## A TIME FOR **URGENT ACTION** TO END TB

TUBERCULOSIS REPORT TO CONGRESS



FY 2021



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT REPORT TO CONGRESS

ON FISCAL YEAR (FY) 2021 TUBERCULOSIS PROGRAMMING WITH FY 2020 FUNDS

#### A TIME FOR URGENT ACTION TO END TB

The U.S. Agency for International Development (USAID) submits this report to Congress pursuant to P.L. 110-293, the Tom Lantos and Henry J. Hyde U.S. Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria Authorization Act of 2008, Section 302(d), which amended P.L. 87-195, the Foreign Assistance Act of 1961, to add Section 104B(g).

## **2020: A DEADLY COMBINATION** TUBERCULOSIS AND COVID-19

Tuberculosis (TB) remains one of the world's leading infectious disease killers. The bacterium that causes TB was, until the emergence of COVID-19, described as, "the most destructive pathogen on the planet." Despite being preventable, treatable, and curable, this ancient disease continues to kill more people each year than HIV and malaria combined. While COVID-19 has been catastrophic for the world, clear data demonstrated the pandemic had a disproportionately devastating impact on the global TB response in 2020.

During the pandemic, under-resourced TB personnel across the globe were repurposed and deployed in response to COVID-19, because of applicable skills and experience in active case detection, contact tracing, and airborne infection prevention and control. The social, economic, and biomedical consequences of COVID-19 affected the same groups at risk for TB—the most vulnerable and poorest populations in the world, who are also more likely to suffer from malnutrition and live in crowded spaces. Furthermore, those with COVID-19 and TB are about three times more likely to die than those with only TB.<sup>2</sup>

The U.S. Agency for International Development (USAID) leads the U.S. Government's global TB efforts by working with agencies and partners around the world on the shared goals of reaching every person with the disease, curing those in need of treatment, and preventing the spread of new infections and the progression to active TB disease. In cooperation with Ministries of Health, USAID provides bilateral assistance in 23 countries with high burdens of TB. Leveraging the U.S. Government's contribution to the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), USAID provides targeted technical assistance to an additional 32 countries. In 2020, as a result of COVID-19, there was an increase in undetected and untreated TB cases, and for the first time in over a decade, TB deaths increased. In USAID's 23 priority countries for TB programming, 1.14 million people died from TB, a seven percent increase from 2019.<sup>3</sup> Of the estimated 6.7 million people who fell ill with TB in these 23 countries, only 57 percent of estimated cases were reported to National TB Programs (NTPs) and started on treatment. This represents a more than 20 percent decline compared to 2019.

In 2020, in USAID's 23 priority countries, an estimated 866,000 people developed TB that is resistant to isoniazid (INH),<sup>4</sup> out of whom 258,000 people developed deadlier, drug-resistant forms of TB (DR-TB)—TB variants that are resistant to at least INH and rifampicin. DR-TB, which includes multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB),<sup>5</sup> remains a global public health challenge in that it is more deadly, and more difficult and expensive, to diagnose and treat.

DR-TB causes one-third of all deaths due to antimicrobial resistance (AMR).<sup>6</sup> Of those with DR-TB variants, it is estimated that most acquired the resistant mycobacteria from another infected individual via airborne transmission, as opposed to developing DR-TB because of inadequate treatment, further underscoring the critical need for accelerated action in fighting the TB epidemic to safeguard global health.



Of those with DR-TB in USAID's 23 priority countries, only 82,129 people (32 percent) started on treatment in 2020 (compared to 40 percent in 2019), and just 59 percent of those who started treatment successfully completed it a slight increase from 2019, but still far too low. While individuals who start treatment regimens with new drugs, including new all-oral regimens, are achieving much higher treatment success rates, there remains an urgent need to strengthen proper diagnosis and treatment of DR-TB variants.

TB hinders development and further drives individuals and families into poverty; these economic impacts continue to worsen as a result of the pandemic. On average, TB patients and their households lose 50 percent of their annual incomes as they suffer from, and get treatment for, the disease—even where TB services are provided free-of-charge.<sup>7</sup>

#### THE UNITED NATIONS GENERAL ASSEMBLY HIGH-LEVEL MEETING ON TB

In September 2018, the United Nations General Assembly High-Level Meeting (UNHLM) on TB increased awareness of the disease and set the parameters for the next stage of elimination efforts. At this meeting, Heads of State committed to the ambitious targets of diagnosing and enrolling an additional 40 million people on TB treatment by 2022—commonly referred to as 40x22—to include 1.5 million people with DR-TB and 3.5 million children. Heads of State also committed to enrolling 30 million people on TB preventive therapy, commonly referred to as 30x22. The next UNHLM on TB is slated for 2023.

2 http://stoptb.org/news/stories/2021/ns21\_011.html

I The Economis

3 WHO 2021 Global TB Report, data on USAID's 23 priority countries

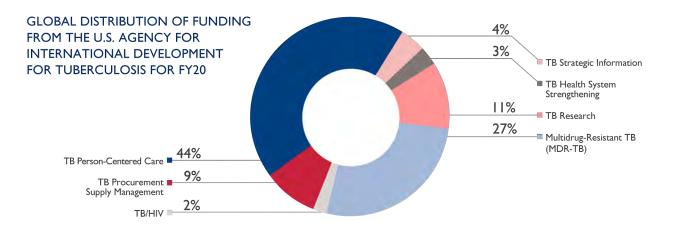
4 Numbers include those with rifampicin-resistant and rifampicin-susceptible forms of TB. 5 MDR-TB is resistant to both isoniazid (the second-most vital drug) and rifampicin (the most vital drug), and XDR-TB is resistant to both rifampicin and isoniazid, and other drugs used to treat MDR-TB. 6 https://www.ijic.info/article/view/20840/14115

7 World Health Organization. National TB Patient Cost Survey to monitor progress toward the target to eliminate catastrophic costs and help design social protection and universal health coverage. 8 https://www.who.int/news/item/09-12-2020-who-reveals-leading-causes-of-death-and-disability-worldwide-2000-2019 9 WHO 2021 Global TB Report

TB is currently the fifth leading overall cause of death in Asia and the eighth overall cause of death in Africa.<sup>8</sup> Across the globe—particularly in low- and middle-income countries millions of people continue to suffer and die from TB each year due to a range of factors including lack of access to TB services; the challenges of diagnosing children; limited availability of effective, well-tolerated DR-TB treatment; stigma and discrimination; high-risk co-morbidities; and the slow development of new diagnostics, drugs, and vaccines. In USAID's 23 priority countries, an estimated 1.4 million people with TB are undernourished, making it difficult for them to successfully complete treatment.<sup>9</sup> In 2020, the onset of the COVID-19 pandemic cruelly compounded all of these factors, resulting in even further suffering and death from TB.

## **USAID'S** GLOBALTB PROGRAM

With continued support from Congress, USAID leads the U.S. Government's (USG) global TB efforts, working through the <u>UNHLM on TB Targets</u>, the Stop TB Partnership's <u>Global Plan to End TB</u>, the World Health Organization (WHO) <u>End TB Strategy</u>, and the USG's <u>Global TB Strategy</u>, which is extended to align with the 2022 UNHLM on TB targets.



In FY 2020, approximately \$310 million in resources were programmed for TB activities, appropriated through USAID's Global Health Programs (GHP) account.<sup>10</sup> This includes programming through bilateral assistance to high-burden countries, regional platforms, and centrally managed mechanisms.

USAID plays an essential coordination role in each country, by working closely with a wide range of multi-sectoral TB stakeholders including Ministries of Health, the Global Fund Secretariat and Principal Recipients, other U.S. Government departments and agencies, WHO, the Stop TB Partnership, civil society, local non-government organizations, faith-based organizations, communities, and the private sector. USAID has increased its support to local partners, civil society, and communities to identify on-the-ground solutions, particularly around stigma, discrimination, gender disparities, and equity. One prime example is USAID's investment in the Stop TB Partnership's Challenge Facility for Civil Society that provides grants, which in 2020 supported 31 civil society grassroots organizations in empowering TB-affected communities, addressing stigma and gender barriers, and activating a human rights-based TB response, among other initiatives. In order to assess the governance of NTPs, USAID developed the first-ever TB governance report in 2020 with the Stop TB Partnership. This annual report will monitor countries' transparency, inclusiveness, efficiency and effectiveness, and legal framework to measure and prioritize strengthened governance in USAID TB priority countries.

#### INCREASING CASE NOTIFICATIONS VIA MOBILE DIAGNOSTIC UNITS IN NIGERIA

TB and DR-TB remain large problems in Nigeria, which bears one of the highest TB burdens in Africa. To improve TB case detection and reduce test result turnaround time, USAID supports two Wellness on Wheels Mobile Diagnostic Units (WOW Units) that rotate within 14 of the country's high TB burden states. These units are each equipped with two GeneXpert instruments, as well as with a digital X-ray machine with artificial intelligence. All components are powered by solar inverters and a backup power generator. Implemented by a local partner, these trucks engage in active TB case finding and then refer individuals who test positive for appropriate TB treatment at health facilities.

From April to December 2020, the WOW Units screened 28,959 people. Of these, nearly 13 percent were identified as having presumptive TB, and nearly 15 percent of those individuals then tested positive for TB. Despite COVID-19's impacts, scaling up of active case finding interventions, such as the Wellness on Wheels initiative, helped contribute to Nigeria nationally recording a 16 percent increase in TB case notifications in 2020.

In addition, while WOW Units were originally targeted toward TB screening and diagnosis, the trucks were adapted to dually screen and test community-based clients for TB and COVID-19 in two states. Between June and October 2020, 1,252 people were screened for COVID-19, yielding 210 positive cases.

10 The Global Distribution of Funding chart was produced using final approved Agency funding levels.





#### DIGITAL INNOVATIONS SUPPORT TB DIAGNOSIS AND TREATMENT DURING COVID-19

In 2020, USAID supported the rapid development and scale up of digital tools and technologies to help maintain TB service continuity during lockdowns and movement restrictions. Innovations, including surveillance apps and video adherence monitoring, played an important role during the pandemic and offer long-term solutions to helping countries' TB efforts.



In South Africa, USAID supported the NTP in piloting the Comprehensive Active TB Tracker (CATT) digital application that enables individuals with DR-TB to access treatment, even during pandemic-related lockdowns.

Functioning as a monitoring checklist for clinics and healthcare workers, this surveillance tool tracks results and monitors referrals to ensure that those with DR-TB are notified and linked to care. Upon piloting the CATT application in South Africa's Doris Goodwin Hospital, the percentage of people with DR-TB linked to care increased by 23 percent. With this success, USAID is working with the NTP to scale up the application.



