

# Something Old, Something New: The Challenge of Tuberculosis Control in the Age of AIDS\*

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## INTRODUCTION

You're confined to the cell, no one can hear you. You scream, you pound the glass, no one hears. You don't talk to a soul. A cage! Everyone stare [sic] in at you.<sup>1</sup>

This woman is quarantined in an isolation cell constructed of heavy gauge steel walls that are virtually sound-proof. Complete with a shower and a television, each cell is its own self-contained unit, effectively sealing off contact with all other persons. In one corner is an anteroom leading to a door. When the door is opened, the visitor is in contact with only the limited space of the anteroom. This woman is confined in such an impenetrable space because she has tuberculosis (TB). Although initially incarcerated for a petty crime, she was placed in a secure isolation unit for failing to complete her TB therapy. She has in effect been quarantined, not because she is contagious, but because she has failed to complete her treatment. In her isolation cell, she will be "properly monitored" until her release.<sup>2</sup>

This incident resounds of the last decade when demands for the detention and quarantine of human immunodeficiency virus (HIV) infected individuals arose. These calls for quarantine appeared early in the acquired immunodeficiency syndrome (AIDS) epidemic when the public was just starting to learn about the disease. Questions of who should be detained and quarantined hark back to the last century in the United States when these methods were used most no-

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1. Michael Winerip, *Rikers Fights an Epidemic Cell by Cell*, N.Y. TIMES, May 24, 1992, at 35.

2. *Id.*

tably with TB. Quarantine was thought to be a suitable solution to TB due to the contagiousness of the disease, coupled with the almost complete lack of effective treatment to fight the disease. In truth, there was little else available to combat the spread of tuberculosis, and quarantine was the only known measure of control at that time. In more recent times, calls for the quarantine of AIDS individuals were tempered when more information became known about the characteristics of the disease; AIDS is not spread by casual contact, and although there is no cure, AIDS is preventable.

The recent rise in TB has forced us to again re-examine questions of quarantine and detention at a time when we thought that public policy makers had reached consensus on these issues in the context of the AIDS epidemic. Questions that are again being raised include whether individuals should be detained and quarantined until cured of TB; whether coercion should be used to administer TB therapy to patients refusing therapy; and whether facilities similar to the TB sanitoriums in operation during the first half of this century should be reestablished to isolate TB individuals not only from society in general, but especially from HIV-infected individuals who are acutely vulnerable to TB. In fact, the very groups that led us to that consensus, mainly the HIV advocacy communities which grounded their arguments in sound public health principles, are now suggesting that we reevaluate again the advisability of utilizing detention and quarantine. This time they suggest reevaluating these measures with TB patients, in order to protect those with HIV who are particularly vulnerable to TB exposure.

These renewed calls for detention and quarantine surface in an age when new tools of public health are available in the form of specialized TB therapy and when direct observation of the patient insures that the patient will complete his or her treatment. At the same time we must also consider that we live in a legal climate where civil liberties must be protected by procedural and substantive safeguards as set out in the Constitution. Moreover, Congress has set out additional protections, first with § 504 of the Rehabilitation Act<sup>3</sup> which the Supreme Court held applied to those with TB and other contagious diseases,<sup>4</sup> followed by more recent protections provided by the Americans with Disabilities Act.<sup>5</sup>

This article provides an analytical framework for examining how to control the TB epidemic within the context of legal and ethical considerations. Part I describes the disease of tuberculosis and the reasons for the return of the TB epidemic. Included in this dis-

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3. 29 U.S.C. § 794 (1973).

4. *School Bd. v. Arline*, 480 U.S. 273 (1987).

5. 42 U.S.C. § 12101 (1990).

cussion is a description of those groups which are at present the most vulnerable to TB, with special focus on HIV populations. Part II describes approaches available to insure patient compliance in TB treatment that contrast with calls for detention and quarantine. Part III is a legal analysis of the constitutional and statutory implications of TB control by the state, including detention and quarantine. Part IV suggests a new approach where low cost methods developed in the public health arena properly balance the state's police and public health powers to protect the general public from TB disease while also protecting the privacy and civil rights of individuals with tuberculosis.<sup>6</sup>

This article concludes that quarantine and detention provide only a partial and flawed solution to controlling the spread of TB. Not only does detention provide no guarantee that a person will complete his or her TB therapy once the individual is released, but there are less restrictive means available that are efficacious, cost-effective, and increase the likelihood of TB therapy completion. Moreover, the use of these less restrictive means should better insure that the civil rights of those with TB will be preserved, as provided for in the Americans with Disabilities Act. This is not to say that there will never be a need to confine individuals who refuse to complete their treatment, but rather patients must be given every chance to complete their therapy before actions of detention and quarantine are initiated by the state.

### I. TB AND THE RETURN OF THE EPIDEMIC

Tuberculosis has been called by many names. The term "consumption" was given to the disease due to the extreme weight loss associated with advanced cases in which the body appeared literally consumed by the illness. TB was formerly called the "white plague", a name attributed to the pallor of the TB victim's skin. And in the 17th century, the preeminence of TB as a wholesale killer was noted by its designation as the "captain of all of these men of death".<sup>7</sup>

One hundred years ago, TB was the leading cause of death in the United States. In the first half of this century alone, TB was responsible for five million deaths. Today, approximately 2000 persons

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6. This paper will not examine legal and ethical issues concerning TB in populations such as children, migrant workers, and the elderly. Clearly, these groups may also reside in congregate settings, but to date, these groups do not account for the majority of the morbidity and mortality resulting from the rise of TB in the United States.

7. Evelyn Zamula, *Tuberculosis. Still Striking After All These Years*, FDA CONSUMER, Mar. 1991, at 21; BACTERIAL INFECTIONS OF HUMANS, EPIDEMIOLOGY AND CONTROL 605 (Alfred S. Evans & Harry A. Feldman eds., 1982).

in the United States die each year of TB.<sup>8</sup> The numbers of active cases in the United States had been declining an average of six percent yearly since 1953, the first year surveillance records were kept by the Centers for Disease Control (CDC).<sup>9</sup> Since 1985, the total number of TB cases has risen by a total of 20.1%. This unexpected rise in cases is due to factors such as the increase in the numbers of homeless, poor nutrition, poverty, drug use, alcoholism, and crowded living conditions in inner city housing. Lax contagious disease control measures in other congregate settings such as hospitals and prisons have also contributed to the rise in TB. Those individuals recently affected by TB have been disproportionately racial and ethnic minorities.<sup>10</sup>

#### A. *What is Tuberculosis?*

Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. TB is spread almost exclusively by airborne transmission from an individual who has an active case of the disease. When an individual with TB disease coughs or sneezes, tiny droplet nuclei are emitted that contain the TB bacteria. After these droplets dry out, the TB bacteria remain suspended in air. These bacteria have been known to survive for extended periods in enclosed places. Transmission usually occurs after prolonged and repeated exposure to someone with the active form of the disease.

After the TB bacteria enter the lungs, the bacteria remain dormant in the air sacs where they are enclosed in hard grey capsules called tubercles (hence the name tuberculosis). This stage is called a latent TB infection, and those who are healthy do not have symptoms of TB disease, nor are they contagious to others. They will not, however, be able to eliminate the TB bacteria without appropriate antibiotics, and they will always produce a positive skin test for TB. It is important to note that most healthy individuals who are exposed to TB do not become infected. Of the ten to fifteen million individuals in the U.S. with latent TB infections, only ten percent will ever develop active TB disease in their lifetime.<sup>11</sup>

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8. Until recently, TB was predominantly a disease of developing nations, where approximately 1.7 billion persons world wide are TB carriers. Each year, approximately 10 million persons worldwide develop TB disease; of these approximately 3 million die yearly from TB. Zamula, *supra* note 7, at 20; National Institute of Allergy and Infectious Diseases, *Tuberculosis*, BACKGROUND, Feb. 1992, at 1 [hereinafter NIAID].

9. Zamula, *supra* note 7, at 20.

10. Dixie E. Snider, Jr. & William L. Roper, *The New Tuberculosis*, 326 NEW ENG. J. MED. 703, 704 (1992); U.S. Department of Health and Human Services, *Emerging Infectious Diseases, Tuberculosis Morbidity - United States, 1992*, MORBIDITY & MORTALITY WKLY. REP., Sept. 17, 1993, at 696 [hereinafter *Tuberculosis Morbidity*].

11. U.S. Department of Health and Human Services, *National Action Plan to Com-*

Latent TB infections convert to the active form of the disease when the individual's resistance is lowered due to factors including illness, fatigue, poor nutrition, or alcoholism. At this point, the TB bacteria break out of the tubercles in the lungs and enter the blood stream. Early symptoms of TB include fever, night sweats, and weight loss. As the disease progresses, patients experience chronic intense coughing, chest pain, shortness of breath, and blood in the sputum. TB may also spread to other areas of the body including the kidneys, bones, and the brain.<sup>12</sup> Active TB disease tends to develop in about five to ten percent of the population within two years of their primary latent infection.<sup>13</sup>

The two drugs of choice for TB are isoniazid and rifampin. Until recently, the standard treatment for TB consisted of administering these two drugs for a minimum of six months (along with the drug pyrazinamide for the first two months)<sup>14</sup> until the patient was cured of TB. When the patient responds to these drugs and completes treatment, cure rates are virtually 100%. After two weeks of continuous therapy, active TB becomes chronic TB where patients are no longer considered contagious and generally are asymptomatic.<sup>15</sup>

One of the major problems in the management of TB is insuring that patients complete their entire course of therapy. When patients do not complete their therapy, TB is not cured, and again becomes infectious.<sup>16</sup> Probably the worst consequence of not completing ther-

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*bat Multidrug-Resistant Tuberculosis*, MORBIDITY & MORTALITY WKLY. REP., June 19, 1992, at 5 [hereinafter *NAP*]; Zamula, *supra* note 7, at 20.

12. Zamula, *supra* note 7, at 20; NIAID, *supra* note 8, at 2.

13. U.S. Department of Health and Human Services, *Management of Persons Exposed to Multidrug-Resistant Tuberculosis*, MORBIDITY & MORTALITY WKLY REP., June 19, 1992, at 61.

14. In response to the increase of multidrug-resistant TB strains in new cases (which rose from 0.5% during the period 1982 to 1986 to three percent in 1991) as well as increased MDR-TB in recurrent cases (which rose from three percent to 6.9% during the same time periods), CDC recently revised its recommendations for TB treatment. CDC now recommends administering four drugs (rifampin, isoniazid, pyrazinamide, and either ethambutol or streptomycin) in the initial treatment of TB. The advantages of this new regimen include: estimated efficacy of at least ninety-five percent; rapid conversion of sputum to TB culture negative; increased flexibility of treatment schedules which allow either daily ingestion of TB medication or administration several times weekly, if the latter is accompanied by direct observed treatment (DOT); and the likelihood of a more rapid cure which protects those tending to lapse in their treatment. U.S. Department of Health and Human Services, *Initial Therapy for Tuberculosis in the Era of Multidrug Resistance, Recommendations of the Advisory Council for the Elimination of Tuberculosis*, MORBIDITY & MORTALITY WKLY. REP., May 21, 1993, at 1-5.

15. *NAP*, *supra* note 11, at 7; Karen Brudney & Jay Dobkin, *Resurgent Tuberculosis in New York City. Human Immunodeficiency Virus, Homelessness, and the Decline of Tuberculosis Control Programs*, 144 AM. REV. RESPIRATORY DISEASE 745, 748 (1991).

16. For 1990, the overall compliance rate for the U.S. was seventy-nine percent. U.S.

apy is the recent development of multi-drug resistant strains of TB (MDR-TB) which do not respond to conventional means of TB therapy. Almost all strains of MDR-TB are resistant to both isoniazid and rifampin, and some strains of MDR-TB have demonstrated resistance to as many as seven antibiotics. MDR-TB patients are treatable with an additional line of anti-TB drugs where treatment lasts for a minimum of eighteen to twenty-four months.<sup>17</sup> These drugs have serious side effects,<sup>18</sup> however, and the cure rate for MDR-TB is sixty percent or less.<sup>19</sup>

The rise of TB rates in this country and the resulting vulnerability of the public to TB has created increasing demand for more intensive TB control particularly with the relatively recent development of MDR-TB. MDR-TB is deadly in an HIV-infected individual. Persons with HIV are not only particularly vulnerable to the effects of TB, these individuals usually progress rapidly to death within a matter of weeks, because even traditional antibiotics are useless against MDR-TB.<sup>20</sup> Compounding this problem is that groups who are especially susceptible to TB such as the homeless, intravenous drug users (IVDUs) and prisoners, are also populations with higher numbers of HIV-infected individuals.<sup>21</sup>

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Department of Health and Human Services, *Approaches to Improving Adherence to Anti-tuberculosis Therapy - South Carolina and New York, 1986-1991*, MORBIDITY & MORTALITY WKLY. REP., Feb. 5, 1993, at 75 [hereinafter *Approaches to Adherence*]. Compliance rates for specific cities during the period 1986-1990 included 53.6% for New York, 57.8% for Chicago, and 59.9% for the District of Columbia. Other cities reporting higher rates include Atlanta with 84.2%, San Francisco with 96.5%, and El Paso with 99.2%. Barry R. Bloom & Christopher J.L. Murray, *Tuberculosis: Commentary on a Reemergent Killer*, 257 SCIENCE 1055, 1059 (1992).

17. More specific recommendations include a minimum of eighteen months treatment followed by twelve additional months of treatment after a negative culture. U.S. Department of Health and Human Services, *Prevention and Control of Tuberculosis Among Homeless Persons*, MORBIDITY & MORTALITY WKLY. REP., Apr. 17, 1992, at 19 (1992) [hereinafter *Homeless*]; U.S. Department of Health and Human Services, *Tuberculosis and Human Immunodeficiency Virus Infection*, MORBIDITY & MORTALITY WKLY. REP., Apr. 14, 1989, at 4 [hereinafter *TB and HIV*].

