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THE TUBERCULOSIS CRISIS: THE DEADLY CONSEQUENCE OF IMMIGRATION POLICIES AND WELFARE REFORM

Kimberly A. Johns* and Christos Varkoutas**

Highly contagious tuberculosis [is] close to epidemic level in the city. . . . No matter where you are in New York today, you can be at risk.¹

I have been sick as a dog the last two weeks; I caught cold in spite of [the] heat and three most famous doctors on the island. One sniffed at what I spat up, the second tapped where I spat it from, the third poked about and listened how I spat it. One said I had died, the second that I am dying, the third that I shall die. I can scarcely keep them from bleeding me.²

Waksman was led into the court in the centre of the hospital, where two shy children came up to greet him. One was a boy of about five, named Michael, and the other was Janet, a girl of about seven. The director explained: ‘These two children were brought to this hospital six months ago, from distant regions of France. They were almost in a state of coma on arrival. We began at once to treat them with streptomycin. As you see, they have both made a complete recovery. . . .’

A year later, in a pattern that was becoming frighteningly familiar, a letter arrived at Waksman’s office in New Jersey informing him that little Michael had relapsed and died. The tuberculosis germs had resurrected and this time they were resistant to

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streptomycin.³

INTRODUCTION

The above scenes are startling reminders of a devastating yesteryear that may not be too far from current reality. Tuberculosis (TB), a highly contagious disease with deadly consequences,⁴ may return such scenes to everyday occurrences. The once romanticized notion of the disease has long since been replaced by the fear of its fatal effects.⁵ Although recently thought to be near eradication,⁶ TB is currently at one of the highest levels of infection in years.⁷ While overall rates in the United

3. RYAN, supra note 1, at 298.


5. See Kollin K. Min, The White Plague Returns: Law and the New Tuberculosis, 69 WASH. L. REV. 1121, 1123 (1994). In the 1800s, TB, referred to as consumption, was epitomized by artisans with short, tragic lives suffering from the disease. “Much of the melancholia of the age, its fixation on the themes of the ephemera of youth and the transience of existence, can be partially attributed to the devastating impact the disease had on so many of the era’s most promising young artists.” Id. “It was believed that tuberculosis could inspire genius, the so-called spes phthisica, as if the bacterium infused into its victims some ambrosial stimulant.” RYAN, supra note 1, at 24. See generally LEWIS J. MOORMAN, TUBERCULOSIS AND GENIUS (1940) (telling the stories of ten famous authors who suffered from TB including Robert Louis Stevenson, Voltaire, Molière, Percy Bysshe Shelley, John Keats, and Saint Francis of Assisi). Other famous TB sufferers include Chopin, Paganini, Emily and Charlotte Bronte, and Eleanor Roosevelt. See Sana Loue, Immigrants, Immigration Law, and Tuberculosis, 71 WASH. L. REV. 969, 970 (1996).

6. In 1984, the Advisory Council for the Elimination of Tuberculosis set the year 2010 as the target date for eradication of TB. See Jeffery Goad & George Jaresko, Tuberculosis in the 90's, 10 J. PHARMACY PRAC. 105 (1997).

7. In the U.S., the incidence of TB was decreasing from 1954 to 1984. See Julia A. Martin, Proposition 187, Tuberculosis, and the Immigration Epidemic?, 7 STAN. L. & POL'Y REV. 89, 92 (1996); Virginia Shubert, Developing a System for Tuberculosis Prevention and Care in New York City, 1 GEO. J. ON FIGHTING POVERTY 418, 418 (1994) (noting that there were more than 84,000 cases in 1953
States are currently dropping, rates among certain populations within the U.S. are rising dramatically. Most serious in this recent resurgence are the numerous outbreaks and incidence of drug-resistant strains of the disease. Although recent scientific and medical discoveries provide some hope for future control of the disease, these recent developments have not yet demonstrated the ability to combat the rising incidence of TB cases.

Starting in 1984, there was a rise in the incidence of TB resulting in a twenty percent increase from 1982. See id. (reporting Center for Disease Control estimates of 39,000 more cases than expected from 1985 to 1991). There are an estimated ten million infected people currently living in the U.S. See Martin, supra, at 92. Very recently, however, the U.S. has seen nationwide decreases in TB cases, although some states have experienced significant increases. See Goad & Jaresko, supra note 6, at 105; see also Josephine Gittler, Controlling Resurgent Tuberculosis: Public Health Agencies, Public Policy, and Law, 19 J. HEALTH POL. POL'Y & L. 107, 112 (1994) (noting that case rates in the District of Columbia, Arkansas, California, Florida, Georgia, Hawaii, Illinois, Kentucky, Mississippi, New Jersey, New York, South Carolina, and Texas exceed the rational case rate). In other parts of the world, TB incidence is at an even more drastic level. See Laurie Garrett, Eastern Europe Sees 25% TB Rise, NEWSDAY, Mar. 25, 1998, at A32 (noting the incredible increase in TB cases in Eastern Europe and the former Soviet Union). "If worldwide control of tuberculosis does not improve, 90 million new cases and 30 million deaths are expected in the decades 1990 through 1999." Raviglione et al., supra note 4, at 220. Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) has been a contributing factor in the TB resurgence. Persons infected with HIV/AIDS have impaired immune systems and are thus at a higher risk of developing active TB. See Min, supra note 5, at 1128; Shubert, supra, at 419 ("A person infected with both HIV and TB is at least ten times more likely to develop active TB disease than an immunologically healthy person.").


9. See Raviglione et al., supra note 4, at 224 (noting outbreaks of drug-resistant TB worldwide and noting lack of accurate statistics on incidence of drug-resistant TB); Martin, supra note 7, at 92 (noting rash of outbreaks of drug-resistant TB in the U.S.); Shubert, supra note 7, at 418 (citing 1991 statistics that 33% of TB cases in New York were resistant to at least one drug while 19% were resistant to multiple drugs); Min, supra note 5, at 1128-29 (citing increases in drug-resistant TB cases).

10. Scientists recently decoded the DNA sequence of the TB bacterium. See Nicholas Wade, Scientists Decode the DNA of Germ Responsible for TB, N.Y. TIMES, June 11, 1998, at A1; see also New TB Drug Approved, NEWSDAY, June 24, 1998, at A26 (noting that the Food & Drug Administration announced its approval for the first new anti-TB drug in 25 years, rifapentine).
drug-resistant TB.

Originally, when little was known about the disease, TB sufferers were quarantined in an effort to curb its spread. Little was, or could be done to help the individual sufferer. The advent of modern medicine seemingly provided the solution to TB and ended the need to quarantine TB sufferers. Today, however, drug therapy treatment may no longer protect against the spread of the disease. The misuse and overuse of medicines has resulted in an increasing incidence of drug-resistant TB which has a dramatically low cure rate.\textsuperscript{11} With the ominous threat of drug-resistant TB and ineffective drug treatments to combat its spread, the true gravity of the impending TB epidemic is yet to be realized.

The escalating problem is both attributable to, and compounded by, not only the rise in drug-resistant strains of the disease, but also by recent U.S. policies and reforms regarding immigrants. Immigrants are particularly vulnerable to TB and currently have one of the highest rates of infection. The current legal framework regarding this class of persons has exacerbated the country’s TB problem by presenting significant opportunities for the quick and rampant spread of the disease. The policies of the U.S. government towards immigrants may, in fact, be contributing to the rise of drug-resistant TB. Persons infected with TB, especially drug-resistant strains, continue to enter the U.S. Furthermore, TB-infected immigrants avoid proper treatment rather than face the harsh effects of recent legislative reforms. The end result is the continuing spread of TB as well as increasing incidence of drug-resistant strains of the disease.

Despite the grim picture, the U.S. government has not recognized the impact of its policies and regulations on the spread of TB. Incidence of TB continues to increase without significant government action to proactively prevent a full-blown epidemic.\textsuperscript{12} Current TB treatment methods will remain ineffective given the debilitating constraints of immigration and welfare policies. Government indifference towards the disease, coupled with these policies and reforms, may ultimately lead to an epidemic rise in TB among the country’s overall population. If the government

\textsuperscript{11} See Gittler, \textit{supra} note 7, at 112; see \textit{infra} notes 57-64 and accompanying text (discussing drug-resistant TB).

