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The Domestic and Global Implications of Considering Non-US Origin a
Risk Factor for Tuberculosis in the United States

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DePauw University Honors Scholar Program

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Introduction

Mabruka, an 18 year old from Ethiopia has experienced living through tuberculosis (TB). TB is a communicable disease often perceived as a disease of the past in high-income countries, like the US; however, TB afflicts the lives of people worldwide daily. Mabruka, who was initially from Ethiopia, knew of TB but assumed that she “didn’t think” she “could get TB” while living in the US. Mabruka was sick for months with symptoms growing increasingly worse. After several visits to the doctor, she was repeatedly prescribed cough medicine but as the months went by, her cough became increasingly severe, she had unexplained weight loss chest pain, difficulty breathing and she began to cough up blood. A visit to the emergency room, months after her initial symptoms, led to her being diagnosed with TB.¹ Mabruka is one of thousands of people, who experience active TB in the US every year, and who suffer from the stigma surrounding TB in the US.²

Despite TB being preventable and treatable, the World Health Organization (WHO) reported that in 2018, an estimated 10.0 million people fell ill with TB globally.³ TB is the most fatal infectious disease with an estimated 1.2 million deaths among people who are HIV-negative and an estimated 251,000 deaths among people, who are HIV-positive in 2018.⁴ TB is highly infectious and can infect anyone; however, the burden of TB is highest in low-and-middle income countries (LMICs) and among marginalized communities. The highest risk groups for TB, according to the Global Fund, are indigenous populations, imprisoned populations,

¹“Mabruka’s Story,” TB Personal Stories, CDC, last reviewed March 7, 2013.

<https://www.cdc.gov/tb/topic/basics/mabrukastory.htm>

² For more TB personal testimonies refer to CDC TB Personal Stories

<https://www.cdc.gov/tb/topic/basics/personalstories.htm> or we are TB <https://www.wearetb.com/resume>

³ World Health Organization (WHO). *Global Tuberculosis Report 2019*. Geneva: World Health Organization, 2019, 1.

⁴ WHO. *Global Tuberculosis Report 2019*, 1.

individuals with HIV, and migrants and refugees.⁵ While TB can be treated, every year, 4.1 million cases go undetected and untreated which continues to exacerbate the TB burden globally.⁶ TB is a disease with global reach but it does disproportionately impact LMICs; however, TB is not eradicated in higher-income countries such as the US.

In the US, 9,025 TB cases were reported to the Center for Disease Control (CDC), the leading public health institute in the US.⁷ The CDC sets the standard for public health practice throughout the US and is a major actor in advocacy surrounding diseases, such as TB. The website for CDC is full of info graphs, informative reports, and of personal testimonies of people who have survived TB like Mabruka. The CDC collects data from health departments nationwide to present an overall picture of the burden of TB. In the CDC's presentation of TB, they present what the number of TB cases, the mortality rate, the risk factors, where the TB cases were, and then who is infected. One of the key variables for individuals of TB, as presented by the CDC, is whether the cases are of individuals who are "foreign-born" or US-born. The CDC notes that the 70.2% of the cases in the United States are among "foreign-born" individuals. ⁸ The binary classification of "foreign-born" and US-born is highly problematic for a number of reasons but the first being that the average number of years that the individuals had lived in the US, at the time of diagnosis, was at least 10 years. So the need to classify whether a person with TB was born in the US or not suggests that the CDC considers the country-of-origin to be the main risk factor in the development of active TB infection rather than the social- contextual factors that are

⁵ "Key Populations: TB," Key Populations, The Global Fund, Published September 13, 2019. <https://www.theglobalfund.org/en/key-populations/>

⁶ Médecins sans Frontières (MSF). *Burden Sharing or Burden Shifting? How the HIV/TB Response is Being Derailed*. Geneva: MSF, October 2019, 5.

⁷"TB: Data and Statistics," Tuberculosis (TB), CDC, last reviewed September 9, 2019, <https://www.cdc.gov/tb/statistics/default.htm>

⁸ "Trends in Tuberculosis, 2018," CDC, last reviewed October 29 2019, <https://www.cdc.gov/tb/publications/factsheets/statistics/tbtrends.htm>

in play in the US. An example of such a factor is food insecurity. According to the WHO, undernourishment is the most significant risk in the development of active TB. Food insecurity is a broader term that encompasses undernourishment and also other factors detailing the accessibility of all people to nutritious food. Food insecurity could be a highly significant factor in developing TB in the US. However, the CDC does not recognize either food insecurity or undernourishment as a main factor in the development of active TB in the US. The focus is on the birthplace of the people with TB. This association perpetuates racist and xenophobic sentiments that immigrant bring TB from elsewhere. The focus on birthplace of people with TB echoes a racist history in the US of blaming immigrants and other minorities as the causes and/or carrier of TB disease. Rather, the focus should be on other contributing risk factors that consider the structural context of each individual with TB.

The implications of focusing on the birthplace of an individual with TB, which means that the social-determinants are ignored, impacts more than just awareness of the TB burden but also factors into what aspects of TB are funded both domestically and globally. The US has been the largest donor for global TB initiatives; however, the interest in foreign aid is dwindling. The guiding ideology for US TB funding, both domestically and abroad, is neoliberalism. The lack of programming that focuses on structural issues, such as food insecurity, can be attributed to neoliberal attitudes. The goal of neoliberalism is to have a free market and to invest in efforts that make a profit. So, most of US TB initiatives both globally and domestically, advocate heavily for the development of vaccines and drugs and ignore broader structural issues, such as food insecurity, which are less likely to make immediate profit.

The CDC's emphasis on whether a TB case in the US is "foreign-born" or US-born" person, suggests the neoliberal influence domestically because this birthplace is the considered the most

important variable rather than the structural contexts within the US itself that contribute to the activation of TB. This characterization is flawed and perpetuates an anti-immigrant idea of immigrants as carriers of disease. It speaks to a larger issue of the importance of the presentation of data within public health, specifically for TB. The characterization of TB disease as being one that most heavily impacts “foreign-born” people impacts funding, the perception of the burden, and the response to the burden of TB. Focusing on the TB patient’s country-of-origin may lead to less effective interventions both domestically and abroad, as well as hinder the efforts to eradicate TB because it relies on the assumption that TB disease is from elsewhere and ignores the structural risk factors that contribute to the activation of TB in the US.

The Burden of Tuberculosis in the United States: A Disease from Elsewhere?

While compared to other countries the US has a low rate of active TB cases, thousands each year still suffer from active TB. In 2018, 9,025 cases or 2.8 cases per 100,000 people, of active TB were reported in the United States.⁹ While TB can impact anyone, according to the CDC, marginalized communities such as ethnic and racial minorities, as well as individuals not born in the US, are disproportionately impacted by TB in the US. In 2019, the CDC reported, that immigrants, or “foreign-born” individuals, totaled 70.2% of the cases in the United States.¹⁰

Similar to the national data, state-level and city-level reports from California and New York City, respectively, presented the data in a similar fashion and emphasized that the majority of TB cases were among “foreign-born” individuals. California and New York City are pertinent

⁹“TB: Data and Statistics,” Tuberculosis (TB), CDC, last reviewed September 9, 2019, <https://www.cdc.gov/tb/statistics/default.htm>

¹⁰ “Trends in Tuberculosis, 2018,” CDC, last reviewed October 29 2019, <https://www.cdc.gov/tb/publications/factsheets/statistics/tbtrends.htm>

locations because across history these locations have some of the highest burdens of TB in the US. The focus on the case rate among “foreign-born” individuals is common in both the New York Health Department TB Report for 2018 as well as the California Health Department TB Report for 2018.¹¹ There are several issues with categorizing “foreign born” as more at-risk of contracting TB. First, there is demographic evidence indicating that many immigrants who contract TB have resided in the US for more than a decade at the time of diagnosis. For example, in the New York City Health Department reported that in 2018 TB, 84% of TB cases in New York City were among “non-U.S.-born patients” and the median number of years that these patients had been in the US was 13 years.¹² Similarly, in the California Department of Public Health reported that in 2018, 83% of TB cases in California were among “persons who were born outside of the U.S” and half of these individuals were diagnosed with TB “20 years or more after arrival in the U.S.”¹³ Despite that most patients in both NYC and in California had resided in the US for over 10 years, the reports published by the health departments still highlighted that the patient was not born in the US. This relates to how health departments as well as the CDC collects data in that the country of birth is key to the presentation of the burden of TB in the US. The insistence of the categorization foreign-birth or born in the US insinuates that TB was imported from elsewhere, namely in a country with a high-burden of TB. However, this claim relies too heavily on outdated information regarding the incubation period of TB.

Experts have long thought that the incubation period for TB was several years following initial exposure to *Mycobacterium tuberculosis*; however, following the analysis of many

¹¹ New York City Bureau of Tuberculosis Control. *End TB NYC: NYC Bureau of Tuberculosis Control Annual Summary, 2018.* Released March 2019, 4. <https://www1.nyc.gov/assets/doh/downloads/pdf/tb/tb2018.pdf>
Tuberculosis Control Branch, *Report on Tuberculosis in California 2018*, California Department of Public Health, Richmond, CA. July 2019.

¹² New York City Department of Health and Mental Hygiene, *Bureau of Tuberculosis Control Annual Summary 2018*. Queens, NY, 2019, 19,20

¹³ California Department of Public Health, *Report on Tuberculosis in California, 2018.2*.

studies, Behr et al. argue that most TB cases occur within two years after initial infection.¹⁴ So, if TB has higher case rates among “foreign-born” people, many of whom have resided in the US for at least a decade, then either these individuals are infected with tuberculosis within the US, or they have travelled to a “high-burden” country, or the latent TB infection activates years after they arrive in the US which implies certain social-contextual factors of living in the US that influence the activation of TB. All three of these scenarios have a commonality in that the country-of-birth is not relevant. Therefore, the CDC and health departments are focusing on the wrong variable i.e the place of birth rather than presenting data based on contextual factors of the lives of immigrants in the US that may contribute to the activation of TB.

The Science of *Mycobacterium tuberculosis*

. TB is caused by *Mycobacterium tuberculosis* and is an airborne disease spread through droplets of the bacteria via coughing or sneezing. However, most people who are infected with *M.tuberculosis* do not have ‘active’ TB but rather latent TB infection, meaning they are not contagious nor do they experience symptoms. *M.tuberculosis* infection and disease is a spectrum which is demonstrated in figure 1. The spectrum ranges, as depicted in figure 1, from infection that is eliminated by the immune system to latent tuberculosis infection, sub-clinical infection, and then active TB infection. TB control and interventions focus on either ‘latent’ or ‘active’ TB infection.

¹⁴Marcel A Behr, Paul H Edelstein, and Lalita Ramakrishnan, “Revisiting the Timetable of Tuberculosis,” *The BMJ* 362, (Aug 2018), 1-2.

