2003

When Terrorism Threatens Health: How Far are Limitations on Personal and Ecomonic Liberties Justified

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55 Fla. L. Rev. 1105-1170 (2003)

FLORIDA LAW REVIEW

FOUNDED 1948

FORMERLY

UNIVERSITY OF FLORIDA LAW REVIEW

VOLUME 55 | DECEMBER 2003 | NUMBER 5

DUNWODY DISTINGUISHED LECTURE IN LAW

WHEN TERRORISM THREATENS HEALTH: HOW FAR ARE LIMITATIONS ON PERSONAL AND ECONOMIC LIBERTIES JUSTIFIED?*

*Lawrence O. Gostin***

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* Previous versions of this Article were delivered at the World Health Organization in Geneva and the Centre for Socio-Legal Studies, Oxford University in the United Kingdom. This Article was developed for the Dunwody Distinguished Lecture in Law at the University of Florida Levin College of Law, delivered on March 28, 2003.

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Professor Gostin acknowledges the important contribution in writing this Article by Lesley Stone, Fellow in Law and the Public's Health at the Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities. Professor Gostin would also like to thank faculty members at Georgetown University Law Center who offered comments on this Article, including David Koplow, David Luban, Steven Salop, and Robin West. Georgetown Law students Elizabeth Geddes and Lauren Marks provided considerable research assistance.

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The government is engaged in a homeland-security project to safeguard the population's health from potential terrorist attacks. This project is politically charged because it affords the state enhanced powers to restrict personal and economic liberties. Just as governmental powers relating to intelligence, law enforcement, and criminal justice curtail individual interests,[1] so too do public health powers.

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1. America is in the early stages of a "national conversation . . . about what kind of country we want to live in and what balance we will tolerate between public safety and private freedom." Matthew Brzezinski, *Fortress America*, N.Y. TIMES, Feb. 23, 2003, § 6, at 38. *Compare* David Cole, *Enemy Aliens*, 54 STAN. L. REV. 953, 955-60 (2002) (discussing the ways that government is curtailing interests in an unfair and ineffective manner), *with* WILLIAM H. REHNQUIST, ALL THE

Disease-control measures invade each of the major spheres of personal liberty: vaccination, physical examination, and medical treatment interfere with bodily integrity; disease surveillance, reporting, and data collection interfere with informational privacy; and isolation, quarantine, and criminal sanctions for risk-taking behavior interfere with liberty.[2] The effects of public health powers on economic interests are just as palpable. In many cases, personal control measures such as quarantine interfere with competitive markets. As the movement of people and goods are restricted, for example, businesses cannot freely sell their products and services; nor can they compete fairly with those who are not fettered by the exercise of control measures.[3] Additionally, much public health regulation is directed squarely at business activities, thereby limiting freedom of enterprise: inspections and administrative searches; permits and licenses; occupational safety and health rules; nuisance abatements; and "takings," including regulatory takings. In each case, there is a constraint on economic liberty, albeit the freedom of contract, pursuit of a profession, or use of property.[4]

Homeland security is controversial because it places in conflict two sets of important values: the public's health and safety on the one hand and personal and economic liberties on the other. Some argue that we can have it both ways: protect the fullest expression of personal and economic liberties and attain the maximum degree of public health safety.[5] Although

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LAWS BUT ONE: CIVIL LIBERTIES IN WARTIME (1998) (suggesting that there are necessary trade-offs between civil liberties and national security), *and* Christopher Woo & Miranda So, *The Case for Magic Lantern: September 11 Highlights the Need for Increased Surveillance*, 15 HARV. J.L. & TECH. 521, 521-22 (2002) (justifying the use of Magic Lantern, a technology that permits law-enforcement agencies to capture key strokes made on a computer without having to physically enter the home or business where the computer resides, even though it may curtail some civil liberties). *See generally* Oren Gross, *Chaos and Rules: Should Responses to Violent Crises Always Be Constitutional?*, 112 YALE L.J. 1011 (2003) (discussing how government tends to usurp civil liberties in emergency situations).

2. *See* LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW: POWER, DUTY, RESTRAINT 113-234 (2000) [hereinafter GOSTIN, PUBLIC HEALTH LAW] (reviewing powers affecting personal interests); *see also* LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW AND ETHICS: A READER (2002) [hereinafter GOSTIN, PUBLIC HEALTH LAW AND ETHICS].