In Bangladesh, more than 60 percent of the country's health facilities are in the private sector. While the Government of Bangladesh requires all health facilities

to notify TB cases to the NTP, there was often a disconnect in private sector reporting. To help close this gap, USAID supported the development of the Janao application, which allows private practitioners to directly notify TB cases to the NTP. In addition, Janao is integrated into the national electronic TB patient management system, allowing for the seamless transfer of case information between sectors. Despite COVID-related movement restrictions and lockdowns, in Dhaka city, where the Janao app was piloted, up to I3 percent of the TB cases were notified through the Janao app. Recognizing the app's importance, USAID is currently supporting the NTP in rolling it out nationally.



# **OUR APPROACH:** THE GLOBAL ACCELERATOR TO END TB

At the 2018 UNHLM, USAID launched a programmatic approach called the Global Accelerator to End TB (the Accelerator) to increase commitment from, and build the capacity of, governments, civil society, and the private sector to accelerate countries' progress in reaching the global targets. The Accelerator focuses on countries with high burdens of TB where the Agency can align with local communities and partners to deliver results by:



#### INCREASING COMMITMENT:

USAID Missions are leveraging additional TB resources and strategic support to reach the UNHLM targets through **partnership statements** with Ministries of Health in 20 countries. To support implementation, USAID develops **annual country roadmaps** with NTPs and other major stakeholders.



#### **BUILDING CAPACITY:**

To further build a sustainable TB response, USAID has made direct awards to 37 **local organizations** in 21 countries, including faith-based groups and new partners. USAID has also embedded 60 **advisors** to build NTPs' capacities through mentorship and technical expertise.



## **COVID-19'S IMPACT ON TB PROGRESS** & ACHIEVING THE UNHLM TARGETS

COVID-19's impact greatly hampered prospects of meeting the UNHLM TB targets. At the onset of the pandemic, a USAID-funded modeling study cited that COVID-19's impact on the global TB response is projected to sicken an additional 6.3 million people with TB and cause an additional 1.4 million TB deaths by 2025.<sup>11</sup> Data collected in 2020 confirms the start of this downward trajectory, and the trend is expected to worsen in 2021 in several countries.

#### OVERALL SINCE 2000, IN THE 23 COUNTRIES WITH BILATERAL FUNDING:



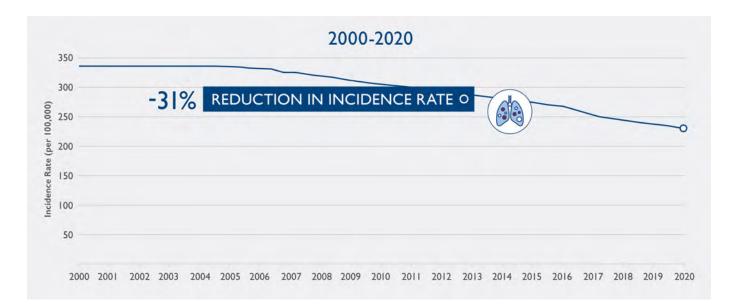
Since 2000, in the 23 countries with bilateral funding, TB incidence decreased 31 percent, TB mortality decreased by 44 percent, and TB notifications increased by 80 percent. Despite the success, notable progress was lost in 2020, with overall TB mortality rates returning to levels last seen in 2018 (a loss of two years of progress), and notifications returning to levels last seen in 2018 (a loss of progress was lost in terms of TB mortality rates, and up to five years of progress was lost in case detection rates in several of USAID's countries.

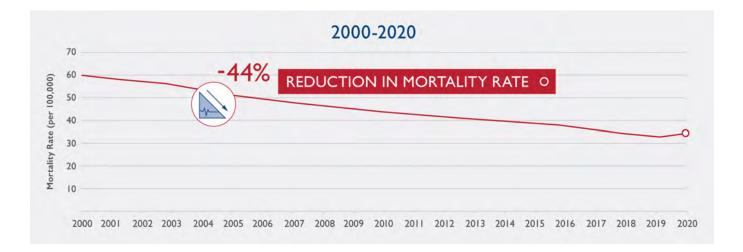
#### USAID PRIORITY COUNTRY STATISTICS: 2019 VERSUS 2020

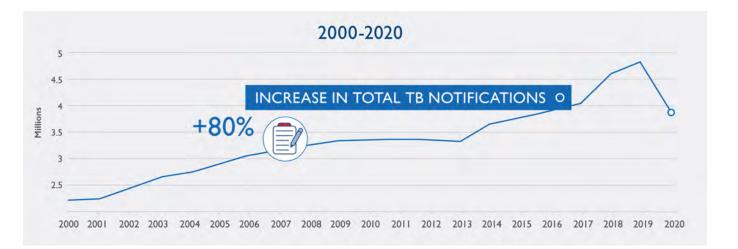
	2019	2020
TB cases detected	4.8 MILLION	3.8 MILLION (I million fewer cases)
Case notifications	5% INCREASE	20% DECREASE
Individuals with DR-TB started on treatment	109,000	82,000
Health workers trained	57,000	<b>33,180</b> <sup>12</sup>
Treatment success rate	88%	89%
Research studies	6	<b>6</b> <sup>13</sup>

11 http://www.stoptb.org/assets/documents/news/Modeling%20Report\_1%20May%202020\_FINAL.pdf

12 Based on provisional data from USAID Missions. Existing health workforce shortages and capacity issues were exacerbated by the COVID-19 pandemic. Prior constraints included the limited number of qualified health care workers at the primary health care level with often large workloads. During the pandemic, under-resourced TB personnel were re-purposed and deployed in response to COVID-19, due to having applicable skills and experience. 13 A detailed description of USAID's research studies and clinical trials are outlined in the Combating Multidrug-Resistant Tuberculosis, Year Five of the National Action Plan Report.







#### **ALL-ORAL REGIMENS MAINTAIN DR-TB TREATMENT DURING COVID-19**

Until recently, DR-TB treatment included months of injectable medicines that were associated with severe adverse events, such as hearing loss. With the advent of new TB medicines, and based on data from research supported by USAID and other partners, a new all-oral regimen is the international standard for treatment of DR-TB. USAID is supporting the scale up of these regimens, which increased by 38 percent from 2019 to 2020.

During COVID-19, the switch to all-oral treatment regimens was important in maintaining many MDR-TB patients on treatment during pandemic-related movement restriction and lockdowns.

In the Philippines, the NTP introduced the short all-oral regimen in March 2020, just prior to COVID-19 lockdowns, and USAID supported the NTP in conducting virtual trainings to cover all DR-TB health facilities by July 2020. The pandemic made the shift more urgent and rapid, as with quarantine restrictions, it would have been difficult for those receiving injectables to report to health facilities daily for injections.

By the end of 2020, 50 percent of all those on MDR-TB treatment were provided with a short all-oral regimen. Despite the pandemic, the Philippines MDR-TB treatment success rate went up to 74 percent in 2020.<sup>14</sup> Based on this and other successes, USAID continues to support research activities to evaluate better TB and DR-TB treatment regimens options.

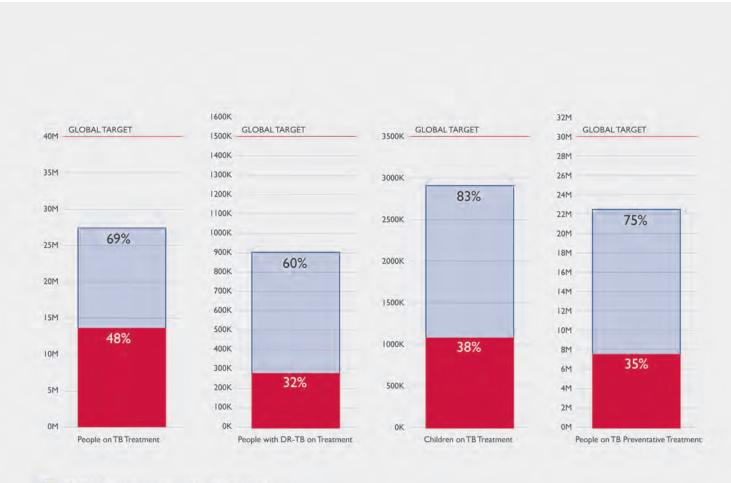




14 Based on 2019 treatment cohort

## **UNHLM GLOBAL** TB TARGETS

USAID priority TB countries make up significant portions of the global UNHLM TB targets. With progress stalling in 2020 due to COVID-19's impact, current data, both globally and for USAID's 23 TB priority countries, shows that the world may fail to achieve the UNHLM targets by 2022, unless intensive commitments and efforts are made.



USAID Countries' portion of the Global Target

USAID Progress towards USAID Countries' portion of the Global Target

#### USAID TB SYSTEM USED TO TRACK COVID-19

Throughout the pandemic, USAID's TB platforms have been systematically utilized to respond to COVID-19 and continue to provide a vital foundation to respond to future airborne pandemics.

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In the Kyrgyz Republic, the Ministry of Health rapidly expanded the USAID-developed TB Laboratory Data Management Information System (LDMIS) to map COVID-19 cases and track the spread of the disease. The system was implemented in 10 laboratories in the capital city of Bishkek and in four additional regions. It allowed laboratory specialists to save time on data input and processing and made the data exchange safer during the pandemic, due to the involvement of fewer contacts and lower physical documentation flow.



## LOOKING FORWARD: RECOVERING FROM COVID-19'S IMPACT

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In 2020, COVID-19's impact, combined with the diversion of attention and resources, reversed years of progress in the fight to end TB. Urgent action is needed to recover from these profound setbacks and drive forward progress in meeting the global TB targets.

To help mitigate the pandemic's impact, USAID is currently executing nine-month targeted TB recovery efforts in seven high TB burden countries that, based on initial data, were most affected. Designed in collaboration with partner governments and the Global Fund, these recovery activities focus on increasing access to and improving the quality of vital TB services. However, if COVID-19 continues to surge in these countries, USAID anticipates further setbacks, with WHO modeling projections suggesting pandemic-related TB disruptions could be much worse in 2021 and 2022.<sup>15</sup>

As demonstrated throughout 2020, USAID's TB investments have built critical platforms to detect and prevent the spread of COVID-19 and other airborne infectious diseases. In addition to the recovery plans, USAID is currently building countries' capacities to respond to both TB and COVID-19 with support for bi-directional testing approaches for both diseases, joint contact investigations and community screenings, stigma reduction and community empowerment, and expanding infection prevention and control measures—providing vital platforms to address both diseases and respond to future airborne pandemics.

Mitigating COVID-19's impact on TB programs—particularly key interventions that will make the largest impact on saving lives—continues to be USAID's highest priority. However, increased political focus and investment from all global TB stakeholders is urgently needed to recover and move forward in meeting the UNHLM global TB targets.