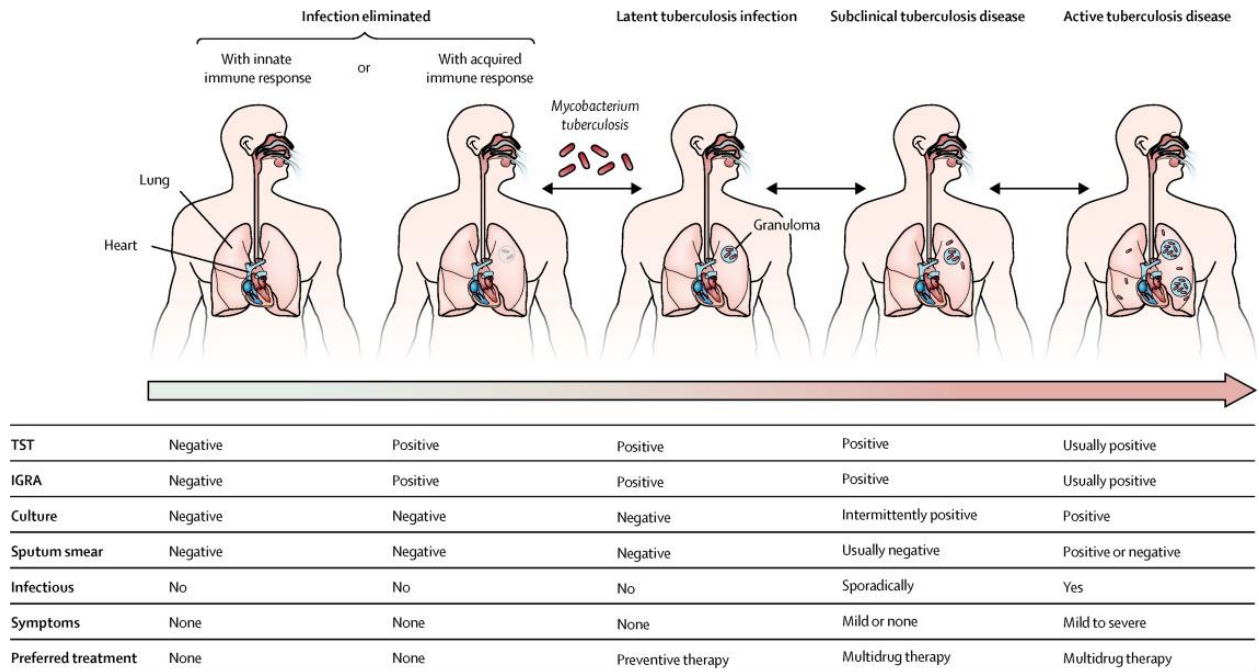


Figure 1: The spectrum of tuberculosis infection and disease.¹⁵ This image demonstrates the spectrum between latent and active TB infection. Latent TB is not infectious and asymptomatic; however, it could develop into active TB, which is infectious and symptoms vary from ‘mild’ to ‘severe.’ On average, latent TB develops into active TB within two years of infection.

Latent TB treatment is the primary method of TB prevention treatment and is one of the CDC’s main strategies for TB control in the US. According to the WHO, latent TB infection is a “state of persistent immune response to stimulation by *Mycobacterium tuberculosis* antigens without evidence of clinically manifested active TB.”¹⁶ The WHO estimates that 1 billion people have latent TB and the CDC reported that an estimated 13 million people in the U.S have latent

¹⁵ Jennifer Furin, Helen Cox, and Madhukar Pai. “Tuberculosis,” *The Lancet* 393, (March 2019), 1643.

Image from Madhukar Pai et al. “Tuberculosis,” *Natural Review* 2, (2016): 3.

¹⁶ WHO, *Latent tuberculosis infection: Updated and consolidated guidelines for programmatic management.* Released 2018, 1.

infection.¹⁷ While these numbers are jarring, the WHO reports that on average, only 5-15% of those infected with TB go on to develop active infection.¹⁸ Behr et al. concluded that the reported burden of latent TB worldwide is ‘overestimated’ because “it reflects immunoreactivity to either past or present infection” meaning that the individual is still immunoreactive to TB and will test positive on a skin test, even a year after treatment.¹⁹ The concept of ‘latency’ has also altered with new evidence in recent years, which increasingly suggests that the burden of latent TB worldwide *and* the incubation period of *M. tuberculosis* inside an individual body is vastly latent overstated.

For decades, experts have thought the latency period could last for several years meaning that once someone was infected with *M.tuberculosis* then it could activate and the disease would manifest later in their lives. Recent analysis of multiple longitudinal epidemiological studies, however, indicate that the incubation period for *M.tuberculosis* is on average two years, maximum, and the vast majority of global active TB cases, is from “recently transmitted infection.”²⁰ Behr et al.’s conclusions indicate that the characterization of “foreign-born” people as being more at-risk of developing TB, without any acknowledgement of the social determinants related to increased risk of TB, is nearsighted since on a national and local level the average number of years that these patients had resided in the US was over 10 years at the time of diagnosis.

¹⁷ “TB: Data and Statistics,” Tuberculosis (TB), CDC, last reviewed September 9, 2019, <https://www.cdc.gov/tb/statistics/default.htm>

Tuberculosis: Overview,” World Health Organization, last modified 2020. https://www.who.int/health-topics/tuberculosis#tab=tab_1

¹⁸ WHO, “Tuberculosis: Overview.”

¹⁹ Behr, Edelstein, and Ramakrishnan, “Revisiting the Timetable of Tuberculosis,” 3.

²⁰ Marcel A Behr, Paul H Edelstein, and Lalita Ramakrishnan, “Revisiting the Timetable of Tuberculosis,” *The BMJ* 362, (Aug 2018), 1-2.

In a study conducted by the Division of Tuberculosis Elimination for the CDC, Courtney M. Yuen et al. analyzed the 26,586 cases of TB between 2011 and 2014 to research the percentage of TB cases that were attributed to ‘limited’ recent transmission rather than ‘extensive’ recent transmission.²¹ They found that 14% of the cases were attributable to recent transmission. 61% of the recent transmission cases were due to ‘limited’ recent transmission and 39% was attributed to ‘extensive’ recent transmission.²² Yuen et al., however, did not explain their definitions for ‘recent’ or ‘extensive.’²³ The lack of definitions highlights the importance of data collection and presentation in accurately depicting the burden of disease. Also, the lack of definitions make conclusions based on a person being infected elsewhere and then developing TB in the US difficult. In this study, ‘foreign-birth’ was negatively associated with ‘extensive’ and ‘limited’ recent transmission.²⁴ Cases attributable to ‘extensive’ recent transmission were more likely in people who had arrived in the U.S. more than 10 years prior to the diagnosis of TB rather than patients, who had arrived 1-5 years prior to their diagnosis.²⁵ They found that 92.5% of TB cases among foreign-born individuals in this period were NOT attributed to recent transmission.²⁶ This study adds on to the CDC’s declaration that for TB cases among “foreign-born” populations, Yuen et al. indicates that TB was not recently transmitted in this population and further insinuates that TB in this population, and thereby for most of the TB cases in the U.S.

²¹ Courtney M. Yuen et al., “Recent Transmission of Tuberculosis—United States, 2011-2014,” *PLoS ONE* 11, no. 4 (April 2018).doi:10.1371/journal.pone.0153728.

²² Yuen et al. “Recent Transmission of Tuberculosis—United States,” 3-4.

²³ “Estimates of Recent Transmission,” 2017 State and City TB Report, the CDC, last reviewed February 1, 2019. In order to better understand the findings of this paper, I assumed that the definition of ‘extensive’ recent transmission and ‘limited’ recent transmission was in alignment of the CDC State and City TB Report because this paper was published by the CDC’s Division. The CDC states that a case is considered to be caused by ‘extensive’ recent transmission if the case “belongs to a plausible transmission chain of six or more cases with at least five preceding cases in the chain within the previous three years.”²³ Otherwise, the cases are considered to be caused by ‘limited’ recent transmission.

²⁴ Yuen et al. “Recent Transmission of Tuberculosis—United States,” 3-4.

²⁵ Yuen et al. “Recent Transmission of Tuberculosis—United States,” 5.

²⁶ Yuen et al. “Recent Transmission of Tuberculosis—United States,” 7.

is brought from their country of origin. It does not acknowledge the potential for becoming infected by travelling to a high-burden area or returning to their home country, if it is considered a high-burden country.

Another study by O.R. McCarthy found that 1/5 of the Asian immigrants in a London neighborhood, who developed tuberculosis in the five year period following their initial arrival, had visited Asia during that period. Another 1/3 who had developed TB, he concluded became infected in Asia, before leaving, and developed TB in the UK. The remaining half had acquired TB while in the UK.²⁷ So around half of the TB cases were said to be due to infection in Asia and the other half in the UK. The categorization of ‘foreign-born’ and Yuen et al. do not acknowledge the possibilities of travelling to high-burden countries, which do not necessarily have to be the country of origin. There is a need to better understand “foreign-born” communities in the U.S and the social-determinants of health that influence the activation or the infection of TB in the US.

The “At-Risk” Immigrant

The second issue with organizing TB cases as “foreign-born” or US-born inherently shifts the blame to the country of origin or even, the individual themselves, rather than acknowledging the social context where immigrants live that perhaps triggers or leads to TB exposure. Blaming immigrants for disease is a human phenomenon with historical roots from the plague in the 16th century, when in Milan they “blamed plague’s spread preemptively on travelers or undesirable migrants.”²⁸ There is a history in the United States of migrant

²⁷ O.R. McCarthy. “Asian Immigrant Tuberculosis—The Effect of Visiting Asia,” *British Journal of Diseases of the Chest* 78, no. 3 (1984): 248.

²⁸ Anne Carmichael, “Plague Persistence in Western Europe: A Hypothesis.” *The Medieval Globe* 1, no. 1 (2014): 167.

populations being demonized as carriers of communicable diseases. Immigrants are often conceptualized as “at-risk” which has “helped cement wider cultural stereotypes and fuel stigma and racism.”²⁹ In the US, TB has disproportionately impacted migrants mostly because of the working conditions as well as economic and social inequality that marginalized immigrant communities face in the US, than their origins.³⁰ In the last century, migrants have been blamed for diseases such as TB in the US for both xenophobic reasons but also race-based theories of disease. In the twenty-first century, highlighting the birthplace of people with TB in the US perpetuates an anti-immigrant sentiment and xenophobic idea that immigrants, in particular immigrants from low-and-middle-income countries (LMICs), are the cause and carriers of disease.

Historical Context of Race-Based Theories of Disease

The categorization of migrants as an “at-risk” group in the USA is not a modern issue but embedded in a historical context rooted in racism and xenophobia. Race-based theories of disease were pervasive in the late 19th century and at the turn of the 20th century largely due to the rise of eugenics, even after Robert Koch’s discovery of the bacteria and germ theory. In the 1870s, Native Americans were dying of TB at an alarming rate and doctors attributed it to their ‘inferiority’ as a race. For example, in 1887, Dr. William Coe, wrote “the Indian is more susceptible to this malady than the white man under like conditions.”³¹ Coe’s language blatantly portrays the racist undertones for Native American’s susceptibility to TB.

²⁹ Heide Castañeda, “Im/Migration and Health: Conceptual, Methodological, and Theoretical Propositions for Applied Anthropology.” *NAPA Bulletin*, 34 (November 2010), 16.

³⁰ Castañeda, “Im/Migration and Health,” 17.

³¹ Christian W. McMillen. *Discovering Tuberculosis: A Global History, 1900 to the present*. (New Haven: Yale University Press, 2015), 19

Later at the turn of the 20th century, notions of racial superiority among white Americans were omnipresent with ideas that physical strength and vigor were the reason for their social and political supremacy.³² While it may seem that public health officials have evolved past this thinking, the race and ethnicity categorization on the CDC's publication on TB lies dangerously close to racial-based reasoning for developing TB. For example, in an infographic (Figure 2) and in their official publications, the CDC shows 'Asians' as the most impacted group in the US, accounting for 35.3% of TB cases.³³ However, there is not any clarification of what they mean by 'Asian.' In order to hone in on who is most impacted by TB, it is important to specify whether the CDC means people who have migrated from an Asian country to the US or people of Asian descent. The same can be said for the "Hispanics or Latinos" figure which does not provide more specificity on whether they mean exclusively the ethnicity or whether this includes immigrants, as well. While it seems that the intention was to indicate that racial and ethnic minorities are disproportionately impacted by TB because of other structural inequalities in the US, that is not clear, and so it is disconcerting that the most prominent public health voice in the US, the CDC, is perpetuating an antiquated racial-based reasoning for TB in their health communications. Most importantly, many immigrants who are diagnosed with TB bear the brunt of both being perceived as "foreign" even though most have lived in the US for more than a decade and they are also racial/ethnic minorities. Both of these categories are stressed as important in the TB burden of the US, according to the CDC; however, the conflation of "foreign-born" and racial/ethnic minority could have implications of race-based reasoning for TB.