18. Side effects of drugs used to treat TB range from abdominal distress, nausea and diarrhea, to hepatitis, hearing loss, tremors and psychoses. Michael D. Iseman, *The Treatment of Multidrug-Resistant Tuberculosis*, 329 NEW ENG. J. MED. 787 (1993); U.S. Department of Health and Human Services, *Severe Isoniazid-Associated Hepatitis - New York, 1991-1993*, MORBIDITY & MORTALITY WKLY. REP., July 23, 1993, at 545.

19. *NAP*, *supra* note 11, at 7.

20. *Id.* at 6.

21. U.S. Department of Health and Human Services, *Prevention and Control of Tuberculosis in U.S. Communities with At-Risk Minority Populations*, MORBIDITY & MORTALITY WKLY. REP., Apr. 17, 1992, at 4 [hereinafter *Minority Populations*].

B. *TB's Return to the U.S. - Why?*

As noted previously, TB was one of the great killers in this country until the 1950's. The demise of TB was due to two main factors, namely the development in the 1940's and 1950's of specialized antibiotics to treat TB plus the overall improvement in sanitation, hygiene, and nutrition in the U.S.<sup>22</sup> From 1953 until 1984, the number of TB cases decreased a total of 73.5% in that time period. Since 1985, TB cases have increased by 20.1%, resulting in a total of 26,673 cases by 1992.<sup>23</sup>

The numbers of tuberculosis cases increased in this time period for a variety of both institutional and social reasons. Due to the previous decline in TB rates, little federal funding was given to TB research in the last twenty to thirty years. Consequently, some of the newer research techniques for rapid identification were never applied to TB.<sup>24</sup> In addition, sharp cutbacks in federal and local funding of TB control programs reduced available public health resources. New York City, for example, experienced an eighty percent decrease in Public Health Service dollars from 1974 to 1980.<sup>25</sup> Until recently, shortages of anti-TB drugs were not uncommon, with some drugs no longer available in the U.S. where they were originally developed. These shortages resulted in a significant increase in the cost of TB therapy and in efforts by the government to obtain TB antibiotics from European and Asian sources.<sup>26</sup>

Health care practices are also partly responsible for the rise in TB. A generation ago, physicians had no trouble recognizing clinical symptoms of TB and effectively treating it. Now, because physicians lack sufficient training in diagnosing TB, or because they see few TB cases, they often misdiagnose the disease, deliver a diagnosis too late, or administer the treatment for an insufficient amount of time to insure full recovery.<sup>27</sup>

Problems in the U.S. health infrastructure further contribute to

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22. Zamula, *supra* note 7, at 20; Bloom & Murray, *supra* note 16, at 1055, 1056.

23. *Tuberculosis Morbidity*, *supra* note 10, at 696.

24. U.S. Department of Health and Human Services, *Meeting the Challenge of Multidrug-Resistant Tuberculosis: Summary of a Conference*, MORBIDITY & MORTALITY WKLY REP., June 19, 1992, at 53 [hereinafter, *Conference Summary*].

25. Brudney & Dobkin, *supra* note 15, at 747.

26. The most notable shortage occurred with the drug streptomycin which was originally developed in the United States. CDC responded by importing the drug from Canada and distributing it free within the United States. The FDA worked to encourage domestic manufacture of these drugs through the use of tax incentives, by extending exclusive marketing rights through the Federal Drug Orphan Act, and by making available investigational new drug applications to pharmaceutical firms. Laurie Garrett, *FDA Tries to Boost TB Drugs*, NEWSDAY, Mar. 12, 1992, at 115; U.S. Department of Health and Human Services, *TB Medication Shortage Ending*, FDA CONSUMER, Sept. 1993, at 5.

27. Zamula, *supra* note 7, at 18.

the rise in TB, in that an increasing proportion of TB is occurring among those populations in need of better health care in this country. Those groups most vulnerable include the homeless and substance abusers. The increase in TB has also meant that institutional settings provide increased opportunity for those with active TB to come in contact with and infect more people than ever before, especially in overcrowded shelters, drug-treatment centers, prisons, group houses, and even hospitals. Significantly, there also tends to be a high prevalence of HIV-infected individuals in these settings as well, and the overall increase in TB can be partially attributed to the increase in those with HIV who are 500 times more likely to have TB disease than non-HIV populations.<sup>28</sup>

### C. *The Faces of Those With TB*

1. *Vulnerable Populations.* Approximately seventy percent of all TB cases occur among ethnic or racial minorities. For the years 1985 to 1992, TB cases *increased* by 26.8% in non-Hispanic blacks, *increased* by 74.5% in Hispanics, but *decreased* by 9.9% in non-Hispanic whites. For cases reported in the year 1992 alone, 28.6% occurred in non-Hispanic whites while 71.3% occurred in minorities. The reasons for the excess rates of TB in minorities stem from the higher prevalence of latent TB infection in these populations due to crowded substandard housing, homelessness, substance abuse, and limited access to health care.<sup>29</sup>

The homeless are particularly at risk of exposure to TB due to the crowded conditions at the shelters in which they reside. The likelihood that a homeless individual will be exposed to and contract TB is directly proportional to the numbers of individuals in a given shelter space. The larger the shelter population and the more crowded the conditions, the greater the risk of TB exposure and transmission. Other factors affecting TB transmission include the degree to which the shelter is ventilated and whether ultraviolet (UV) light is being used to disinfect the shelter air space.<sup>30</sup> It is difficult to determine the numbers of homeless who are affected by TB. Studies of selected shelters and shelter health clinics showed eighteen to fifty-one percent rates of latent TB infections in the homeless, and 1.6 to 6.8% rates of infectious TB.<sup>31</sup>

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28. NAP, *supra* note 11, at 7-8; Peter F. Barnes et al., *Tuberculosis in Patients with Human Immunodeficiency Virus Infection*, 324 NEW ENG. J. MED. 1644 (1991).

29. *Tuberculosis Morbidity*, *supra* note 10, at 697, 703; *Minority Populations*, *supra* note 21, at 1-4; U.S. Department of Health and Human Services, *Summary of Notifiable Diseases, United States 1992*, MORBIDITY & MORTALITY WKLY. REP., Sept. 21, 1993, at 3, 60.

30. *Homeless*, *supra* note 17, at 18.

31. *Id.* at 14.

Incarcerated individuals are exposed to TB at three times the rate seen in the general population. Prisoners, like other groups who live in overcrowded, confined or poorly ventilated areas, are vulnerable to outbreaks of TB. The presence of TB among the incarcerated has implications not only for the inmates directly affected, but also for the public at large. Each year, approximately 540,000 inmates are released to the public from federal and state correctional facilities.<sup>32</sup> Inmates have also been affected by MDR-TB outbreaks. The first such reported outbreak occurred in 1991 in a New York prison where seven inmates and one guard died from MDR-TB. All eight individuals suffered from an immuno-compromised status; the inmates were infected with HIV, and the guard had been receiving chemotherapy for cancer. An additional twenty-two inmates were exposed to MDR-TB of which fifteen were HIV positive, two were HIV negative, and the remaining five refused HIV testing.<sup>33</sup>

Users of "crack" cocaine and IVDUs are vulnerable to TB for a number of reasons. Many of these individuals are homeless, live in shelters or crowded housing, and use illegal drugs in environments with no ventilation so as to avoid detection of their drug use. Probably the main factor associated with TB exposure in this population is the increased risk of HIV.<sup>34</sup>

TB and HIV rates in IVDUs are usually estimated from residents of drug treatment programs. Federal regulations require that all applicants be tested for TB before admission into a treatment program. Nationally, fifty-seven percent of all HIV individuals with TB are IVDUs.<sup>35</sup> Studies in the city of Baltimore show that approximately twenty-five percent of IVDUs are TB positive, irrespective of HIV status.<sup>36</sup> Baltimore's methadone maintenance clinics report that twenty-seven percent of their clients test positive for latent TB, and twenty-five percent are HIV positive.

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32. U.S. Department of Health and Human Services, *Prevention and Control of Tuberculosis in Correctional Institutions: Recommendations of the Advisory Committee for the Elimination of Tuberculosis*, MORBIDITY & MORTALITY WKLY. REP., May 12, 1989, at 313; U.S. Department of Health and Human Services, *Tuberculosis Prevention in Drug-Treatment Centers and Correctional Facilities - Selected U.S. Sites 1990-1991*, MORBIDITY & MORTALITY WKLY. REP., Mar. 26, 1993, at 210, 212.

33. U.S. Department of Health and Human Services, *Transmission of Multidrug-Resistant Tuberculosis Among Immunocompromised Persons in a Correctional System - New York 1991*, MORBIDITY & MORTALITY WKLY. REP., July 17, 1992, at 507, 508.

34. Jonathon Bor, *TB Increases Among City Addicts; AIDS Virus Makes Detection Difficult*, BALTIMORE SUN, Jan. 15, 1992, at 1D.

35. *TB and HIV*, *supra* note 17, at 7.

36. Neil M.H. Graham et al., *Prevalence of Tuberculin Positivity and Skin Test Energy in HIV-1 Seropositive and Seronegative Intravenous Drug Users*, 267 JAMA 369 (1992).

2. *The Added Burden of HIV.* The recent rise in TB is especially alarming for HIV-infected individuals, who are particularly susceptible to the disease. Currently, HIV is rated as "the most potent risk factor for development of tuberculosis."<sup>37</sup> Moreover, persons with AIDS show rates of TB that are 500 times greater than those without AIDS.<sup>38</sup> Most of the TB that is associated with HIV is latent TB that becomes active due to the effect of HIV on the immune system. In contrast to the general population where the chance of latent TB converting to active disease is ten percent over the course of a *lifetime*, the risk of latent TB becoming active TB disease in an HIV-infected individual is seven to ten percent *per year*. In the remainder of cases where persons with HIV are infected with new TB infection, forty percent develop active TB within a few months of exposure to the TB source. These latter cases deteriorate rapidly, often leading to death.<sup>39</sup>

Nationwide, of the one million individuals infected with HIV, approximately ten percent are infected with TB.<sup>40</sup> States with the largest numbers of HIV-infected also have the largest increase of reported cases of TB.<sup>41</sup> Rates of TB in HIV patients in selected cities range from twenty-three percent in Seattle, Washington to 100% in Newark, New Jersey.<sup>42</sup> In fact, the high rate of TB in minorities in the twenty-five to forty-four year age group is likely linked to the increased rate of HIV which is also seen in this group.<sup>43</sup> Increased rates of tuberculosis are also beginning to accompany the rise of HIV in selected populations as the AIDS epidemic continues.<sup>44</sup>

TB usually precedes other opportunistic infections that constitute a definitive diagnosis of AIDS; however, TB is usually more virulent than other HIV pathogens and is likely to cause disease at a much earlier stage than other pathogens.<sup>45</sup> TB usually occurs six to

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37. Peter F. Barnes & Susan A. Barrows, *Tuberculosis in the 1990's*, 119 ANNALS INTERNAL MED. 400 (1993).

38. Michael J. Given et al., *Tuberculosis Among Patients with AIDS and a Control Group in an Inner-City Community*, 154 ARCHIVES INTERNAL MED. 643 (1994).

39. NAP, *supra* note 11, at 6; Snider & Roper, *supra* note 10, at 704.

40. *Conference Summary*, *supra* note 24, at 52.

41. Barnes et al., *supra* note 28, at 1644.

42. Other rates of HIV in persons with tuberculosis include twenty-nine percent in San Francisco. In New York City and Florida, eighty percent and ninety percent respectively of all HIV with tuberculosis cases occurred in blacks and Hispanics. *TB and HIV*, *supra* note 17, at 1-2.

43. Barnes & Barrows, *supra* note 37, at 400.

44. The fastest growing segment of the AIDS population is currently women. See The Centers for Disease Control, *AIDS in Women - United States*, 265 JAMA 23 (1991). Consequently, TB is increasing in pregnant women who are at high risk for HIV. See U.S. Department of Health and Human Services, *Tuberculosis Among Pregnant Women - New York City, 1985-1992*, MORBIDITY & MORTALITY WKLY. REP., August 13, 1993, at 605, 611.

45. Barnes et al., *supra* note 28, at 1645.

nine months before the diagnosis of an AIDS defining condition, but can precede a diagnosis of AIDS by as little as two months. Current figures show that fifty to sixty-seven percent of HIV patients with TB develop that disease before they are diagnosed with AIDS.<sup>46</sup>

Persons with HIV face not only the debilitating effects of TB, but also the fact that TB is often difficult to diagnose in an HIV-infected person. Because HIV infection can depress the body's immune response to infection, approximately ten to eighty percent of HIV-infected individuals with TB produce a negative TB skin test.<sup>47</sup> This lack of reaction is called anergy, and results in a false negative result coupled with a delayed diagnosis of TB. Other factors which delay diagnosis include normal chest x-rays exhibited by many HIV-infected individuals with TB and current laboratory culture methods which take two to four weeks to grow the TB bacillus for a definitive identification. Failure to timely diagnose TB results in higher mortality in HIV persons due to delay in administering therapy, as well as further transmission of TB to others.<sup>48</sup>

Problems with diagnosing TB in HIV-infected persons have led to guidelines for administering isoniazid and rifampin as preventive therapy.<sup>49</sup> These drugs not only have the capacity to cure but to prevent TB as well. Since the presence of HIV is one of the strongest risk factors for the development of active TB from a latent case, the CDC recommends that all persons with TB should be assessed for HIV, and likewise that all individuals with HIV be tested for TB. The reason for this recommendation is that individuals with both HIV and TB need additional months of antibiotic therapy and more frequent monitoring, both for adverse drug reactions and for the early detection and treatment of opportunistic pathogens such as pneumocystis. In addition, the use of HIV counseling with persons who have TB may enhance the prevention and control of HIV. CDC

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46. *TB and HIV*, *supra* note 17, at 2; Helen Schietinger, AIDS ACTION FOUND., TUBERCULOSIS AND HIV PUBLIC HEALTH POLICY: A DUAL CHALLENGE 5 (1992)[hereinafter AIDS ACTION FOUND.].

47. Jordan B. Glaser & Joseph K. Aboujaoude, *Tuberculin Skin Test Conversion Among HIV-Infected Prison Inmates*, 5 J. ACQUIRED IMMUNODEFICIENCY SYNDROME 431 (1992).