\textsuperscript{12} But see Marisa Moore et al., \textit{Trends in Drug-Resistant Tuberculosis in the United States, 1993-1996}, 278 JAMA 833, 836 (1997) (noting dramatic decrease in multi-drug-resistant-TB (MDR-TB) cases in New York City due to increased resources and control measures to combat TB).
Tuberculosis Crisis

recognizes the deleterious effects of its policies and takes action to avoid the disaster before it happens, solutions for curbing TB are close at hand.

Part I of this article looks at the method of infection, symptoms, and diagnosis of TB. Furthermore, this section will discuss proffered cures such as quarantine and current drug therapy treatments. Part II analyzes the consequential effects of current immigration policies and the recent welfare reform act on the spread of TB. Part III offers current methods to limit TB and explains why, under the U.S. government’s policies towards immigrants, these methods would fail. This article concludes that the U.S. government must redress the harm caused by its current policies immediately, before an epidemic of drug-resistant TB spreads throughout the country and forces a return to the unpalatable days of quarantine for TB sufferers.

I. TUBERCULOSIS

Tuberculosis has plagued populations from the earliest of times. The disease is an acute or chronic infection, caused by Mycobacterium tuberculosis or tubercle bacilli, for which the average person has no specific immunological defense. Although one may become infected quite easily, the slow progression of the disease and its vague symptoms make it difficult to detect. Despite progress in treating those that suffer from the disease, TB remains resistant to complete eradication. As time passes, the disease becomes increasingly difficult to cure and prevent.

A. Method of Infection, Symptoms, and Diagnosis

TB infection occurs through the inhalation of infectious droplets that are aerosolized by coughing. These tiny droplets contaminate the air in

13. See Ryan, supra note 1, at 5 (noting evidence of TB in skeletons dating to 5,000 B.C. and to 4,000 B.C.); Loue, supra note 5, at 970 (noting evidence of TB in Egyptian mummies dating to 3400 B.C.). TB not only has plagued man, but also infects mammals, fish, birds, and reptiles. See Ryan, supra note 1, at 6.


16. See id. Droplets are also aerosolized by sneezing and singing. See Loue, supra note 5, at 972. TB can also be contracted by swallowing Mycobacterium
enclosed spaces for long periods of time. Bacilli lodge in the lungs and slowly multiply. The infection may then develop into the disease, depending on the person's age, intensity of exposure, and overall health. Fortunately, only a small percentage of those exposed to the disease will actually develop TB.

At first, pulmonary TB is asymptomatic, with gradual symptoms of fever, malaise, and weight loss going unnoticed. Secretions draining into the bronchi from sloughing areas of lung tissue cause the coughing related to TB. Sputum increases gradually, varying in color and consistency, from green and purulent to yellowish and mucoid, depending on the progression of the disease. One of the first noticeable symptoms of TB is hemoptysis (i.e., spitting or coughing up of blood), which var-

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17. See Ryan, supra note 1, at 16. One may contract TB from drinking milk from an infected cow. See id. at 19. This often severe form of the disease has been halted by the elimination of infected cattle through skin testing of the animals. See id.

18. See Gostin, supra note 14, at 226.

19. See Vincler & Gordon, supra note 4, at 993 (noting that transmissibility factors include disease severity, cough frequency, and acid-fast bacilli concentration in pulmonary secretions). See id. (noting that contraction factors include age, immunosuppression, poor ventilation, and frequency of exposure).

20. See id. at 991 ("Only approximately ten percent of persons infected with TB will develop active TB . . . .")

21. The most common form of the disease is pulmonary TB. See Gostin, supra note 14, at 226 n.39. There are many types of TB. A partial list also includes extrapulmonary TB, miliary TB, and central nervous system TB. See The Merck Manual, supra note 14, at 134-39; see also id. (providing a more complete description of these other forms of TB).

22. See Gostin, supra note 14, at 226 & n.39; Goad & Jaresko, supra note 6, at 106 ("Such nonspecific symptoms as malaise, anorexia, fatigue, and fever with chills and night sweats.").


24. "Substance expelled by coughing or clearing the throat. It may contain a variety of material from the respiratory tract including one or more of the following: cellular debris, mucus, blood, pus, caseous material, and microorganisms." Taber's Cyclopedic Medical Dictionary 1734-35 (16th ed. 1989).

ies in degree from slight streaks of blood to massive hemorrhage.26 Left untreated, pulmonary TB can cause a slow decline in health, spread to other parts of the body, and ultimately cause death.27

Given the somewhat undetectable nature of TB symptoms, early diagnosis of the disease is essential to begin timely and effective treatment. Generally, diagnosis of TB is hampered either by the length of time required to obtain test results, or by the lack of definitiveness of test results. Chest x-rays usually provide the initial indication that a person may be infected with TB.28 However, a chest x-ray usually only leads to other, more stringent and definitive tests.29 The test that is most common, and easiest to perform, is the intradermal administration of purified protein derivative (PPD).30 Here, the doctor pricks the skin with a device containing several small pins. The results are read forty-eight to seventy-two hours later.31 If the patient has been exposed to TB, the site will swell.32 The PPD test, however, often yields false negatives for infected people.33 Therefore, a negative PPD test is not conclusive, and an individual exposed to TB needs to be kept under observation. Growing cultures from early morning sputum creates a definitive test.34 Unfortu-

26. See id. Although hemoptysis is one of the first noticeable symptoms, it is not common during the early stages of TB. See id.
29. See Lorie Madsen, Tuberculosis Today, RN, Mar. 1, 1990, at 44 (noting that patients with x-ray evidence of pulmonary tuberculosis should immediately receive a purified protein derivative (PPD) test).
30. See Resurgent TB, supra note 2, at 97. This test is also known as the Mantoux test. See id.; Martin, supra note 7, at 91 (describing the PPD test); see also Gostin, supra note 14, at 235 (listing groups who should be or are required to be tested by the Public Health Service and individual states).
31. See Loue, supra note 5, at 973.
33. See id.; Madsen, supra note 29, at 48 ("It can also produce a false negative when tuberculosis infection is so longstanding that the immune system has stopped reacting to it."); see also Resurgent TB, supra note 2, at 98-100 (noting interpretation of PPD test is highly susceptible to human error).
34. See The Merck Manual, supra note 14, at 134; Madsen, supra note 29, at 48 ("[S]putum [cultures are] the only test that diagnoses pulmonary tuberculosis with certainty."); see also Resurgent TB, supra note 2, at 105 (describing how to obtain sputum culture).
nately, this test is often slow to produce results.\textsuperscript{35} The difficulty in diagnosing TB requires the keen eye of a trained health-care provider who is able to recognize a TB infection. Only prompt diagnosis and treatment can impede the unwitting spread of the disease to others.

\textbf{B. Treatment}\textsuperscript{36}

TB plagued societies for centuries\textsuperscript{37} before the cause of the illness was actually discovered.\textsuperscript{38} Recognition of the source of TB prompted the search for a treatment and cure.\textsuperscript{39} At first, treatment consisted of little more than providing comfort to sufferers and preventing spread of the disease. Scientific progress led to the application of drug therapy for TB sufferers, but despite the advancement, certain strains of TB remain impervious to any known methods of treatment.

\textit{1. Quarantine}

The original treatment for TB, quarantine, was instituted in Germany during the late 1800s.\textsuperscript{40} Prior to the advent of drug therapy, it was believed that TB could be cured by removing sufferers from the stresses of an urban environment.\textsuperscript{41} Physicians moved TB patients to sanitoria.

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\textsuperscript{35} See Goad & Jaresko, \textit{supra} note 6, at 107 (noting that it takes two to three weeks to grow a culture); Madsen, \textit{supra} note 29, at 48 (stating that it takes three to eight weeks for results).