³² Emily Abel, *Tuberculosis and the Politics of Exclusion* (New Brunswick: Rutgers University Press, 2007), 61.

³³ CDC, Trends in Tuberculosis, 2018.







Race/Ethnicity	Percentage of Reported TB Cases in the United States – 2018	Incidence Rate of TB Cases per 100,000 – 2018	Percent Change of Incidence from 2017 to 2018
American Indians or Alaska Natives	1.2%	4.3	 10.0%
Asians	35.3%	17.0	 -4.7%
Blacks or African Americans	19.9%	4.4	 -6.7%
Native Hawaiians and other Pacific Islanders	1.3%	20.0	 2.7%
Hispanics or Latinos	29%	4.4	 1.7%
Whites	11.9%	0.5	 0.2%

Figure 2: This is the data presented by the CDC on their webpage titled “Trends in Tuberculosis, 2018” and is placed under the sub-heading “Minority populations continue to be disproportionately affected by TB disease.”³⁴

Further, it is also important to highlight that for several racial and ethnic minority groups the burden of TB has either remained stagnant or increased between 2017 and 2018. Khan et al. found for the past two decades, TB cases have decreased nationally, however, disparities between who has active TB infection have not. They used rate ratios to assess the health disparities between various populations in the U.S and found that the case rate for TB decreased for minority populations as a whole; however, the rate ratios of TB, between 1994-2016, either increased or stayed the same for all minorities relative to the white population in the USA.³⁵ The disparity between white populations and minorities in TB infection did not improve in over two

³⁴ CDC, Trends in Tuberculosis, 2018.

³⁵ Khan et al., “Changes in Tuberculosis Disapirities at a Time of Decreasing Tuberculosis Incidence in the United States, 1994-2016,” *AJPH* 108, no. S4 (2018).

decades. For immigrant populations in particular, the index of disparity by national origin increased an average of 1.5% per year between 1994 and 2016 indicating that while there has been progress to decrease TB, immigrants face a disparity with TB infection here in the US. It would be incorrect to shift all of the blame to the country of origin, rather more focus should be given to the social and environmental factors here in the US that would increase the risk of developing TB in the USA for these immigrant populations.

Similar to the CDC, health departments around the country are emphatic that most cases of TB in the USA are contracted by “foreign born individuals.” Local histories of TB in the US are also rooted in racism and xenophobia. California, which has 23.2% of all cases of TB in the US, has a significant history of TB and exclusionary sentiment towards immigrants.³⁶ Dr. Emily K. Abel, in her historical analysis of TB in Los Angeles in the early 20th century, provides a historical context of ideas of racial superiority that bleed into anti-immigrant sentiment. At the turn of the 20th century, Los Angeles was considered a place where the warmth and the sun would greatly benefit people with TB. However, the Los Angeles leadership worked to change this perception because they felt that it was attracting ‘poor’ and diseased people that were burdening their community. Abel argues that not only was there a growing fear of TB but also a growing fear of the poor, who were perceived as ignorant and lacking care for public health and hygiene.³⁷ For example, in a Los Angeles ad campaign, the intended audience was financially stable white people from the East coast with advertisements of the real estate and agriculture industries of California. They marketed that the agriculture in California was disease-free, unlike the agriculture from other countries, which is already hinting at the assumption that other

³⁶ CDC, Trends in Tuberculosis, 2018.

³⁷ Abel, *TB and Politics of Exclusion*, 30.

countries, and therefore immigrants, were carriers of disease.³⁸ Abel argues, however, that the desire for cheap labor “shattered the dream of racial homogeneity” in California and ultimately led to the influx of immigrants from abroad.³⁹ The assumption that the ‘poor’ were too ignorant to care about public health and were a burden on the “public purse” was an assumption that was projected onto immigrants as well.

As the migrant population increased, namely immigrants from the Mexico, California invoked many practices of exclusion with public health officials playing a major role in encouraging fear of migrant as carriers of TB as well as other diseases in the early 20th century. The rhetoric circulating among public health circles was similar to the perception of the poor. Mexicans were perceived as “dirty,” “incompetent” and reckless in regards to public health precautions.⁴⁰ Southern California health officials argued that TB was not part of normal life in Southern California and then blamed immigrants for the presence of TB. ⁴¹ In order to justify anti-immigrant sentiment, the State Board of Health in California insinuated that TB was “imported” because “only” 30.2% of cases were native to the US.⁴² This seems all too familiar in the 2018 California TB report which emphasized that 83% of the cases of TB in California were from people born outside of the US. The board also admitted that over half of these cases occurred in immigrants, who had arrived in the US 20 years or more prior to falling ill with TB.⁴³ Given that on average immigrants had lived in California at least 20 years prior to contracting active TB should be a huge indicator that the context in which immigrants are living in the US plays a bigger role than their point of origin. Yet, that is not the case in California’s annual TB

³⁸ Abel, *TB and Politics of Exclusion*, 62.

³⁹ Abel, *TB and Politics of Exclusion*, 62.

⁴⁰ Abel, *TB and Politics of Exclusion*, 64.

⁴¹ Abel, *TB and Politics of Exclusion*, 38,62.

⁴² Abel, *TB and Politics of Exclusion*, 29, 30.

⁴³ California Department of Health, “Report on Tuberculosis in California, 2018,” 2.

reports. Both on the national, the state, and the local level (for New York City), there is a repeated focus in the modern day on the fact that most TB cases in the U.S are among “foreign-born” individuals, who have live in the U.S for at least a decade. As stated earlier, the incubation for *M.tuberculosis* is on average a maximum for two years, so obviously something more is going on than is reported. There is not proper accountability given to the social context and injustices that immigrants live through in the U.S that could potentially trigger the activation of TB, which is a vital component to implement proper interventions to eradicate TB.

Risk Factors and Contextual Triggers for TB

The CDC and local health departments place too much importance on whether a person was born in the U.S or not and glosses over key risk factors and social-determinants that could heavily influence an individual’s susceptibility to active TB infection. Abel points out that the connection between harsh working conditions and higher TB rates in Mexican populations was notably left out of the public health discourse in California in the early 20th century. She attributes this to the fact that working conditions of the Mexican population was out of the line of sight of the health department being a namely white organization.⁴⁴ The current public health conversation does consider the socioeconomic context to some extent. The CDC states the TB risk factors for people in the U.S. are: people with diabetes; individuals who have excessive alcohol use; have used noninjectable drugs; individuals who have HIV infection; people who have reported being homeless in the year prior; and people were live in correctional settings as

⁴⁴ Abel, *TB and Politics of Exclusion*, 69.

well as healthcare care workers or people who work with groups who have higher transmission rates of TB.⁴⁵

However, the CDC does not discuss the socio-contextual that may exacerbate an individual's risk of developing TB. Furin, Cox, and Pai, for example, highlight that low-economic status increases the risk of becoming infected namely due to living conditions. In a study in Ventanilla, Peru, researchers observed that modifiable risks, that strongly predicted of TB cases, in the homes were indoor air pollution, limited number of windows per room, and the socioeconomic status of household. ⁴⁶Other reports have also stressed the increased risks of developing TB if an individual is a smoker.⁴⁷ However, Furin, Cox and Pai stress that more research is needed to further understand the human infection model of TB. The human infection model can expand the understanding of the impact that social and environmental factors have on the TB infection. While there is acknowledgement of the socioeconomic context in regards to TB prevalence, at least amongst some academic researchers, there is still significant focus amongst public health reports on the place of origin of the immigrant rather than the local context in where they live in the USA. On a global level, The WHO, stated that the most significant risk factors for TB in 2018 was, in addition to alcohol abuse and smoking was positive HIV-status, which contributed to 0.81 million cases of TB worldwide as well as diabetes mellitus, which caused 0.36 million TB cases. ⁴⁸ The most significant contributor to TB worldwide however, was undernourishment, which is a risk-factor left out of the conversation surrounding TB in the U.S.

⁴⁵ CDC, "TB Risk Factors," last reviewed March 18, 2016, <https://www.cdc.gov/tb/topic/basics/risk.htm> — CDC, Trends in Tuberculosis, 2018.

⁴⁶ Saunders et al. "A score to predict and stratify risk of tuberculosis in adult contacts of tuberculosis index cases: a prospective derivation and external validation cohort study," *The Lancet Infectious Disease* 17, (2017): 1190.

⁴⁷Furin, Jennifer, Helen Cox, and Madhukar Pai. "Tuberculosis," *The Lancet* 393, (March 2019), 1644.

⁴⁸ WHO, Global TB Report, 141.

Food Insecurity as a Risk Factor for Active TB

It is evident that characterizing people with TB by their country of birth is problematic and is ignoring the root of the structural problems in the U.S that could lead to active TB infection. One important factor that requires further research is food insecurity. Food security is defined as all people, “at all times have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.”⁴⁹ Thus, food insecurity is the opposite and is defined by Feeding America as “a household’s inability to provide enough food for every person to live an active, healthy life” and is a way to measure and assess the risk of hunger.⁵⁰ The ranges of food security are: high food security, marginal food security, low food security, and very low food security and they are presented in figure three.

⁴⁹ “Food Security,” Food Security, International Food Policy Research Institute, last modified 2020
<https://www.ifpri.org/topic/food-security>

⁵⁰ “How do you measure hunger?,” What is food insecurity, Feeding America, last modified 2020,
<https://www.feedingamerica.org/hunger-in-america/food-insecurity>



Source: Adapted from the USDA Economic Research Service.

Figure three: This image shows the levels food security to more accurately describe the experience of households that range between food secure and food insecure. High food security and marginal food security are categorized as “food secure” whereas low food security and very low food security are considered “food insecure.”⁵¹

Undernourishment, a possible result of food insecurity, is a known risk factor for tuberculosis worldwide. In fact, it is one of the most significant factors in the development of active TB worldwide.⁵² In 2018, 2.8 million TB cases were caused by undernourishment.⁵³ Undernourishment includes a wide range of nutritional deficiencies, and is the most common cause of secondary immunodeficiency around the world.⁵⁴ Many animal models have suggested the extensive impact of undernutrition on the immune response against *M. tuberculosis* however, Sinha et al. calls for more research on the impact of undernourishment on the human immune response to *M.tuberculosis*.⁵⁵ *M.tuberculosis* can also can impact the effectiveness of the BCG vaccine, the vaccine for TB given to infants in many countries worldwide, and should

⁵¹ “What is Food Insecurity?” Understand Food Insecurity, Feeding America, last modified 2019, <https://hungerandhealth.feedingamerica.org/understand-food-insecurity/>

⁵² Pranay Sinha et al. “Undernutrition and Tuberculosis: Public Health Implications,” *The Journal of Infectious Diseases* 219, no. 9 (November 2018): 1359.

⁵³ WHO, Global TB Report, 141.

⁵⁴ Pranay Sinha et al., “Undernutrition and Tuberculosis,” 1356-57.

⁵⁵ Pranay Sinha et al., “Undernutrition and Tuberculosis,” 1357-58.

be a consideration in the development of new vaccines for TB.⁵⁶ Additionally, there is some research suggesting a correlation between undernourishment leading to more severe TB cases however, more research is needed to make more definitive conclusions on this correlation.⁵⁷ Lastly, undernourishment has been shown to worsen treatment outcomes and the nutritional status of a patient could act as a predictive measure for the treatment success, outcomes, and mortality.⁵⁸ Undernutrition and TB have a cyclical relationship in that undernutrition can weaken the immune system and ultimately increase an individual's risk of developing active TB infection. On the other hand, a symptom of TB is weight loss and a potential consequence for many with active TB is poverty, both of which are factors that contribute to undernutrition. ⁵⁹ What is important is understanding the significant influence that undernutrition can have on contracting active TB infection, TB treatment, and treatment outcomes. According to the US Department of Agriculture (USDA), in 2018 14.3 million households or 11.1% of households were food insecure at least once throughout the year in the US. 5.6 million households (4.3%) had very low food security.⁶⁰ Within the context of the US it could be useful to look at the influence of food insecurity on TB cases given the prevalence of food insecurity has on households in the U.S each year.