48. Snider & Roper, *supra* note 10, at 704.

49. The criteria for those who should receive preventive TB therapy are as follows:

- a) a positive TB skin test and abnormal chest x-ray
- b) close contact with an individual with infectious TB
- c) a positive skin test and HIV
- d) a positive skin test in all individuals younger than 35 years of age
- e) IVUDs with a positive skin test
- f) a negative skin test that has converted to positive within 2 years of the original skin test.

Zamula, *supra* note 7, at 23; NIAID, *supra* note 8, at 4; *TB and HIV*, *supra* note 17, at 7.

now recommends that all individuals with TB be offered HIV testing and counseling, even where the individual is not likely to have other HIV risk factors.<sup>50</sup> Those individuals who are HIV-infected and who test TB negative should be considered for preventive therapy if they are in contact with others at a high risk of TB.<sup>51</sup> Preventive therapy should also be considered for those who are TB positive and who refuse HIV testing.<sup>52</sup>

The statistics surrounding MDR-TB show the devastation that is wrought on persons with HIV. Between 1990 and early 1992, the CDC investigated seven outbreaks of MDR-TB in which over 200 cases were reported in thirteen states; ninety-six percent of these cases occurred in persons with HIV. The mortality in these outbreaks ranged from seventy-two to eighty-nine percent; the median time between diagnosis and death for these individuals was four to sixteen weeks.<sup>53</sup> These outbreaks occurred in institutional settings including prisons and hospitals which tend to include populations with elevated risks of both TB and HIV. The reason for these outbreaks included delays in diagnosing both TB as well as MDR-TB, delays in adjusting therapy to more effectively attack MDR-TB, inadequate facilities and practices for contact with TB patients, and the limited availability of drugs for effectively treating MDR-TB.<sup>54</sup> In other words, outbreaks occurred, because those with HIV were particularly vulnerable to strains of TB which were already multi-drug resistant. The outbreaks of MDR-TB did not occur as a result of those individuals not completing their treatment.<sup>55</sup>

## II. CURRENT APPROACHES TO TB CONTROL

The most significant challenge to TB control is the promotion of a therapy that involves ingesting a number of medications over a minimum of six months. In fact, not completing treatment is *the* major obstacle to eliminating TB, a curable disease.<sup>56</sup> Completing therapy regardless of the disease tends to be a problem in that individuals frequently stop their medications as soon as symptoms dis-

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50. *TB and HIV*, *supra* note 17, at 2-5.

51. Barnes et al., *supra* note 28, at 1649.

52. *Id.*

53. Snider & Roper, *supra* note 10, at 704; *NAP*, *supra* note 11, at 7; Barnes & Barrows, *supra* note 37, at 401.

54. The routes of MDR-TB transmission included patient to patient, patient to health care worker or guard, and patient to family members. Snider & Roper, *supra* note 10, at 704; AIDS ACTION FOUND., *supra* note 46, at 6; *see NAP*, *supra* note 11, at 7.

55. A recent study in New York City showed an initial MDR-TB infection rate of eighty-eight percent in HIV-infected individuals with TB. *ICAAC New York Study Finds HIV Negative Patients Source of Infection for MDR-TB*, AIDS WKLY., Nov. 8, 1993.

56. Brudney & Dobkin, *supra* note 15, at 748.

appear and they "feel better".<sup>57</sup> For the homeless, the need to secure food, shelter, and safety for themselves and their families on a daily basis may take priority over finding the time to ingest medicine. In general, however, there is no correlation between overall rates of non-completion of TB treatment and any particular age, sex, education level, or socio-economic group.<sup>58</sup>

#### A. *Direct Observed Therapy*

One approach developed to improve compliance with TB treatment is Direct Observed Therapy (DOT). DOT consists of directly viewing a patient taking TB medication and can be accomplished either in a clinic setting, or through an outreach worker who visits the patient at his or her residence. Only about fifteen percent of TB patients nationwide currently receive DOT.<sup>59</sup> The advantages of DOT are substantial. First, direct supervision by medical personnel to see that a patient has taken their TB medication assures that the contagiousness of the patient is reduced and prevents the spread of TB in the community. Second, by completing therapy, the chance of the development of MDR-TB is greatly reduced. Third, by completing their course of treatment, TB is cured in the individual.<sup>60</sup> States are beginning to demonstrate successful results with the use of DOT in controlling the spread of TB. One state's experience with DOT over a five year period showed a treatment completion rate of 96.5% where the national average overall is seventy-nine percent. In addition, there was a thirty percent decrease of new TB cases in this state at the end of the trial period in 1991.<sup>61</sup> Yet another state demonstrated reduced rates of resistant TB and significantly lowered rates of relapse in patients with standard TB as well as those with MDR-TB.<sup>62</sup>

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57. *Tuberculosis and HIV, Questions and Answers*, AIDS ACTION FOUND., Apr. 13, 1992, at 2.

58. *Minority Populations*, *supra* note 21, at 9.

59. *Conference Summary*, *supra* note 24, at 52. In Baltimore, about fifty-five percent of all diagnosed cases receive DOT. Jonathon Bor, *TB Strikes Again*, BALTIMORE SUN, Mar. 10, 1992, at 1C.

60. *NAP*, *supra* note 11, at 17; Bloom & Murray, *supra* note 16, at 1061.

61. In contrast, New York City which pursued a policy of forcible detention for non-compliant patients, reported a completion failure rate of 70.2% in a three and one-half year period. The average cost of treatment per patient committed was \$66,000. *Approaches to Adherence*, *supra* note 16, at 74-75. Ironically, when New York City expanded its DOT program from less than 100 TB patients in 1991 to more than 1200 patients in 1993, not only did the rate of treatment completion increase, but the overall number of new TB cases decreased in 1993 by fifteen percent. Margaret A. Hamburg & Thomas R. Frieden, *Tuberculosis Transmission in the 1990's*, 330 NEW ENG. J. MED. 1751 (1994).

62. Stephen E. Weis et al., *The Effect of Direct Observed Therapy on the Rates of Drug Resistance and Relapse in Tuberculosis*, 330 NEW ENG. J. MED. 1179, 1183 (1994).

DOT is a particularly cost-effective solution when compared to the costs of hospital treatment. The estimated costs of DOT for standard TB is less than \$600 per patient; costs for treating MDR-TB rise to approximately \$6000 because of the use of specialized antibiotics. The treatment of standard TB in an institution raises the total costs to about \$25,000, whereas the costs of institutionalizing and treating individuals with MDR-TB skyrockets to \$100,000 to \$250,000 per patient.<sup>63</sup>

Because DOT is community-based intervention, it has the added advantage of being combined with other established social services. DOT can be easily administered at those places where those most vulnerable to TB, notably the homeless, IVUDs, and HIV-infected individuals, already seek health care services. Such places include public clinics, homeless shelters, HIV/AIDS residential facilities, and drug treatment centers. To date, proposals for expanding the access of under-served groups to TB treatment have focused on capitalizing on those health structures presently in place that are used most extensively by vulnerable populations.<sup>64</sup>

Some critics object to DOT as a universal "quick fix" for all individuals infected with TB. Requiring universal DOT may be over-inclusive and an "inefficient use of scarce public health funds."<sup>65</sup> Yet there is something troubling about exempting certain individuals from DOT based on the view that they are "virtually certain"<sup>66</sup> to

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63. Michael Specter, *Neglected for Years, TB is Back with Strains that are Deadlier*, N.Y. TIMES, Oct. 11, 1992, §1, at 1; Bloom & Murray, *supra* note 16, at 1063; Michael D. Iseman et al., *Directly Observed Treatment of Tuberculosis; We Can't Afford Not to Try It*, 328 NEW ENG. J. MED. 577 (1993). Iseman's figure of \$561 for DOT compares with an average cost of \$490 for non-DOT self-administered therapy. *Id.* California's recent experience with treating Medicaid patients with TB showed reimbursement rates of over \$11,000 per patient hospitalized for routine TB treatment, and \$95,000 for treatment of MDR-TB. This is in contrast to the approximately \$1000 estimated cost for outreach workers to administer treatment in the form of DOT to TB patients. Cheryl Clark, *Task Force Fears a TB Epidemic*, SAN DIEGO UNION-TRIBUNE, May 9, 1993, at A1. Furthermore, the costs of treating TB can rise rather quickly, both in terms of treating additional TB cases, and treating patients who develop MDR-TB which is vastly more expensive to treat. An example from Texas is illustrative of exactly how expensive a TB outbreak can be. The index patient who had MDR-TB infected nine other individuals, including members of the patient's own family. The total costs for the eight members who required hospitalization amounted to just under one million dollars. At the time, this sum represented five times the allotted budget for the entire county TB control program. U.S. Department of Health and Human Services, *Outbreak of Multidrug-Resistant Tuberculosis - Texas, California, and Pennsylvania*, MORBIDITY & MORTALITY WKLY. REP., June 8, 1990, at 369, 371 (1990).

64. NAP, *supra* note 11, at 17.

65. Carlos A. Ball & Mark Barnes, *Public Health and Individual Rights: Tuberculosis Control and Detention Procedures in New York City*, 12 YALE L. & POL'Y REV. 38, 49 (1994). See also *infra* note 129 and accompanying text.

66. George J. Annas, *Control of Tuberculosis - The Law and the Public's Health*, 328

complete treatment. Studies consistently show that most patients do not complete routine courses of medication for most diseases in general, and that physicians should routinely expect up to a thirty-five percent non-completion rate.<sup>67</sup> As noted earlier, less than full compliance with medical treatment occurs in "all social classes and all education levels."<sup>68</sup> Further, both provider predictions as to patient compliance as well as client predictions about their own likelihood in completing therapy correlate poorly with more direct means of confirming that individuals follow directions to take medication.<sup>69</sup> As an alternative, it has been suggested that compliance with TB treatment can be monitored through screening of urine or serum for TB drug components.<sup>70</sup>

### B. *Isolation and Quarantine: The Politicization of Public Health*

In spite of these approaches, the overall increase in TB cases and the prospect of MDR-TB in the general population has led to an expedited political reaction by states and municipalities to detain and quarantine those with TB, as was the practice in the first part of this century. In fact, the early practice of quarantining and isolating TB patients raises an entire range of legal and ethical issues that was just recently addressed with the HIV/AIDS epidemic.<sup>71</sup> The

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NEW ENG. J. MED. 585, 587 (1993).

67. Weis et al., *supra* note 62, at 1182.

68. See Ball & Barnes, *supra* note 65, at 46. One of the most successful DOT demonstration projects showed a TB treatment completion rate of 96.5%. *Approaches to Adherence*, *supra* note 16, at 74. Other studies using selected populations have not achieved desired completion rates, even with DOT. See Richard Curtis et al., *Implications of Directly Observed Therapy in Tuberculosis Control Measures Among IDUs*, 109 PUB. HEALTH REP. 319, 325 (1994) (TB completion rates of fifty-seven percent with users of "crack" cocaine.)

69. See Weis et al., *supra* note 62, at 1182. Predictions of who will comply are risky as illustrated by the case of one individual currently detained in New York City who is a registered nurse on the staff of a New York hospital; this individual resides on the Upper East Side of Manhattan. Mireya Navarro, *Confining Tuberculosis Patients: Weighing Rights vs. Health Risks*, N.Y. TIMES, Nov. 21, 1993, §1, at 1.

70. Barnes & Barrows, *supra* note 37, at 405; Weis et al., *supra* note 62, at 1182.

71. Joyce Price, *Quarantine: When HIV Carriers Can't Say No*, WASH. TIMES, June 21, 1992, at A1. With respect to HIV/AIDS, balancing these different rights was reached by recognizing a number of factors, starting with basic epidemiologic characteristics of the disease. The mode of HIV transmission poses no danger of contagion to the general public; HIV is spread, not by casual contact, but by very specific means including sexual relations, blood or blood products transfusion, and needle-sharing among IDUs. To confine individuals based on their HIV status alone would represent an excessive curtailment of their personal rights. To confine individuals based on their risk-taking behaviors is also problematic in that such an action implies predicting their future behaviors. In addition, detention of the approximately one million individuals with HIV presents an impractical fiscal reality; since HIV infection lasts a lifetime, confining these individuals would be prohibitively expensive and include not only the cost of their confinement, but the cost of

consensus was reached that there is no justification for forcible restraint and quarantine of HIV-infected individuals.<sup>72</sup> In contrast, no such consensus has been reached by the public with TB, in part because of the fear of TB contagion. The possibility of TB again becoming prevalent in this country is unnerving, considering the lack of progress that had been made in TB control in the past four decades.

The most obvious source for recommendations and guidelines regarding public health assessments of risk and the recommended modes for reducing these risks is the CDC. The CDC is charged with investigating disease outbreaks and recommending guidelines and procedures for containing and minimizing the transmission of disease. It is interesting to note that some of the most restrictive proposals for addressing the increase in TB rates have originated with the CDC. The CDC has called for renewed exercise of state police powers in ordering long-term institutionalization of TB patients (especially those with MDR-TB), court-ordered DOT, the use of "emergency isolation" powers by local health officers to detain individuals for TB evaluation, quarantine and detention, and the use of "penalties" with non-compliant TB patients.<sup>73</sup> This approach relies on criteria for detaining individuals based on evidence of past, not present danger to the public in the form of contagion. In fact, public health authorities alone may just not be competent in crafting legally sufficient definitions of significant risk.<sup>74</sup>

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their care as well. Larry Gostin, *The Politics of AIDS; Compulsory State Powers, Public Health, and Civil Liberties*, 49 OHIO ST. L. J. 1017, 1035 (1989).

72. *Id.*

73. U.S. Department of Health and Human Services, *Tuberculosis Control Laws - United States, 1993*, MORBIDITY & MORTALITY WKLY. REP., Nov. 12, 1993, at 7-8. It is interesting to note that the CDC's original recommendations were more specific in calling for "civil and/or criminal penalties" for patients refusing to comply with therapy. Centers for Disease Control, Public Health Service, U.S. Dept. of Health and Human Services, *Tuberculosis Control Laws in the United States: A Survey and Recommendation*, 11 (Draft Sept. 30, 1992)(available from Information Services, National Center for Prevention Services, CDC). Public authorities in the state of Maryland and New York City have already instituted some of these means in detaining individuals who are non-contagious and who may pose little or no risk of contagion to others. *See infra* notes 143-179 and accompanying text.