3. *See* Richard A. Epstein, *The Informal Economy: The Moral and Practical Dilemmas of an Underground Economy*, 103 YALE L.J. 2157, 2161 (1994) ("One prerequisite for a level playing field is that both parties be bound by the same legal rules and constraints. A system which requires *B* to labor under restrictions that do not bind his rival *A* is patently unfair and has consequent corrosive effects on moral sentiments.").

4. For a review of these powers affecting economic interests, see GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 237-305; *see also* GOSTIN, PUBLIC HEALTH LAW AND ETHICS, *supra* note 2, at 229-63.

5. *E.g.*, George J. Annas, *Bioterrorism, Public Health, and Civil Liberties*, 346 NEW ENG. J. MED. 1337, 1340 (2002) (asserting that the idea of "a trade-off between effective public health measures and civil rights is simply wrong").

security and liberty sometimes are harmonious, more often than not they collide. Advancing the common good frequently requires limitations on individual interests. Society therefore faces hard trade-offs: individuals must forego some liberty to achieve a healthier and safer population; conversely, the government must permit some diminution of security to achieve a freer society.

The dilemma requires understanding the strength of each set of interests, recognizing the critical choices, and making the trade-offs knowingly in advance of a public health emergency. The pitched battle over civil and economic liberties in an era of bioterrorism[6] will not be settled without a principled framework for balancing individual and collective interests.

First, it is important to conceptualize the nature and magnitude of the threat of bioterrorism. Biological agents are likely to be a weapon of choice for terrorists: the technology is comprehensible and affordable, surveillance and detection is difficult, and the destabilizing effects are substantial.[7] Part I offers a risk analysis of bioterrorism, while recognizing that decision-makers lack full information. I conclude that the level of risk is sufficient to consider liberty-limiting powers designed to efficiently detect and respond to the threat.

In response to the risk assessment described in Part I, government has proposed and enacted a set of powers that interfere with personal and proprietary interests:[8] vaccination, treatment, and quarantine, as well as nuisance abatements and takings of private property. Commentators often claim that the state should not possess these and other liberty-limiting powers. In Part II, I explain why asking whether the government should have liberty-limiting powers is the wrong question. The risk from bioterrorism can be stratified into three categories: significant risk, moderate risk, and negligible risk. The right question is, what powers

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6. I define bioterrorism as "the intentional use of a pathogen or biological product to cause harm to a human, animal, plant, or other living organism to influence the conduct of government or to intimidate or coerce a civilian population." Lawrence O. Gostin et al., *The Model State Emergency Health Powers Act: Planning for and Response to Bioterrorism and Naturally Occurring Infectious Diseases*, 288 JAMA 622, 623 (2002).

7. Homeland security necessarily includes safeguarding against naturally occurring infectious diseases. Although the risk is at least as great as that of bioterrorism, this Article does not focus on naturally occurring infectious diseases. For an account of the threat of naturally occurring infectious disease, see David P. Fidler, *The Globalization of Public Health: Emerging Infectious Diseases and International Relations*, 5 IND. J. GLOBAL LEGAL STUD. 11, 22-23 (1997); Brian J. McCarthy, *The World Health Organization and Infectious Disease Control: Challenges in the Next Century*, 4 DEPAUL INT'L L.J. 115, 118-22 (2000).

8. These powers are found in the Model State Emergency Health Powers Act. CTR. FOR LAW AND THE PUBLIC'S HEALTH, GEORGETOWN UNIV. & JOHNS HOPKINS UNIV., THE MODEL STATE EMERGENCY HEALTH POWERS ACT (Dec. 21, 2001), *at* http://www.publichealthlaw.net/MSEHPA/MSEHPA2.pdf. [hereinafter MSEHPA].

should the state have to deal with each level of risk? Assuming the government's intervention is well targeted, the significant risk scenario unequivocally justifies the exercise of state power; arguably, a moderate level of risk could imbue the state with certain powers as well. Rather than inquiring whether liberty-limiting power is ever legitimate, commentators should ask what circumstances must exist to justify the exercise of authority.