\textsuperscript{36} For a thorough review of the history of TB treatment see RYAN, \textit{supra} note 1.

\textsuperscript{37} See id. at 5-6 (describing earliest signs of TB dating to 5,000 – 4,000 B.C. and establishment of TB in mainland Europe by 2,500 – 1,500 B.C.); see also Loue, \textit{supra} note 5, at 970.

\textsuperscript{38} Haltingly, over those two and a half millennia, a painfully slow progress did take place in our understanding of tuberculosis. \ldots  
[Y]et no treatment could possibly cure the disease while its real cause remained a mystery, and this mystery eluded the most knowledgeable of doctors, as it had for several thousand years. RYAN, \textit{supra} note 1, at 8. The cause of TB was discovered by Robert Koch in 1882. See id. at 9-15; see also Gostin, \textit{supra} note 14, at 222 ("A host of compulsory measures to combat the spread of tuberculosis can be documented from the mid-1890s, beginning almost directly after Koch’s discovery of the causative agent of tuberculosis.").

\textsuperscript{39} See RYAN, \textit{supra} note 1, at 9 ("[The discovery of TB’s source] would become the first step in the twentieth century search for the cure.").

\textsuperscript{40} See Min, \textit{supra} note 5, at 1125.

\textsuperscript{41} See id.
cated in rural areas so they might enjoy plenty of fresh air, peace and quiet. These sanitoria sprang up in several countries, including the U.S.\(^{42}\) During this time, the state confined TB sufferers to protect the public at large from contracting the disease.\(^{43}\)

Although not a cure for TB,\(^{44}\) the sanitorium played a significant role in reducing the spread of the disease by isolating infectious individuals from the general population.\(^{45}\) This confinement contained the spread of the disease and eventually assisted doctors in monitoring patients' drug regimens. The practice of quarantine helped to virtually eliminate TB as a serious health problem in the U.S.\(^{46}\)

In the past, U.S. courts have generally upheld the states' police powers to quarantine individuals for public health reasons.\(^{47}\) Even more recent cases support the legal authority of states to quarantine people.\(^{48}\)

\begin{itemize}
\item \(^{42}\) See id. at 1126.
\item \(^{43}\) See id.; see also Gostin, supra note 14, at 222 (listing the various powers of the state for treatment of persons infected with TB to include case identification, disinfection, confinement, criminal prosecution for endangering the public and removal of children from infected parents).
\item \(^{44}\) In mild cases, quarantine prolonged life by slowing the progression of the disease. See Ryan, supra note 1, at 26. But, a seriously infected patient did not benefit from quarantine. See id.
\item \(^{45}\) See Min, supra note 5, at 1126 ("Although the sanitorium movement probably did little to cure patients with serious TB cases, the institutions did play a dramatically effective role in controlling the spread of the disease to the general public.").
\item \(^{46}\) See Gostin, supra note 14, at 228.
\item \(^{47}\) In the nineteenth and early twentieth centuries, the states' power to quarantine was not questioned. See Min, supra note 5, at 1132. Courts generally upheld statutes requiring quarantine of an individual "as constitutional under the states' police power, the sovereign power to protect public health." Id. at 1131.
\item \(^{48}\) In the early case of Jacobson v. Massachusetts, 197 U.S. 11 (1905), the Court rejected constitutional challenges to smallpox vaccinations required by local authorities in Massachusetts. See id. at 363. The Court pointed out that the community had the right to protect itself against an epidemic and the state, under the police power, had the authority to enact health laws, including quarantine. See id. at 365.
\end{itemize}
This legal foundation, however, may not withstand the public pressure against quarantine if imposed due to a grand-scale TB outbreak. With skyrocketing progress in drug development following World War II, diseases formerly considered contagious and/or deadly were quickly conquered. This advancement prompted the common belief that modern science could conquer any disease, and consequently, quarantine laws were eradicated. The public’s reliance on advancements in medicine has created a general belief that one cannot be confined simply for having a disease. Quarantine may no longer be a possible recourse in containing the spread of TB.

2. Drug Therapy and Drug-Resistant TB

The advent of drug therapy radically altered the treatment and control of TB. Streptomycin, discovered by Selman Abraham in the 1940s, was the first drug used in treating TB. Discovery of this drug dramatically improved the ability to treat TB sufferers. Later, however, the medical community realized that streptomycin had not cured TB, but

while Arline provides support for the state’s authority to impose quarantine, it is not dispositive as to the legal standards required for implementing such a measure. See id. at 1135.

49. See Gittler, supra note 7, at 124 (“Some commentators have questioned the continuing validity of a long line of decisions affirming the power of the states to exercise their police powers by enacting compulsory infectious disease control laws.”).

50. See Jon Frandsen, Fighting a Disaster that Could Be ‘Plane Ride Away’ from U.S., GANNETT NEWS SERVICE, Mar. 15, 1998 (“Since World War II, much of the developed world has succeeded in wiping out, treating or vaccinating against some of the most sinister diseases. . . .”).

51. “The reappearance of tuberculosis as a serious public health threat points up the fallacy of the widely held assumption that medical science had conquered the communicable diseases that were once leading causes of morbidity and mortality.” Gittler, supra note 7, at 107.

52. See Min, supra note 5, at 1132.

53. See id. at 1126 (“It would be difficult to overstate the impact that the development of effective drug treatment for TB during the 1950s had on public health throughout the United States.”).

54. See Gostin, supra note 14, at 219.

55. See Ryan, supra note 1, at 295 (“The subsequent death rates for this appalling disease tell their own story. In New York, in the year 1930, 400 people died from tuberculous meningitis, by 1953 this had been reduced to 47.”).
had only limited the disease’s negative effects.\textsuperscript{56} TB deaths following the discovery of streptomycin provided evidence of TB strains that were resistant to this miracle drug.\textsuperscript{57} To combat the setback, scientists made great gains in treating the disease through the discovery of new drugs, and the combination of such new drugs. The improvement and growth of drug therapy treatment had progressed to the point where the cure rate for TB was nearly 100 percent.\textsuperscript{58}

Unfortunately, this reliance on modern medicine has fueled the current resurgence of TB. The overuse and misuse of medications has led to the creation of TB strains that are resistant to drug treatment.\textsuperscript{59} A person may develop drug-resistant TB in one of two ways. First, transmitted or primary drug resistance develops from infections with TB organisms that are already resistant to at least one drug.\textsuperscript{60} Second, acquired or secondary drug resistance develops as a result of ineffective treatment of TB.\textsuperscript{61} Conventional drug therapy treatments often prove useless in com-

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{56} See id. at 327.
\item \textsuperscript{57} See id.
\item \textsuperscript{58} See Gittler, supra note 7, at 110 (noting that TB is almost always cured if the patient follows the proper drug regimen); Min, supra note 5, at 1127 (noting a greater than 90\% cure rate if TB patients take their prescribed medication).
\item \textsuperscript{59} See Linda A. Johnson, \textit{TB Infections Rising, Treatments Falttering}, L.A. TIMES, Apr. 13, 1997, at A30. ("[T]he number of people infected with tuberculosis is continuing to grow, in part because the antibiotics that could control the disease are often used incorrectly."). There are many drug resistant forms of venereal diseases because of the overuse and misuse of antibiotics. See Delthia Ricks, \textit{Resistance to Antibiotics a Problem Medical Professionals Try to Solve}, LAS VEGAS REV.-J., Jan. 1, 1997, at E4 ("The abuse, misuse and overuse of antibiotics are largely to blame."). Unfortunately, the drug regimens of a few years ago are also becoming less effective against TB. See id. ("Some strains of TB are so stubborn they are resistant to a dozen drugs."). Therefore, doctors must use stronger, and possibly more dangerous, drug combinations to treat a patient with TB. See id. See generally Sandra G. Boodman, \textit{Running Out of Wonder Drugs}, WASH. POST, Mar. 16, 1993, at A10.
\item \textsuperscript{60} See Gostin, supra note 14, at 227; Goad & Jaresko, supra note 6, at 108 (noting that mycobacterium have an intrinsic probability of mutating to cause primary resistance); RYAN, supra note 1, at 407 (explaining natural drug resistance of TB strains).
\item \textsuperscript{61} If persons with tuberculosis take their medication in an incomplete or sporadic fashion (e.g., erratic drug ingestion or omission of one or more of the prescribed agents), if there is an insufficient number of drugs in the regimen, or if the dosage is suboptimal, hardy bacilli survive and can go on to multiply and produce drug-
\end{itemize}
\end{footnotesize}
bating these cases. Due to the inability of current drug regimens to effectively treat drug-resistant TB, the cure rate in such cases is approximately forty to sixty percent. This marks a dramatic drop from the near 100% cure rate for typical TB. Furthermore, drug-resistant TB remains infectious for a longer period of time than does typical TB. Therefore, the potential for infection is greatly increased. Consequently, the possible widespread outbreak of drug-resistant TB would be extremely dangerous.