74. *See infra* notes 91-92 and accompanying text. Recently, a Georgia County health department detained an HIV-infected individual with MDR-TB for two months. The standard indication of a non-infectious TB status is three consecutive negative smears. At the time the order of detention was entered, this individual had already produced twelve negative TB smears. The director of the state's TB surveillance unit, however, insisted on detaining this individual due to his MDR-TB status until three consecutive negative cultures (not smears) were obtained. He explained, "It's safer to wait. . . . That way you can be sure there's no chance of . . . transmitting the disease. And even then, there's always the chance the person will relapse and have TB again." *Man With MDR-TB Quarantined Despite 12 Negative Sputum Smears*, AIDS WKLY., Apr. 18, 1994. The detention order was granted despite testimony by a retired official from the CDC that the patient posed

In addition, the CDC has recommended establishing "Regional Centers of Excellence" which would be used for "treating difficult-to-manage TB cases, especially patients with MDR-TB."<sup>75</sup> As to the nature of these centers, the CDC is not specific, other than to note the need for "regional inpatient treatment centers."<sup>76</sup> In addition, the CDC has also noted that states' "laws, regulations, and/or procedures for quarantine, detention, reporting and treatment of [TB] patients may be out of date or inadequate", and the CDC is currently developing guidelines for obtaining court orders for DOT and for the forcible quarantine of non-compliant patients.<sup>77</sup>

These calls for isolation and quarantine of persons infected with TB in special "treatment centers" hark back to the days when specialized hospitals were opened to treat TB patients. These hospitals, called sanitariums, were generally thought of as the means to quarantine TB patients.<sup>78</sup> In reality, sanitariums were a class-oriented solution for controlling TB with the aim of providing the TB-infected poor with the same services as their more well-off counterparts who travelled to mountain and ocean retreats for their "cure" of fresh air, nutritious diet, and bed rest. Clearly, one purpose of sanitariums was to segregate less well-off patients, and such facilities never provided the same level of care as private facilities.<sup>79</sup>

Because of the social stigma attached to residing in a sanitarium and subsequent difficulties in obtaining employment, physicians often failed to report their patients' TB status to state authorities in order to keep their patients out of the sanitarium. The subsequent decline in TB mortality was related not to any effectiveness on the part of quarantine, but to the discovery of effective antibiotics, notably streptomycin in 1947 and isoniazid in the 1951. The discovery of these drugs enabled the last U.S. sanitarium to close in the 1960's.<sup>80</sup>

In addition to the dubious effectiveness of detaining and quarantining individuals in facilities similar to the old sanitariums, the

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no danger to the public and the risk of transmission was "very, very remote." *Id.* Another CDC official who specializes in MDR-TB noted that, although three consecutive negative smears are recommended, other factors may be considered in determining the infectiousness of an MDR-TB patient. *Id.*

75. *NAP*, *supra* note 11, at 21.

76. *Id.*

77. *Id.* at 23.

78. The first sanitarium in the U.S. opened in 1882. Bloom & Murray, *supra* note 16, at 1056.

79. Zamula, *supra* note 7, at 20; David J. Rothman & Eileen A. Tynan, *Advantages and Disadvantages of Special Hospitals for Patients with HIV Infection, A Report by the New York City Task Force on Single-Disease Hospitals*, 323 *NEW ENG. J. MED.* 764, 765 (1990).

80. Zamula, *supra* note 7, at 20.

issue of cost also militates against the re-establishment of these types of institutions. The cost of confining and treating a TB patient may reach \$250,000 over a period of two years.<sup>81</sup> The use of outpatient treatment with antibiotics is vastly more cost-effective, even when combined with a monetary incentive of \$20 per day to patients for completing their therapy.<sup>82</sup>

It is important to remember that the public health principles that provide sound scientific guidelines for controlling and treating TB must not be allowed to compromise legal and ethical principles especially where alternatives exist. Measures such as detention and quarantine that completely deprive individuals of their liberty should be used only when other less restrictive public health measures such as preventive therapy, DOT, and ventilation controls fail. Therefore, it is not simply a question of whether to institute public health measures, but rather *which* public health measures will be used. Will we, as a society, devote sufficient health resources to strategies which maximize individual rights and ethical principles, despite political calls for forcible detention and quarantine?<sup>83</sup>

### III. CONSTITUTIONAL AND STATUTORY IMPLICATIONS

#### A. *Constitutional Law*

1. *State Police Powers to Maintain Public Health.* State authority to regulate public health, safety, and general welfare is grounded in its general "police powers." These powers entitle the state to pass and enforce regulations concerning measures such as the testing and reporting of infectious diseases, and orders of quarantine to preserve public health as well as to implement disease control measures.<sup>84</sup> The Supreme Court resolved an early challenge to a state's police powers to compel a public health measure in *Jacobson v. Massachusetts*.<sup>85</sup> With this 1905 decision, the Supreme Court upheld the

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81. Michael Specter, *TB Carriers See Clash of Liberty and Health*, N.Y. TIMES, Oct. 14, 1992, at A1 [hereinafter Specter, *Liberty Clash*].

82. *Id.*; Bloom & Murray, *supra* note 16, at 1061.

83. In early 1992, the New York City Department of Health recommended the establishment of "secure" drug treatment programs, TB shelters and mental health facilities for the wholesale detention of "chronically non-compliant TB patients." The Department withdrew the recommendation, but later adopted a statute that would allow detention of TB patients who are non-contagious and non-compliant in completing their TB therapy. Nancy Mahon et al., *Developing a System for TB Prevention and Care in New York City 1*, n.2 (Sept. 1992)(unpublished white paper, on file with AIDS in Prison Project, Correctional Association of New York); New York City Health Code, 2 RCNY § 11.47 (1993).

84. Stephen B. Teret & Ruth Gaare, *The Law and the Public's Health*, 1 BIOLAW REP. 29 (1986).

85. 197 U.S. 11 (1905).

constitutionality of inherent police powers in the State of Massachusetts to require the immunization of citizens against smallpox, an infectious disease. Moreover, the Court ruled that the state may subordinate an individual's liberty right to be freed from restraint to the rights of the public in matters of safety and health.<sup>86</sup> Thus the Court set an early precedent for the subordination of private citizens' rights for the public good in matters of disease control. This decision was quickly followed by the establishment of state health boards by 1909 in all states to institute and enforce public health measures.<sup>87</sup>

The right of the state to quarantine in order to prevent the spread of contagious disease was also held to be a legitimate exercise of state police power. Relying on the principles stated in *Jacobson v. Massachusetts*, an Illinois state court<sup>88</sup> upheld the state's right to "pass and enforce quarantine, health, and inspection laws to prevent the introduction of disease, pestilence, and unwholesome food, and such laws must be submitted to by individuals for the good of the public."<sup>89</sup> State courts generally limited this right subject to two criteria, namely that the danger of contagion be a reasonable one based on medical evidence, and the required means of controlling the contagion be the least restrictive in the light of current medical information.<sup>90</sup> This latter requirement is especially crucial for the protection of individuals infected with TB who may be arbitrarily detained based on their disease status and/or their social class.

2. *Substantive and Procedural Rights.* Although the courts have generally upheld most quarantine regulations as valid, they have not shown a willingness to yield unlimited discretion to public authorities in exercising quarantine powers. Certain substantive safeguards have been instituted over time to protect the citizen against abuses relating to involuntary detention for illnesses. Although many of these cases deal with involuntary detention of the

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86. *Jacobson*, 197 U.S. at 29 (noting that "the rights of the individual in respect of his liberty may at times, under the pressure of great dangers, be subjected to such restraint, to be enforced by reasonable regulations as the safety of the general public may demand").

87. In the early part of this century, state health boards were active in establishing medical clinics, in administering medical examinations and treatment, and in conducting health education campaigns. Today, the activities of state health boards are confined largely to the regulation of health care personnel and prevention efforts. Teret, *supra* note 84, at 31.

88. *People ex rel Barmore v. Robertson*, 302 Ill. 422, 134 N.E. 815 (1922), cited in Teret, *supra* note 84, at 34.

89. See *id.*

90. Teret, *supra* note 84, at 33-34; see generally Wendy E. Parmet, *AIDS and Quarantine: The Revival of an Archaic Doctrine*, 14 HOFSTRA L. REV. 53 (1985).

mentally ill, courts have on occasion explicitly articulated the rights of individuals with tuberculosis who are subject to quarantine. One such case decided by the Arkansas Supreme Court held that the state's evidence of acute TB infection used to justify quarantine had to be *recent* medical evidence, not dated evidence of past contagiousness.<sup>91</sup> The court reasoned that the state acts as *parens patriae* in protecting the public from exposure to the alleged infectious individual, and that the state must substantiate the present contagiousness of the accused individual. The court also held that the statute mandating quarantine is not a "penal statute" intended to punish the accused individual for his or her disease, but rather the state is obligated to protect the accused citizen from arbitrary confinement.<sup>92</sup> In essence, the court recognized that the state must balance the rights of an individual who may be ill and subject to quarantine and the rights of the public to be protected from contagion.

The Supreme Court endorsed this position in its 1962 decision in *Robinson v. California*<sup>93</sup> where the Court held that the criminalization of those with illnesses amounted to a status crime and was clearly unconstitutional. Although the state maintained the right to confine those who are ill for the purposes of treatment or for the protection of society, the conviction of those individuals by virtue of their disease alone constitutes a violation of the Eighth and Fourteenth Amendments' prohibition of cruel and unusual punishment.<sup>94</sup> The Supreme Court later modified this position in *O'Connor v. Donaldson*<sup>95</sup> in ruling that the state cannot confine an individual solely on the basis of illness, so long as that person is not dangerous to himself or to others.<sup>96</sup> "The fact that the state law may have authorized confinement . . . does not itself establish a constitutionally adequate purpose for the confinement."<sup>97</sup>

The Supreme Court subsequently set out additional constitutional safeguards for those who are forcibly detained. In examining the appropriate standard of proof to be used in committing a patient to involuntary detention, the Court ruled that a clear and convincing

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91. *State v. Snow*, 324 S.W.2d 532 (Ark. 1959).

92. *See id.* at 534 (noting that the requirements for quarantine are "[t]o be strictly construed to protect the rights of the [accused] citizen").

93. 370 U.S. 660 (1962).

94. *See id.* at 666. Although this case dealt with a criminal conviction stemming from an individual's heroin addiction, the Court illustrated the cruelty of such an approach by making the analogy to convicting an individual with leprosy based solely on his disease. *Id.* Ironically, the bacterial agent responsible for leprosy, *Mycobacterium leprae*, is in the same family (Mycobacteria) as TB. Evans & Feldman eds., *supra* note 7, at 349.

95. 422 U.S. 563 (1975).

96. *See id.* at 575 (noting that "[m]ere public intolerance or animosity cannot constitutionally justify the deprivation of a person's physical liberty").

97. *See id.* at 574.

standard of proof was required in the face of such a severe deprivation of individual liberty.<sup>98</sup> The Court sought to strike a balance between protecting both the public and the individual subject to detention. The Court reasoned that society first of all has an obligation to prevent errors that would lead to decisions to confine individuals unnecessarily. Moreover, the Court gave weight to society's obligation to recognize the vulnerable individual's interest in avoiding involuntary confinement.

In defining the appropriate standard of proof, Chief Justice Burger (in citing another case) wrote that "[i]n cases involving individual rights, whether criminal or civil, '[the] standard of proof [at a minimum] reflects the value society places on individual liberty.'"<sup>99</sup> Society's interest in protecting the public welfare should be counterbalanced by society's obligation to protect a vulnerable individual's liberty interest from errors in decisions to detain and quarantine.<sup>100</sup> The Court also noted the not insignificant effects of the stigma associated with an individual who is subject to state detention. For these reasons, the Court set a strict standard of proof for detention.<sup>101</sup>

Both state courts and the Supreme Court have ruled that the state cannot subject individuals to mandatory detention or quarantine without instituting specific procedural rights. The Supreme Court of West Virginia held in *Greene v. Edwards*<sup>102</sup> that persons involuntarily committed for TB are entitled to a number of procedural safeguards including written notice as to the grounds and facts on which the detention is sought, the right to counsel, and the right to be present at the commitment hearing.<sup>103</sup> The court reasoned that such rights should attach to attempts by the state to quarantine individuals since the act of quarantine represents a transgression against an individual's fundamental right to liberty.<sup>104</sup>

In a decision just two weeks later, the U.S. Supreme Court affirmed these same procedural rights for all individuals threatened

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98. *Addington v. Texas*, 441 U.S. 418 (1979) (holding that the individual's liberty interest in avoiding confinement is such as to require more than a preponderance of evidence, but the state's legitimate interest in protecting the public and administering treatment justifies less than a criminal standard of beyond a reasonable doubt).

99. *See id.* at 425 (quoting *Tippett v. Maryland*, 436 F.2d 1153, 1166 (1971)).

100. *See id.* at 425-27.

101. Although there exists a risk of error in committing an individual, plus the factor of stigma, these factors are not sufficient to establish a proof standard of "beyond a reasonable doubt" which is reserved for criminal cases. *See id.* at 425-28.

102. 263 S.E.2d 661 (W.Va. 1980).

103. Other rights include the right to cross-examine witnesses, a standard of proof which is clear and convincing evidence, and a right to a transcript of the hearing. *See id.*

104. *See id.* at 663.

with detention in *Vitek v. Jones*.<sup>105</sup> The Court reasoned that the risk of error in diagnosis (in this case, mental illness), the possibility of stigma for the patient, and the requirement of treatment mandated distinct safeguards for the protection of the individual against involuntary detention.<sup>106</sup> Those rights include written notice of the reason for confinement, a judicial adversarial hearing before an independent fact-finder, and the availability of legal counsel.<sup>107</sup>

The Supreme Court later refined and modified the rights of those involuntarily detained in *Youngberg v. Romeo*.<sup>108</sup> The Court held that the constitutional rights of those who are detained will be determined as measured by an individual's liberty interests under the Fourteenth Amendment, and not by the more stringent Eighth Amendment proscription against cruel and unusual punishment. Further the Court held that the liberty interests of the individual must be balanced against the state's interests in detention.<sup>109</sup> As this principle applies to the right to treatment, the test of whether the state has adequately protected the detainee's right would be determined by a qualified medical professional's assessment to which the courts should give deference.<sup>110</sup> In other words, once detained, questions involving the individual's treatment are best left to a medical authority, not to a judicial fact-finder.