In Part III, I examine two major political theories to test the assumption that state power is in some circumstances justified—liberalism and communitarianism.[9] Although liberalism has become the *de facto* public philosophy in America, communitarianism is equally plausible as a competing theory, particularly in the context of a public health emergency. At first sight, liberal and communitarian responses to the legitimacy of state power appear quite different. However, on more careful reflection, these two philosophical traditions diverge only in the harder cases. In this Part, I explain why the exercise of public health power to avert a significant risk is supportable under both theories. Similarly, liberalism and communitarianism would reject liberty-limiting authority in the absence of discernible risk. In the case of moderate risk, hard trade-offs are required between individual and collective interests.

If the state power to control health threats is legitimate, the central question then is, under what circumstances the power should be exercised. In Part IV, I offer a framework for balancing personal freedom and collective security. I would allow government to pursue public security through the full panoply of traditional powers, but require conformance with a structured set of standards and procedures set by elected officials in advance of a public health emergency. I incorporate safeguards traditional to a liberal democracy, such as objective criteria for interventions (based upon scientific risk assessments), due process, and checks and balances. Yet, I would not make the state's burden so great as

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9. I could just as easily have tested the assumption that state public health power is sometimes justified by examining the exercise of that power historically and through constitutional analysis. The states have used police power to control infectious disease during all periods of American history and continue to do so. *See* WILLIAM J. NOVAK, THE PEOPLE'S WELFARE: LAW AND REGULATION IN NINETEENTH-CENTURY AMERICA 191-233 (1996). This is evidenced by historical accounts of disease epidemics and pervasively enacted public health statutes at the state and federal level. *See* Lawrence O. Gostin et al., *The Law and the Public's Health: A Study of Infectious Disease Law in the United States*, 99 COLUM. L. REV. 59, 128 (1999) (analyzing state communicable disease legislation). Not only has public health power been prevalent throughout American history, it has also been constitutionally upheld. There is ample evidence from constitutional history and judicial precedent that states have police power authority to protect the public's health and safety. *See, e.g.*, Jacobson v. Massachusetts, 197 U.S. 11, 39 (1905) (upholding a vaccination requirement for smallpox); GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 61-83, 203-67.

to chill effective disease surveillance and intervention. If the criteria and procedures required are excessively onerous, there remains too little space for the public interest. A framework can be structured into law that affords government the power to act, while deterring overreaching.

This framework involves hard trade-offs. It will not satisfy those who see either individualism or public security as sacrosanct. The nation would forego some security out of deference to democratic and constitutional values. Individuals would lose some freedom and autonomy out of deference to communitarian values. In the end, individuals require both a certain level of freedom secured in a constitutional democracy and a certain level of health secured by a political community that takes public health seriously.

I. CONCEPTUALIZING THE NATURE AND MAGNITUDE OF THE THREAT OF BIOTERRORISM

The homeland security project supported by the Bush Administration and many states entails significant inroads into personal and proprietary freedoms in advance of a bioterrorist attack (through enhanced surveillance) and after an attack (through infectious-disease control powers). The Model State Emergency Health Powers Act (MSEHPA or Model Act), written by the Center for Law and the Public's Health at the request of the Centers for Disease Control and Prevention (CDC), provides states with ample legal authority.[10] The MSEHPA affects interests in privacy, autonomy, and liberty through powers of active surveillance and data exchange, vaccination and treatment, and isolation and quarantine.[11] It affects proprietary interests through powers of nuisance abatement, destruction and seizure of property, and licensing.[12]

The Model Act has galvanized the debate around the appropriate balance between personal rights and public goods.[13] But even before

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10. *See* MSEHPA, *supra* note 8.

11. For a discussion of the Model State Emergency Health Powers Act, see James G. Hodge, Jr. & Lawrence O. Gostin, *Protecting the Public's Health in an Era of Bioterrorism: The Model State Emergency Health Powers Act*, *in* IN THE WAKE OF TERROR: MEDICINE AND MORALITY IN A TIME OF CRISIS 17-32 (Jonathan D. Moreno ed., 2003); Lawrence O. Gostin, *Public Health Law in an Age of Terrorism: Rethinking Individual Rights and Common Goods*, 21 HEALTH AFF. 79 (2002); Gostin et al., *supra* note 6, at 622-28.

12. *See* sources cited *supra* note 11.