Today, a drug treatment regimen is administered in varying types, amounts, and lengths of time, depending on the type of infection and the patient’s condition. At least four drugs are needed for the treatment of typical TB. In the U.S., this regimen usually consists of isoniazid.
rifampin, pyrazinamide, and streptomycin or ethambutol for six months. After drug susceptibility tests, a more specific drug regimen is employed. Advanced cases, or cases where drug resistance is suspected, require longer courses of treatment. Full compliance with drug regimens is essential for fully effective treatment. Additionally, follow-up testing is critical in determining whether the drug regimen has sufficiently treated the disease.

The recent approval of rifapentine has provided hope in improving the success rate of drug therapy because its addition to current drug regimens diminishes the length of treatment by fifty percent. The reduced regimen will bolster patient compliance with drug therapy which, in

68. "Rifampin, a semisynthetic broad-spectrum bactericidal antibiotic, inhibits bacterial RNA synthesis by binding strongly to the beta subunit of DNA-dependent RNA polymerase, preventing attachment of the enzyme to DNA and thus blocking initiation of RNA transcription." USP DI, supra note 67, at 2568; see also PDR, supra note 67, at 1230-33; Goad & Jaresko, supra note 6, at 112.

69. "Pyrazinamide may be bacteriostatic or bactericidal, depending on its concentration and the susceptibility of the organism." USP DI, supra note 67, at 2513; see also PDR, supra note 67, at 1412-13; Goad & Jaresko, supra note 6, at 112-13.

70. Streptomycin "is a bactericidal antibiotic. It acts by interfering with normal protein synthesis." PDR, supra note 67, at 2208; see also USP DI, supra note 67, at 71, 79; Goad & Jaresko, supra note 6, at 114.

71. "Ethambutol is a synthetic, bacteriostatic antitubercular agent. Its mechanism of action is not fully known. It diffuses into mycobacteria and appears to suppress multiplication by interfering with RNA synthesis. It is effective only against mycobacteria that are actively dividing." USP DI, supra note 67, at 1409; see also PDR, supra note 67, at 1402-13; Goad & Jaresko, supra note 6, at 113.

72. See Rosalind S. Abernathy, Tuberculosis: An Update, 18 PEDIATRICS IN REVIEW 50, 57 (1997); see also Loue, supra note 5, at 974.

73. See Loue, supra note 5, at 974; Goad & Jaresko, supra note 6, at 107 ("With the risk of drug resistant TB, drug susceptibility testing should always be performed.").

74. See THE MERCK MANUAL, supra note 14, at 144.

75. Patient compliance with the drug regimen is necessary to prevent creation of drug resistant strains. See, e.g., Goad & Jaresko, supra note 6, at 117; Moore et al., supra note 12, at 833; Gittler, supra note 7, at 118. See also id. at 119 ("[I]t has been estimated that about fifty percent of such patients do not adhere to therapy at some point.").

76. See Resurgent TB, supra note 2, at 116-17 (recommending that one not rely solely on radiographic evidence of therapy response).

77. See New TB Drug Approved, supra note 10.
turn, may reduce the risk of creating drug-resistant strains of the disease. In addition, scientists recently decoded the DNA sequence of the TB bacterium. The scientific community hopes that this discovery will eventually aid in the development of new anti-TB drugs and vaccinations. However, a full analysis of the discovered DNA sequence will take years, and there are as yet no results to prove that rifapentine, or any other new drug, will be any more effective than past medicinal discoveries.

TB is a highly communicable disease, and the drug regimen needed for treatment is extremely long. Furthermore, the overuse and misuse of medication has created resistant strains of TB which require different and/or longer drug regimens to effectuate a cure. As the incidence of drug-resistant TB increases, a cure for TB sufferers with known medicines is in jeopardy. Recent advancements have not yet proven capable of altering this course.

II. IMMIGRANTS

In general, a significant number of TB cases are “imported” into the U.S. by immigrants, either documented or undocumented. Immigrants are predisposed to suffer respiratory and other infectious diseases like TB, due to the concentration of undocumented immigrants among the

78. See id.
80. See Wade, supra note 10; Cooke, supra note 79.
81. See Wade, supra note 10.
82. See supra notes 16-17, 66-77 and accompanying text.
83. See supra notes 60-65 and accompanying text.
84. See Gittler, supra note 7, at 114 (“In 1992, 27.3 percent of the total reported TB cases occurred in foreign-born persons and the majority had been in the United States five years or less.”); Mae M. Cheng, TB Cases Drop in City, But Immigrants at Risk, NEWSDAY, Mar. 25, 1998, at A30 (noting that despite drop in TB cases in New York City in 1997, there was a growing number of cases among immigrants). Additionally, the incidence of TB among the undocumented immigrant population is likely to be underestimated due to fear of deportation and failure to seek medical care. See Martin, supra note 7, at 93. The most active disease occurs in immigrants from Southeast Asia, Africa and Central and South America. See Raviglione et al., supra note 4, at 220. Specifically, persons from Mexico, Haiti, India, China, Philippines, and Vietnam are most at risk. See Goad & Jaresko, supra note 6, at 105.
migrant farm worker population, their substandard living conditions, and malnourishment.\textsuperscript{85} Additionally, immigrants suffer from drug-resistant strains of TB at a significantly high rate,\textsuperscript{86} dramatically increasing their vulnerability to the diseases. The increased rate at which immigrants in the U.S. suffer from the disease, despite recent declines of TB incidence among the general population, demonstrates the vulnerability of immigrants.\textsuperscript{87} Thus, any formulation to combat TB must adequately address this adversely affected group. Specifically, the U.S. government must consider the effects of current immigration policies and the new welfare reform act\textsuperscript{38} on the incidence of TB in the immigrant population.

\textbf{A. Immigration Policies}

Although the U.S. has promulgated an image of itself as a haven for the poor and downtrodden,\textsuperscript{89} the country has consistently imposed im-

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\textsuperscript{86} Drug-resistant tuberculosis is most prevalent in areas of the world where the incidence of tuberculosis is highest and resources for treatment are most limited. In these areas, doctors often do not prescribe adequate amounts of the appropriate drugs, and patients do not have the resources to complete or even begin treatment, resulting in high rates of drug-resistant strains.

Martin, \textit{supra} note 7, at 91-92 (noting that immigrants from Southeast Asia, India, Haiti, Mexico, and parts of Latin America have extremely high MDR-TB rates); see also Moore et al., \textit{supra} note 12, at 837 (factors important to TB infection include country of birth and duration of residence in the U.S.). Many of the cases of TB among immigrants show a resistance to more than one antituberculosis drug. See Martin, \textit{supra} note 7, at 92.


\textsuperscript{89} The poem, \textit{The New Colossus}, by Emma Lazarus, inscribed on a bronze
migration restrictions. Many of these restrictions were enacted under the auspices of controlling the importation of diseases. For example, in the late 1800s, Congress passed legislation to prevent the admission of people with contagious diseases to the U.S. This legislation was used as part of the country’s efforts to prevent the importation of the cholera epidemic from Europe and Asia. The Surgeon General used the provisions of this legislation, in conjunction with state quarantine laws, to hinder the spread of that disease by requiring all arriving immigrants to remain in quarantine for a minimum of twenty days. Even today, upon entry into the U.S., a person may be quarantined for certain contagious diseases, including TB.