The impact of malnutrition on TB is known and relatively well researched however, there is a dearth of research on the relationship between food insecurity and TB.⁶¹ Food insecurity in the U.S. could be a more specific indicator in understanding the groups that are more at-risk of

⁵⁶ Pranay Sinha et al., "Undernutrition and Tuberculosis," 1359.

⁵⁷ Pranay Sinha et al., "Undernutrition and Tuberculosis," 1359-60.

⁵⁸ Pranay Sinha et al., "Undernutrition and Tuberculosis," 1358.

⁵⁹ Pranay Sinha et al., "Undernutrition and Tuberculosis," 1359.

⁶⁰ Alisha Coleman-Jensen, Matthew P. Rabbit, Christian A. Gregory, Anita Singh. *Household Food Security in the U.S in 2018*, ERR-270, U.S. Department of Agriculture, Economic Search Service, September 2019.

⁶¹ Ingabire G. Balinda, Diarmuid D. Sugrue, and Louise C. Ivers. "More Than Malnutrition: A Review of the Relationship Between Food Insecurity and Tuberculosis," *Open Forum Infectious Diseases* 6, no. 4 (April 2019): 1. [10.1093/ofid/ofz102](https://doi.org/10.1093/ofid/ofz102)

developing TB, specifically the people who fall into the category of “foreign-born.” Studying food insecurity in this population is worth the endeavor considering the relationship between immigrant status, food insecurity, and tuberculosis in Canada.⁶² Danielle Burgess, faculty of Social Work at the University of Toronto, recognized that while immigrants, or foreign-born people, from high TB burden countries were more likely to develop TB in Canada, this was largely instigated by social determinants of health, such as stress and poverty that are common occurrences when first relocating to Canada.⁶³ In Canada, household food insecurity is more common for recent immigrants than non-immigrants and can be one of the ‘stressful’ factors that play a role in immigrants to develop ‘active’ TB.⁶⁴ While there is limited information on specifics related to food insecurity and TB in the US in the official CDC and other state records, there is still some information in New York City to gain some insight on the role of food insecurity in the activation of TB in US communities.

In New York City, 84% of TB cases in 2019 were among “foreign-born” individuals, who had resided in the U.S. for a median number of 13 years.⁶⁵ Every borough in New York City had TB cases in 2019 and 15 neighborhoods had a TB rate higher than the city-wide rate with the following neighborhoods having the most cases: Hunt Point-Mott in the Bronx; Sunset Park in Brooklyn; and West Queens in Queens had the highest rates.⁶⁶ Sunset Park and West Queens also had some of the highest rates in 2018 but Hunt Point-Mott was newly added in 2019. The TB rate for West Queens also increased between 2018 and 2019. Between 2015-2017 the most

⁶² Danielle Burgess, “Immigrant Health in Toronto, Canada: Addressing Food Insecurity as a Social Determinant of Tuberculosis,” *Social Work in Public Health* 31, no. 7 (2016).

⁶³ Burgess, “Immigrant Health in Toronto, Canada,” 618.

⁶⁴ Burgess, “Immigrant Health in Toronto, Canada,” 620.

⁶⁵ *New York City Health Department Annual Tuberculosis Summary*, Released March 2020, 4, 21. <https://www1.nyc.gov/assets/doh/downloads/pdf/tb/tb2019.pdf>

⁶⁶ *New York City Health Department*, 4,22

food insecure bureaus were: Brooklyn, which is home to Sunset Park, a neighborhood with one of the highest rates of TB in NYC.⁶⁷

Why is food insecurity so such a significant risk factor for TB?

The relationship between food insecurity and TB is under researched compared to malnutrition and TB, especially within the US. Balinda, Sugrue, and Ivers published a review detailing the dearth of research on the impact of “non-nutritional pathways” on the connection between food insecurity and TB.⁶⁸ The “non-nutritional pathways” are mental health, high-risk health-related behavior, and substance abuse. The authors found articles that demonstrated the connection between food insecurity and nutrition as well as the “bidirectional relationship” between nutrition on TB.⁶⁹ The “bidirectional relationship” suggests that the symptoms of TB, such as weight loss, as well as the consequences of TB, such as the financial strain, can result in food insecurity for individuals with TB. On the other hand, food insecurity can result in undernourishment or other nutritional issues which has been considered a significant risk factor for TB for many decades and was the most substantial risk factor for TB in 2018, according to the WHO.⁷⁰ However, Balinda, Sugrue, and Ivers found the connection between food insecurity, obesity, diabetes TB was less recognized which is important because of the association of obesity with diabetes mellitus. Diabetes mellitus is another major risk factor for TB, according to both the CDC and the WHO.⁷¹ In fact, according to the CDC, the diabetes was

⁶⁷ Hunger Free America. *New York City Hunger Reports, 2018*.

https://www.hungerfreeamerica.org/sites/default/files/atoms/files/NYC%20and%20NYS%20Hunger%20Report%202018_0.pdf

⁶⁸ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 1.

⁶⁹ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 4,7.

⁷⁰ WHO, *Global TB Report*, 141.

⁷¹ WHO, *Global TB Report*, 141.

CDC “Additional Risk Factors.”

the most substantial risk factor for TB in the US with 19.8% of people with TB also having diabetes.⁷²

Additionally, Balinda, Sugure, and Ivers found that food insecurity and mental health was relatively well researched as well as the connection between TB and mental health however, once again there was not any studies on the connection between all three. Studies have found a correlation between food insecurity and depression, PTSD, stress, shame, and anxiety.⁷³ The authors found studies on the association between TB and stigma. Stigma can result in internalized guilt, shame, and disgust which may contribute to depression which in turn can impact a individuals' likelihood of seeking a diagnosis and also is more likely to result to treatment non-adherence.⁷⁴ Many of the individuals who have TB and who discussed their "personal stories," as presented by the CDC, had a similar feeling of stigma surrounding their diagnosis in the U.S.⁷⁵ Many discussed how the stigma was rooted in ignorance in that others were unaware of the symptoms of TB and how TB is transmitted. So the association between stigma surrounding TB and the mental health consequences are relevant within the U.S. While studies were available that highlighted the connection between food insecurity and mental health as well as the impact of stigma with TB on mental health was available there was a dearth of research on the connection between how mental health, food insecurity, and TB are all connected.

Lastly, Balinda, Sugure, and Ivers researched what is known of food insecurity and TB and their impact on health-related behavior and substance abuse. Food insecurity places

⁷² CDC "Additional Risk Factors."

⁷³ Balinda, Sugrue, and Ivers. "More Than Malnutrition," 3,4.

⁷⁴ Balinda, Sugrue, and Ivers. "More Than Malnutrition," 4.

⁷⁵ "TB Personal Stories," Tuberculosis (TB), CDC, last reviewed September 2019.

<https://www.cdc.gov/tb/topic/basics/personalstories.htm>

“individuals and families in a precarious situation that can influence their decision-making and tolerance of risk, which can have important health implications.”⁷⁶ The connection between food insecurity and postponing medical care, postponing medications, utilizing the emergency department use, and hospitalizations has been studied as well as the impact of food insecurity’s negative impact on treatment adherence.⁷⁷ Balinda et al. found many studies conducted in various countries in which food insecurity impacted TB treatment adherence as well as the impact of food insecurity and substance abuse disorder as well as excessive alcohol use. ⁷⁸ Both abuse of alcohol and substance-use disorder are considered major risk factors for TB both globally and within the U.S.⁷⁹ Balinda et al. found studies highlighting the connection between food insecurity and the correlation with increased alcohol and drug abuse as well as the strong association between alcohol and IV drug use with pulmonary and active TB, respectively.⁸⁰ Balinda et al. hypothesized that “food insecurity is part of a negative cycle within households that leads to increased TB disease and poor outcomes through nutritional, mental health, and behavioral pathways” and concluded that there were hardly any studies indicating these connections and they call for more research on this hypothesis.⁸¹ The connection between food insecurity and TB could be substantial and is an important risk-factor to consider within the U.S. 14.3 million households in the U.S were considered ‘food insecure’ and 5.6 million of those households were considered to have very low food security.⁸² Food insecurity is not an unknown

⁷⁶ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 4.

⁷⁷ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 4.

⁷⁸ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 4.

⁷⁹ WHO, *Global TB Report*, 141.

CDC “Additional Risk Factors.”

⁸⁰ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 5.

⁸¹ Balinda, Sugrue, and Ivers. “More Than Malnutrition,” 7.

⁸² Coleman- Jensen, Rabit, Gregory, and Singh. 2019. *Household Food Security in the U.S in 2018*, ERR-270, U.S. Department of Agriculture, Economic Research Service.

phenomenon in the U.S and the connection between the two is important consideration and topic of research in high-burdened TB communities in the U.S. that requires further research.

Financing TB in the United States

The presentation of data is more significant than just for TB advocacy and reports of burden but also, becomes the basis for funding requests. The purpose of this section is to discuss the budget provided for TB domestically and their reasoning, based on the CDC's justification, for this funding. The budget justification provides insight on what TB strategies are utilized in the US and what strategies are receiving funding. Domestic funding for TB is primarily distributed to the CDC by Congress and so the CDC's justification for the requested funding gives a sense of how the CDC is responding to TB and how the categorization of "foreign-born" influences funding and policy. While the US does have a relatively low number of TB cases per year, the CDC stated that in 2019 the "current strategies" to combat TB in the US were "not enough to eliminate TB in this century."⁸³ It is likely due to both inefficiency in domestic TB programming and underfunding TB efforts. In regards to what programming receives TB funding, there is not any mention of programming specifically for "foreign-born" individuals, who bear the brunt of TB cases in the US despite this association being repeatedly emphasized in advocacy efforts and reports. Also, there is not any mention of funding for social-contextual factors or social determinants, such as food insecurity, within the justification. While the CDC emphasized their concern that current strategies are not enough to eliminate TB, these "strategies" go beyond limited funding but also includes how they approach and advocate for TB

⁸³ "Take on TB," CDC, published September 2019. <https://www.cdc.gov/tb/publications/infographic/pdf/take-on-tuberculosis-infographic.pdf>

too meaning that without more substantial strategies to combat social determinants for “foreign-born” people specifically, then TB will not be eliminated.

The total budget for TB provides a bigger picture of how much is provided for TB funding and what aspects of TB control and prevention are provided funding. For the FY 2021, the CDC was provided \$135 million for TB domestically and accounts for 11% of the sector’s budget.⁸⁴ TB is funded through the “HIV, Viral Hepatitis, STIs, and Tuberculosis” budget for the CDC which is presented in figure 3. While it is, at least, reassuring that the domestic budget for TB did not decrease, between the FY 2020 and 2021, it is nonsensical that tuberculosis would not receive more funding given that the CDC did not believe that the recent strategies for TB in the US would result in TB elimination in this century.

	FY 2019 Final	FY 2020 enacted	FY 2021 President's Budget	FY 2021/ FY 2020 Enact
Total Budget for “HIV, Viral Hepatitis, STIs, and Tuberculosis”	\$1,123.89	\$1,273.56	\$1552.556	\$279.00
Budget for Tuberculosis Only	\$134.55	\$135.03	\$135.034	\$0

Figure 3: Federal Funding for the CDC is separated into sectors. TB is funded under the “HIV, Viral Hepatitis, STIs, and Tuberculosis” sector. This figure presents the budget for this sector and specifically the CDC’s budget for TB domestically in the fiscal year 2021.⁸⁵ All monetary values are in the millions.

⁸⁴ U.S. Department of Health and Human Services (DHHS), *Center for Disease Control and Prevention: FY 2021 Justification of Estimates for Appropriations*

⁸⁵ DHHS, *CDC: FY 2021 Justification of Estimates for Appropriations*, 74.