In the recent case of *Washington v. Harper*,<sup>111</sup> the Court set out guidelines for mandatory treatment once an individual is detained. A judicial hearing is not required prior to treatment, but judicial review of the decision to medicate is available after treatment has been administered.<sup>112</sup> The Court reasoned, as in *Youngberg*, that a detainee's medical interests are best served by a medical professional rather than a hearing judge.<sup>113</sup> The state may also administer treatment against an individual's will, if the person is determined to be dangerous to himself or others. This policy is justified by the state's interest in controlling an ill inmate, and in preserving the

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105. 445 U.S. 480 (1980).

106. *See id.* at 481, 491-95.

107. Other safeguards mandated by the court included the right to present testimony by witnesses, the right to cross-examine, and the right to a written statement of the fact-finder's decision. *See id.* at 494-95.

108. 457 U.S. 307 (1982).

109. *Id.*

110. *See id.* at 321 ("If there is to be any uniformity in protecting these interests, this balancing cannot be left to the unguided discretion of a judge or jury. . . . 'the Constitution only requires that the courts make certain that professional judgment in fact was exercised.'") (quoting *Romeo v. Youngberg*, 644 F.2d 147 (3d. Cir. 1980) (Seitz, C.J. concurring)).

111. 494 U.S. 210 (1990).

112. *See id.*

113. *See id.* at 231; *see also Youngberg*, 457 U.S. at 322-23.

safety of the institution staff and other detainees.<sup>114</sup> This policy does not pre-empt other procedural safeguards of the notice requirement, namely the right to be present and to cross-examine witnesses at the initial medical hearing.<sup>115</sup>

Ironically, these cases which set out constitutional protections for individuals who find themselves subject to quarantine also set out the means for involuntarily detaining an individual based on the individual's danger to himself or others. Danger to others was the traditional rationale used in the past by local authorities for detaining and quarantining those with contagious diseases. However, as noted earlier, restricting individual rights via quarantine was used in an era before the development of effective antibiotics and other public health means of controlling disease. Where treatment is available, as it is presently for tuberculosis, modern courts and Congress has seen fit to recognize individuals with contagious diseases as potentially handicapped in the face of unwarranted acts of discrimination and bias, first with the Rehabilitation Act of 1973, and more recently with the adoption of the Americans with Disabilities Act of 1990.

#### B. *Federal Anti-Discrimination Laws*

1. *The Rehabilitation Act of 1973*. In 1973, Congress adopted the Rehabilitation Act in which § 504 prohibited the recipients of federal funds from discrimination against handicapped individuals.<sup>116</sup> The intent of the Rehabilitation Act was to provide safeguards for disabled Americans against discrimination because of their handicaps. An individual is defined as handicapped if he or she "has a physical or mental impairment which substantially limits one or more of such person's major life activities, has a record of such impairment, or is regarded as having such an impairment."<sup>117</sup> Disabilities can refer to conditions which are contagious as well as to those which are not.<sup>118</sup> Contagious diseases were defined as a disability in *School Bd. v. Arline*,<sup>119</sup> a case where no inquiry was made by the plaintiff's employer into the contagiousness of the plaintiff's tuberculosis condition. Because her contagiousness was not established, nor were there attempts made to accommodate her, the U.S. Supreme Court held that no determination could be made as to whether the

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114. See *Washington*, 494 U.S. at 211, 225.

115. See *id.* at 235.

116. 29 U.S.C. § 794(a) (1988 & Supp. V 1993).

117. *Id.* § 706(8)(B) (1988 & Supp. V 1993).

118. Lawrence O. Gostin, *Public Health Powers: The Imminence of Radical Change*, 69 MILBANK Q. 268, 271 (Supp. 1-2 1991)[hereinafter Gostin, *Radical Change*].

119. 480 U.S. 273 (1987).

plaintiff was "otherwise qualified" for her job.<sup>120</sup> The Supreme Court ruled that the provisions of § 504 of the Rehabilitation Act protected individuals with contagious diseases such as TB against discrimination due to the perceptions of others regarding the disease.<sup>121</sup> These public perceptions meant that the individual fell within the classification of "regarded as impaired," and, therefore, the person was entitled to legal protections of disabled individuals.

The Court in *Arline* further held that questions of contagiousness are to be resolved within an "individualized inquiry" where the test of whether the individual poses a significant health or safety risk includes determining the nature of the risk of disease transmission, the duration of the risk of contagion, the severity of the risk to other individuals, and the probability of disease transmission.<sup>122</sup> In addition, courts must decide whether any type of reasonable accommodation can aid the individual in overcoming his or her handicap.<sup>123</sup>

2. *The Americans with Disabilities Act of 1990.* Congress supplemented § 504 of the Rehabilitation Act in 1990 with the Americans with Disabilities Act (ADA). The thrust of the ADA is that neither public nor private agents may discriminate against individuals because of their disabilities. The ADA defines a disability as a physical or mental impairment, a record of such an impairment, or the perception that the person has the impairment.<sup>124</sup> A disabled individual is qualified for a public or private service if, with or without reasonable accommodation, the individual is otherwise qualified for the service.<sup>125</sup> However, the disabled person is not qualified if he or she presents a "direct threat" to the health and safety of others which cannot be eliminated by means of reasonable accommodation.<sup>126</sup> Thus, in protecting the rights of the disabled, the ADA acts both as a sword in opening the doors of opportunity to these individuals, as well as a shield in guarding them against discriminatory actions. For this reason, the ADA requires that reasonable accommodation be made to create and to protect the rights of the disabled individual.

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120. *See id.* at 288-89.

121. *See id.* at 282-83.

122. *See id.* at 287-88.

123. *See id.* at 288-89.

124. 42 U.S.C. § 12102(2) (Supp. IV 1992). The primary distinction now between these two acts is that the Rehabilitation Act applies to federal agencies, whereas the ADA applies to all other private and public entities, regardless of whether they receive federal funding. *Id.* § 12209(a)(2)(b)(1), (c)(1) (1990).

125. *Id.* § 12131(2) (Supp. IV 1992).

126. *Id.* § 12111(3) (Supp. IV 1992).

What, in fact, is the nature of a "reasonable accommodation" that society is required to offer an individual infected with TB? The ADA's mandate to protect individuals from discriminatory actions by public or private agents raises issues as to whether the state may coerce TB treatment in the context of court-ordered DOT. Whether the ADA reasonable accommodation standard applies to compulsory DOT centers around the definition of a "benefit" or "service." The pertinent language reads, "no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity."<sup>127</sup> The ADA itself provides no set definition of a benefit or service. With respect to DOT, it can be argued that DOT would be considered a benefit or service subject to the ADA. In instituting state-administered programs such as Medicaid, where medical services and treatment are provided to eligible participants, the federal government has long recognized medical treatment as a benefit. Likewise, DOT serves as a benefit by providing medications when community health workers administer TB treatment to patients, whether at public clinics or at their homes or places of employment. In addition, when the alternative is detention (and the complete abrogation of an individual's liberty), DOT can serve as a benefit in assuring completion of treatment, while allowing the individual to remain in his or her community.

If DOT is assumed to be a benefit, can the state use the ADA to compel the acceptance of this benefit, especially medical treatment? The ADA stipulates that "[n]othing...require[s] an individual with a disability to accept an accommodation, aid, service, opportunity, or benefit which such individual chooses not to accept."<sup>128</sup> On its face, the ADA would seem to preclude coercive activities by the state to the extent that an individual is protected at the expense of society's health. According to these criteria, an individual may legally refuse DOT, and concurrently, the state may not be able to compel the state to provide "accommodation" to a handicapped individual who refuses the proffered service.<sup>129</sup>

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127. *Id.* § 12132 (Supp. IV 1992).

128. *Id.* § 12201(d) (Supp. IV 1992).

129. Some commentators question whether a state can mandate universal DOT, arguing that it may not only be excessive in that it may not represent the least restrictive alternative, but may also represent a solution that is "wasteful, inefficient, and gratuitously annoying." Annas, *supra* note 66, at 587. Others argue that it would be a violation of a patient's privacy and autonomy interests for the state to require an individual to accept a community health worker into his or her home or place of business for the purpose of witnessing the patient ingest medication. Ronald Bayer et al., *The Dual Epidemics of Tuberculosis and AIDS: Ethical and Policy Issues in Screening and Treatment*, 83 AM. J.

Just as the state cannot compel an individual to accept a benefit, it might be argued that the ADA would likewise appear to preclude the withholding of a public service (such as access to a homeless shelter) for those individuals known to be contagious who decline DOT. However, the act of declining DOT would be balanced against the significant risk posed by the individual's health status so that, while the individual could legally refuse treatment, society could still enforce detention or withhold a service such as admission to a shelter, without forcing treatment on that individual.

Requiring compliance with DOT as a condition for necessary medical treatment or, alternatively, requiring other "needed" services such as drug treatment as a prerequisite to accessing TB treatment, presents a slightly different picture. On a practical level, adopting this position would be counter-productive and result in alienating individuals away from a health care system that seeks to impose additional coercive forms of "treatment." Such an approach would only serve to discourage those most in need from seeking TB treatment, while they continue to pose a threat of contagion to the public.

According to the ADA, a person with TB, as a handicapped individual, cannot be coerced to accept an accommodation. A governmental agency's requirement that a TB-infected individual accept treatment as a condition of access to other medical services (or vice versa) would constitute coercion of an accommodation on that individual. Similarly, to withhold a medical service because of the TB infected individual's disabled status would seem to be exactly the type of discriminatory action precluded by the ADA. Here, the ADA would be acting both as a sword by insuring the individual's access to health care, and as a shield by protecting the individual against coercive actions by the state.

Detention raises additional questions as to whether the ADA applies to exercises of state police powers. Some commentators have argued that the ADA does not apply to detention efforts. First, they assert that detention is not a public service or benefit that would be covered by the ADA. Rather detention entails a deprivation of liberty that for the disabled would not represent a sought after "benefit" for which the ADA would provide protections. Second, they argue detention efforts are not based on an individual's status as disabled, (i.e., suffering from TB), but rather on the individual's behavior in failing to complete treatment.<sup>130</sup> Finally, some commentators argue that the ADA does not cover the exercise of state police

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PUB. HEALTH 649, 653 (1993); see also Ball & Barnes, *supra* note 65 (suggesting that the use of coercive measures to attain public health goals raises several serious concerns).

130. Ball & Barnes, *supra* note 65, at 58-59.

powers in the area of public health. Based on their examination of legislative intent, Congress did not intend for the ADA to “interfere with state and local public health measures aimed at curbing transmission of disease.”<sup>131</sup> These interpretations of congressional intent rely on provisions of the ADA that do not protect those with communicable diseases who pose a “direct threat” because of their disability.

In contrast, other commentators argue that the ADA does apply to the actions of state health departments in their exercise of police powers to control communicable disease.<sup>132</sup> Since the “primary goal of the ADA . . . is to assure equality of opportunity”,<sup>133</sup> it is argued that the ADA should apply to those actions of a state health department that affect the opportunities of those with communicable disease. For example, the state provides services and benefits in making available vaccines and other forms of health provisions and care to the public.<sup>134</sup> Furthermore, with respect to the definition of “service” or “benefit”, the exercise of public health powers by a state agency is a service in that public health programs are provided by the state for preserving and protecting the public’s health.<sup>135</sup> Further, if the ADA protects access to discrete state benefits such as job opportunities or food stamps, these same protections against discrimination should certainly apply to fundamental rights such as an individual’s liberty interest regarding state efforts to detain and quarantine.<sup>136</sup>

To date, the courts have not had the opportunity to rule on a challenge to an order of detention based on the ADA.<sup>137</sup> First, public officials should not be able to argue that they are generally exempt from the provisions of the ADA. The ADA covers public entities which it defines as “any State or local government; any department,

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131. *Id.* at 59; see also Josephine Gittler, *Controlling Resurgent Tuberculosis: Public Health Agencies, Public Policy, and Law*, 19 J. HEALTH POL. POL’Y & L. 107, 127-28 (1994).

132. Lawrence O. Gostin, *The Americans With Disabilities Act and the Corpus of Anti-Discrimination Law: A Force for Change in the Future of Public Health Regulation*, 3 HEALTH MATRIX 89, 103-07 (1993).

133. *Id.* at 104.

134. *Id.* at 105.

135. *Id.*

136. *Id.* at 105-06.

137. The Supreme Court of New York recently decided a challenge to a detention order based on clear and convincing evidence that the plaintiff was unable to complete therapy for the projected eighteen to twenty-four month period necessary to cure her MDR-TB. See *City of New York v. Doe*, 614 N.Y.S.2d 8 (1st Dep’t 1994). An individual with HIV who was infected with MDR-TB was recently quarantined in his state without a hearing. Prior to his release, his attorney raised the ADA as applicable to his client’s detention. See AIDS WKLY., *supra* note 74.

agency . . . or other instrumentality of a State or States or local government."<sup>138</sup> Second, the courts should reject the argument that detention orders are not subject to the ADA because detention orders are based not on the TB patient's status as disabled but rather the patient's behavior in failing to complete treatment. Discrimination against the disabled occurs not only because of their identification as "disabled", but because of assumptions we make about their attributes or abilities. Accordingly, the ADA provides protection for those who are disabled as well as for those who are *perceived* as disabled. For the individual with TB, the ADA should serve to protect these individuals against assumptions made by public officials as to their behavior as recalcitrant individuals.

If there is evidence that individuals pose a significant risk due to their communicable status and they refuse to accept treatment, this decision constitutes a refusal of the "reasonable accommodation" offered. The state would seem to have little choice but to favor the side of protecting the public's health and prevent further contagion by detaining the individual. However, if the test of significant risk is not met, then the ADA should afford the same protections to individuals with TB against discriminatory efforts in pursuing detention as against any other state discriminatory action.