Currently, before consular offices issue visas to immigrants, applicants are required to submit to a physical examination. Therefore, anyone seeking permanent entry into the U.S. is subject to an examination to determine whether that person is infected with a contagious disease.

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91. See Act of Mar. 3, 1891, ch. 551, 26 Stat. 1084. Indeed, there were other less altruistic reasons for passing this legislation. The legislation also excluded convicts, the mentally retarded and insane, sexual deviants, drug addicts, alcoholics, paupers, beggars, vagrants, illiterates, anarchists, Communists, polygamists and those coming to engage in “any immoral sexual act,” or those likely to become a public charge. See Immigration and Nationality Act § 212 [hereinafter INA]; Victoria Bennett, Medical Examination of Aliens: A Policy With Ailments of Its Own?, 12 U. ARK. LITTLE ROCK L.J. 739, 741-42 (1989/1990).

92. Congress was aware of the possibility of the spread of disease, even though the mechanisms of transmission were not clear. See Bennett, supra note 91, at 741-42.

93. See id. at 742.

94. See id. at 746 (other diseases that may warrant quarantine include chancroid, gonorrhea, granuloma inguinale, HIV, infectious leprosy, lymphogranuloma venereum, and syphilis in the infectious stage). Although TB-infected individuals may be excluded from entry, most are granted an exception on the belief that treatment will be more effective in the United States. See Martin, supra note 7, at 93.

95. See INA § 221(d), 8 U.S.C. § 1182 (1994). For an explanation of medical examinations required for immigrants see Loue, supra note 5, at 979-85.
such as TB. However, one seeking a nonimmigrant visa need not submit to a physical examination unless the consular official believes it is necessary. Furthermore, there is no requirement for foreigners entering the U.S. who do not need a visa, or U.S. citizens returning to the country after traveling abroad, to submit to any physical examinations before entering the country. Obviously, undocumented immigrants who enter the country covertly are also not subject to TB testing. Therefore, many persons entering the country are never tested for TB prior to their arrival in the U.S.

The new immigration reform act focuses tremendous resources on stemming the tide of covert undocumented immigration. This narrowly tailored plan, however, will not prevent people infected with TB from entering the country. Despite enhanced efforts provided in the act, undocumented immigration continues. In fact, because the provisions

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96. See Bennett, supra note 91, at 747.
97. See id.
98. See id. at 747, 749-50; see also Hernández-Truyol & Johns, supra note 90, at 571 (noting that immigrants from visa waiver states may enter the country simply by purchasing a round-trip ticket).
99. See Loue, supra note 5, at 983-84; Resurgent TB, supra note 2, at 98; Martin, supra note 7, at 93 (noting difficulty in determining TB incidence in undocumented immigrants because they often refuse to divulge immigration status or do not seek medical care).
100. See Goad & Jaresko, supra note 6, at 105 (noting that despite screening before issuing visas to immigrants and refugees, TB in immigrants is still high).
102. See Pub. L. No. 104-208 §§ 101-22 (codified as amended in scattered titles and sections of U.S.C.) (increasing "by not less than 1,000 the number of positions for full time, active-duty border patrol agents," increasing "by 300 the number of positions for personnel in support of border patrol agents," installing "additional physical barriers and roads," acquiring and using "any Federal equipment (including fixed wing aircraft, helicopters, four-wheel drive vehicles, sedans, night vision goggles, night vision scopes, and sensor units), and adding a civil penalty "of at least $50 and not more than $250 for each" illegal entry or attempted illegal entry); see also Hernández-Truyol & Johns, supra note 90, at 570-72 (noting that while the Act focuses efforts to curb covert undocumented immigration, especially from Mexico, over half of all undocumented immigrants in the U.S. enter the country legally).
103. See Non-Yankees Go Home, NEWSDAY, Oct. 2, 1996, at A36 ("As
of the immigration reform act make deportation easier, the incentive for undocumented immigrants to conceal themselves from government authorities increases. As a result, such immigrants are unlikely to be tested for any deadly disease. Additionally, as noted above, some foreigners and Americans traveling abroad can easily enter the country without being subject to TB testing.

Therefore, if the government’s aim is to halt TB from crossing the nation’s borders, policies must be more encompassing. Only complete elimination of covert, undocumented immigration, as well as testing of all foreigners and nationals entering the country from abroad, can stop TB importation into the U.S. Past failure in preventing covert, undocumented immigration, as well as opposition to mandatory testing of all Americans and foreigners, demonstrates the impossibility of perfecting such prophylactic measures.

Given the narrow focus of current policy, eliminating the importation of TB into the U.S. is far from becoming reality. Even if policies were adopted to address all possible avenues of TB importation, such policies would be both detested and ineffective. As long as people enter the U.S., diseases such as TB will enter as well. Thus, the government must turn its attention and its resources to treating TB sufferers and curbing the spread of the disease, rather than futile attempts at preventing the disease from entering the country.

long as the jobs remain open the illegal pipeline will keep flowing.”).

104. See Pub. L. No. 104-208 § 235 (b)(1)(A)(i). Those seeking to enter the country must convince an immigration officer either that they are admissible or have a “credible fear of persecution” to be entitled to asylum. See Hernández-Truyol & Johns, supra note 90, at 581-82. If the immigrant is not “clearly beyond a doubt entitled to be admitted,” a proceeding is held. See id. If this single immigration officer determines the immigrant does not qualify for admission the immigrant is summarily removed from the country without review. See id.

105. “Immigration... ‘sustains the incidence of tuberculosis’ in developed countries like the United States.” Martin, supra note 7, at 93, 101 (noting that attempts to eliminate all illegal immigration would not be successful). But see Shari B. Fallek, Health Care for Illegal Aliens: Why it is a Necessity, 19 HOUS. J. INT’L L. 951, 978 (1997) (“The only way to deal with the illegal immigrant problem is to tighten the borders...”).

106. See Loue, supra note 5, at 987 (“The screening of all entrants to the United States would be a logistical and fiscal nightmare.”).
Tuberculosis Crisis

B. Welfare Reform

Recently, the U.S. enacted welfare reform aimed at immigrants\textsuperscript{107} that will only exacerbate the current and increasing problem of TB. These reforms, focused on stopping undocumented immigration and reducing benefits to immigrants,\textsuperscript{108} instead facilitate the spread of the disease and deny treatment to infected individuals. Both documented and undocumented immigrants suffer from lack of treatment for TB because they have no benefits and fear deportation should they even seek treatment. Therefore, the structure of welfare reform allows a group with a high incidence of TB to forego treatment and further spread the disease.

The new welfare reform act does not provide coverage for undocumented immigrants who need non-emergency medical care.\textsuperscript{109} Although strictly limiting access to medical benefits, this reform makes an exception for treatment of communicable diseases.\textsuperscript{110} By drastically limiting medical coverage of documented immigrants to emergency situations, the welfare reform also acts as a bar for immigrants legally present in the country to receive medical treatment.\textsuperscript{111} Because of the vague nature of early TB symptoms, the disease does not always appear to be an emergency, or readily identifiable as a communicable disease.\textsuperscript{112}

\textsuperscript{107} Much of what is referred to as the new welfare reform act focuses on removing welfare benefits from documented and undocumented immigrants. See Hernández-Truyol & Johns, supra note 90, at 560-62.

\textsuperscript{108} See id. at 556; see also Kevin R. Johnson, Public Benefits and Immigration: The Intersection of Immigration, Status, Ethnicity, Gender, and Class, 42 UCLA L. REV. 1509, 1519-28 (1995) (describing the history of fear in the U.S. of immigrants' access to public benefits); Berta Esperanza Hernández-Truyol, Natives, Newcomers and Nativism: A Human Rights Model for the Twenty-First Century, 23 FORDHAM URB. L.J. 1075, 1090 (1996) ("Certainly, there have always been and continue to be ethnic, religious, cultural and economic aspects of nationalistic and nativistic ideology and anti-foreign/anti-immigrant mentality.").