15 WHO 2021 Global TB Report

UKRAINE

UZBEKISTAN REPUBLIC

TAJIKISTAN

AFGHANISTAN

## **USAID** TB PRIORITY COUNTRIES

BANGLADESH

INDIA





CAMBODIA

PHILIPPINES

INDONESIA



## **APPENDIX**

This appendix provides a snapshot into achievements during fiscal year 2021 in each of the 23 countries in which the U.S. Agency for International Development (USAID) provides bilateral assistance to end tuberculosis (TB).

#### NOTES:

- Unless otherwise noted, notification data is used as a proxy for diagnosed and started on treatment.
- The charts use 2020 data for the estimated burden.
- The Stop TB Partnership calculated the targets for "40x22" (diagnosing and enrolling an additional 40 million people on that the Stop TB Partnership updated the targets in November 2019 to reflect most recent burden estimates. This report uses the updated targets for 2019 and onward.
- (PLHIV). This is in alignment with the goals set at the UNHLM.
- Complete data for preventative treatment for TB in 2020 were either partially available or unavailable for Afghanistan, Tanzania, and Zimbabwe.
- Missing data related to these graphs are noted directly on the graphs.
- Data on childhood TB from previous years have been inconsistent because of a mixture of programmatic challenges with number of children started on treatment for TB in 2019.
- For the Burden and Number of Patients Started on Treatment by Age and Sex (2020) graph, Uganda did not report plus in 2020, and Mozambique reports data to WHO in the age groups 0–4, 5–14, and 15 plus.
- of Funding from the U.S. Agency for International Development for Tuberculosis.
- "Support costs" are defined as system costs to support TB diagnosis and care, including the categories of health-systems strengthening (HSS) and strategic information (SI).

#### DATA SOURCES:

USAID sourced the data for all of the following pages from USAID internal systems, WHO, and NTPs.

treatment for TB by 2022, with a focus on countries with the highest burden of the disease) and "30x22" (enrolling 30 million on preventive therapy for TB) by using the latest estimates generated by the World Health Organization (WHO) for the incidence of TB and the number of notifications available publicly. With the exception of India and the Philippines, USAID calculated all projections by using the Tuberculosis Impact Model and Estimates (TIME) model implemented by Avenir Health. To reflect country ambition, USAID adjusted upward the targets for TB treatment in India and the Philippines based on their governments' announcements at the United Nations General Assembly High-Level Meeting on TB (UNHLM) in September 2018. Please note

• For the purpose of this appendix, "drug-resistant TB" (DR-TB) means a strain of the disease resistant to at least isoniazid and rifampicin. • The target for preventive treatment for TB includes three categories: under-five child household contacts of bacteriologically confirmed TB cases, adolescent and adult household contacts more than five years of age, and people who are living with HIV

Bangladesh, Burma, the Democratic Republic of Congo, Ethiopia, India, Kyrgyz Republic, Malawi, Mozambique, South Africa,

• Data on the number of TB cases attributable to top risk factors were not available for certain risk factors in some countries.

diagnosing and treating the disease in children, as well as data-reporting problems. Additionally, for the Number of Children Started on Treatment for Tuberculosis graph, the Democratic Republic of Congo did not report any data to WHO on the

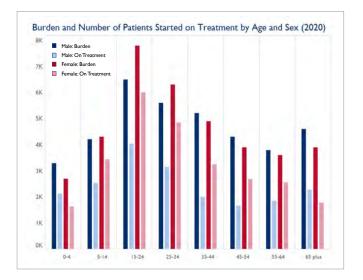
disaggregated data to WHO on the number of patients started on treatment for individuals in the age groups of 55–64 and 65

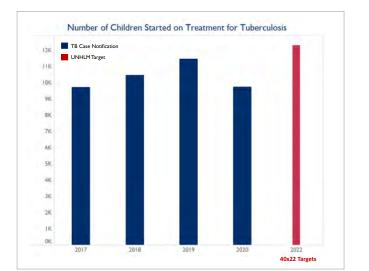
• For the Democratic Republic of Congo and Ethiopia, only projected or planned data is currently available on the Distribution

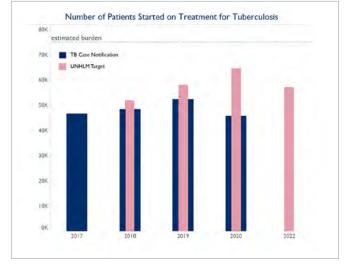
• The charts present the distribution of USAID's program funding according to the agency's internal budgeting and finance system, which includes two TB cross-cutting areas: training and support costs. Training is approximately 10 percent across all categories.

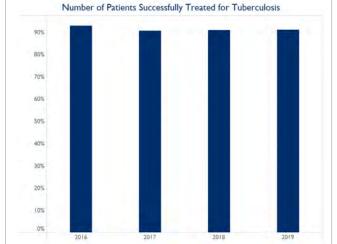
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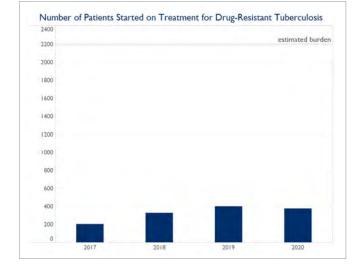
## ISLAMIC REPUBLIC OF **AFGHANISTAN**

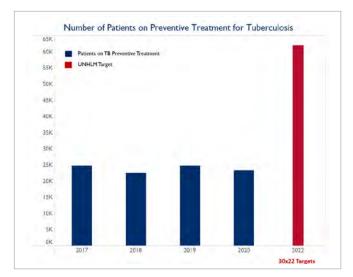








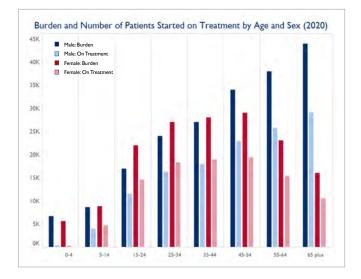


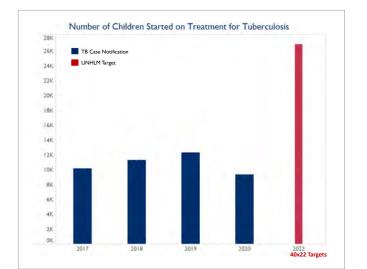


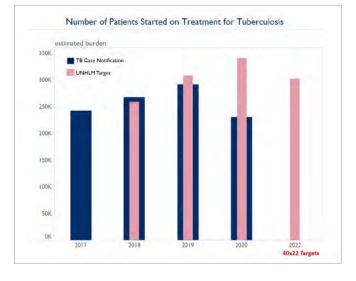
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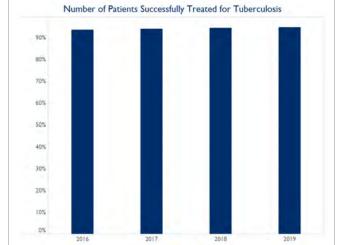
#### PEOPLE'S REPUBLIC OF **BANGLADESH**

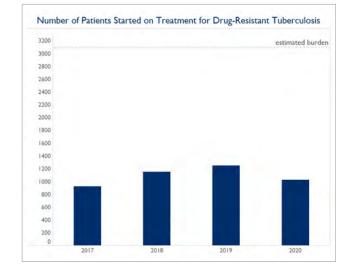
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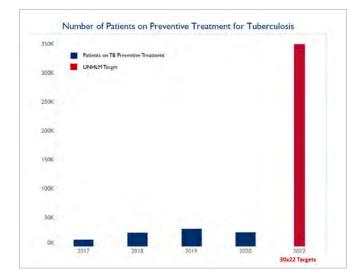


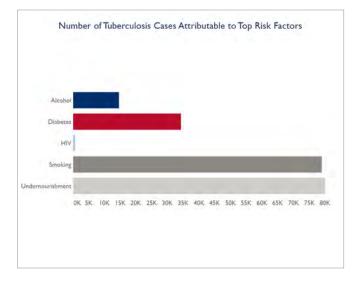


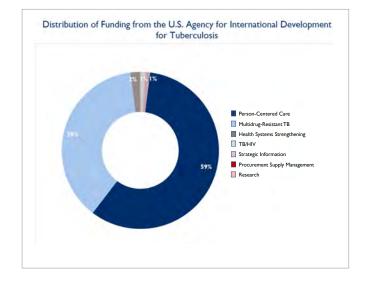




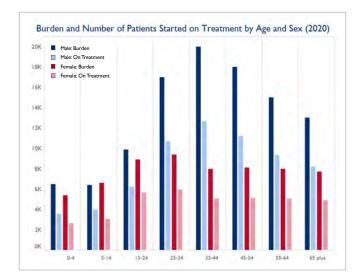


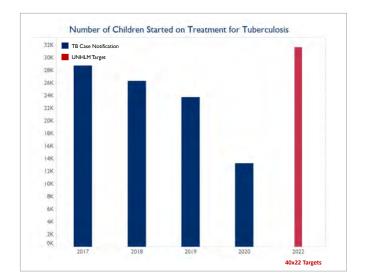


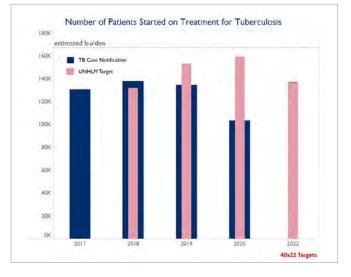


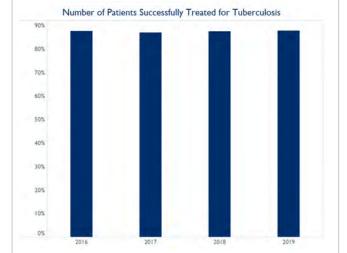


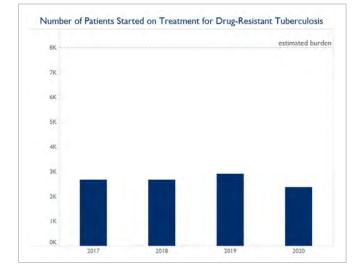
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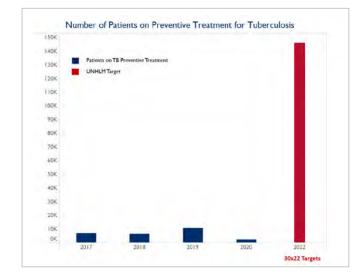




