAIJAN
3	BRAZIL	BANGLADESH
4	CAMBODIA	BELARUS
5	CENTRAL AFRICAN REPUBLIC	CHINA
6	CHINA	DPR KOREA
7	CONGO	DR CONGO
8	DPR KOREA	ETHIOPIA
9	DR CONGO	INDIA
10	ETHIOPIA	INDONESIA
11	INDIA	KAZAKHSTAN
12	INDONESIA	KENYA
13	NGOLA	KYRGYZSTAN
14	LESOTHO	MOZAMBIQUE
15	LIBERIA	MYANMAR
16	MOZAMBIQUE	NIGERIA
17	MYANMAR	PAKISTAN
18	NAMIBIA	PAPUA NEW GUINEA
19	NIGERIA	PERU
20	PAKISTAN	PHILIPPINES
21	PAPUA NEW GUINEA	REPUBLIC OF MOLDOVA
22	PHILIPPINES	RUSSIAN FEDERATION
23	RUSSIAN FEDERATION	SOMALIA
24	SIERRA LEONE	SOUTH AFRICA
25	SOUTH AFRICA	TAJIKISTAN
26	TANZANIA	THAILAND
27	THAILAND	UKRAINE
28	VIET NAM	UZBEKISTAN
29	ZAMBIA	VIET NAM
30	ZIMBABWE	ZIMBABWE

[12] *Use of high burden country lists for TB by WHO in the post-2015 era. Geneva: World Health Organization; 2015 (http://www.who.int/tb/publications/global_report/high_tb_burdencountrylists2016-2020.pdf, accessed 6 June 2017).*

A2: THE GLOBAL PLAN NINE COUNTRY SETTINGS

List of nine country settings of the Global Plan [13]

	SETTINGS	DESCRIPTION
1	High MDR Burden, Centralized Care	Eastern European and Central Asian settings that have a high proportion of drug-resistant TB and a hospital-based care delivery system
2	High TB/HIV, SADC	Southern and Central African settings where HIV and mining are key drivers of the epidemic
3	High TB/HIV, outside SADC	African settings with moderate to high HIV where mining is not a significant issue
4	Moderate Burden, COE	Settings with severely under-resourced health systems or country settings with challenging operating environments (COE)
5	High Burden, Private Sector	Settings with a high to moderate burden of TB with a large proportion in private sector care
6	Moderate Burden, Middle Income	Middle-income country settings with a moderate TB burden
7	India	India setting
8	China	China setting
9	Low Burden, High Income	Low-burden settings and country settings on the verge of eliminating TB

[13] *Global Plan to end TB: the paradigm shift, 2016–2020. Geneva: Stop TB Partnership; 2015 (http://www.stoptb.org/assets/documents/global/plan/GlobalPlanToEndTB_TheParadigmShift_2016-2020_StopTBPartnership.pdf, accessed 6 June 2017).*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