\textsuperscript{111} See Hernández-Truyol & Johns, supra note 90, at 584; Clinton to Support Legal Immigrant Rights to Medicaid, BUS. WIRE, Sept. 27, 1996 ("It could result in removing a large portion of the legal immigrant population from the Medicaid program for non-emergency services, forcing them to go without necessary health care or to wait until their conditions worsen and then to go to emergency rooms. . . ").

\textsuperscript{112} See Martin, supra note 7, at 95; see also supra notes 22-27 and ac-
fore, without benefits to cover the cost of treatment, many immigrants with TB forego medical assistance. Thus, by the time TB-infected persons reach the high threshold for covered emergency care, there is not much that can be done for them, and they have likely already infected many others.

The new legislation also requires the reporting of known undocumented immigrants who seek medical assistance. General health laws also require the reporting of the name, address, and contacts of TB-infected patients. Therefore, undocumented immigrants have the added risk of deportation just by attempting to receive medical assistance to treat their disease, even if their condition has progressed to an emergency.

Documented immigrants are also reluctant to seek care for fear that they will be deported because they are “undesirable” or that accompanying text (describing initial symptoms of TB). The emergency treatment will be more expensive than the prophylactic treatment would have been. See Brooks, supra note 85, at 156 (estimating that $963.5 million was spent on emergency medical care of illegal immigrants); see also Johnson, supra note 108, at 1569-70.

113. See Loue, supra note 85, at 276 (“The undocumented community is, unfortunately, characterized by a lack of financial resources to pay for much of the needed care.”).

114. See Martin, supra note 7, at 100.


116. See Loue, supra note 5, at 974; Gittler, supra note 7, at 124 (noting the possibility of civil commitment and compulsory treatment still exists). See also Vincler & Gordon, supra note 4, at 1004-05 (listing the requirements of Washington State upon the diagnosis of TB). But cf., Gittler, supra note 7, at 128-29 (“[M]any states do not require the reporting of HIV infection, and in a significant number of states where cases of persons with HIV infection must be reported, they are reported without disclosure of their names.”).

117. “Undocumented individuals continually live with the fear of deportation because of their illegal status. This fear often prevents them from seeking any type of medical care. Therefore, they arrive most often in emergency rooms only after the medical situation has elevated to a crisis.” Brooks, supra note 85, at 164. See also Johnson, supra note 108, at 1529; Loue, supra note 85, at 277; Reich, supra note 85, at 4; supra notes 109-10 and accompanying text (noting exceptions for emergencies and communicable diseases).

118. Other individuals may fear the immigration consequences of receiving publicly-funded medical benefits. All aliens applying for permanent resident status must demonstrate that they will not become public charges. A failure to make this showing may result in their exclusion from the United States. Although a prospective test is used to determine an alien’s likelihood of becoming a public
undocumented friends or family will be detected and deported through contact tracing by health officials. Thus, the fear of deportation forces many immigrants to avoid treatment, even when such treatment is available under the narrow exceptions of the reform legislation. Sadly, immigrants often allow their own condition to degenerate to an extreme stage of the disease while at the same time infecting more people.

Fear forces immigrants, if they seek any treatment at all, into an underground system of drugs. In this case, “underground drugs” are not illicit, dependency-inducing drugs, but instead are antibiotics, obtained without a prescription, which are then used in the treatment of TB.

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charge, the past receipt of public benefits may be an important factor in this calculation.

Loue, supra note 85, at 303 (footnotes omitted). See Brooks, supra note 85, at 164.

119. See infra notes 146-47 (describing contact tracing).

120. There are other reasons why immigrants are reluctant to obtain health-care. A language barrier created by the inability to speak English prevents many immigrants from seeking or obtaining medical treatment. See Loue, supra note 85, at 300-01; Martin, supra note 7, at 98. Culture is also a significant barrier to treatment. The Western health-care system is often quite dissimilar to some cultures’ dependence upon folk remedies or healers. See Loue, supra note 85, at 298; Martin, supra note 7, at 99. Additionally, some cultural beliefs regard affliction with TB to be cause for social ostracism. See id.

121. See Fallek, supra note 105, at 974 (citing a study that fear of immigration authorities led immigrants to delay seeking treatment).

122. See Loue, supra note 5, at 985 (“Undocumented immigrants fear seeking out those benefits to which they are entitled.”).

123. “[U]ndocumented immigrants continue to suffer from debilitating, preventable diseases, including communicable diseases that put the entire community at risk.” Brooks, supra note 85, at 169. “Each illegal immigrant with active tuberculosis who delays care infects an average of ten people during the period of delay. If the immigrant never gets treatment, the number infected will be even higher.” Martin, supra note 7, at 99 (footnotes omitted). See also Loue, supra note 85, at 275.

124. See Laura Beil & Maggie Rivas, Germ Capital of U.S. Poverty and Crowding Along the 2,000-mile Stretch of Desert the U.S. Shares with Mexico are Causing Some of the Worst Threats to Health in America, SAN FRANCISCO EXAMINER, Dec. 11, 1994, at A4 (noting that many rely on cheap drugs sold over-the-counter in Mexico, thus adding to drug resistance); Ricks, supra note 59 ("People stockpile antibiotics,... 'When they don't finish a prescription, they'll keep it and pass it around to other family members when they're sick. We have no way of determining how often this happens.").
Unfortunately, the treatment of TB is extremely lengthy\(^{125}\) and patient’s compliance with this regimen, especially when not under direct supervision, is extremely poor.\(^{126}\) Therefore, immigrants who attempt to self-medicate often fail to comply with the difficult regimen. A dangerous cycle is thus created: an infected person fails to effectively self-medicate, continues to spread the disease,\(^{127}\) and contributes to the creation of drug-resistant TB, which is even more difficult to treat in newly-infected persons.

The enactment of measures that restrict benefits to undocumented and documented immigrants is reflective of an effort to remove incentives for immigration to the United States.\(^{128}\) Despite the removal of such benefits, immigrants continue to enter and remain in this country.\(^{129}\) New reforms foster a system in which immigrants’ health-care needs go unchecked.\(^{130}\) Those elements of the welfare reform act that affect immigrants’ receipt of medical assistance, either because of high costs or fear of deportation, encourage the spread of TB and contribute to the creation of drug-resistant strains. If the U.S. does not take new measures to change its immigration and welfare policies, drug-resistant TB could mark the advent of a medical crisis in the country.

### III. CURRENT METHODS FOR CURBING THE TB EPIDEMIC

Many agree that the key to preventing TB is the detection and cure of infectious cases.\(^{131}\) Only with an effective program can TB be con-  

125. See generally Loue, supra note 5, at 976 (stating drug regimens take anywhere from eighteen to twenty-four months for treatment of resistant strains of TB). See THE MERCK MANUAL, supra note 14 and accompanying text.

126. "By far, the most serious obstacle to successful treatment of tuberculosis and eradication of the disease is patient noncompliance with drug regimens." Martin, supra note 7, at 91 (noting that half of all TB patients do not take their medication for the time prescribed).

127. See Gittler, supra note 7, at 111 (noting that people infected with drug-resistant TB may be infectious for a long period of time).

128. See Johnson, supra note 108, at 1513 & n.15 (citing political statements in favor of reform legislation that benefits are the incentive for immigration); Loue, supra note 5, at 977 ("[I]mmigrants migrate for economic reasons, expecting to find better jobs, higher wages, and better living conditions.").

129. See Johnson, supra note 108, at 1513 (proposing that the incentive for illegal aliens is jobs and family members, not public benefits); see also Brooks, supra note 85, at 172.

130. See Fallek, supra note 105.

131. See, e.g., Raviglione et al., supra note 4, at 225; Moore et al., supra
trolled. Current efforts to curb any possible epidemic include education, screening, drug therapy, directly observed therapy, contact tracing, follow-up, and case reporting. New methods are also being formulated in order to cope with the rising TB problem. Due to the harsh effects of government policies toward immigrants, however, these efforts are ineffective in halting the spread of the disease and incapable of preventing the creation of drug-resistant strains.