The \$135 million for TB goes towards the following: investment in health departments to improve TB control and prevention; to provide training and laboratory services for health professionals and health departments nationwide; to fund TB clinical and field research for improved treatment regimens and improved LTBI prevalence estimations; and funding for programs related to improved preparedness for TB at the national level.⁸⁶ The budget justification does not emphasize the social-determinants of health within TB programming but rather focuses on the development of TB treatment and then TB control more broadly. While both of these components are important to TB control and elimination there is a lack of importance placed on the social determinants of health related to TB. Moreover, there was an emphasis on the treatment of LTBI within the budget justification which relates to the emphasis on “foreign-born” people constitute the majority of TB cases. The importance placed on foreign birth insinuates that these individuals were mostly infected elsewhere and imported latent TB infection (LTBI) from their country-of-origin to the US and the LTBI it activated once in the US. So, the implementation of more widespread LTBI treatment likely targets this population; however, that is not explicitly stated in the justification.

In the budget justification, the CDC noted that in the US, there were 9,029 cases in 2018, which is relatively low. However, they estimate that up to 13 million people in the US have latent TB and estimate that “more than 80% of the U.S. TB cases result from reactivated latent tuberculosis infection (LTBI).”⁸⁷ Yet, Behr et al., who concluded that the incubation period for *M.tuberculosis* is maximum two years on average, also found that the reported burden of latent

⁸⁶ DHHS, CDC: *FY 2021 Justification of Estimates for Appropriations*, 92-94.

⁸⁷ DHHS, CDC: *FY 2021 Justification of Estimates for Appropriations*, 92.

TB worldwide is ‘overestimated.’⁸⁸ Both of these findings are substantial in regards to TB initiatives and strategy within the US because the main strategy of the CDC, regarding TB, is the prevention of “reactivated LTBI”. However, Behr et al. determined that the number of latent TB cases globally is ‘overestimated’ because “ it reflects immunoreactivity to either past or present infection.”⁸⁹ Immunoreactivity means that someone with *M. tuberculosis*, latent or active, or someone who has been infected with *M. tuberculosis* previously has adaptive immunity with or without the presence of *M. tuberculosis*. These individuals may test positive on a tuberculosis skin test (TST) however, the positive does not always mean that the *M.tuberculosis* will activate because the positive test could indicate both the presence of LTBI or a previous infection of LTBI or active TB infection. So, in accordance with the findings of Behr et al., who found that the global latent TB burden is ‘underestimated,’ there is reason to think that the US estimate for the number of LTBI, that could develop into active TB, is lower than was once thought. The expansion of LTBI treatment speaks to a broader issue in which the CDC’s response to the disproportionate burden of TB cases in the “foreign-born” population is the expansion of LTBI treatment without any recognition of programming that focuses on the underlying social-contextual factors that contribute to the activation of TB. The ‘solution’ then still implies that the blame for TB is the country-of-origin, rather than addressing the structural issues in the US that contribute to TB cases among immigrants.

Additionally, within the budget proposal, the CDC did not mention the “foreign-born” population but rather included a performance summary that stressed their work towards the “Long Term Objective” to decrease the rate of TB among “U.S. born persons in the United

⁸⁸ Behr, Edelstein, and Ramakrishnan, “Revisiting the Timetable of Tuberculosis,” 3.

⁸⁹ Behr, Edelstein, and Ramakrishnan, “Revisiting the Timetable of Tuberculosis,” 3.

States.”⁹⁰ Even though the CDC states in reports and advocacy materials that the majority of TB cases in the US are among “foreign-born” people, that language is nowhere in the budget justification to Congress. The word choice is significant because while the “foreign-born” population is disproportionately impacted in the US the goal, or at least the goal presented to Congress, is to protect “US-born” individuals. Potentially this change in data presentation by focusing on the impact on “US-born” people is a way that the CDC can receive more funding from Congress. This is still highly problematic because in the CDC’s advocacy for TB and their reports on TB burden, they collect and present data that shows that “foreign-born” individuals make up most of the TB cases which implies that these individuals were infected with TB elsewhere, namely their country of birth. However, they do not collect and present information related to social-contextual issues, such as food insecurity, as related to TB, which might be a better indicator of the burden of TB, rather than the birthplace of patients. By then advocating on behalf of “US-born” individuals in the budget justification, who are not as significantly impacted, the CDC is complicit in xenophobic and racist policies that look at immigration-status rather than the structural factors at play in the US that contribute to higher TB rates. The CDC does not challenge the structural issues associated with potential risk of TB and so this could be a challenge in their effort to eliminate TB in the US.

Link with neoliberal and is the same in global financing

While the burden of TB burden is relatively low rate in the United States, the CDC proclaims that “current strategies are not enough to achieve TB elimination in this century.”⁹¹ Limits on current TB strategies go beyond funding but is also influenced by the CDCs response to the TB burden in the US. The emphasis on a higher TB rate among individuals with “foreign-

⁹⁰ DHHS, *CDC: FY 2021 Justification of Estimates for Appropriations*, 340.

⁹¹ “Take on TB,” CDC, published September 2019.

birth” vs. individuals does not acknowledge the impact of structural factors, such as food insecurity, on TB prevalence. Rather, this emphasis perpetuates xenophobic policies where CDC is perceived as a disease imported from elsewhere and then funding for TB is justified based on the extent that it helps and protects US born people. Stigmatizing immigrants as being more prone to infectious disease or carriers of disease is dangerous because it “ serves political purposes by justifying restrictive immigration policies that ignore broader structural conditions..[and] underlying disease transmission.”⁹² Also, the lack of focus on social determinants, like food insecurity, is rooted in neoliberal ideology by focusing on birth place rather than acknowledging systemic issues that are in need of adjustment. The choices of what data the CDC chooses to present to exhibit the burden of TB in the US influences how the burden is perceived and then how the CDC responds. The lack of attention given to structural issues such as food insecurity is embodied in the global financing for TB as well.

Overview of Global Financing for TB

This section shifts the focus of the paper from domestic TB efforts within the US to global TB efforts and the role of the US in these efforts. Before looking more into the US global TB efforts, it is important to understand the global context of these efforts. While global health efforts often do not receive adequate funding, TB specifically has a history of being ignored. According to the Institute for Health Metrics and Evaluation (IHME), between 1990 and 2018, tuberculosis received the second lowest amount of development assistance for health (DAH) at

⁹² Sargent, C. and Larchanché, S. “Transnational Migration and Global Health: The Production and Management of Risk, Illness and Access to Care.” *Annual Review of Anthropology* 40 (2011): 352.

\$19.9 billion.⁹³ In 2019, \$6.8 billion USD was put towards TB efforts globally. This is around \$3.3 billion short of the financial goal of the WHO.⁹⁴ \$5.9 billion, or 87%, of funding for TB was from domestic resources. The BRIC (Brazil, Russia, India, China, and South Africa) countries, where 47% of the world's TB cases occurred, accounted for 53% of the available funding.⁹⁵ For other LMICs, namely low-income countries, international donations are more common and necessary, with 49% of funding for TB originating from international donors.⁹⁶ The United States has been the largest contributor to global TB efforts; however, international donations, from the US and other countries, have been dropping in recent years. The decreasing political will of the US, as well as the distribution of global funding, which is discussed later on, suggests a lack of interest in investing in global health efforts which consequently lessens investment in TB efforts not only related to treatment and vaccines but also decreased the possibility of funding programs that focus on systemic issues, such as food insecurity and undernutrition worldwide and domestically, which is already underrecognized in TB programs.

The United States

Historically, the United States has been, and continues to be, the largest country donor for global TB efforts. It provided \$578.6 million for tuberculosis in 2018. The US channeled \$236.6 million USD through NGOs, \$182.4 million through the Global Fund, and \$141 million through its own agencies.⁹⁷ However, for the FY 2019, the United States budgeted only \$306 million and the Trump administration's requested amount for TB funding in FY 2020 dropped even lower to

⁹³ Institute for Health Metrics and Evaluation (IHME). *Financing Global Health 2018: Countries and Programs in Transition*. Seattle, WA: IHME, 2019, 70.

⁹⁴ WHO, TB Report 2019, 123.

⁹⁵ IHME, *Financing Global Health*, 123.

⁹⁶ IHME, *Financing Global Health* 123.

⁹⁷ IHME, *Financing Global Health* 85

\$262 million.⁹⁸ The drop in funding is once again nonsensical considering the WHO stressed that the global shortage of \$3.3 billion USD to combat TB.⁹⁹ The United States distributes its funding for TB through different channels which are exhibited in the figure four.¹⁰⁰ Similar to the CDC's domestic TB efforts, global tuberculosis funding and foreign US aid is carried out within the framework and ideology of neoliberalism.

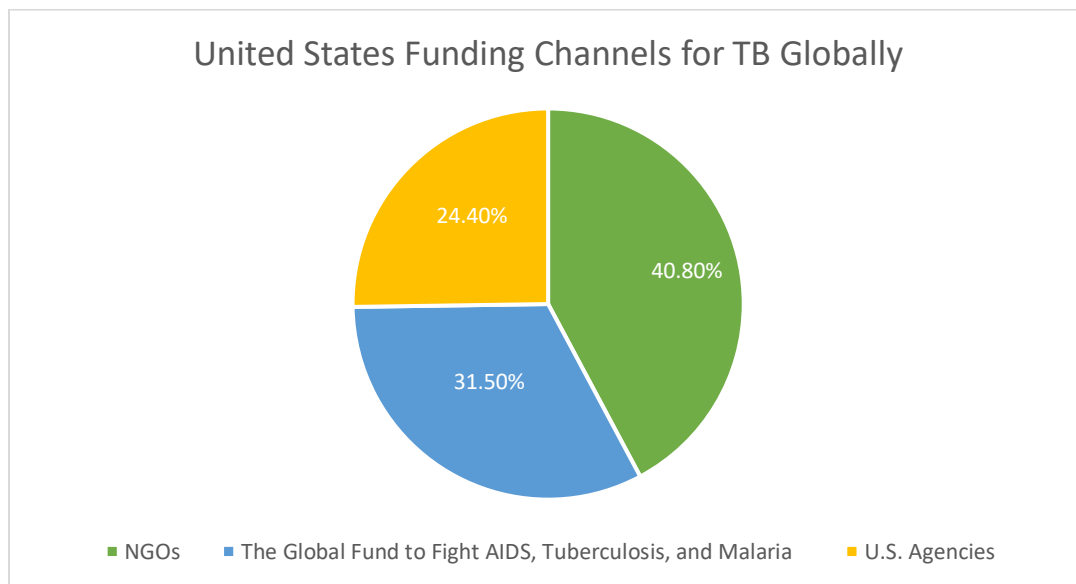


Figure 4: The figure indicates the channels in which TB funding is distributed. Note that the most funding is channeled through NGOs and The Global Fund which shows neoliberal realignment of global health efforts from efforts carried out by state to global health efforts being carried out mainly by NGOs. The Global Fund provides the most global funding towards TB and accounts for 73% of global financing for TB from international donors.¹⁰¹ Yet, only 15.8% of the

⁹⁸ Kaiser Family Foundation (KFF), “Breaking Down the Global Health Budget,” published May 2019. <https://www.kff.org/global-health-policy/fact-sheet/breaking-down-the-u-s-global-health-budget-by-program-area/>

⁹⁹ WHO, TB Report 2019, 123.

¹⁰⁰ KFF, “Breaking Down the Global Health Budget.”