3. *The ADA and Arline: Policy Implications.* At least one commentator has suggested that constitutional review of the rights of contagious individuals is being replaced by a stricter scientific standard espoused in the ADA.<sup>139</sup> This standard defines direct threat as one that presents a significant risk to other individuals. By reviewing the ADA's legislative history and the *Arline* decision, certain criteria for defining significant risk become apparent. Significant risk is to be determined on a case-by-case basis according to standards set by the public health disciplines. Risk must be material, real, or of a substantial probability, and not merely speculative. The standard of proof of the risk must be a clear and convincing one. The burden of proof would be on the party seeking to prove the risk.<sup>140</sup>

Further criteria for assessing whether the risk is significant include the mode of transmission of the contagious disease, the duration and probability of the risk, the severity of harm, and the burden on the human rights of the contagious individual.<sup>141</sup> This latter criterion depends on assessing the significance of the health risk, by weighing the public health benefit in reducing a threat of disease

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138. 42 U.S.C. § 12131(1)(A)-(B) (1990).

139. Gostin, *Radical Change*, *supra* note 118, at 269.

140. *Id.* at 276-78.

141. *Id.* at 278-79; *School Bd. v. Arline*, 480 U.S. 273, 282 (1987).

with the social and economic costs of that reduction, and by using the least restrictive means of achieving the public health goal.<sup>142</sup>

Although proponents of the strength of the ADA concede the need for some procedural rights,<sup>143</sup> their main premise seems to be that anti-discrimination protections for individuals with contagious diseases should be driven by public health definitions of significant risk as set out by criteria in the *Arline* decision and in the ADA. If we are consistent in the application of these criteria, they should afford a greater degree of protection than previously defined Constitutional rights. These definitions of significant risk are seen as adhering to strict scientific standards which will render as moot decisions and assessments of the contagious individual based on prejudice and fear. However, as the examples of New York City and Maryland discussed below illustrate, individuals are currently being detained without an inquiry made as to whether they pose a significant risk; some in fact are being detained by authorities who publicly recognize that these persons are not contagious.

### C. *State and Municipal Laws*

Approximately forty states currently have laws that allow for the detention and quarantine of infectious TB patients. Most of these laws were drafted at the turn of the century when notions about the state's exercise of police powers to quarantine were broad and when individuals' civil liberties were not yet developed.<sup>144</sup> States take a variety of approaches in exercising their powers, and in some areas of the country, local governments have not hesitated to use their quarantine powers to detain individuals, including those with HIV. In recent years, authorities in Michigan, Oklahoma, and Oregon took actions to place HIV-infected citizens under quarantine. The state of Florida attempted to confine an individual with HIV, but declined after objections by its own state health department.<sup>145</sup>

Major U.S. metropolitan areas have been even more forcible in exercising local quarantine powers against persons with TB. Since 1993, New York City has detained more than thirty individuals with TB. In Boston, one hospital detained TB patients against their will at the rate of fifteen per year. Authorities in Los Angeles admit to detaining about two dozen TB patients per year.<sup>146</sup>

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142. Gostin, *Radical Change*, *supra* note 118, at 278-79.

143. Larry O. Gostin, *Controlling the Resurgent Tuberculosis Epidemic; a 50-State Survey of TB Statutes and Proposals for Reform*, 269 JAMA 255, 259 (1993).

144. *Id.*; Specter, *Liberty Clash*, *supra* note 81, at A1.

145. Price, *supra* note 71, at A1.

146. Mireya Navarro, *Steep Drop Shown in New Cases of TB for New York City*, N.Y. TIMES, Mar. 15, 1994, at A1; *Hospitals Revive Quarantine For Patients with Tuberculosis*,

Both city and state governments are demonstrating an increased fervor in initiating and enforcing detention not only of those with infectious TB, but also for those TB patients who do not complete their TB therapy, even though they may not be infectious. Most notable among these efforts has been New York City which has been in the forefront of the TB epidemic.<sup>147</sup> In March of 1993, New York amended its Health Code to "clarify the Commissioner's authority to detain individuals with active tuberculosis who present a risk to the public health, either because they pose a direct threat of transmission or because their non-compliance with treatment may lead to the redevelopment of active infectious tuberculosis."<sup>148</sup> This legislation includes special provisions empowering the city health commissioner to issue a number of orders including the requirement to submit to physical examination for individuals suspected of having active TB,<sup>149</sup> court-ordered DOT therapy,<sup>150</sup> and detention without a prior court order of those who are infectious or of those who "can not [sic] be relied upon to participate in and/or complete an appropriate prescribed course of medication. . . ."<sup>151</sup> Confinement of individuals with TB is allowed for up to two years.<sup>152</sup>

The New York City Health Code also includes procedural safe-

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WASH. POST, Nov. 28, 1992, at A2.

147. In 1992, almost 4000 cases of tuberculosis were reported in New York City. These numbers represent 14 percent of the total numbers of TB cases nationwide. This was three times the number reported in Los Angeles, another major metropolitan center. Sheryl Stolberg, *Taking It to the Streets, A Small Cadre of Community Workers and Nurses Struggles to Contain an Outbreak of TB At a Time When Clinics are in Danger of Closing*, L.A. TIMES, Oct. 24, 1993, at 14; *New York City Adopts Rule to Detain TB Patients Who Fail to Take Medicine*, BNA HEALTH CARE DAILY, Mar. 26, 1993, at 21.

148. See Ball & Barnes, *supra* note 65, at 61. Another commentator expressed the reasons for the amendment more succinctly. "[T]he primary purpose of the regulations [amended code] was to provide the D[e]partment O[f] H[ealth] with the legal authority to detain tuberculosis patients involuntarily and to permit directly observed treatment ("DOT")." Rosemary G. Reilly, *Combating the Tuberculosis Epidemic: The Legality of Coercive Treatment Measures*, 27 COLUM. J. L. & SOC. PROBS. 101, 133 (1993).

149. New York City Health Code, 24 RCNY § 11.47(b), (d)(1) (1993).

150. *Id.* § 11.47(d)(3).

151. This section of the revised New York City regulations allows authorities to order detention of those reported to have active TB where there has been no follow-up report of completing TB therapy and "where there is a substantial likelihood, based on such person's past or present behavior, that he or she can not [sic] be relied upon to . . . complete an appropriate prescribed course of medication for tuberculosis. . . ." *Id.* § 11.47(d)(5). The criteria for assessing the likelihood of this behavior ranges from "failure to take medication for tuberculosis", to "failure to keep appointments for treatment of tuberculosis. . . ." *Id.* This leaves open the possibilities that individuals can be detained for actions ranging from forgetting to take their medication, to inaccessibility to centers of treatment, to lack of means to pay for medication.

152. *Id.* § 11.47; Rorie Sherman, *New York TB Rules Are Hailed*, NAT'L L. J., Apr. 5, 1993, at 9.

guards designed to protect individuals subject to these actions. These safeguards include the right of the detainee to request immediate release, upon which the commissioner must respond within seventy-two hours with an application for a court order authorizing the detention action. If the order is declined, the patient must be released within five working days of the original request for release. Court orders are required for detentions lasting sixty days or more, and judicial review of the detention is mandated for every ninety days of the detention. The standard of review that the commissioner must meet to obtain a court order for detention is clear and convincing evidence of the necessity for the individual's detention. Those who are detained have the right to legal representation which will be provided by the city, if the detainee makes an explicit request for such assistance.<sup>153</sup>

At least one state, Maryland,<sup>154</sup> has also shown an eagerness to follow the direction of New York City in moving toward more restrictive means in quarantining not only those who are infectious, but also those who are non-infectious, but non-compliant in completing their treatment.<sup>155</sup> In the past, Maryland law provided that if an individual was found to have infectious TB, he or she *may* be ordered to an appropriate health care facility for treatment.<sup>156</sup> The Code of Maryland Regulations was more specific in requiring that a state health officer *shall* isolate a TB patient who is infectious.<sup>157</sup> However, this requirement of isolation was less restrictive than quarantine in that forcible detention was not required. A patient could satisfy the requirements of isolation if he or she "receives adequate chemotherapy, is under medical supervision, and observes the instructions issued by a health officer."<sup>158</sup> In other words, by completing therapy on his or her own, a contagious TB patient in Maryland could avoid detention and quarantine.

For individuals with infectious TB who are non-compliant in completing therapy, Maryland law allowed for isolation of these persons, but stipulated that the least restrictive means of isolation will be used, with court-ordered incarceration used only as a last resort.<sup>159</sup> In addition, Maryland law incorporated procedural safe-

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153. New York City Health Code, 24 RCNY § 11.47(e) (1993).

154. The state of Florida also recently passed legislation authorizing detention of those with TB prior to their commitment hearing. *Tuberculosis Bill Passes Legislature*, ST. PETERSBURG TIMES, April 10, 1994, at 5B.

155. Intergovernmental Health Policy Project, *Highlights - TB Regulations*, STATE HEALTH NOTES, July 26, 1993, at 7.

156. MD. CODE ANN., HEALTH-GEN. § 18-324(b) (1990).

157. MD. REGS. CODE tit. 10, § 06.01.22A(1) (1989).

158. *Id.* § 06.01.22A(2).

159. The forms that isolation may take for a non-compliant TB patient include re-

guards in requiring proof of contagion prior to issuing a court order before instituting the most restrictive isolation.<sup>160</sup> Maryland's TB control law was originally crafted so as not to restrict and punish the non-compliant individual with quarantine, but to give the individual every opportunity for treatment in a setting compatible with the TB patient's needs before detention is enforced.

However, Maryland's power to quarantine was recently expanded to include those individuals who are in a "noncommunicable stage" who "refuse[] to receive adequate chemotherapy."<sup>161</sup> In other words, those who are not contagious are now subject to quarantine, if they "refuse to receive" sufficient TB therapy. Unlike the New York City regulations, there are no criteria specified in the Maryland regulations as to when authorities may consider a TB patient as having "refuse[d] to receive" a sufficient amount of TB medication.<sup>162</sup> Under the new law, Maryland has quarantined three individuals to date.<sup>163</sup>

Both the New York City Health Code and Maryland regulations present potential conflicts with the ADA. The ADA sets out that a public agency may not discriminate against an individual because of a physical impairment.<sup>164</sup> The practical implication of this requirement is that the disabled individual is qualified for a public service with a reasonable accommodation. As mentioned earlier, the disabled person is not qualified for the accommodation if he or she presents a direct threat to the health or safety of others *which cannot be eliminated by means of a reasonable accommodation*.<sup>165</sup> The Supreme Court held in *Arline*<sup>166</sup> that individuals with contagious diseases, including TB (the plaintiff's disease in question), are considered disabled within the meaning of the law, and the Court set out a specific definition of direct threat in terms of "significant risk."<sup>167</sup> The New York City Code and Maryland regulations allowing for the detention of non-contagious individuals arguably fail all four tests of the significant risk definition; the risk of disease transmission for a non-contagious person is zero, as is the duration of the risk of con-

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striction to the patient's house where others are not exposed, voluntary admission to a hospital for treatment, court-ordered admission to a hospital, and court-ordered incarceration of the patient when all other isolation means fail. *Id.* § 06.01.22 A(4)(c)(i-iv).

160. MD. CODE ANN., HEALTH-GEN. § 18-325(c) (1990).

161. MD. REGS. CODE tit. 10, § 06.01.22A(5) (1993).

162. *Id.*

163. Amy Goldstein, *Md. Toughens Restrictions on TB Patients*, WASH. POST, July 14, 1993, at C2; Todd Spangler, *Quarantine Rule Expanded to Bolster Fight Against TB*, WASH. TIMES, Oct. 11, 1993, at C8.

164. See *supra* notes 124-26 and accompanying text.

165. *Id.*

166. 480 U.S. 273, 282 (1987).

167. *Id.* at 287-88.

tagion, the severity of the risk, and the probability of disease transmission at the time of non-contagiousness.

One might argue that if an individual does not complete his or her TB therapy and is not contagious now, the individual will be contagious at some point in the future. New York City authorities assert that "a detention policy which only seeks to detain infectious patients, while concurrently limiting the detention period to the infectious stage, will not be . . . effective . . . since many detained patients, upon discharge, fail to continue with treatment."<sup>168</sup> Missing from this analysis is a discussion of *why* patients fail to complete their treatment. They are not even made aware that treatment is available to them. One study revealed that during a three year period in Brooklyn, New York, only nine percent of intravenous drug users treated for TB were even told that they had TB. Some abandoned the hospital where they were being treated to seek relief from withdrawal symptoms after being refused methadone treatment by hospital staff. Others reported that upon discharge, they were never given prescriptions for TB medications, nor did they receive either outpatient referrals or a discharge plan.<sup>169</sup> These patients did not "refuse" treatment, rather they were denied both information on the nature and seriousness of their TB infection and access to means which would have allowed them to comply with treatment.

There are other problems with this analysis as well. Significant risk should be calculated in terms of present risk, not in terms of the probability of future risk which is purely speculative. In fact, the recently revised CDC Guidelines outline a new combination of recommended TB antibiotics that result in a more rapid recovery to a non-contagious state and a faster cure rate than the traditional therapy.<sup>170</sup> Depending upon where patients are in the course of their treatment, they may not only be non-contagious at the time of their detention, they may even be cured.<sup>171</sup> Further, with the administration of TB therapy in the form of DOT, the element of direct threat of contagiousness is removed, thus placing the burden on public authorities to provide DOT as a reasonable accommodation before

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168. Ball & Barnes, *supra* note 65, at 64.

169. Curtis et al., *supra* note 68, at 321, 324.

170. See *Initial Therapy for Tuberculosis in the Era of Multidrug Resistance*, *supra* note 14.

171. The New York City Health Code does not use a significant risk standard in allowing detentions, but rather a "substantial likelihood" of transmission. New York City Health Code, 24 RCNY § 11.47(d)(4) (1993). This standard requires a finding that the patient is "substantially likely to fail to comply with treatment, or that she is substantially likely to infect others." Ball & Barnes, *supra* note 65, at 66 n.175. Code advocates insist that the New York standard is "essentially equivalent" to a significant risk standard. *Id.*

individuals can be detained as "non-compliant."<sup>172</sup>

The New York City Health Code in particular contains specific provisions which may be contrary to the ADA. The regulations provide that individuals may be detained if they fail to take their medication, not uncommon for most people under treatment.<sup>173</sup> The regulation provides no guidance as to the application of this standard. How many times is an individual allowed to lapse in taking their TB therapy (a situation that is common with the vast majority of patients taking medication for any illness)? Once, twice, more? Who monitors these individuals for lapses in therapy? The same section of the code allows detention of those who fail to keep their appointments for TB treatment. Again, how many appointments must be missed before a person is subject to detention? Is there a requirement that the appointments be missed consecutively, or are there a minimum number of missed appointments that, no matter how far apart in time or no matter the reason, result in detention of the individual?