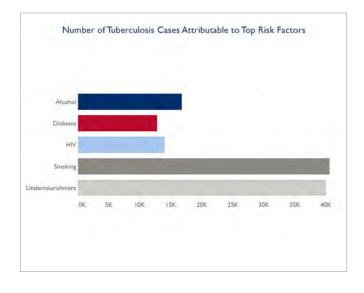


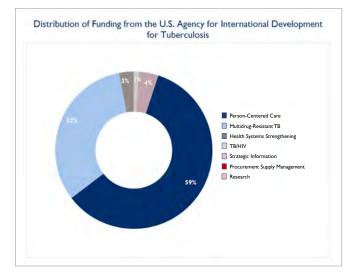




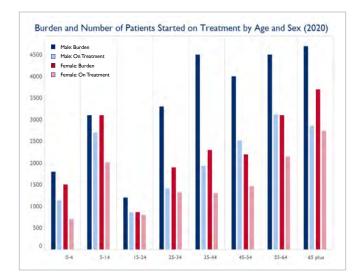


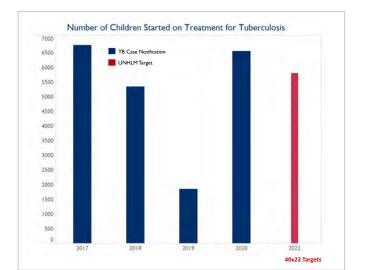
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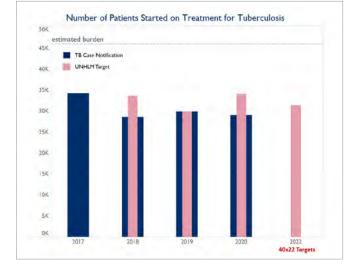


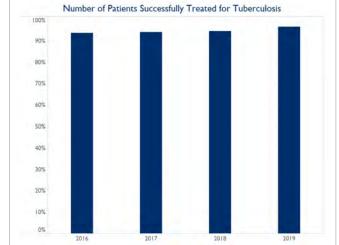


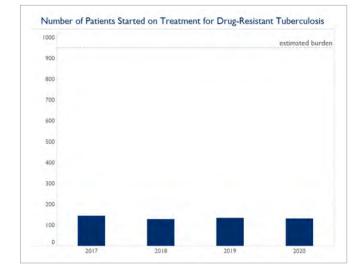
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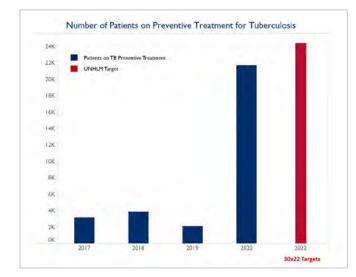




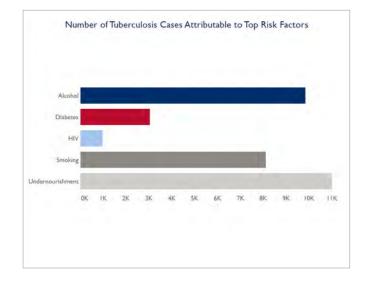


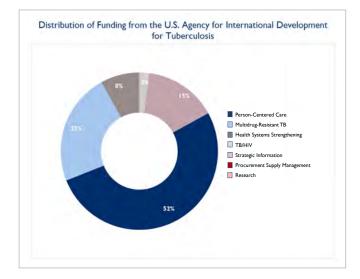






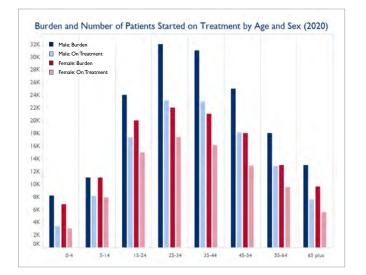
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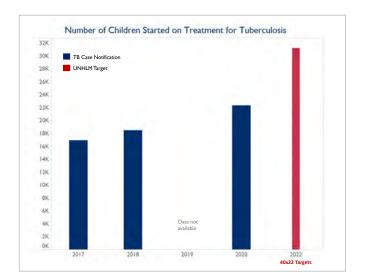


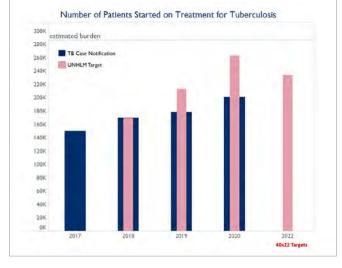


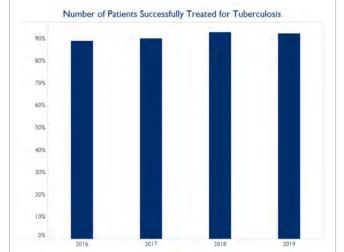
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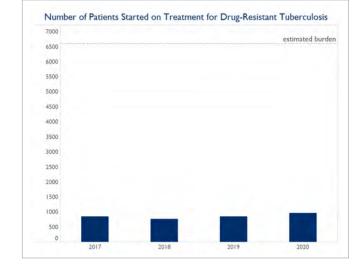
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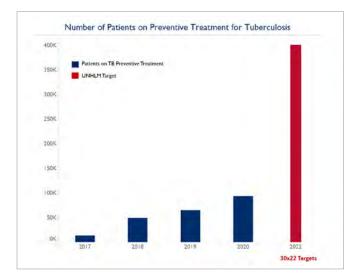


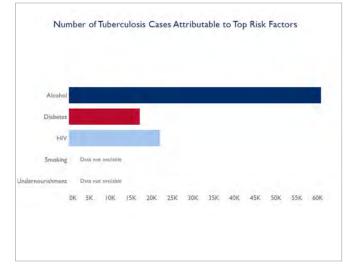


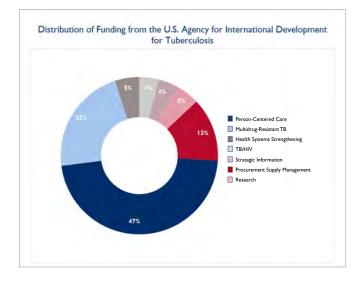






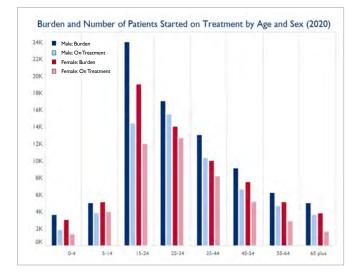


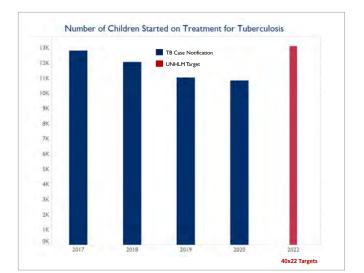


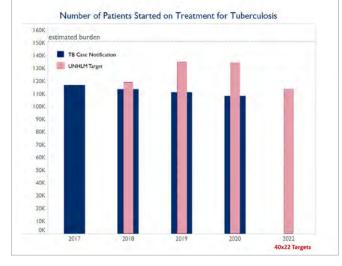


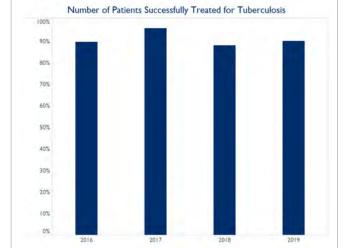
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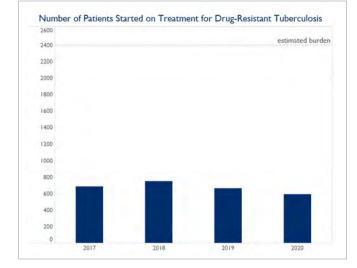
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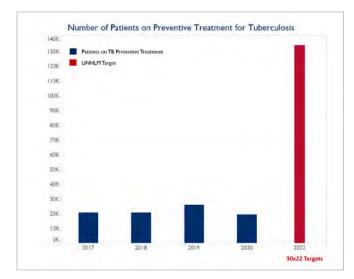


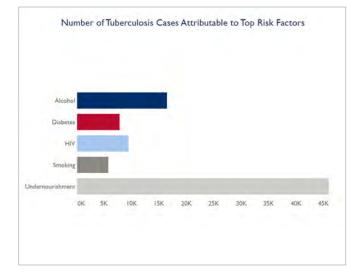


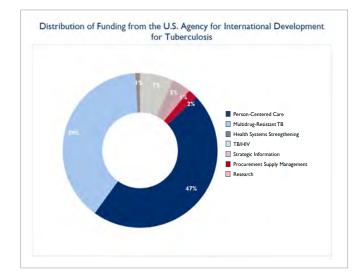




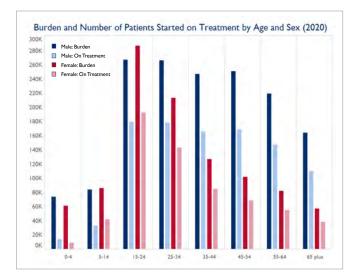


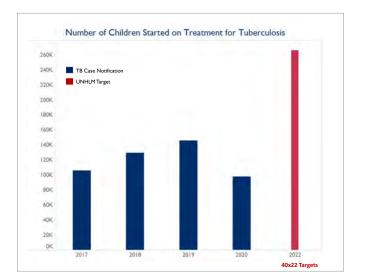


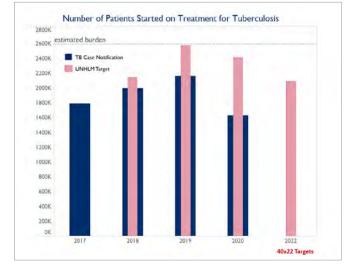


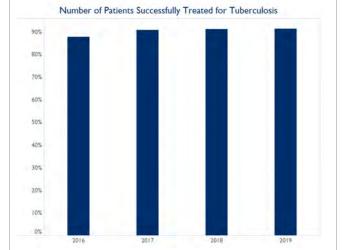


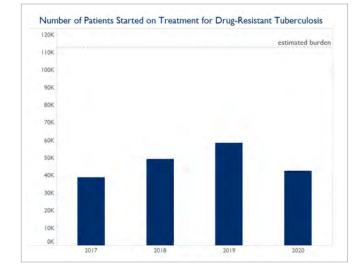
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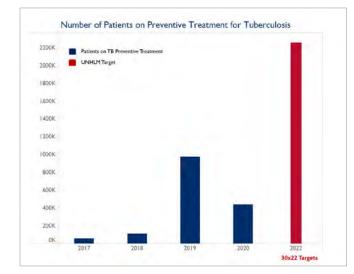