¹⁰¹ WHO, Global TB Report 2019, 123

Global Fund's budget went towards TB, at \$6.78 billion in 2018.¹⁰² This data is from the IHME at the University of Washington.¹⁰³

Overview of Neoliberalism in Global Health

The influence of neoliberalism in TB efforts, as well as all global health efforts, is significant because it influences the focus on TB efforts that provide direct profit rather than funding programs that provide systemic change. The priority within the framework of neoliberalism is profit as so neoliberalism within global health prioritizes investment in products with immediate profit such as drugs, diagnostic technology, and vaccines. While these developments are important in global health and TB efforts, they tend to be the general focus while more systemic issues, such as food insecurity or undernourishment, which can significantly impact an individual's susceptibility to TB, are not addressed as significantly. Dr. Salmaan Keshavjee, professor and the Director of the Harvard Medical School Center for Global Health Delivery, discusses this phenomenon in *Blindspot: How Neoliberalism Infiltrated Global Health*. He explains that the golden rule of neoliberalism is "he who has the gold, rules" and the market rules all.¹⁰⁴

In the midst of the 20th century, the neoliberal ideology took course and NGOs became responsible for providing for services to the poor rather than the state.¹⁰⁵ The transferal of duties was justified in an effort to combat communism and totalitarianism by limiting state functions. Keshavjee further explains that moving NGOs to the center of international development and

¹⁰² The Global Fund Data Explorer <https://data.theglobalfund.org/investments/home>

¹⁰³ "Flows of global health financing," Financing Global Health Viz Hub, IHME, released April 2020, <https://vizhub.healthdata.org/fgh/>

¹⁰⁴ Salmaan Keshavjee. *Blind Spot: How Neoliberalism Infiltrated Global Health*. (Oakland: University of California Press 2014), xxii.

¹⁰⁵ Keshavjee, *Blind Spot*, xxxi.

global health shifted the ideal from the ‘welfare state’ to the NGOs which have become the “transplantation mechanism” for neoliberal ideology.¹⁰⁶ Figure 4 demonstrates this phenomenon and shows that US foreign aid for TB is distributed namely through NGOs and the Global Fund. Keshavjee argues that the neoliberal ideology is creating a ‘world order’ and important components of the ideology, such as free market, utilization of NGOs etc are “operating as common sense,” meaning that neoliberalism is so pervasive that all efforts that operate under this framework are shifting the idea of what is considered the ‘correct’ way to respond to global health issues, such as TB. Keshavjee argues that neoliberal goals of profit, open market lead to “neoliberal programmatic blindness: areas of programs that are eclipsed by ideological aims.”¹⁰⁷ This explains why in the US, the CDC focuses on “foreign-birth” of a TB patient as the most notable factor in the development of TB rather than acknowledging and addressing the social determinants that influence TB incidence. For the US global efforts, United States Agency for International Development (USAID) distributes funding to international organizations and other programs for TB global interventions and is heavily guided by neoliberal principles.

USAID

In 1998, USAID, the main agency that carries out global TB initiatives for the US, began a global TB program and has been the single largest donor to the Global Fund by providing more than \$930 million between 2010 and 2014.¹⁰⁸ However, USAID was created by John F. Kennedy in 1961 with the intent of creating foreign development programs that would benefit the US

¹⁰⁶ Keshavjee, *Blind Spot*, xxxi.

¹⁰⁷ Keshavjee, *Blind Spot*, 114.

¹⁰⁸ USAID. *United States Government Global Tuberculosis Strategy 2015-2019*. DC: USAID, published 2015, 7.

politically and the western world ideologically.¹⁰⁹ Dr. Keshavjee argues that it was clear that that in USAID in Almaty in October 1996, when asked about their reasoning to finance a revolving drug fund, was to “to open new markets” and “foster democracy.”¹¹⁰ The language is extremely similar in the USAID budget and goals for 2021. The USAID budget for global TB the FY 2021 is \$275.0 million. Within their justification for funding, USAID included that they “support a competitive market for quality-assured TB and MDR-TB drugs, as well as diagnostics and other commodities, including through the innovative Global Drug Facility.”¹¹¹ The importance of the goals to open up markets and support the production of diagnostic tools, drugs, and vaccines all of which contribute to the ‘market.’ While these tools do hold importance in the elimination of TB, the importance of social determinants of health or more systemic change, such as efforts responding to the relationship between food insecurity and TB, is not emphasized, most likely because it does not contribute to immediate profit.

The USAID also started a project called the Global Accelerator to End Tuberculosis and the language used in the report to Congress is that it is the “agency’s new business model for TB.”¹¹² The language of ‘business model’ suggests the undertones of neoliberalism and the ideology is further emphasized in the USAID FY 2019 Financial report. In this report, USAID detailed their strategic goals. One of the goals involving health was strategic objective two, which was to “renew America’s Competitive Advantage for Sustained Economic Growth and Job Creation.”¹¹³ A subset objective two was strategic objective 2.2 which is to “Promote healthy, educated, and productive populations in partner countries to drive inclusive and

¹⁰⁹ Salmaan Keshavjee. *Blind Spot: How Neoliberalism Infiltrated Global Health*. (Oakland: University of California Press 2014), 101-102.

¹¹⁰ Keshavjee, *Blind Spot*, 108.

¹¹¹ U.S. Department of State, *Congressional Budget Justification Department of State, Foreign Operations, and Related Programs Fiscal Year 2021*, Washington, DC 69-70. **Citation?**

¹¹² USAID, *Accelerating Action to End TB: Tuberculosis Report to Congress*, January 2020, 6. **Citation?**

¹¹³ USAID, *Agency Financial Report Fiscal Year 2019: Promoting a Path to Self-Reliance*, 11. **citation?**

sustainable development, open new markets, and support U.S. prosperity and security objectives.”¹¹⁴ So obviously, neoliberalism is guiding the framework of the main agency that conduct global TB initiatives from the USA. For advocates of neoliberalism, success means the creation of markets and reduction of government involvement in the lives of citizens.¹¹⁵ USAID is straightforward in strategic goal 2.2 to opening new markets. Neoliberal ideology emphasizes profit over everything and contributes to the lack for attention provided to social determinates of TB both domestically and globally.

Burgess (2016) suggested a similar phenomenon when arguing why food insecurity is not stressed in TB initiatives in Canada. She argues that the “work-first models” developed in the U.S in the 1980s and ‘90s led to many countries, including Canada, to shift to similar models. The “work-first” model shifted the focus of the social welfare system to emphasize “rapid labor-force attachment” meaning that employment trumped “any other welfare objective, including health.”¹¹⁶ She noted instances when doctors advocated for higher welfare checks for low income families since the amount provided was too low to purchase healthy food and was rejected because “A doctor is there to be a doctor, not an advocate for the poor.”¹¹⁷ Like Canada, the lack of connection perceived between medicine, public health, and social welfare is reflected in the priorities of the CDC and USAID, and is a reason why issues such as food insecurity, are not given the same funding or recognition as drugs or vaccines in the fight against TB both domestically and globally. The following section discusses the program areas of TB funding and show the limited funding going towards structural inequality.

¹¹⁴ USAID, *Agency Financial Report FY 2019*, 11.

¹¹⁵ Keshavjee, *Blind Spot*, 133.

¹¹⁶ Burgess, “Immigrants Health in Toronto,” 620.

¹¹⁷ Burgess, “Immigrants Health in Toronto,” 620.

Program Area of Global TB Funds

Of the \$6.8 billion USD in funding for TB in 2019, \$4.3 billion was for drug-susceptible TB and \$2.2 billion was designated for multi-drug resistant TB. The remainder was put towards interventions related to the TB/HIV co-infection.¹¹⁸ The median cost to treat a patient in 2018 with drug-susceptible TB was \$973. Treatment for a patient with MDR-TB was \$6430.¹¹⁹ The dispersal of funds was \$162.1 million, or 9.9%, for the development assistance of health for treatment of TB and \$32.9 million, or 2.0%, for diagnosis.¹²⁰ Many reports indicate that this is not enough. In particular, MSF reported that there has been a yearly \$3.5 billion funding gap for TB treatment and diagnosis and \$2 billion annual funding gap in TB research.¹²¹ While the funding gaps for TB treatment and diagnosis are significant, the funding gaps for social determinants of health are not clear or even detailed in the global TB reports. It may be easier to quantify the funding gaps for research, treatment, and diagnosis however, it is equally as important to know where the world stands on interventions related to more structural issues related to TB. Figure 6 highlights the funding dispersal by program area for TB in 2018. TB diagnosis is provided the most funding followed by human resources, other health system support, treatment, 'other,' and then drug resistance. It is unclear what 'other' represents. Perhaps, it is funding for other developmental related funding for TB, which relates to food security and economic stability but that is not substantiated within any of the reports.

¹¹⁸ WHO, *Global TB Report 2019*, 123.

¹¹⁹ WHO, *Global Tuberculosis Report*, 123.

¹²⁰ IHME, *Financing Global Health 2018*, 86

¹²¹ WHO, *Global Tuberculosis Report*, 6,7.

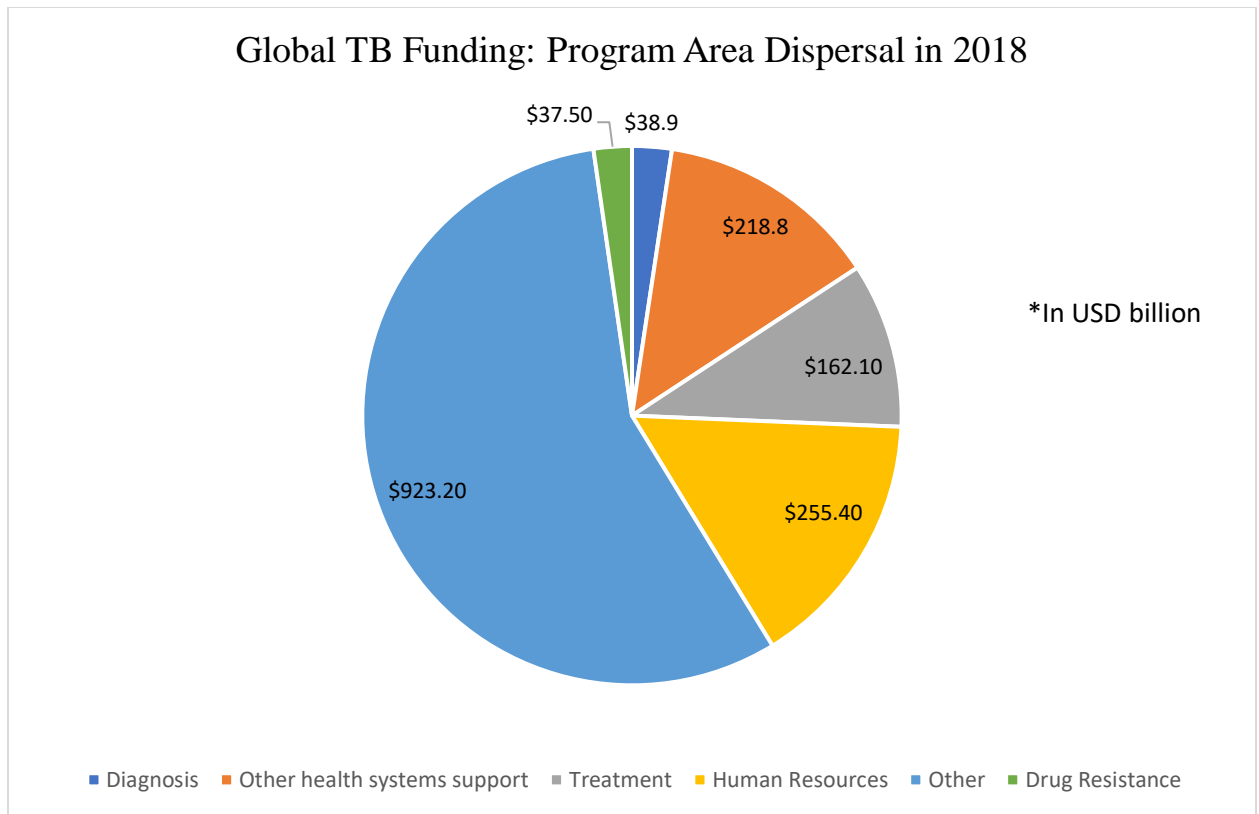


Figure 5: The most funding goes towards TB diagnosis at \$162.1 million or 9.9% DAH for treatment of TB and \$32.9 million (2.0%) for diagnosis. Data provided by the IHME from global health financing in 2018.¹²²

Growing Disinterest in Foreign Aid

While there have been global efforts to combat TB, such as the UN meeting in September 2018 which was the first UN high-level meeting for TB, there is a growing disinterest by governments to provide money for foreign aid, in general. Médecins Sans Frontières (MSF) released a report documenting and warning the world of the waning interest and commitment to

¹²² “Flows of global health financing,” Financing Global Health Viz Hub, IHME, released April 2020, <https://vizhub.healthdata.org/fgh/>

both HIV/AIDS and TB.¹²³ Between 2017 and 2018, international assistance decreased by 9% and 12% for HIV/AIDS and TB, respectively.¹²⁴ In 2018, the development assistance for health for TB was \$1.6 billion which was down 12.2% from 2017.¹²⁵ and TB still only remains 4.2% of total DAH funding for all health areas.¹²⁶ While there has been much improvement in the attention and funding given to TB in the last couple of decades, international organizations stress that it is not enough. Funding for TB has never reached the threshold to SDG goal to end TB by 2030, and so decreasing efforts and funding for TB now is a mistake.