Education programs, geared toward reaching high-risk groups, are necessary to raise consciousness about the disease. Only with a heightened awareness will people recognize possible infection, comply with drug treatment, and properly prevent contagion. Immigrants, as members of a high-risk group, must necessarily be recipients of this information if any education program is to be effective and beneficial. However, the general trend of recent legislation to remove spending earmarked for the benefit of immigrants indicates the government's unwillingness to put money toward informing immigrants about TB.

Screening, which tests for TB in persons in high-risk groups, is essential for immigrants. However, current policies only screen documented immigrants and refugees as they enter the U.S. In addition, a large number of undocumented immigrants are not tested for TB as part of any screening program because they fear deportation. As a substantial portion of a high-risk group is not screened for the disease, the

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12. The city must educate communities at risk for TB about the signs of the disease and the need for early diagnosis and treatment. This campaign must include information regarding testing and treatment sites. Moreover, the city must educate people diagnosed with TB regarding the essential need for compliance with prescribed treatment, the likelihood of side effects to TB medications, and the availability of positive incentives. Finally, the city must fully inform the general public regarding the means of TB transmission in order to avoid hysteria and misinformation. Shubert, supra note 7, at 117; see also Goad & Jaresko, supra note 6, at 117 (recommending that programs target immigrants and workers in hospitals, drug treatment centers, homeless shelters, HIV clinics, and correctional institutions).

13. See Goad & Jaresko, supra note 6, at 117; see also Shubert, supra note 7, at 425-26 ("Meaningful access to care also requires that treatment information be communicated to patients in a culturally sensitive manner.").

14. See Martin, supra note 7, at 97.

15. See Resurgent TB, supra note 2, at 98 (noting that screening of these populations reaches only approximately 800,000 persons per year).

16. See supra notes 99-100 and accompanying text.
program's effectiveness is undermined. Drug therapy focuses on medicating those persons infected with TB in order to treat their disease. As discussed above, however, documented and undocumented immigrants, who have one of the highest incidence of infection, will not seek medical treatment. Lack of financial resources to cover the costs of treatment, combined with the fear of deportation, dissuade immigrants from seeing professionals who are trained to provide necessary treatment. Even the recent approval of the new anti-TB drug, rifapentine, will be ineffective in controlling TB or in reducing drug resistance, as the drug will be largely unavailable to the immigrant population.

Directly observed therapy requires health care providers to observe patient compliance with drug therapy. By watching medication intake, health care providers can ensure that drug regimens are completed. Directly observed therapy helps reduce drug-resistant TB and reduces the chance of relapse. However, problems associated with drug therapy, in general, prohibit the feasibility of this treatment plan.

Contact tracing seeks to find and test those people who may have been in contact with infected individuals. Thus, when an immigrant seeks treatment for TB, public health officials will search for those persons with whom an infected individual has had contact. Therefore, immigrants whose friends or family are undocumented will forego treatment for fear that contact tracing will uncover the immigration status of

137. See supra notes 65-76 and accompanying text for a discussion of currently used drug therapy regimens for the treatment of TB. See also supra notes 77-81 and accompanying text for a discussion of new drug developments.
138. See Gittler, supra note 7, at 114; Martin, supra note 7, at 91-92; Cheng, supra note 84; supra notes 84-87 and accompanying text.
139. See supra notes 109-23 and accompanying text.
140. See Gittler, supra note 7, at 118 (suggesting the pharmacist as the ideal health-care professional for directly observed therapy).
141. See id. at 117; Resurgent TB, supra note 2, at 117.
142. See Gittler, supra note 7, at 118; see also Gittler, supra note 7, at 120 (noting that directly observed therapy could proceed either by patients going to a hospital or clinic or by a health-care worker visiting the patient's home or office).
143. See Gittler, supra note 7, at 117-18.
144. A further problem with directly observed therapy is its additional costs in terms of time and money. See Resurgent TB, supra note 2, at 117.
145. See Martin, supra note 7, at 97; Gittler, supra note 7, at 117.
those close to them. Many would rather suffer with TB than be responsible for the deportation of friends and family.

Health-care providers employ follow-up to ensure that treatment has fully cured the infected person. Patients are checked for drug resistance, evaluated for drug therapy compliance, and screened for reactivation of the disease. Health officials are unable to conduct any follow-up of immigrants who refuse to seek initial treatment for the disease. Therefore, infected individuals often go unchecked for drug resistance, drug treatment compliance, or relapse.

Case reporting requires collection and compilation of records of TB incidence in order to track the disease throughout the country. Again, infected immigrants who refuse to seek treatment represent unknown cases of the disease. Therefore, public health officials cannot determine the true scope of the TB problem. Without accurate information regarding concentration, incidence, and drug-resistance, officials will be unable to plan effective measures to combat the spread of TB.

Recent increases in the incidence of drug-resistant TB have prompted communities to consider more systematic plans for addressing the current TB problem. Programs to control the TB crisis are being created from health-care models already in existence. For example, the state of Washington is currently reviewing and updating its laws regarding the control of TB. There, the local board of health appoints a local health officer (LHO) who reviews reports of suspected cases of disease that may be a public threat, and then determines an appropriate action. The LHO has the power to institute preventative measures such as requiring isolation, detention, and quarantine of the individual, or individuals, suspected of being infected. The LHO can also invoke the power of

146. See Martin, supra note 7, at 100; supra note 121 and accompanying text.
147. See Martin, supra note 7, at 98; Resurgent TB, supra note 2, at 116-17 (describing techniques of follow-up to determine whether patient's TB has been cured); see also Gittler, supra note 7, at 117-18 (suggesting follow-up is also important to ensure that persons who were in contact with the TB patient receive preventive drug therapy).
148. See Martin, supra note 7, at 98.
149. See Vincler & Gordon, supra note 4, at 1004.
150. See id.
151. See id.
152. See id.
the courts to enforce any measure deemed necessary.\textsuperscript{153} As with other treatment methods, immigrants who fear the consequences of reform legislation will attempt to avoid detection by any government official, including the LHO. Thus, this fear undermines the ability of an LHO, or any similar health program, to aid in the battle against TB.

Current treatment systems have the potential to provide relief to TB sufferers, as well as to stem the spread of the disease. It is, therefore, well within the government’s power to control the potentially disastrous effects of a TB epidemic. However, the government’s policies toward immigrants subverts the effectiveness of any of these treatment systems. Even the highly touted advancement of decoding the DNA sequence of the TB bacterium, which is anticipated to lead to new drugs and vaccinations, is meaningless when immigrants are unable or unwilling to access any treatment. The welfare reform legislation’s crack-down on benefits and heightened reporting requirements forces immigrants into avoiding treatment programs. Because of the harsh consequences imposed by immigration and welfare reforms, current methods of curbing TB are not options for a large number of potential TB sufferers.

In order for treatment systems to be effective in controlling and curing TB, the government must repeal the problematic provisions of its immigrant and welfare policies that currently subvert such treatment methods. Only by allaying financial concerns and the fear of deportation, will immigrants submit to such programs. This change, however, would require the repeal of significant portions of the recent welfare reform.

Given the reform’s domestic popularity,\textsuperscript{154} altering the legislative scheme appears somewhat remote.\textsuperscript{155} Alternatively, if there are no

\textsuperscript{153} See id.
\textsuperscript{154} See Punishing Legal Immigrants, WASH. POST, Sept. 27, 1996, at A24 (noting that the legislation is particularly popular in large border states of Texas and California).
\textsuperscript{155} But cf. Hernández-Truyol & Johns, supra note 90, at 562-63 (noting that under immense political pressure, the 105th Congress passed some changes to the welfare reform that restored social security benefits to elderly and disabled documented immigrants if they resided in the country and received benefits prior to August 22, 1996); H.R. 2015, 105th Cong. (1997); Peter T. Kilborn, In Budget Bill, President Wins Welfare Battle, N.Y. TIMES, Aug. 1, 1997, at A1 (detailing changes to welfare reform regarding documented immigrants). Such changes, however, still leave undocumented immigrants, as well as many documented immigrants, without access to many benefits. See Hernández-Truyol & Johns, supra note 90, at 557, 563.
changes in the current treatment methods so that immigrants may benefit, TB will continue to spread as more drug-resistant strains are created. The longer this situation persists, the less likely current measures will be able to combat the TB epidemic. Furthermore, the longer TB goes unchecked in the immigrant population, the more likely the disease will spread, afflicting the general public in epidemic proportions. With TB rampant and incurable by modern medicine, we will have no choice but to return to the undesirable pre-drug days of quarantine of TB sufferers.