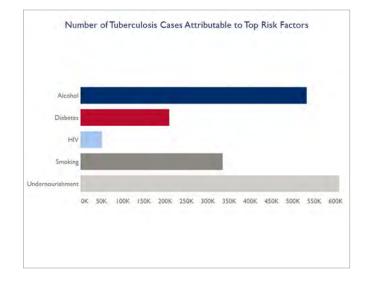


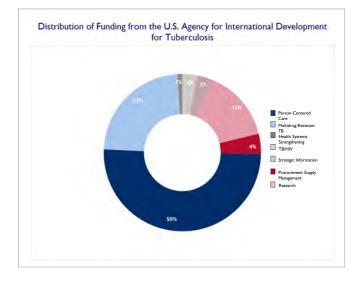




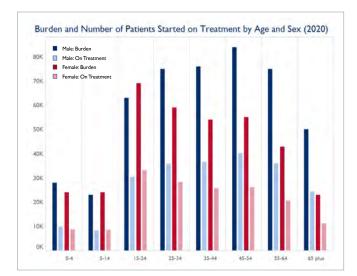


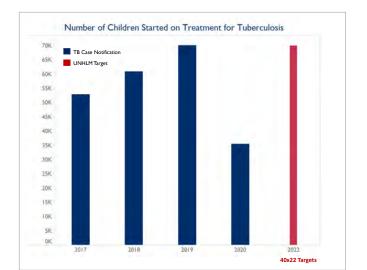
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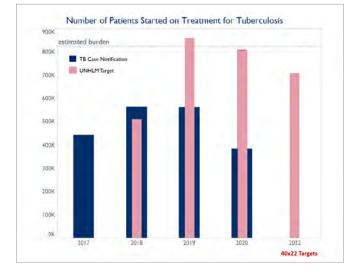


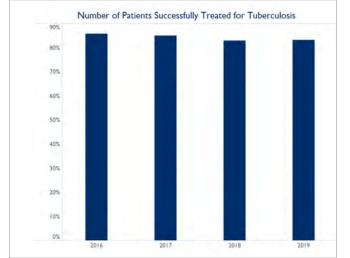


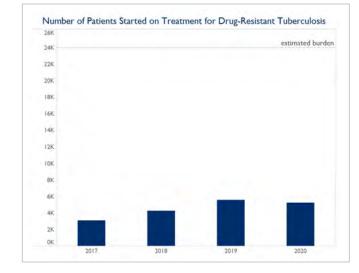
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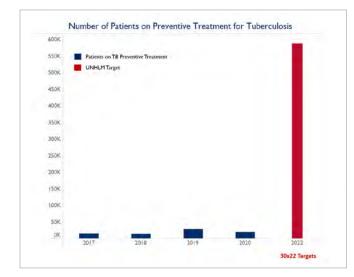




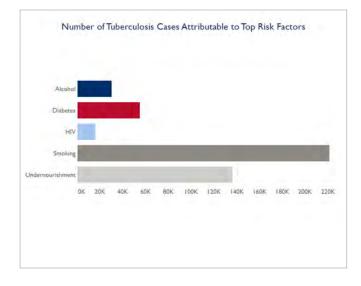


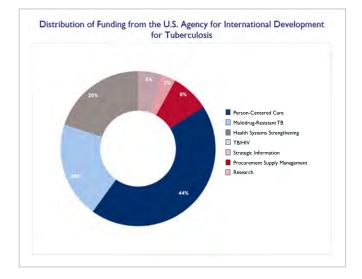




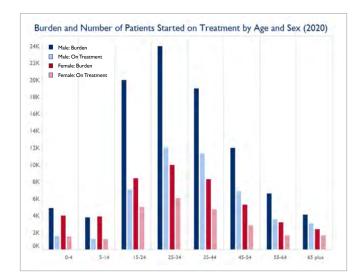


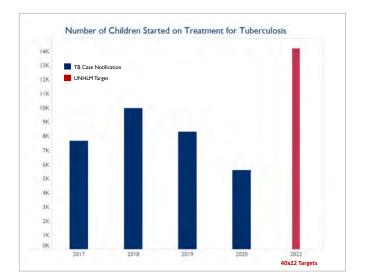
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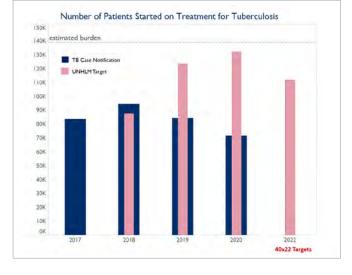


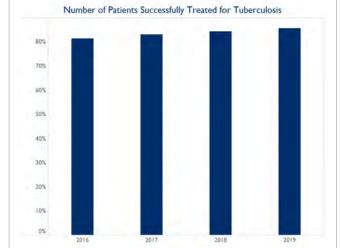


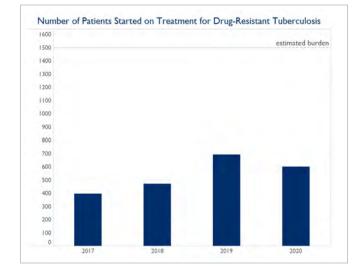
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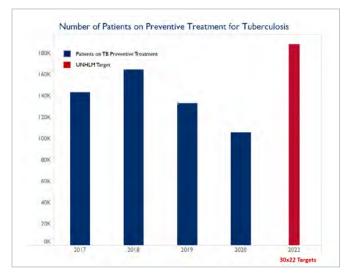




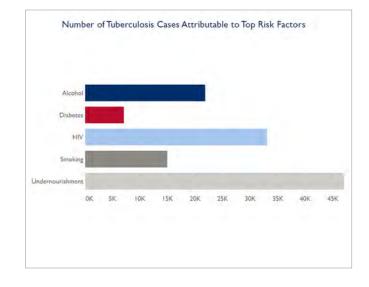


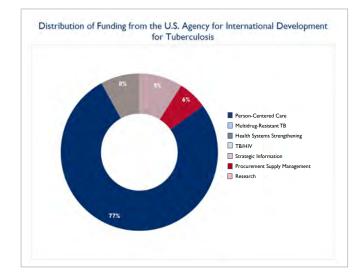




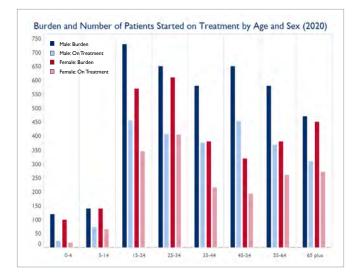


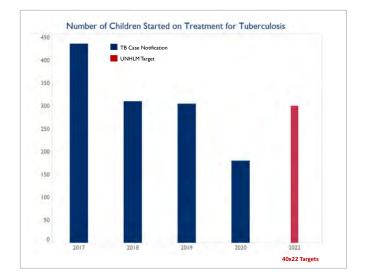
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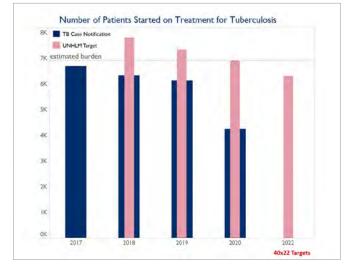


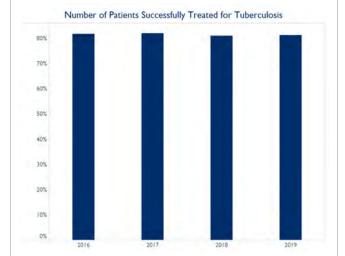


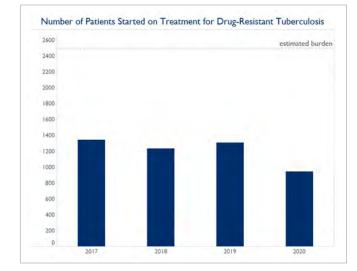


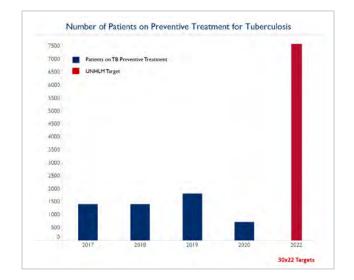




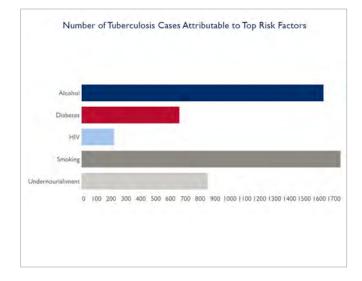


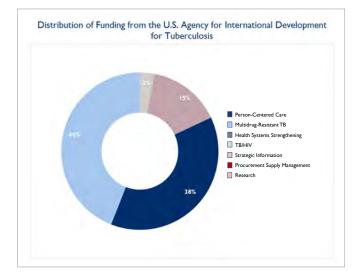




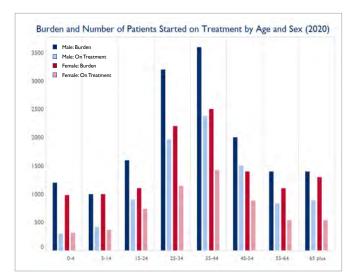


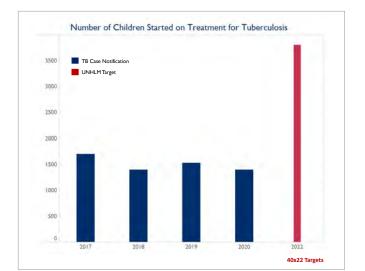
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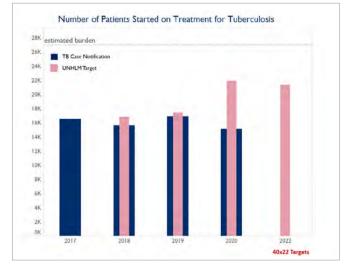


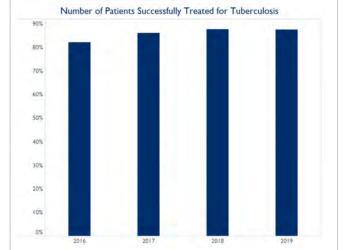


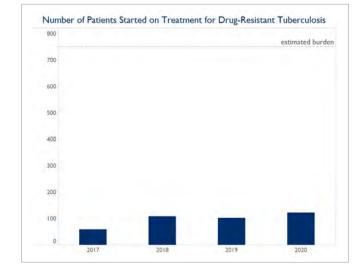
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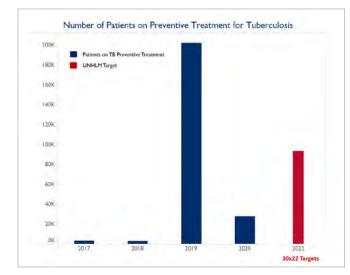