High-income governments are not putting forth the funding necessary to eliminate the threat of TB. The United States is an example of waning government interest in foreign aid. Not only is the US diminishing foreign aid, but it is not even providing enough funding for TB domestically. For the FY2020, the US funding for TB global initiatives was cut by 14% and contributions to the Global Fund were cut to \$958 million, the lowest since 2007.¹²⁷ TB and HIV/AIDS both burden LMICs most significantly and so global collaboration is vital for the eradication of either to be possible. MSF explains that this lack of funding is placing an increased burden on already strained health systems and infrastructures.¹²⁸ Additionally, Andrew Price-Smith, a political scientist, stresses that “dealing with the proliferation of so many diverse pathogenic agents will require enormous amounts of political will, international cooperation, continued regime consolidation, and a significant redistribution of resources” from high-income countries to LMICs.¹²⁹ Less global funding increases the likelihood that multidrug resistant TB (MDR-TB) will become more of a threat and the Sustainable Development Goals

¹²³ MSF. *Burden Sharing or Burden Shifting?*, 12.

¹²⁴ MSF. *Burden Sharing or Burden Shifting?*, 5.

¹²⁵ IHME, *Financing Global Health in 2018*, 85.

¹²⁶ IHME, *Financing Global Health in 2018*, 85.

¹²⁷ KFF, “Breaking Down the Global Health Budget.”

¹²⁸ MSF. *Burden Sharing or Burden Shifting?*, 5

¹²⁹ Price-Smith. *The Health of Nations*, 16.

(SDGs) to eliminate TB and HIV/AIDS by 2030 is growing increasingly unlikely and resulting in both diseases becoming more of a risk for everyone.¹³⁰ Price-Smith also explains that attrition outbreaks, such as HIV and TB, “don’t generate as much fear and out-migration as ‘outbreak events’ but they typically result in greater actual human morbidity and mortality and in significant long-term economic and social erosion.”¹³¹ Price-Smith explains why less attention given attrition outbreaks, such as TB, can be detrimental to societies. The lack of perceived urgency could be playing a role in decreasing funding but also, in the case of the US, increasing isolationism and anti-immigrant sentiment is leading to disinterest global collaboration.

In the US, the current government is isolationist with pervasive anti-immigrant policies and rhetoric which filters into global health efforts and TB efforts both domestically and abroad. The CDC plays into this anti-immigrant sentiment with their emphasis on “foreign-born” people accounting for the most cases of TB in the US without acknowledgement of the social-contextual risk factors for immigrant in the US that may contribute to TB activation. The association between “foreign-born” and TB pushes the blame onto the country-of-origin rather, then looking at the US context. This is doubled down in the CDC budget justification for congress with emphasis on TB efforts protecting “US born” individuals from the scourge of TB. The association of TB being a disease that is caused by people immigrating from outside of the US might lead to less interest in funding TB efforts globally because it is considered an ‘outsider’ problem without any acknowledgment that global health efforts elsewhere impact the health of the US population.

¹³⁰ MSF. *Burden Sharing or Burden Shifting?*, 5

¹³¹ Andrew Price-Smith. *The Health of Nations: Infectious Disease, Environmental Change, and Their Effects on National Security and Development*. (Cambridge: The MIT Press, 2002), 16.

Similar to why the US efforts to eliminate TB domestically are failing, there is a similar failing globally because of increasing disinterest in foreign aid as well as general disinterest in funding efforts that improve systemic issues, such as undernourishment and food security, which are significant risk factors for TB. While there is increasing disinterest to fund all global health initiatives, this is not a new phenomenon for TB. McMillen explains that throughout the 20th century, there has been ebbs and flows of the global attention provided to TB in which the world has been continuously “discovering and rediscovering” TB.¹³² Drug-resistant TB and the HIV/TB co-epidemic has reintroduced the threat of TB to higher income countries even though, as McMillen argues, these issues are not new since “TB is not newly out of control; it’s never been under control.”¹³³ The fact that TB has never not been an issue for many parts of the world shows, and is still an issue in the US, speaks to the importance of data collection and presentation in developing priorities in global health. The US still had thousands of TB cases per year; however, it is presented as a disease that impacts “foreign-born” people the most which plays into the decades-long assumption that TB was ‘fixed’ and resulted in decades of ignoring TB worldwide. The disinterest in funding TB leads to consequences worldwide because global health efforts, for better or for worse, are dictated by the high-income country agenda and funding that is monopolized by higher-income countries. This calls back to the golden rule of neoliberalism which is “he who has the gold, rules”¹³⁴ Global TB initiatives are dictated by the whims of political fervor of higher-income countries so decreasing interest can have global consequences and leaves certain regions of the world increasingly vulnerable to TB.

¹³² McMillen, *Discovering Tuberculosis* ,5.

¹³³ McMillen, *Discovering Tuberculosis* ,6.

¹³⁴ Keshavjee. *Blind*, xxii.

Neocolonialism in Global Health

Most of the money and decision making occurs in higher-income countries; however, TB burdens LMICs most heavily. In the WHO's Global TB report, 44% of TB cases occurred in Southeast Asia and 24% of cases occur in Africa.¹³⁵ India, China, Indonesia, the Philippines, Pakistan, Nigeria, Bangladesh, and South Africa account for 76% of the globally total.¹³⁶ While only 3% of cases occurred in Europe or the Americas, most of the funding distribution, decision making, and research is conducted in these countries.¹³⁷ As stated prior, USAID and the Global Fund are the largest financial providers for TB, both of which are located in higher income countries, the United States and Geneva, Switzerland, respectively.

There is a plethora of research and articles written on the imperialism of global health. Tucker and Makgoba (2008) argue that diseases that predominantly impact African populations such as TB, always receive a small proportion of global financial support for medical interventions and scientific advancement. Further, they argue that African experts have limited executive authority in the public-private partnership paradigm of global health.¹³⁸ Rose Mbaye et al. have similar conclusions on the lack of representation of experts from Africa in infectious disease research conducted in Africa. They conducted a systematic review and found that 93.2% fit "inclusion criteria" by having at least one Africa-based authors; however, only 49.8% had an African expert as the first researcher and 41.3% of publications had an African researcher as the last author.¹³⁹ Additionally, most first and last authors were from only six countries on the

¹³⁵ WHO, Global TB Report 2019, 27.

¹³⁶ WHO, Global TB Report 2019, 27.

¹³⁷ WHO, Global TB Report 2019, 27.

¹³⁸ Tucker, T.J. Makgoba, M.W. "Public-Private Partnerships and Scientific Imperialism," *Science* 320, no. 5879, (May 2008), 1016.

¹³⁹ Rose Mbaye et al. "Who is telling the story? A systematic review of authorship for infectious disease research conducted in Africa, 1980-2016." *BMJ* 4 (October 18 2019), 1.<https://gh.bmj.com/content/4/5/e001855.info>

continent: South Africa, Ethiopia, Nigeria, Kenya, and Ghana. ¹⁴⁰So there is a lack of research conducted in many parts of the continent. Mbaye et al. ask an important question of “Who is telling the story?” which asks more questions regarding data collection and presentation of TB.

Similarly, in a recent article, researchers found that experts from LMICs, particularly who are women, are underrepresented in the leadership of global health journals. In the top global health journals, experts from LMICs, particularly female experts, are in the minority on the leadership boards. All of the top global health journals are located in higher-income countries and are entangled with “colonial structures and power dynamics, where high-income country experts and institutions are valued much more than expertise in low-income and middle-income countries.”¹⁴¹ On the boards of 12 major global health journals, 35% of all the editors were female. 33% of the editors were based in LMICs and only 11% were women based in LMICs.¹⁴² Not only are the research journals led by experts from high income countries but also global health conferences, agencies, and funding is dictated by the agenda of experts in high-income neocolonial and neoliberal powers. Overall, there is a lack of representation of experts from LMICs in global health decisions and research which surely contributes to the limited priority given to TB as well why TB initiatives prioritize increased drug production and vaccine development rather than food insecurity, for instance, because high-income countries have financial incentive for pharmaceutical and vaccine development.

The implications of not having enough representation from LMICs has historical roots but also philosophical explanations. Given that TB and other global health issues are in fact global, it is important that the perspectives from certain countries, regions, or cultures are given

¹⁴⁰ Mbaye, “Who is telling the story?,” 7.

¹⁴¹ Nafade, Vaidehi, Paulami Sen, Madhukar Pai. “Global health journals need to address equity, diversity and inclusion.” *BMJ* 4, (October 2019), 1.

¹⁴² Nafade, Paulami, and Pai. “Global health journals,” 1.

priority over another. Seye Abimola (2019) wrestles with positionality in global health authorship and the role of the ‘foreign gaze.’¹⁴³ Seye Abimola defines the ‘gaze’ as who the imagined audience is and that is coupled with the ‘pose’ which is “the position or standpoint from which we write.”¹⁴⁴ This idea is relevant in discussions surrounding what aspects of TB are provided funding. The prioritization of funding vaccine and drug development can be attributed to the neoliberal “gaze” in this instance and adds on to Keshavjee’s idea around “neoliberal programmatic blindness”¹⁴⁵ where neoliberal ideology prioritizes profit over all rather than funding programs that respond to structural issues that contribute to TB, such as food insecurity and undernourishment.

Abimola delves into three overarching questions: what if the foreign gaze is necessary?; what if the foreign gaze is inconsequential?; and what if the foreign gaze is corrupting?. Depending on the context, the foreign gaze can be all three. This connects with Foucault’s framework for the medical ‘gaze’ in which Western medicine is based.¹⁴⁶ The ‘gaze’ is the doctor’s perspective and instills a power-dynamic in which the doctor is superior to the patient. The ‘gaze’ acts, at its worst, as superior knowledge in which the patient does not have agency in their treatment. The ‘gaze’ dehumanizes the patient and does not consider the context of each individual. This philosophical framework relates to the ‘foreign gaze’ or the ‘neoliberal gaze’ whose objectives are to enhancing capabilities for profit rather than working on solutions that respond to social determinants of TB. Abimola argues that there will always be a difference in what the local and foreign gaze see. The ‘foreign gaze’ represents neoliberal and neocolonial powers, who dictate

¹⁴³ Seye Abimbola. “The foreign gaze: authorship in academic global health.” *BMJ Global Health* 4, (October 2019).

¹⁴⁴ Abimbola, “The foreign gaze,” 1.

¹⁴⁵ Keshavjee, *Blind Spot*, 114.

¹⁴⁶ Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (New York: Vintage Books, 1994).

the global health agenda and priorities. Abimbola says that “what gets written for the foreign gaze reflects the appetite of the foreign gaze, which is more attuned to the ‘surgical’ than the ‘organic.’”¹⁴⁷ The surgical is tangible and short term change while the organic is the long term and internal change. Abimbola provides a philosophical framework to explain the neoliberal influence in TB global initiatives in that they are focus on the ‘surgical’ which is short-term tangible change via drug and vaccine development. Whereas the ‘organic’ exemplifies TB interventions that work on the reform of structural issues that will lead to long-term solutions not just for TB but other diseases, as well.