13. The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (the Gilmore Commission) has recommended that each state that has not already done so, to adopt the Model Act (modified to fit that state's particular requirements) or develop its own legislation. *See* ADVISORY PANEL TO ASSESS DOMESTIC RESPONSE CAPABILITIES FOR TERRORISM INVOLVING WEAPONS OF MASS DESTRUCTION, ANNUAL REPORT § IV, at 63-64 (2002), *available at* http://www.rand.org/nsrd/terrpanel/terror4.pdf [hereinafter GILMORE COMM'N]. For a defense of the Model Act, see Gostin et al., *supra* note 6, at 625-28; Gostin, *Public Health*

engaging in such a discourse, it is important to address a threshold question: Is the risk of a bioterrorist event sufficiently credible to warrant serious consideration of restricting personal and proprietary freedoms? It is unnecessary to consider trading liberties, economic or civil, for protection against remote events. However, if the harm to be averted is reasonably likely, then a rigorous assessment of the trade-offs between enhanced government power and individual freedom becomes important.

To some extent, the controversy over homeland security derives from the inability to quantify the risk.[14] Scholars, accustomed to policy analysis derived from risk-benefit ratios, are being forced into decisions at a time when such ratios cannot easily be calculated.[15] Risk assessments in an age of terrorism lack complete data: Are biological agents available to terrorists? Do they have the technical skill to "weaponize" these agents by, for example, refining the agent to create efficient aerosolized dispersion or genetically manipulating the agent to produce increased virulence? Are the methods of agent delivery capable of creating widespread infection rates among the population?

This Part considers the plausibility of the government's claim that bioterrorism poses a significant national-security threat. Despite imperfect information, credible evidence exists to support the perceived threat.[16]

Law in the Age of Terrorism, *supra* note 11, at 86-91. For critiques of the MSEHPA, see Annas, *supra* note 5, at 1339 (criticizing the Model Act because trade-offs between public health and civil liberties are not always necessary); George J. Annas, *Bioterrorism, Public Health, and Human Rights*, 21 HEALTH AFF. 94, 94 (2002) (noting that it is "unnecessary and counterproductive to sacrifice basic human rights to respond to bioterrorism," especially in modern times); Ronald Bayer & James Colgrove, *Public Health vs. Civil Liberties*, 297 SCI. 1811 (2002) (detailing civil liberty advocates' criticism of the Model Act in both its draft and current version); Gene W. Matthews et al., *Legal Preparedness for Bioterrorism*, 30 J.L. MED. & ETHICS 52, 53 (2002); *see also* Ronald Bayer & James Colgrove, *Bioterrorism, Public Health, and the Law*, 21 HEALTH AFF. 98, 99-100 (2002).

14. *E.g.*, Steve Connor, *Scientists Condemn Alarmist Official Propaganda over Bioterrorism*, INDEPENDENT (London), Jan. 31, 2003 (quoting "senior scientists who believe that the resulting panic is potentially worse than the threat [of bioterrorism] itself"); Sheryl Gay Stolberg, *FDA Asks Public about Smallpox Vaccine Tests on Children*, N.Y. TIMES, Nov. 5, 2002, at A14 (quoting Dr. Karen Midthun, who supervises vaccine research for the FDA, as saying, "Everyone agrees that the risk of smallpox through a bioterrorism event is not zero. . . . But how small or how large is that risk? Given that it is so difficult to quantitate, it makes it difficult to know whether there is potentially any benefit to these children.").

15. Some argue that even with reasonably complete information, the lay risk perception of terrorism is exaggerated. *See* Cass R. Sunstein, *Probability Neglect: Emotions, Worst Cases, and Law*, 112 YALE L.J. 61, 100 (2002); *see also* Siobhan Gorman, *Fear Factor*, NAT'L J., May 10, 2003 (noting that the fear associated with terrorism may preclude the population from making calm, level-headed policy decisions).