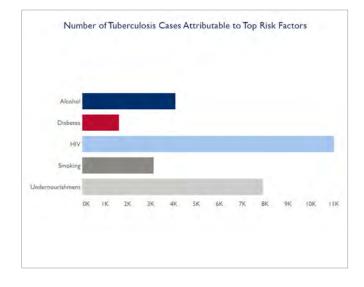


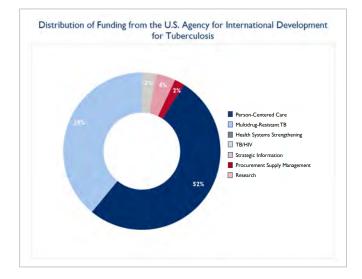




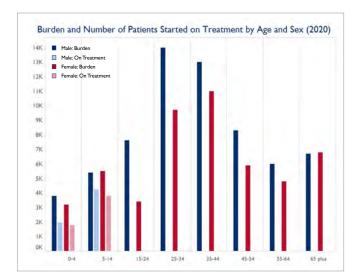


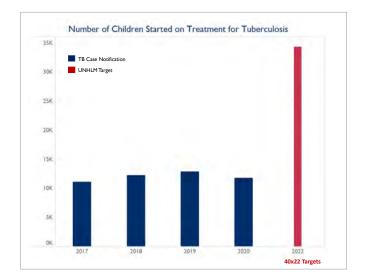
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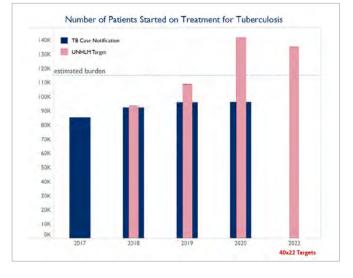


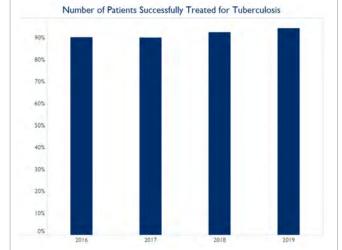


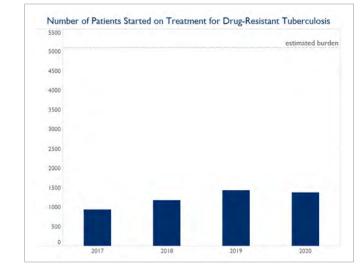
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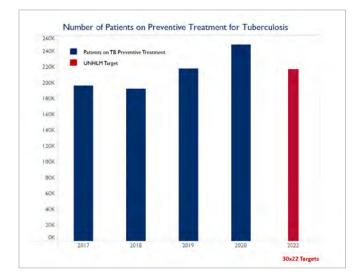




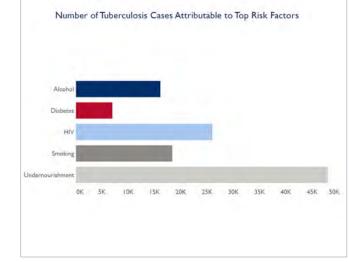


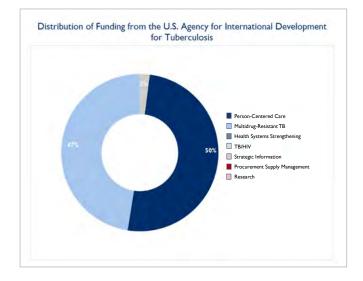




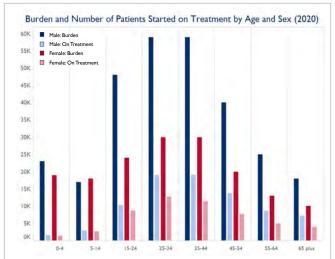


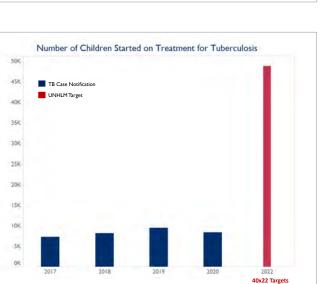
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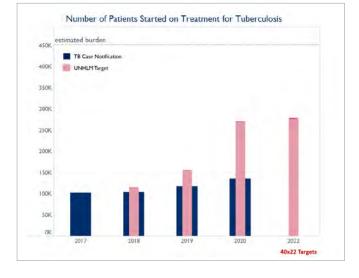


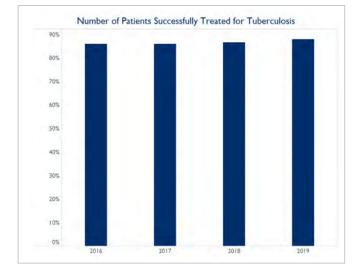


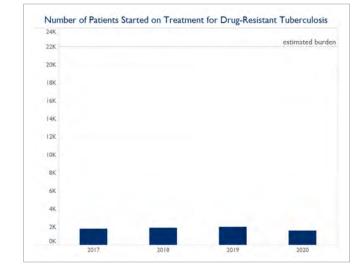
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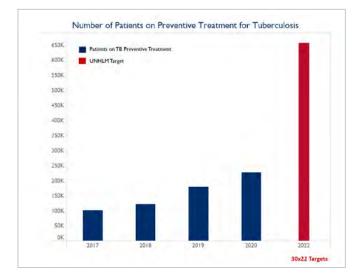




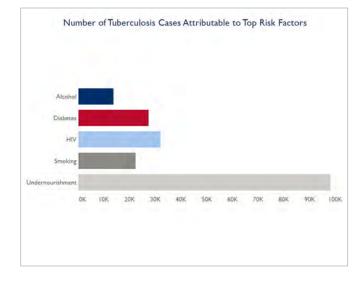


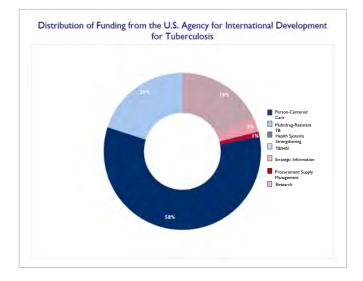




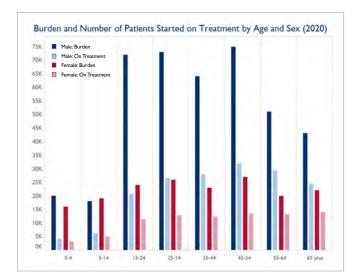


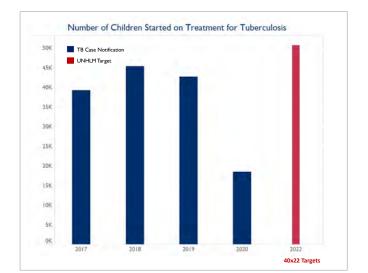
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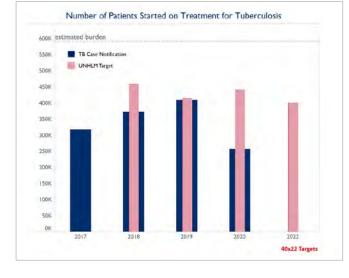


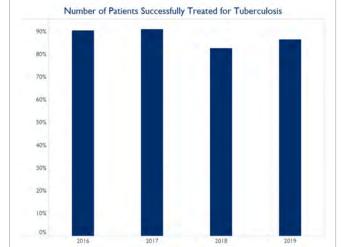


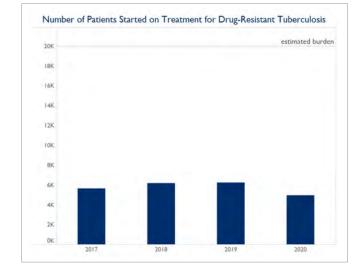
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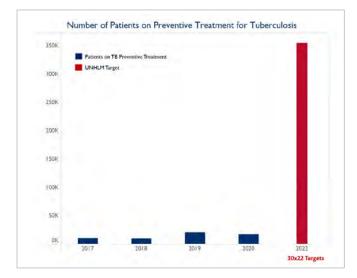




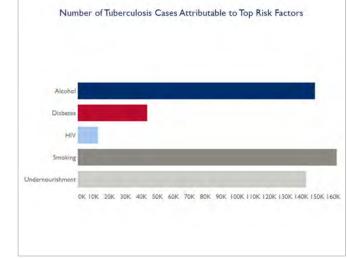


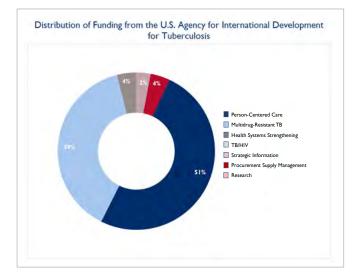




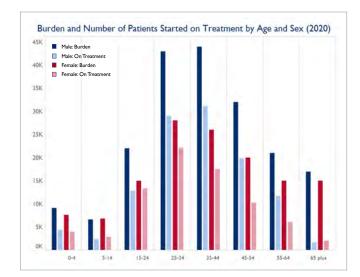


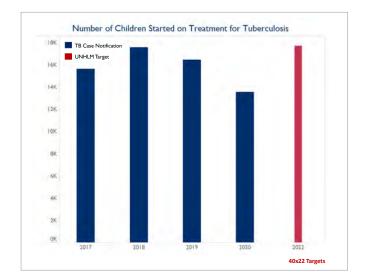
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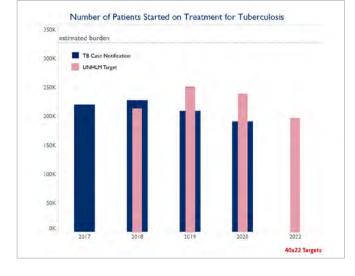


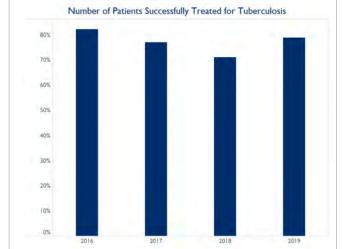


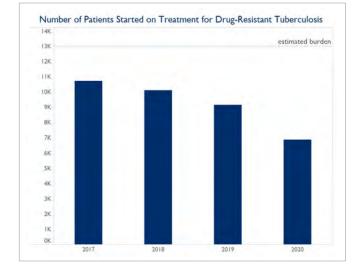
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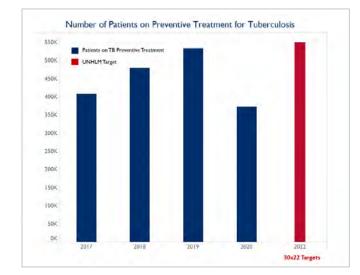