Abimbola concludes that in the globalizing world the foreign gaze cannot be eradicated but there must be more open conversations on its place in the conversation and that local knowledge must be valued in order to dismantle colonial structures and attitudes.¹⁴⁸ The same can be said of the ‘neoliberal gaze.’ Neoliberalism is at the heart of global systems; however, there must be a conversation discussing its blind spots in regards to global health interventions, especially for TB. The neoliberal ‘gaze’ encourages the development of drugs and vaccines for TB, which are important innovations, but their development does not squash the need for structural reform that contribute to systemic change, such as on efforts to combat food insecurity that surpass just the availability of food banks or donations, that influence TB prevalence worldwide. Investing in structural reform is not only useful in the fight against TB but also in all global health efforts.

¹⁴⁷ Abimbola, “The foreign gaze,” 3.

¹⁴⁸ Abimbola, “The foreign gaze,” 4.

Who “deserves” care?

Many of the questions in this paper can be narrowed down to who has been considered ‘deserving’ of care and priority, both in the US but also globally. At the turn of the 20th century in the USA, there were arguments over how deserving poor TB patients were of medical care and there was a prominent attitude of disregard for the lives of the poor. The poor were perceived as “extremely careless about safeguarding the health of others ” as well as economic burdens because TB greatly exacerbated the impacts of poverty. ¹⁴⁹ A NYC medical officer considered poor people not worth the expenditure because they were “worthless to the community” ¹⁵⁰ There was a similar sentiment among many California officials, who conflated the worth of individuals to their productivity and social worth, which was essentially eliminated if someone were to get TB. ¹⁵¹ The concept of social worth is relevant today within the modern neoliberal paradigm where productive labor and profit are of the utmost importance above all.

In the turn of the early 20th century, immigrants were also considered not ‘deserving’ of care. Immigrants were considered burdensome and a danger to others, especially when they were perceived to be carriers of TB. Government officials in California worked to ban and ‘send back’ the migration of the poor and those who could potentially bring TB. In LA, Dr. John L Pomeroy, the Chief Health Officer of Los Angeles County TB program in 1917 emphasized that Mexicans and Japanese, who were considered more ‘at-risk’ of TB, were out of the body politic and “their health was significant only insofar as it threatened that of whites.”¹⁵²

The disregard for the lives of the ‘other’ and insistence that it is the fault of the ‘other’ that they fall ill with TB, is not an idea that is easily forgotten. In fact, it is still present in public

¹⁴⁹ Abel, *TB and Politics of Exclusion*, 32.

¹⁵⁰ Abel, *TB and Politics of Exclusion*, 34.

¹⁵¹ Abel, *TB and Politics of Exclusion*, 32.

¹⁵² Abel, *TB and Politics of Exclusion*, 66.

health initiatives domestically and also abroad. The intense focus on country of origin by local health departments and the CDC indicates that there is much work that needs to be done for TB eradication.

The Consequences of Not Prioritizing TB

Mobilizing resources to eradicate TB is not only based in a moral argument of human rights but also can be argued from a standpoint of national security and economics. It is enormously costly to not eradicate TB. This is namely an issue for high-income countries which have a history of ignoring TB, which has largely effected them less in the last several decades. Price-Smith in *The Health of Nations*, provides a theoretical framework on the impact of infectious disease on state capacity. State capacity includes the following components which he argues are from most to least importance: fiscal resources, human capital, reach and responsiveness, resilience, legitimacy, autonomy, coherence, instrumental rationality.¹⁵³ He provides some statistical analysis suggesting that HIV/AIDS and TB, both of which significantly impact one's life expectancy, will "exert significant negative pressures on state capacity at the national level."¹⁵⁴ In research conducted on the US, TB data between 1950-1991 Price-Smith found a significant negative association between TB and state capacity over time meaning that as TB incidence fell over 40 years the state was able to work at increased capacity.¹⁵⁵

TB is enormously costly for both the individual and the health system. The IHME institute estimates that if trends of mortality and infection continue, 2.6 million people will die each year of drug resistant TB by 2050, which will cost the global economy an estimated \$16.7

¹⁵³ Price-Smith, *The Health of Nations*, 26.

¹⁵⁴ Price-Smith, *The Health of Nations* 58.

¹⁵⁵ Price-Smith, *The Health of Nations*,73.

trillion.¹⁵⁶ In 2018 alone, TB cases in the USA cost \$480 million to the US.¹⁵⁷ Price-Smith explains a theory of the economic and political impact of an infectious disease resurgence, in any nation. He argues that it will spur a shock in both the supply and the demand of the healthcare sector. The demand for medical care will dramatically increase, medical professionals will be at more at risk, it will burden medical insurance, disability payments, life insurance premiums and it will add to the societal burden of health care.¹⁵⁸ Price-Smith argues that it will likely divert fiscal resources from the government, causing more deficits and debt, and could lead to the undermining the ability of a government to provide basic needs to their population. ¹⁵⁹ One of these needs might be food security which may dramatically impact the burden of TB in nations, such as the U.S. that have comparatively low rates.

Another consequence of an infectious disease outbreak, such as TB, is the impact on food security. TB, in particular, burdens societies reliant on manual labor for agriculture and food.¹⁶⁰ Diseases, such as TB and AIDS, “have significant deleterious effects on the quality of life of a populace—effects that are reflected in declining life expectancy and increasing in poverty.” So, not only is the fight to end TB rooted in human rights and injustice but it is one of survival. TB has largely been underfunded and under researched within the last several decades however, TB is mostly treatable and arguably, preventable, with appropriate structural interventions. It is imperative now more than ever that TB be provided the appropriate interventions, especially in regards to significant structural change, so that it is no longer a threat.

¹⁵⁶ IHME, *Financing Global Health*, 84

¹⁵⁷“Take on TB,” CDC, published September 2019.

¹⁵⁸ Price-Smith, *The Health of Nations*, 94.

¹⁵⁹ Price-Smith, *The Health of Nations* 96.

¹⁶⁰ Price-Smith, *The Health of Nations*, 100.

Global Goals for TB: Are they in reach?

There has been more acknowledgement by the global community about the burden of TB globally however, it seems that acknowledging the issue has not translated into adequate resource mobilization. In September 2018, the UN had the first high level meeting on TB and they introduced and added on to the End TB Strategy's goals. The goals were that the incidence of TB should fall 2-5% per year by 2020 and then to 10% per year by 2025. Also, the proportion of people with TB who die should decrease to 6.5% of all cases by 2025.¹⁶¹ The UN claims that in order to reach these goals the initiative needs to mobilize at least \$13 billion annually for TB treatment, diagnosis, and treatment and \$2 billion per year for research by 2022.¹⁶² The Stop TB Partnership's Global Plan to End TB 2018-2022 estimates that \$10.1 billion USD is required in LMICs in 2019 and will rise to US \$14.9 billion in 2022 to combat TB. In 2019, however, these financial goals were not met. The WHO collected data from 119 LMICs, which accounts for 97% of notified TB cases, and reported that only \$6.8 billion USD was available in 2019.¹⁶³ While this is an improvement from the \$3.5 billion available in 2006 there is still a gap of about \$3.3 billion USD in 2019 and the WHO calls urgently for more funding from domestic and international donors.¹⁶⁴

The UN suggested that these goals can only be achieved with universal healthcare (UHC) and with initiatives that focus on systemic issues such as social and economic development.¹⁶⁵ UHC means that everyone can obtain health services without suffering financial hardship. The WHO explained that faster reduction in incidence and deaths from TB requires improving access

¹⁶¹ WHO, Global TB Report 2019, 13.

¹⁶² WHO, Global TB Report 2019, 123.

¹⁶³ WHO, Global TB Report, 123.

¹⁶⁴ WHO, Global TB Report, 123.

¹⁶⁵ WHO, Global TB Report, 86.

to diagnosis and care within the overarching global goals of UHC as well as further understanding the determinants of TB incidence such as undernutrition, poverty, smoking, and diabetes. These five determinants greatly exacerbated the risk of developing TB. In 2018, 2.8 million TB cases were caused by undernourishment; 0.86 million, mostly men from smoking; 0.83 million due to alcohol abuse; 0.81 million due to HIV status; and 0.36 million from diabetes.¹⁶⁶ The WHO stressed that these issues must be addressed, including poverty levels, in order to improve TB which is hugely significant for the burden of TB in the US.

Financing TB research and development is essential in achieving TB goals. The UN meeting called for \$2 billion USD to be mobilized annually between 2018-2022 for research. WHO declares that there must be major technological breakthrough by 2025 so that the TB incidence rate will fall 17% per year between 2025 and 2035.¹⁶⁷ The top priorities are a new vaccine or drug treatment for people with latent TB; rapid diagnosis at point of care; safer, simpler shorter drug regimens for treatment. As of 2019, one year following the UN meeting no new technology was released in 2019. There is still not a single rapid, accurate and robust TB diagnostic test. As for drug treatment, there are 23 drugs in the works for drug-susceptible, MDR, and latent TB as well as 14 vaccine candidates in trial.¹⁶⁸ While there is hope for future progress, the goals of the global health community are evidence of the priority placed on vaccines and treatment as the main forces to stop TB rather than other factors such as undernourishment. However, putting more effort and investment in structural issues may have more long-term impact on TB, as well as other public health issues. growing disinterest of international donors is dwindling indicating that eradicating TB.

¹⁶⁶ WHO, Global TB Report, 141.

¹⁶⁷ WHO, Global TB Report, 165.

¹⁶⁸ WHO, *Global Tuberculosis Report*, 165.

Conclusion

TB is still impacting millions of people each year around the world. The importance of how the burden is presented and the information that is considered important for risk factors is vital in its eradication. In the US, the CDC categorizes TB burden between “foreign-born” and “US-born” people and states that the majority of cases are among “foreign-born” individuals, who have also been in the US for at least a decade. The categorization of cases being either “foreign-born” or “US-born” is highly problematic namely because it emphasizes the TB has been imported from elsewhere rather than acknowledging that there are structural factors in play in the US, such as food insecurity, as well as other that influence the development of active TB in the US. The association of “foreign-born” people is perpetuating a xenophobic idea that immigrants are the carriers of the disease. The lack of attention placed on combating structural issues carries over into US global health efforts where aspects of TB control related to vaccine and drug development is given priority over systemic issues.

The categorization of “foreign-born” people as a factor of the burden of TB in the US suggests that the data collection and subsequent policy proposals of the CDC are complicit in racist and capitalist policies that further exploit minority groups such as immigrants, who also are most burdened by TB in the US. The CDC does not challenge the structural issues associated with potential risk of TB and so perpetuates these in just systems. The relationship between food insecurity and TB needs to be researched further as it could be a major factor in the development of TB in the US. The CDC is holding themselves back from eliminating TB in the U.S. with so much focus on the fact that a patient is “foreign-born” rather than other factors that may have influence the development of TB more. The presentation of data indicating that immigrants are disproportionately impacted by TB can show inequality and structural issues in society but also

can hinder effectiveness of interventions and efforts. Without an deep look at the structural issues that impact TB disease development, the elimination of TB will be nearly impossible. In Abel's historical analysis of exclusionary policies regarding TB she concluded that "only when we acknowledge our membership in a global community will we be able to extirpate tuberculosis. Rather than erecting higher and higher barriers against "outsiders," we must improve living standards and distribute effective public health programs both at home and abroad."¹⁶⁹ This is still holds true. The social determinants of TB are vital in understanding the true TB burden and subsequent effective solutions for TB. If investments in structural issues are made, then maybe TB can be eliminated for good.

¹⁶⁹ Abel, *TB and Politics of Exclusion*, 140.

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