16. A report by the National Intelligence Council for the Central Intelligence Agency concluded that the U.S. population is vulnerable to bioterrorism and emerging and reemerging infectious diseases. NAT'L INTELLIGENCE COUNCIL, THE GLOBAL INFECTIOUS DISEASE THREAT AND

First, bioterrorism is theoretically plausible because biological weapons are nearly as easy to develop as chemical weapons, far more lethal, and will likely become easier to deliver.[17] Unlike nuclear weapons, they are inexpensive to produce and the risk of detection is low.[18] Second, certain countries are known or suspected to have biological weapons programs,[19] and nonstate actors have become important as well.[20] Third, biological agents already have been deployed against American populations.[21] The

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ITS IMPLICATIONS FOR THE UNITED STATES (2000).

17. *See* WORLD HEALTH ORG., PUBLIC HEALTH RESPONSE TO BIOLOGICAL AND CHEMICAL WEAPONS (2d ed. forthcoming 2003) (discussing how advances in microbiology and airborne infectious diseases in the 1920s and more recent advances in biotechnology and genetic engineering have resulted in an increased threat from biological weapons), *available at* http://www.who.int/emc/pdfs/BIOWEAPONS_exec_sum2.pdf (pre-publication edition).

18. In 1998, the U.S. Commission on National Security in the twenty-first Century concluded that biological agents are the most likely choice of weapons for disaffected states and groups. U.S. COMM'N ON NAT'L SEC. IN THE 21ST CENTURY, NEW WORLD COMING: AMERICAN SECURITY IN THE 21ST CENTURY: SUPPORTING RESEARCH AND ANALYSIS (1999), *available at* http://www.nssg.gov/Reports/reports.htm.

19. Iraq, North Korea, Iran, Libya, Syria, Russia, China, Israel, and Egypt have been cited as possibly developing biological weapons. *See* MILTON LEITENBERG, AN ASSESSMENT OF THE BIOLOGICAL WEAPONS THREAT TO THE UNITED STATES, (prepared for CONFERENCE ON EMERGING THREATS ASSESSMENT: BIOLOGICAL TERRORISM AT DARTMOUTH COLLEGE, July 7-9 2000); Elisa D. Harris, *Chemical and Biological Weapons: Prospects and Priorities After September 11*, 20 BROOKINGS REV. 24 (2002); Judith Miller, *A Nation Challenged: Bioterror*, N.Y. TIMES, Nov. 19, 2001, at B1; *see also Reducing the Threat of Chemical and Biological Weapons: Hearing Before the Senate Foreign Relations Comm.*, 107th Cong., 2d Sess. (2002) [hereinafter *Hearings*] (statement of Carl W. Ford, Assistant Secretary of State, Bureau of Intelligence and Research, discussing both state and non-state actors who possess biological weapons).

20. GILMORE COMM'N, *supra* note 13:

> [T]he greatest threat to international peace and stability comes from rogue states and transnational terrorist groups that are unrestrained in their choice of weapon and undeterred by conventional means. The September 11 attacks showed that terrorist groups were much better organized, much more sophisticated, and much more capable of acting globally than we had assumed possible.

Id. (quoting John Bolton, Undersecretary of State for Arms Control and International Security); *see also* Bill Frist, *Public Health and National Security: The Critical Role of Increased Federal Support*, 21 HEALTH AFF. 117, 118 (2002) (discussing an unclassified memo from the National Intelligence Council that warned, "[t]he biological warfare capabilities of state and non-state actors are growing worldwide").

21. More than fifteen years before the intentional distribution of anthrax in 2001, another successful bioterrorist attack had been carried out in the United States. In 1984, a group contaminated salad bars in Oregon with salmonella causing 750 people to become ill. *See* David A. Ashford et al., *Planning Against Biological Terrorism: Lessons from Outbreak Investigations*, 9 EMERGING INFECTIOUS DISEASES 515, 518 (2003) (noting investigations on outbreaks in the United States that revealed six potential bioterror attacks and forty-one other outbreaks for which no cause was ever identified; also noting that it required up to twenty-six days to identify the cause

intentional dispersal of anthrax through the postal system in the aftermath of September 11, 2001 demonstrated the potential for bioterrorism.[22] Finally, government modeling or "tabletop" exercises simulating biological attacks in the United States—such as Dark Winter (smallpox)[23] and TOPOFF (plague)[24]—revealed serious weaknesses in public health preparedness.[25] Both exercises predicted large-scale morbidity and fatalities from a biological attack.[26] There is good evidence that a successful bioterrorist attack would have large-scale effects on the economy and the population's health.[27]