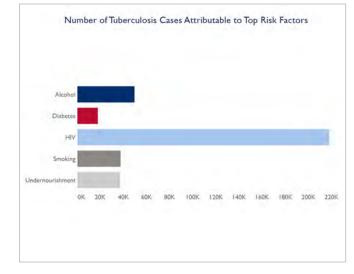


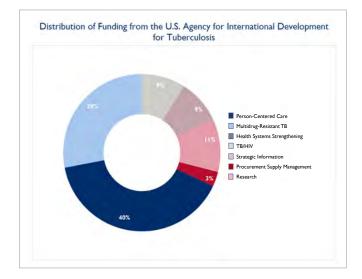




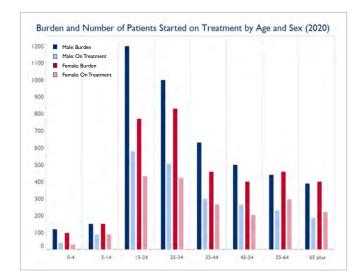


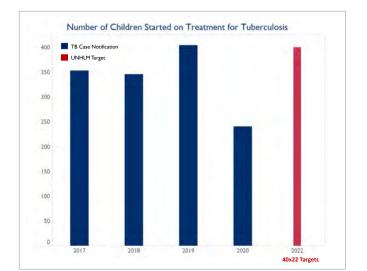
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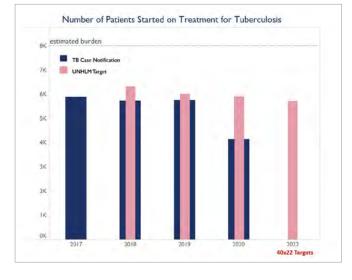


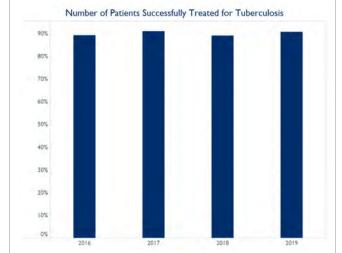


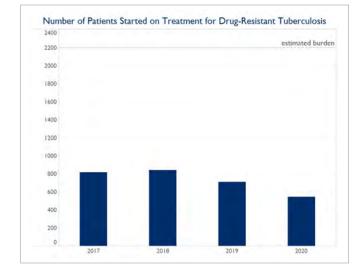
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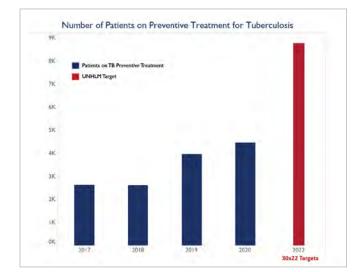




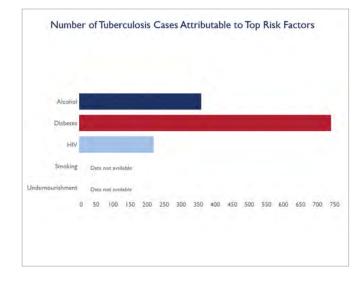


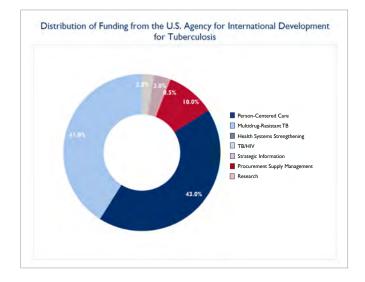




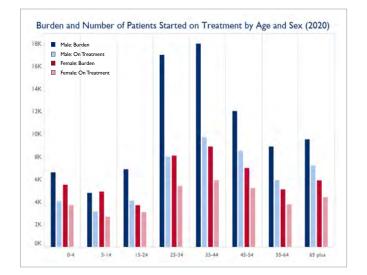


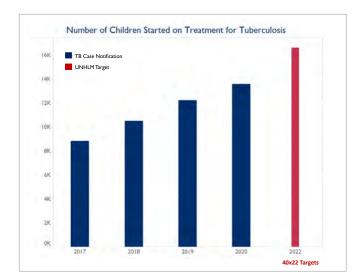
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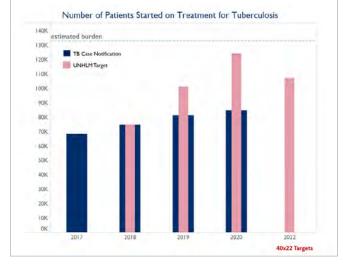


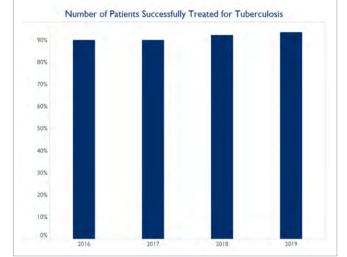


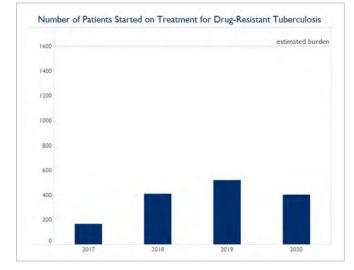
#### UNITED REPUBLIC OF TANZANIA

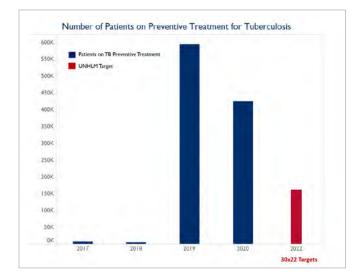




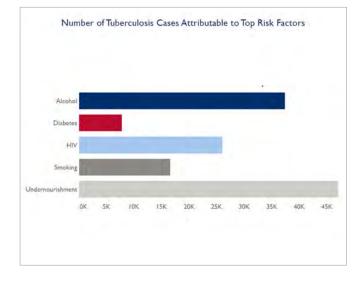


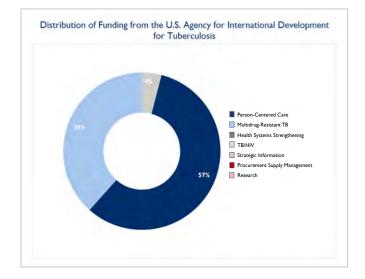




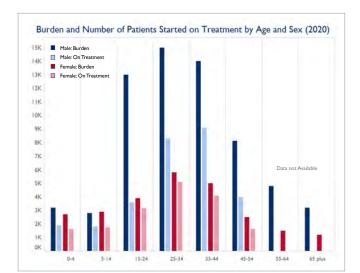


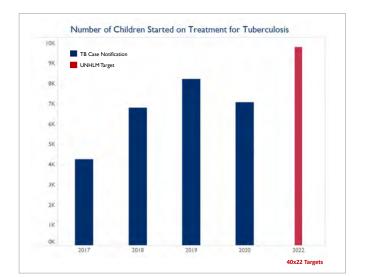
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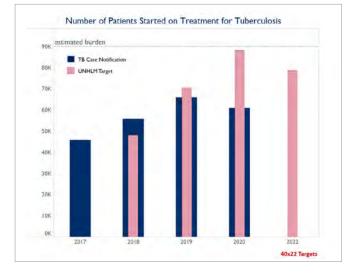


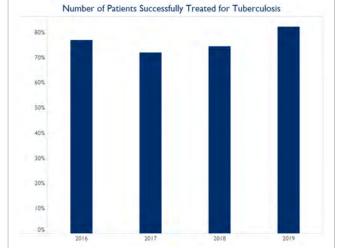


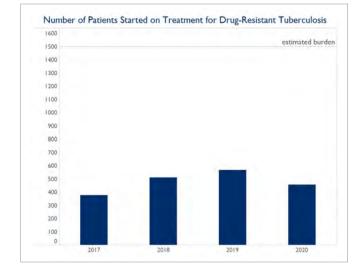
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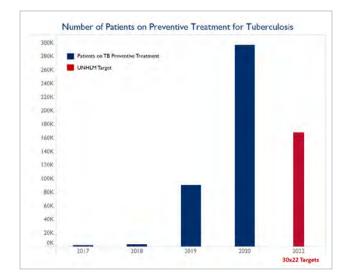






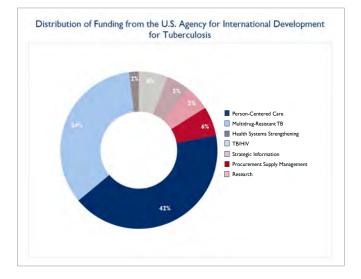




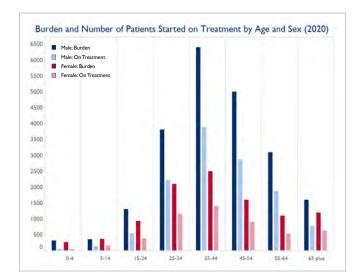


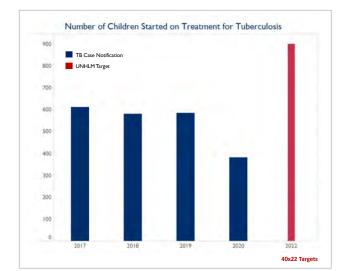
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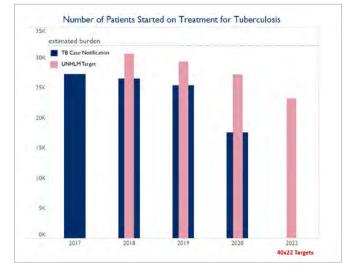
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HIV															
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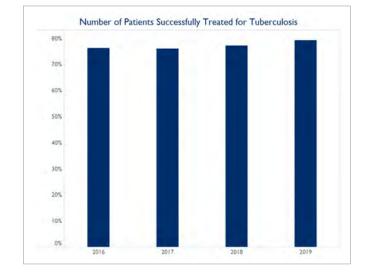


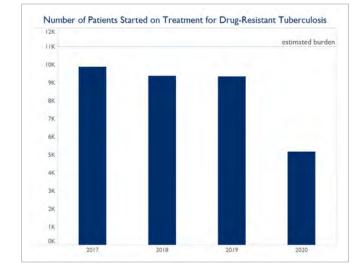
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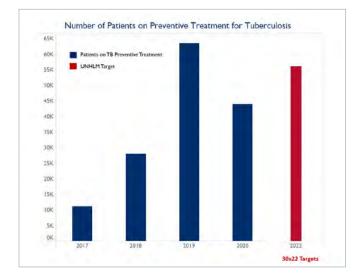