CONCLUSION

TB presents a serious and deadly problem today for both the U.S. and the entire world. There are ominous and foreboding signs that TB is again on the rise. The incidence of drug-resistant TB presents a frightening threat to world health. Thus, current treatment methods need to be fully effective against the spread of the disease if a deadly epidemic is to be averted. Furthermore, new medicines and possible vaccinations must be available universally, especially to people of high-risk groups, if they are to have any impact upon the overall TB crisis.

Unfortunately, the U.S. government appears unwilling to fashion solutions to solve the TB problem. Immigrants, who are the predominant

156. There is a stark contrast between the government’s action in response to HIV/AIDS and its response to TB. Of the two diseases, TB is more contagious and does not require the intimate contact necessary to transmit HIV/AIDS. See CYNTHIA D. MAGGIO & DAVID B. BRUSHWOOD, PHARMACY PERSPECTIVE: ACQUIRED IMMUNE DEFICIENCY DISEASE 6 (William J. Feinberg, ed. 1996); RYAN, supra note 1, at 17-19; Johnson, supra note 59 (quoting deputy director of the World Health Organization’s Global Tuberculosis Programme describing TB as “AIDS with wings”). The principal ways to become infected with HIV/AIDS are: exposure to needles or syringes used by an HIV-positive person, having vaginal, oral or anal sex with an infected person, exposure of the baby to an infected mother’s blood during pregnancy and birth, receiving a blood transfusion, and blood-to-blood contact or bodily fluid-to-blood contact from an infected to a non-infected person. See MAGGIO & BRUSHWOOD, supra at 6. TB, on the other hand, may be contracted by inhaling air containing infectious droplets from another person who is speaking, sneezing, or coughing. See Martin, supra note 7, at 91; see also supra notes 15-20 and accompanying text (describing transmission of, and infection with, TB). But see American Lung Association, (visited Aug. 24, 1998) <www.lungusa.org/diseases/lung/luntb.html> (“It is not easy to become infected with tuberculosis. Usually a person has to be close to someone with TB disease for a long period of time.”). Despite the degree to which TB is more contagious than HIV/AIDS, the efforts and attention of the U.S. Government has focused great
sufferers of TB, have little political clout in the U.S. to prompt action aimed at curbing the spread of the disease. With the exception of some advocates, there are few willing to spearhead support for causes affecting immigrants in general, let alone the specific cause of TB-infected immigrants. Thus, the problem of TB, concentrated in immigrant and low-income populations, has received little or no attention from the government. TB, like other problems of the unrepresented, will not be a concern that receives government attention until it affects the general population. However, by the time the TB problem reaches the general public, and the government begins taking action, it may be too late to effectively and palatably stop the spread of the disease.

Instead of curbing TB, immigration and welfare reform policies have exacerbated the TB problem. Immigration policies that focus on testing resources and attention on the problem of HIV/AIDS and has almost completely ignored TB. See Amy Goldstein, U.S. to Begin Minority AIDS Initiative, WASH. POST, Oct. 9, 1998, at A3 (citing total government spending on AIDS as $7.7 billion); John Fish, Americans Must Fight Globally to Fight TB, CHICAGO SUN-TIMES, Apr. 20, 1998, at 22 (citing government spending at approximately $80 million for TB research). Government action to fight the spread of HIV/AIDS is due in large part to the political clout of those persons afflicted with the disease. Although homosexuals, a group greatly devastated by HIV/AIDS, have suffered discrimination, as a class they have exerted great pressure on the legislature to pass laws that are beneficial to HIV/AIDS treatment and research. See Gittler, supra note 7, at 129 ("[P]olitically active gay organizations did much to shape public health approaches to HIV infection control."). But see Watkins v. U.S. Army, 875 F.2d 699, 727 (9th Cir. 1989) ("[H]omosexuals as a group are handicapped by structural barriers that operate to make effective political participation unlikely if not impossible.").

157. See Shawn Foster, Latino Leader Says Immigrants are Scapegoats for U.S. Problems, SALT LAKE TRIB., Oct. 16, 1996, at A8; Bill Minutaglio & George Rodrigue, Aid Restoration is Relief to Immigrants, DALLAS MORNING NEWS, May 7, 1997, at 42A ("These are people who often don't speak English; they don't vote. . . . You can just cut them off, and you don't have to deal with them.") (quoting Karen Fleshman of the United Network for Immigrant and Refugee Rights). TB also predominantly hits the urban poor, especially racial and ethnic minorities. See Gittler, supra note 7, at 114. Similarly to immigrants, the poor are hit hard because they are unable to fight off TB due to poor nutrition and health care and substandard, overcrowded housing or homelessness. See Martin, supra note 7, at 94.

158. See Gittler, supra note 7, at 138 ("Elected officials and their constituents may choose to ignore the economic and social problems that underlie the resurgence of TB because those most affected by TB are among the most disadvantaged and marginalized members of society.").
only some persons entering the country, and the inability to completely halt covert undocumented immigration, allow persons infected with TB to enter the country undetected. Once in the U.S., immigrants are deterred from seeking testing or treatment due to the new welfare reform act. Lack of financial resources, as well as the fear of deportation, prevent infected immigrants from being detected or treated. The end result is not only the increased spread of TB, but also the further creation of drug-resistant strains of the disease. As a result of these immigration policies and welfare reforms, current methods of treating and containing TB, including recent medical and scientific advancements, are useless.

The government must recognize the deleterious effects of the current immigration and welfare policies. The fear of "outsiders" and "free-loaders" which drive the popularity of such policies must yield to the protection of the nation's health. While TB is currently prevalent only among immigrants and the poor, without prophylactic measures the disease will surely affect the general population. Remodeling of immigration policies and welfare reform is necessary to prevent future spread of contagious diseases like TB. This reform must occur now, before TB reaches an epidemic stage and ultimately threatens the health of the entire nation.

Under the current direction of government policy, once TB becomes a problem large enough for our lawmakers to address, it may be too late to fashion an effective and palatable response. For, as drug-resistant TB spreads unchecked, the country will have no choice but to return to the pre-drug days of quarantine. Despite the solid legal framework to uphold quarantine requirements, it is questionable whether society will accept such a course of action. Given strong notions of modern drug miracle cures and individual rights, the return to quarantine will be next to impossible.

Without prompt, effective government action, the nation and the world will be faced with a deadly TB epidemic. Despite continuing medical progress, drug-resistant TB will make treatment with drug therapy incapable of curing sufferers or preventing the spread of the disease. The remaining option of quarantine, which will be abhorred and resisted

159. See Hernández-Truyol & Johns, supra note 90, at 553.
160. See supra note 50 and accompanying text.
161. See supra notes 51-53 and accompanying text. The recent approval of rifapentine, which is highly touted for its potential to reduce drug resistant strains of TB, will fuel the notion that medicines should be able to cure the disease.
if it can be enforced at all, will be able to do little more than its past, limited success in preventing the further spread of TB. We will then be reliving the thought-to-be-forgotten days when the "White Plague"\textsuperscript{162} devastated the world. If care is not taken today, tomorrow we may just find ourselves faced with the grim scenes of yesteryear.

\textsuperscript{162} See RYAN, supra note 1, at 7 (noting that the TB epidemic that swept through Europe from the seventeenth to nineteenth century was known as the "White Plague").