This Part also describes the deterioration of the public health infrastructure. The likelihood of a bioterrorism event brings into focus the nation's ability for early detection and response. Systems designed to detect and respond to an attack have been neglected, with the result that a large-scale event would be overwhelming.[28] Shoring up the infrastructure would aid in our response not just to bioterrorism, but also to emerging infectious diseases.[29] The Part concludes that the significant risks of

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of the outbreak); Tatsha Robertson & Robert Schlesinger, *Microbes Were Mail-Ordered—Lax Controls Let Extremists Easily Obtain Anthrax*, BOSTON GLOBE, Nov. 6, 2001, at A9 (noting several different unsuccessful attempts to use bioterrorism in the United States).

22. *See* Larry M. Bush et al., *Index Case of Fatal Inhalational Anthrax Due to Bioterrorism in the United States*, 345 NEW ENG. J. MED. 1607, 1607, 1610 (2001); John A. Jernigan et al., *Bioterrorism-Related Inhalational Anthrax: The First 10 Cases Reported in the United States*, 7 EMERGING INFECTIOUS DISEASES 933, 933-34 (2001).

23. *See* Tara O'Toole et al., *Shining Light on "Dark Winter,"* 34 CLINICAL INFECTIOUS DISEASES 972 (2002).

24. Thomas V. Inglesby et al., *A Plague on Your City: Observations from TOPOFF*, 32 CLINICAL INFECTIOUS DISEASES 436 (2001). TOPOFF II models the effects of a pneumonic plague dispersal in Illinois and a radiological device ("dirty bomb") in Washington state. Press Release, U.S. Department of Justice, Justice Department, State Department to Conduct Exercises Combating Weapons of Mass Destruction (Oct. 8, 2002), *available at* http://www.usdoj.gov/opa/pr/2002/October/02_ag_585.htm.

25. *See* Inglesby et al., *supra* note 24, at 441; O'Toole et al., *supra* note 23, at 981-82.

26. *See* Inglesby et al., *supra* note 24, at 438; O'Toole et al., *supra* note 23, at 979.

27. *See* Inglesby et al., *supra* note 24, at 442-43; O'Toole et al., *supra* note 23, at 979.

28. *See* Inglesby et al., *supra* note 24, at 439-43.

29. The risk from emerging infectious disease is at least as important to the public's health as the risk from bioterrorism. *See, e.g.*, INST. OF MED., EMERGING INFECTIONS: MICROBIAL THREATS TO HEALTH IN THE UNITED STATES 140 (Joshua Leederberg et al. eds., 1992); David P. Fidler, *Return of the Fourth Horseman: Emerging Infectious Diseases and International Law*, 81 MINN. L. REV. 771, 829 (1997); Ctrs. for Disease Control & Prevention, *Preventing Emerging Infectious Diseases: A Strategy for the 21st Century Overview of the Updated CDC Plan*, 47 (RR15) MORBIDITY & MORTALITY WKLY. REP. 1 (1998). In the United States, infectious diseases (excluding those that cause AIDS and sexually transmitted diseases) cause about 90,000 deaths annually, and an estimated 740 million nonfatal illnesses. Gostin et al., *supra* note 9, at 97. Since the 1970s, the United States has been confronted with emerging diseases like tuberculosis, Lyme disease, AIDS, hepatitis C virus, cryptosporidiosis, and hantavirus. *See* McCarthy, *supra* note 7, at 119-20 (2000); *see also* CTRS. FOR DISEASE CONTROL & PREVENTION, ADDRESSING EMERGING

bioterrorism to the public's health warrant careful discussion of how competing interests should be balanced.