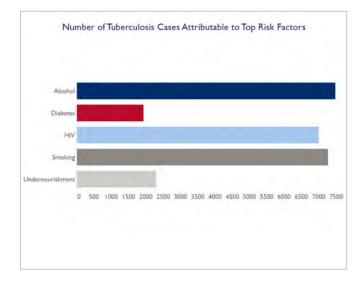


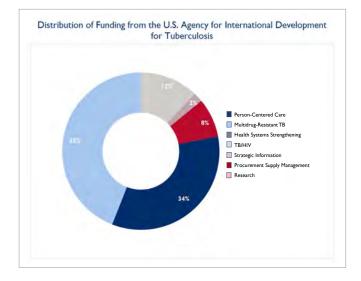




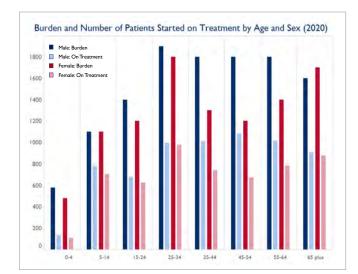


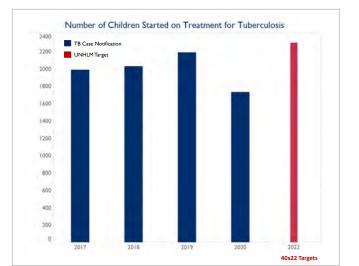
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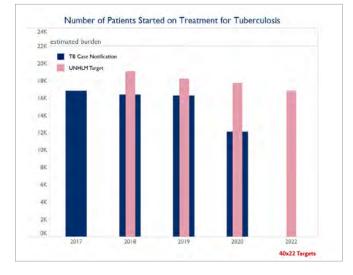


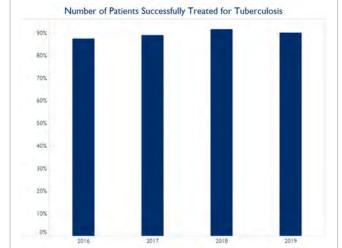


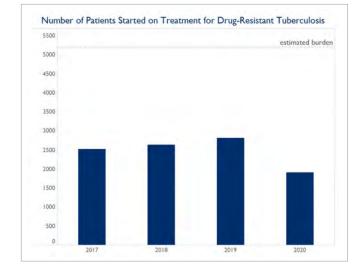
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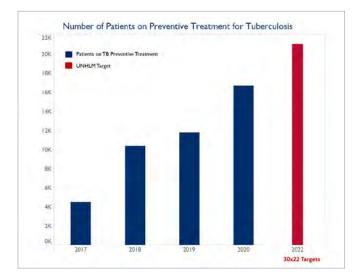




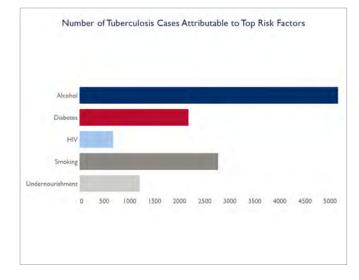


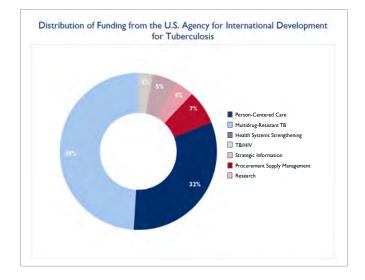






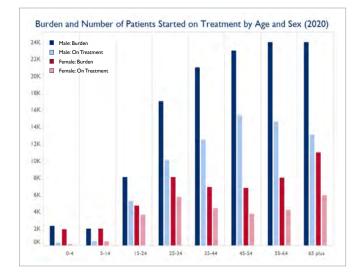
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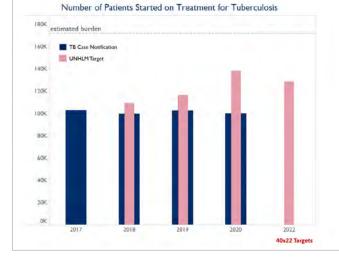


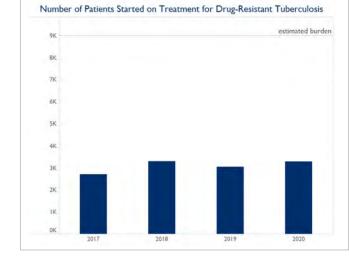


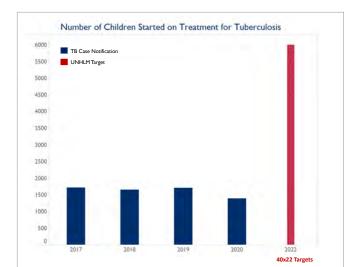
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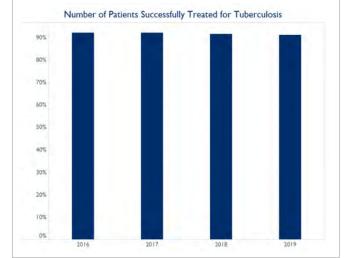
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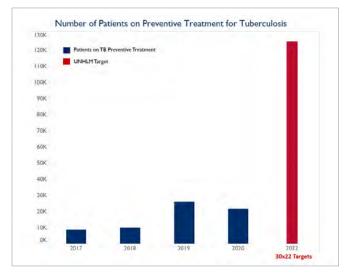


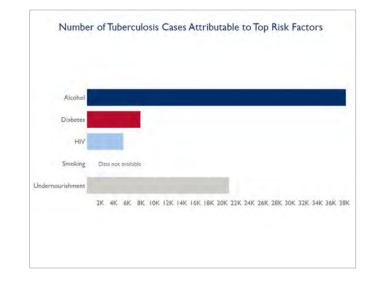


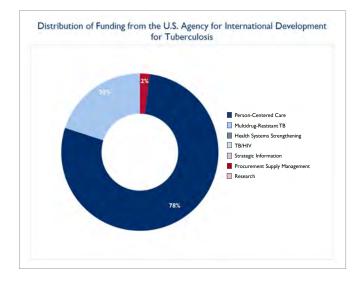




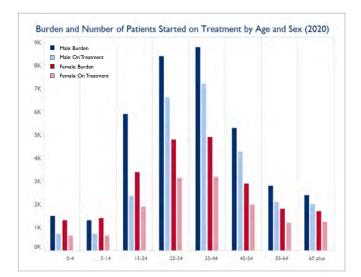


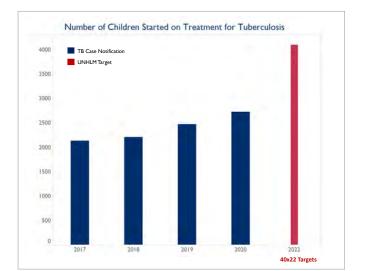


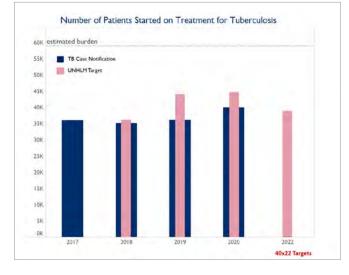


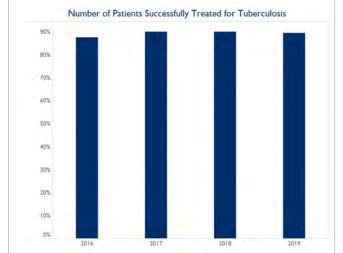


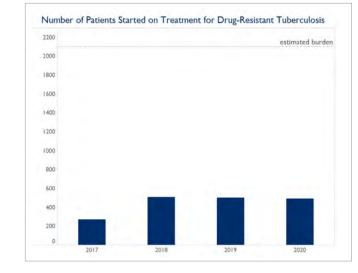
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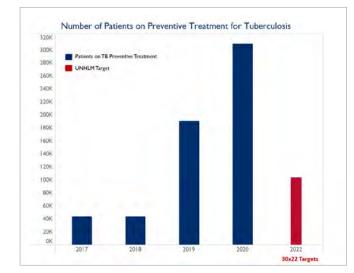




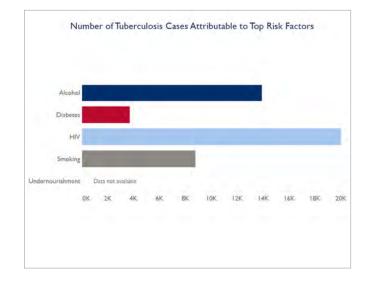


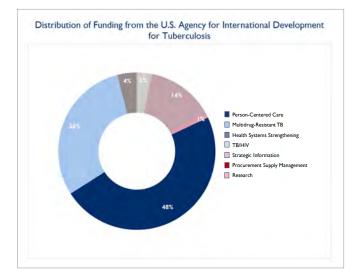




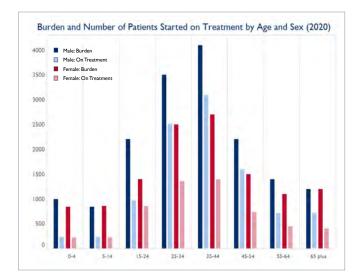


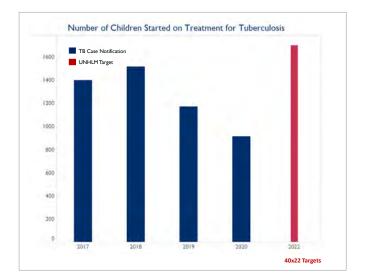
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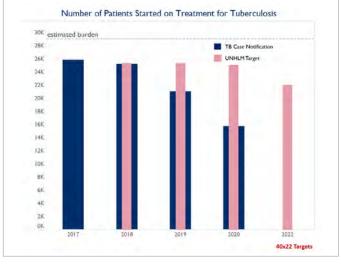


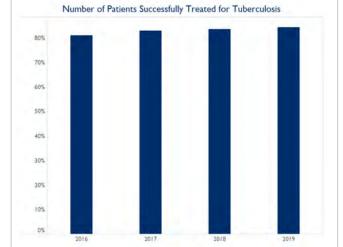


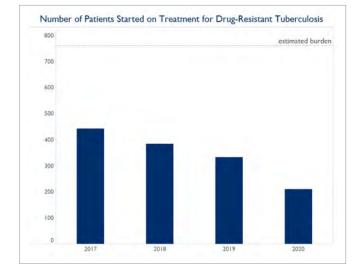
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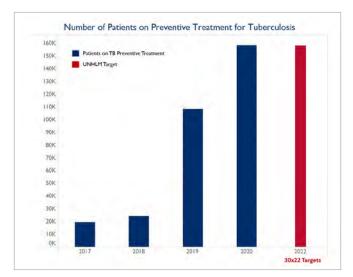




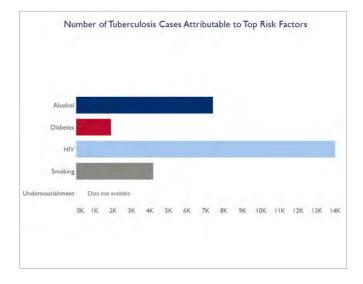








#### REPUBLIC OF **ZIMBABWE**







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