Proponents of the amended code claim that detention is used as a last resort "when all other reasonably and appropriate alternatives have failed to achieve compliance."<sup>174</sup> Yet they also admit that "[n]ot all less restrictive alternatives . . . are appropriate for all individuals."<sup>175</sup> Thus, it would appear that New York City authorities are not always required to attempt less restrictive treatment alternatives before detaining certain individuals. Authorities may "consider", but are not required to offer DOT.<sup>176</sup> In fact, public health authorities have shown a relatively restrained hand in the use of their detention powers. Although more than thirty individuals have been detained since the enactment of the Code in March of 1993, this contrasts with the more than 1200 TB patients in 1993 who were administered DOT.<sup>177</sup> Despite this current policy, the newly amended health code may not provide legal protections for all TB patients by requiring the use of less restrictive alternatives before detention is sought. To comply with the ADA, the city should not move to detain individuals who have not first been offered a reasonable accommodation.<sup>178</sup>

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172. See *supra* notes 124-38 and accompanying text.

173. New York City Health Code, 24 RCNY § 11.47(d)(5) (1993).

174. Ball & Barnes, *supra* note 65, at 60.

175. *Id.* at 56. Among the less restrictive methods available in New York City are free treatment, voluntary hospitalization, voluntary DOT, and compulsory DOT. *Id.* at 55.

176. New York City Health Code, 24 RCNY § 11.47(f)(1)(iii) (1993).

177. Hamburg & Frieden, *supra* note 61, at 1751; Navarro, *supra* note 69. Only one case to date has challenged a detention order under the new law. A factual finding revealed that the plaintiff was offered and refused to cooperate with voluntary DOT before her detention. *City of New York v. Doe*, 614 N.Y.S.2d 8 (1st Dep't 1994).

178. See *supra* notes 124-38 and accompanying text.

And finally, the regulations set out power for city authorities to issue court-ordered DOT for those persons who are "unable or unwilling . . . to complete an appropriate prescribed course of medication for tuberculosis."<sup>179</sup> If the ADA does not compel a disabled individual "to accept an accommodation, aid, service, opportunity, or benefit which such individual chooses not to accept"<sup>180</sup> the best that the city can do is offer the individual, not legally compel, TB treatment in the form of DOT. If the individual refuses, however, and remains in a contagious state, the city may enforce detention without coercing the individual to take treatment.

#### D. *Legal Claims by Vulnerable Populations*

Calls for action by the three groups most affected by the upsurge in TB, namely the homeless, prisoners, and those with HIV have also raised new legal challenges. These groups have pursued their demands for specialized TB control facilities through successful court cases. In *Mixon v. Grinker*,<sup>181</sup> the court upheld the rights of HIV-infected homeless in New York City to "medically appropriate housing," noting that crowding HIV individuals in public shelters endangers their lives by exposing them to other residents' infectious diseases of which TB is noted by name.<sup>182</sup> In a separate suit against New York City, inmates of the city's Rikers Island prison sued to compel timely installation of "contagious disease isolation units" in the prison to specifically isolate inmates with TB from the rest of the facility's incarcerated.<sup>183</sup> In 1992, Pennsylvania inmates sued successfully to compel the state to implement TB control measures in the entire state penal system.<sup>184</sup> These measures include mandatory testing of all inmates and prison staff, isolation and treatment of individuals with active TB, and the segregation of inmates who refuse to comply with screening and testing procedures.<sup>185</sup> It is worth noting that it is the inmates themselves who are demanding testing of the entire prison population for TB.

In addition, New York City advocacy groups who work with the homeless, prisoners, and HIV-infected individuals<sup>186</sup> have issued

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179. New York City Health Code, 24 RCNY § 11.47(d)(3) (1993).

180. 42 U.S.C. § 12201(d) (1990).

181. 556 N.Y.S.2d 855 (1st Dep't 1990).

182. *Id.* at 858-59.

183. *Vega v. Sielaff*, No. 82-C6475, 1992 U.S. Dist. LEXIS 5249, at \*1 (S.D.N.Y. Apr. 22, 1992).

184. *Austin v. Pennsylvania Dept. of Corrections*, No. CIV.A.90-7497, 1992 U.S. Dist. LEXIS 14971, at \*1 (E.D. Pa. Sept. 29, 1992).

185. *Id.* at \*15-16.

186. These groups include: the AIDS in Prison Project Correctional Association of New York; AIDS Service Center HIV Law Project; Brooklyn Legal Services Corp. B, HIV

recommendations that would provide that, after reasonable "treatment opportunities" such as DOT and appropriate shelter for the homeless have been offered the TB patient, individuals who refuse to comply with TB therapy should be immediately detained "on a temporary basis."<sup>187</sup> Calls for the detention and quarantine of individuals with TB is understandable on the part of HIV-infected individuals. As noted earlier, those with HIV are currently the most vulnerable population to TB. Because of their immuno-compromised status, HIV individuals often contract TB more often and at a faster rate than non-infected individuals. Once infected, TB progresses at an alarming rate in this population. Moreover, MDR-TB is often little more than a death sentence (with death occurring frequently within a matter of weeks) for individuals with HIV.

It is ironic that these calls for the quarantine of TB patients come so soon on the heels of recent calls for the quarantine of HIV individuals to protect society against HIV contagion. It is even more ironic that the intended victims of these recent calls should now feel compelled to adopt their opponents' solution of quarantine in order to protect themselves against TB. The danger with calls to quarantine individuals with TB is that this demand for quarantine could be extended to all HIV-infected individuals, regardless of their TB status. The implications of such an action might be twofold. First, those who have TB would be detained in order to protect those in the general public with HIV infection. Second, this same rationale could be equally applied to instituting protective quarantine of all individuals with HIV, in order to isolate them from the dangers of contracting TB from the population at large.

The unfortunate aspect of quarantine is that its application is not always based on scientific principles. As indicated earlier, quarantine was often used in the past against individuals, not out of the strict need to isolate them, but because their lower socio-economic status restricted them from access to health measures used by their more affluent counterparts. The element of stigma not only seems to result from such measures, but also appears to be a factor in the public policy decision-making process as to which individuals to quarantine. Present calls for quarantining those persons with TB might seem scientifically "correct", but may just be socially convenient, due to the types of individuals who will now be removed from societal sight: minorities, the homeless, substance abusers, and

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Project; Housing Works, Inc.; Gay Men's Health Crisis; Lambda Legal Defense and Education Fund, Inc.; Legal Action Center; and TB Working Group - ACT-UP, New York. Mahon et al., *supra* note 83, at cover sheet.

187. *Id.* at 29-34. Immediate detention without a prior hearing may be necessary to avoid losing the individual in New York City. Interview with Michael Isbell, Lambda Defense Fund of New York City, in New York, N.Y. (Oct. 1992).

those with HIV. The specter of wholesale round-ups of social "undesirables" such as the homeless and substance abusers for deposit in TB warehouses is truly foreboding. The legal issues surrounding this dilemma highlight the tension between models of detention and quarantine versus non-coercive means of administering TB therapy with accompanying respect for individual civil rights.<sup>188</sup>

#### IV. ACHIEVING A BALANCE: RECOMMENDATIONS FOR TB CONTROL

Historical precedents tell us that there are better and worse ways of solving problems. One unfortunate way adopted in the past was the use of sanitariums where quarantine was mandated, not to isolate individuals, but to impose a regimen of treatment on the poor. This method was used since little else was available in the form of TB treatment. As is often the case, methods used in the past are not often supported by modern public health views and methods. New public health practices provide us with the tools (such as DOT) to fight TB and afford us the opportunity to respect and actively protect the rights of individuals consistent with both constitutional and statutory law. Quarantine and detention should be used only as a last resort for those who refuse to initiate or comply with TB treatment. In addition, any efforts to quarantine must be accompanied by a full range of substantive and procedural protection.

To these ends, the following recommendations are made.

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188. The legality of prosecutorial actions that are primarily targeted against minorities has been raised in other contexts, including African-American mothers who are disproportionately prosecuted for drug use during pregnancy. *See, e.g.,* Dorothy E. Roberts, *Punishing Drug Addicts Who Have Babies: Women of Color, Equality, and the Right of Privacy*, 104 HARV. L. REV. 1419, 1450-56 (1991). Roberts argues that such actions may be unconstitutional as a violation of the equal protection clause of the Fourteenth Amendment which provides for anti-subordination as well as anti-discrimination protections. The anti-subordination principle measures the effects of government policy on condition of those who are disadvantaged by that policy. The anti-subordination approach does not examine the legality of acts committed by single agents, but rather tests general government policy as perpetuating conditions that selectively disadvantage minorities.

The present TB epidemic could be examined in this context where minorities who comprise approximately seventy percent of the current rise in TB cases are disproportionately affected by lack of accessible and affordable health care, specialized housing for the homeless with TB, lack of funding for DOT and other control measures, such as ventilation controls and preventive therapy.

Concurrently, Roberts outlines an anti-discrimination protection which prohibits discriminatory actions against those because of race. This is evidenced in situations where a disproportion of those who are prosecuted are members of one race. As we develop increasing data on those who are detained and quarantined to control TB, it will be important to analyze whether a disproportion of those with TB who find themselves subject to these actions are disproportionately members of minorities.

A. *Increase Funding for Basic Public Health Services to Cover Administration of Proven Cost-Effective Methods of TB Control*

Alternatives to wholesale detention and quarantine are currently available and cost-effective. One of the most basic preventive means is installing ventilation controls in congregate settings where TB patients are likely to be. Examples of such facilities would be homeless shelters, substance abuse treatment centers, waiting rooms of outpatient care facilities, and isolation rooms for TB patients.<sup>189</sup> The costs for equipping rooms with a negative pressure window fan is \$1000; a full range of ventilation, filter, and UV light controls are estimated at \$10,000 to \$60,000.<sup>190</sup> Where limited funding may allow for only one type of control to be used, the installation of UV light in congregate areas is a particularly cost-effective means of reducing exposure to TB.<sup>191</sup>

Probably the single most cost-effective means of controlling the spread of TB is the administration of direct observed therapy (DOT). DOT has the advantage of linking the TB-infected individual with pre-existing health care support services. DOT can be performed either by health care personnel at public health clinics, at homeless shelters or shelter clinics, and at drug treatment centers. DOT can also be administered by outreach workers who directly visit the patient. Not only can the worker insure that the patient has taken his or her therapy, but the patient can be monitored for side effects which is especially important with the medications used to treat MDR-TB.<sup>192</sup> Compliance is especially optimal if the therapy can be linked to the individual's everyday routine.<sup>193</sup>

As an ethical matter, coercion should not be used to force a patient to accept TB treatment as a condition of receiving additional health services. In addition, the ADA may prevent the denial of medical services due to the individual's classification as disabled from TB. On a practical level, society would lose in three respects were a TB patient to withdraw from the health care system in response to coercive attempts to impose TB treatment: (1) the chance

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189. These controls include enhanced ventilation to the outside of the facility, and the use of UV light and/or HEPA filters. *NAP, supra* note 11, at 30; U.S. Department of Health and Human Services, *Guidelines for Preventing the Transmission of Tuberculosis in Health Care Settings, with Special Focus on HIV-Related Issues*, MORBIDITY & MORTALITY WKLY. REP., Dec. 7, 1990, at 15-16, 23-24.

190. Elisabeth Rosenthal, *TB, Easily Transmitted, Adds a Peril to Medicine*, N.Y. TIMES, Oct. 13, 1992, at A1; Lisa Belkin, *New York Hospitals Faltering on TB, State Says*, N.Y. TIMES, Oct. 23, 1992, at B1.

191. Bloom & Murray, *supra* note 16, at 1058.

192. *Homeless, supra* note 17, at 16.

193. John A. Sbarbaro, *The Patient-Physician Relationship: Compliance Re-Visited*, 64 ANNALS ALLERGY, 325, 328-29 (1990).

is lost for any future attempts to persuade the individual to accept TB treatment; (2) this lost opportunity results in an individual becoming more ill, progressing to infectious TB, and spreading the disease to the public; and (3) any opportunity for curing the individual's remaining illnesses is foreclosed along with the possibility of restoring the social productivity of the individual.

There are other cost-effective means as well. The concerns of HIV individuals to be protected against exposure to TB are especially acute since this group appears to be the most vulnerable to contracting TB. One cost-effective approach currently in use for protecting both those individuals who are HIV positive along with populations who are vulnerable to HIV is TB preventive therapy. This is especially applicable to individuals in congregate settings where the risk of contracting TB is the greatest.<sup>194</sup> The CDC now recommends that those who are HIV positive be assessed for TB as part of their health care program. If an individual demonstrates that he or she may have had contact with a TB source, antibiotic therapy can be administered to the HIV-infected individual to protect them from developing TB. In this way, HIV populations are not left vulnerable to TB exposure, but active steps are taken to foreclose the development of TB.

The relatively modest costs of mandating ventilation controls for congregate settings, instituting DOT, and administering preventive therapy will mean investment in the problems of substance abusers, the homeless, and those with HIV. The issues of patient compliance with TB therapy seems to be one not only of non-compliance, but of lack of realistic access to basic health services. The recent increase in TB is related to cuts in federal funding for TB programs that occurred in the 1970's and 1980's. In 1969, federal project grants for TB control were funded at over twenty million dollars. By 1982, the grants were only one million dollars for the entire United States. The grants increased to five million in 1983 and \$9.1 million by 1991, even though Congress had authorized the expenditure of thirty-six million dollars for that year.<sup>195</sup>

The need for substantial increases in funding for re-building the health infrastructure from the ground up, i.e., to implement community-based TB control programs, is finally being recognized at the federal level. Early in 1993, the Tuberculosis Prevention and Control Amendments of 1993 were introduced which would have authorized \$380 million to be used to expand TB control programs. \$250 million of this amount was slated to be spent on equipping

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194. Bloom & Murray, *supra* note 16, at 1061.

195. Lee B. Reichmann, *The U-Shaped Curve of Concern*, 144 ANNALS REV. RESPIRATORY DISEASE 741 (1991).

health care facilities with ventilation controls, and other supplies needed to treat TB patients. In addition, twenty five million dollars was earmarked to establish five national specialty health centers for treating TB patients.<sup>196</sup> This amount however was cut by the Clinton administration to \$124 million where it was further reduced by Congress to \$111 million. Although this amount represents more than twelve times the funding appropriated to TB control in 1991, these funds also amount to less than twenty-five percent of funding estimated by the CDC to adequately control TB in the United States.<sup>197</sup>

B. *Provide Incentives for DOT to Encourage Compliance; Overcome Health Workers Resistance to Compensate People for Treatment*

Compliance with TB therapy has been shown to be enhanced by the use of incentives, either in the form of additional health-related services such as drug treatment, or with other incentives ranging from gifts of food, cash, transportation, bus tokens, clothing, and lodging.<sup>198</sup> As mentioned earlier, the coupling of DOT with a cash incentive of twenty dollars per day is significantly less expensive than the cost of detention and treatment.

One of the key issues in implementing effective incentives for TB treatment is overcoming the resistance of some health care workers (and the public) to "pay" patients to complete their therapy.<sup>199</sup> There seems to be a marked incredulity that anyone would turn down society's largesse in the form of free treatment. Unfortunately, for many individuals, including the homeless and substance abusers, taking time off from efforts to insure the basics of daily survival in the form of securing food and shelter for themselves and their families is not an option. Society must realize the payoffs inherent in providing incentives to these unfortunates who are not only the most vulnerable to TB, but who often lack the basic social support services that allow them the luxury of seeking treatment. Not only does the payoff come in the form of containing the TB epidemic and protecting society at large, but the combination of DOT with cash or gift incentives is absolutely the most cost-effective solution when compared with detention models which cost approximately ten times as much to administer.

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196. *More Training for Health Care Workers Included in TB Prevention Control Bill*, BNA HEALTH CARE DAILY, May 25, 1993.

197. Philip J. Hilts, *Rise of TB Linked to a U.S. Failure*, N.Y. TIMES, Oct. 8, 1993, at A23.

198. NAP, *supra* note 11, at 18.

199. Specter, *Liberty Clash*, *supra* note 81, at B4.

C. *Detention Should Be Used as a Means of Last Resort for Those Individuals Who Do Not Complete Treatment*

As mentioned earlier, non-completion of TB therapy has a number of ramifications for both the patient and society, the most significant being the development of MDR-TB. It is important to note, however, that the appearance of MDR-TB is not solely the result of non-compliance on the part of a TB patient. A recent study showed that treatment errors had occurred in approximately eighty percent of the MDR-TB patients. An average of four errors was made with each patient by his or her medical provider<sup>200</sup> resulting in "salvage therapy" consisting of hospitalization, additional therapy with more drugs and surgery. The total cost for treating these study patients was \$4.8 million with an average cost of \$180,000 per patient.<sup>201</sup>

Furthermore, it is also important to realize that some patients will not accept or comply with any treatment. There are good ethical and legal principles for adopting an approach that allows for the possibility of detention while recognizing the rights of detainees who are quarantined. Because of the potential public health threat from allowing TB to spread in the population, state police powers justify protecting the public from those with infectious diseases. Therefore the state is entitled to require treatment and isolation of individuals with TB who have refused treatment while they remain in the infectious stage.<sup>202</sup>

Allowing the possibility of detention does not give the state, however, automatic, unlimited powers to detain. For those individuals who will need to be detained, legal safeguards should be established to protect the rights of these individuals, as well as to prevent mistaken acts of detention. A good starting point would be to insure that previously established constitutional rights are considered before a program of detention and quarantine is begun. These rights are still useful, needed, and would be as follows:

1. *Recognition of the stigma resulting from detention and the gravity of instituting safeguards to protect the individual's liberty interest.*<sup>203</sup> The stigma for an individual with TB should not be un-

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200. These errors include failure to recognize MDR-TB, inadequate treatment, insufficient initial therapy, insufficient preventive therapy, and failure to recognize non-compliance. Artin Mahmoudi & Michael D. Iseman, *Pitfalls in the Care of Patients with Tuberculosis; Common Errors and Their Association With the Acquisition of Drug Resistance*, 270 JAMA 65, 67 (1993).

201. *Id.*

202. Ronald Bayer et al., *The Dual Epidemics of Tuberculosis and AIDS: Ethical and Policy Issues in Screening and Treatment*, 83 AM. J. PUB. HEALTH 649, 653 (1993).

203. *Addington v. Texas*, 441 U.S. 418 (1979).

derestimated, even in modern times. Although rarely publicized, providers continue to shield their patient's TB status from public knowledge. Recently, a former Washington, D.C. delegate to Congress revealed that he was treated for TB in 1990. A subsequent response by the Chief of the Bureau of Tuberculosis Control in that city indicated that this congressional delegate's TB status was never reported to the Bureau, as required by law. Further, the Chief noted that physicians in her city fail to report as many as five percent of all cases, a practice she labelled a "cover-up",<sup>204</sup> and indicative of the effect on individuals with publicized cases of TB.

2. *No status crimes based on a diagnosis of TB.* The fact that a person has contracted TB or MDR-TB either now or in the past, would not automatically justify an order of detention.<sup>205</sup> Solid evidence that the individual poses a significant risk that meets the criteria set out in the ADA and *Arline*<sup>206</sup> would be the only justification for detaining individuals with TB.

3. *No confinement on the basis of illness, as long as the person is not dangerous to himself or others.*<sup>207</sup> This requirement would be applicable to individuals with chronic TB who are compliant in taking their medications. A hearing should be held before the individual is detained to establish whether the individual poses a significant risk because of his or her disease status. Public health authorities in at least two geographic areas<sup>208</sup> are detaining individuals who are non-contagious, where the condition may not be legally sufficient to meet a test of significant risk.

4. *Recognition that the liberty interest of the individual compels a standard of proof of clear and convincing evidence that must be met in order to execute a detention order.* This standard is a stricter standard and is designed to prevent errors in the unnecessary detention of individuals with TB.<sup>209</sup>

5. *Institute procedural safeguards for detention hearings.* These safeguards should include written notice of the grounds for hearing, the right to counsel and to present witnesses, the right to cross-examine, the right to a written report of the order, and the right to ap-

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204. Hazel M. Swann, *Controlling Tuberculosis*, WASH. POST, Feb. 15, 1993, at A26.

205. *Robinson v. California*, 370 U.S. 660 (1962).

206. 480 U.S. 273, 282 (1987).

207. *O'Connor v. Donaldson*, 422 U.S. 563 (1975).

208. See *supra* notes 144-80 and accompanying text.

209. *Addington v. Texas*, 441 U.S. 418, 418 (1979).

peal.<sup>210</sup> The right to retain counsel is especially crucial, since the populations currently most affected by TB, namely minorities, the homeless, substance abusers, and prisoners, are those groups typically with limited access not only to legal representation, but also, like most individuals regardless of class, they lack the medical vocabulary and literacy to discuss their condition and its ramifications within a legal context.

D. *There Is No Justification for Detaining Individuals with HIV on the Basis of Their HIV Status*

The consensus that individuals with HIV should not be subject to detention and quarantine simply because they have HIV was reached based on good public health, legal, and ethical norms. Likewise, with the current TB epidemic, individuals with HIV should be protected from detention efforts, whether in the name of protective custody for TB negative individuals (to prevent their exposure to TB), or preventive custody for those with TB, regardless of their compliance with therapy. It would be very easy for those who in the past promoted the sequestering of individuals with HIV to repeat these calls for detention, not only in the name of protecting society from HIV individuals with TB, but now in the name of gratuitously protecting HIV-infected individuals themselves from TB.

The strong demands of prisoners, the homeless, and those with HIV for means of quarantine and detention seem to be in stark contrast to the concern for observing legal and ethical rights for those with TB, many of whom may have HIV. These demands are made however by groups entitled to protection from TB since not only is this disease so prevalent among their respective populations, but these groups tend to be vulnerable to HIV as well. The calls by these groups for isolation facilities can also be viewed not as demands for broader police powers in detaining individuals with TB, but as calls that members of these groups are deserving of greater access to means of health care. If facilities are available where TB-infected homeless, substance abusers, and others can go, there is generally no need to detain these individuals. Likewise, if there are facilities where HIV-infected members of the above groups can go to be treated and protected from public congregate settings, there is no general need to detain individuals with TB. A general operating principle should be that there is no ethical justification for placing an individual in quarantine unless other lesser restrictive methods have been used to afford the person access to the means of treatment and to secure adequate housing in order to allow the person to re-

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210. *Washington v. Harper*, 494 U.S. 210 (1990).

main voluntarily sequestered.

E. *The ADA Should be Supplemented With Additional Rights to Insure Protection of Those with TB*

The ADA is deficient in certain protections for those handicapped individuals due to the nature of TB. One such area is employment. Individuals with TB remain infectious for the first two to four weeks of treatment, and must be isolated. This means that the individual is precluded from the work-place and confined to his or her residence during this time period. As discussed earlier, the ADA protects the rights of those who are contagious by measuring the significant risk of their disease against the standard of whether any reasonable accommodation can be made that would make the person "otherwise qualified" for a service. Most employees of larger firms will be "reasonably accommodated" by sick or medical leave which not only serves as a pre-authorized absence from the work-place, but which secures their job as well. Those who work for smaller firms where no sick or medical leave is given, or where leave is left to the discretion of the manager, may not be protected by the ADA, if the employer can show that the employee's absence results in "undue hardship" for the employer.<sup>211</sup>

The danger that an employee may be released from employment or at least not paid during an absence for TB treatment is not theoretical, but a very real one. For example, a maintenance worker formerly employed in a New York hospital initiated legal action against his employer to recover back pay after the hospital administration discouraged him from applying for workman's compensation after he had contracted TB; he was eventually forced to go on welfare.<sup>212</sup>

The ADA is, therefore, insufficient to protect all employees with TB who may need to be absent from work during the infectious stage. To fire or refuse to pay an individual because they are sick seems tantamount to a status crime, that is, punishing the individual for a circumstance beyond their control. For individuals with TB who need only two to four weeks to become non-contagious, the only meaningful protection against discrimination may be the very right to maintain their employment in the face of a temporary and limited period of disability. Perhaps laws should be enacted at the federal level that would guarantee this protection for workers, in addition to providing some compensation to employers who do not provide sick

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211. Interview with Lee Hoshall, State of Maryland Human Rights Commission (Nov. 1992).

212. Rosenthal, *supra* note 190, at A1, B2.

or medical leave time.<sup>213</sup> This added compensation could be justified on the basis that, not only would the employee benefit from job protection and security, but the employer would benefit by having infected individuals remain away from the work-place instead of exposing others including fellow employees and the public in general.

In addition, the ADA does not set out full safeguards for those individuals who are either not contagious, or who refuse to accept TB treatment, and who may find themselves the recipients of detention and quarantine actions by the state. For this reason, it is crucial that any protections afforded by the ADA be supplemented with constitutional safeguards to insure that the individual receives the full protection of substantive and procedural rights to foreclose any possibility of error in detention or quarantine.

### CONCLUSION

Whether one approaches the dilemma of insuring individual compliance with TB therapy from a public health perspective or from a legal standpoint, the use of Direct Observed Therapy (DOT) provides a cost-effective means of controlling TB while respecting legal rights in foregoing mandatory quarantine for those who are diligent in completing their therapy. Unless society is willing to commit patients for the entire course of their TB therapy, a prohibitively expensive proposition, forcible detention during the infectious stage of TB does not seem to insure that TB patients will later complete their therapy and be cured, nor does it imply that society is protected, since the individual in all likelihood will revert once again to the infectious stage of TB.

The general lessons to be gained from the surge in TB may be that diseases have their own dynamics in populations, and that an apparent decrease in a disease such as TB may only be a temporary lull before disease rates start to climb again. Increases in disease rates, especially one with the contagious nature of TB, raises the dilemma of quarantining individuals, an issue which we have visited

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213. Congress has already demonstrated a willingness to provide additional protection to employees in the work-place with the enactment of the Family and Medical Leave Act. This Act mandates that employers must grant up to twelve weeks leave to those employees who require time away from their jobs due to "serious health condition[s]" of themselves or of their family members. In addition, employers must preserve and hold an employee's job until that employee returns from leave. This law could easily be applied to those with TB in that "serious" health conditions are defined as those involving "inpatient care" or "continuing treatment by a health care provider." Although the Family and Medical Leave Act is limited to employers with fifty or more employees, this law sets a precedent on which Congress could expand by establishing approved leave for employees with short-term infectious diseases such as TB. FAMILY AND MEDICAL LEAVE ACT, 29 U.S.C. §§ 2611, 2612, 2614 (Supp. V 1993).

before in this country.

It is also important to remember that earlier public health solutions are not ideally suited to our present time. They were solutions in a time when public health measures had little else to offer. Further, they were flawed solutions in terms of the stigma that individuals endured as evidenced by the direct efforts of health care providers themselves in assisting their patients to avoid quarantine. As shown earlier, these efforts by providers to shield their patients from public knowledge of the patients' TB status continues to date.

There is no doubt that there may be a need to quarantine individuals who refuse to comply with treatment. However, restraining individuals in health care settings compels us to balance ethical and legal issues in the protection of the individual's rights versus protection of the public from exposure to TB. If we must quarantine, we should do so only after the patient has been given a chance to comply with treatment, and we should insure that the quarantine is compelled by sound public health principles of significant risk. But we must also insure that the entity that is recommending the measures is not tainted by political or popular pressures to institute measures that deprive the individual of fundamental legal rights as does quarantine. We must also insure that the least restrictive means for detention are used. A balanced approach should supplement definitions of significant risk with constitutional safeguards that protect the individual against arbitrary detention and afford the full benefits of due process.