A. *The Efficiency of Biological Weapons Development*

Biological agents are attractive for their ease of development, low risk of detection, and lethal potential.[30] Since the terrorist attacks on the World Trade Center and Pentagon and the subsequent intentional dispersal of anthrax in the fall of 2001, government[31] and academia[32] have carefully considered the nature of the risk posed by biological weapons. Because of the plethora of possible agents that could be used in a bioterrorist attack and multiple methods of dissemination, evaluating the risk is daunting.[33] Consequently, the United States is engaged in serious debates about the appropriate amount of resources to spend on preparing for an attack, and the best way to expend them.[34]

INFECTIOUS DISEASE THREATS: A PREVENTION STRATEGY FOR THE UNITED STATES 2 (1994), *available at* http://www.cdc.gov/ncidod/publications/eid_plan/ default.htm. Fortunately, many of the same public health mechanisms that must be in place for a bioterrorism event are the same that should be strengthened for more efficient management of emerging infectious diseases. For example, the same surveillance system that will alert authorities to an outbreak of smallpox will alert authorities to an outbreak of a naturally occurring disease. While a discussion of emerging infectious diseases is beyond the scope of this Article, resources will be allocated more efficiently and policies will have a greater effect if they serve not only to protect the public from terrorism, but from infectious diseases as well.

30. *See, e.g.*, Barry Kellman, *Biological Terrorism: Legal Measures for Preventing Catastrophe*, 24 HARV. J.L. & PUB. POL'Y 417, 427-29 (2001) (discussing the risks of bioterrorism in terms of their ease of implementation and overwhelming potential to harm).

31. *E.g.*, Inglesby et al., *supra*, note 24 (reviewing an exercise directed by Department of Justice to evaluate governmental response to a biological attack); CTRS. FOR DISEASE CONTROL & PREVENTION, DEP'T OF HEALTH & HUMAN SERVS., PROGRAMS IN BRIEF: BIOTERRORISM AND PUBLIC HEALTH PREPAREDNESS, *at* http://www.cdc.gov/programs/bio.htm (last visited Feb. 14, 2002) (outlining a list of the CDC's measures designed to respond to bioterrorism as part of its Bioterrorism Preparedness and Response Program); News Release, White House, President Signs Public Health Security and Bioterrorism Bill (June 12, 2002) (noting how the bill will protect the nation against bioterrorism attacks).

32. *See, e.g.*, Kellman, *supra* note 30, at 430-37.

33. *See id.*

34. For example, there is a debate whether resources should be allocated on the state level or the federal level. James G. Hodge, Jr., *Bioterrorism Law and Policy: Critical Choices in Public Health*, 30 J.L. MED. & ETHICS 254, 258 (2002) (discussing the advantages and disadvantages of having the federal government take the lead in combating bioterrorism); Annas, *supra* note 13, at 94 ("A bioterrorist attack on the United States . . . is inherently a matter of national security, making it a federal matter."); Michael Moser, *Bioterrorism and Civil Liberties*, 347 NEW ENG. J. MED. 856, 856 (2002) (editorial from Kansas Department of Health & Environment) (disputing George Annas' contention that federal agencies should lead the "public health response to bioterrorism"). Additionally, there is a debate regarding how resources should be allocated. *E.g.*, Ceci Connolly, *Bush Plan for Smallpox Vaccine Raises Medical, Fiscal Worries*, WASH. POST, Dec. 15, 2002, at A33 (noting the controversial decision to devote resources towards vaccinating health

When compared to other methods of attack, bioterrorism has the potential to be highly cost-effective. The covert use of biological weapons, of course, is less expensive than feeding, clothing, and training a standing army. Because many biological agents are found in nature,[35] easily accessible, or purchasable,[36] producing a biological weapon is cheaper than developing a nuclear or chemical weapon.

The raw material for a biological weapon is the infectious agent itself. A small sample is all that may be needed because of its potency or the fact that many agents can be reproduced in mass quantities in a laboratory.[37] For example, a single gram of crystalline botulinum toxin, evenly

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officials for smallpox as opposed to other national security initiatives); Sue Ellen, *Connect the Dots; Addressing the Threat of Bioterror*, CHI. TRIB., July 21, 2002, at 1 (noting the controversy in deciding how many people should be vaccinated for smallpox under the Department of Health and Human Services' plan); OFFICE OF MGMT. & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2003: PROTECTING THE HOMELAND 19 (2002) (outlining the President's plan to allocate funds for bioterrorism), *available at* http://www.whitehouse.gov/omb/budget/fy2003/pdf/budget.pdf [hereinafter PRESIDENT'S 2003 BUDGET].

35. For example, the organism that causes the plague exists on every populated continent except Australia. Thomas V. Inglesby et al., *Plague as a Biological Weapon: Medical and Public Health Management*, 283 JAMA 2281, 2282 (2000). Anthrax is naturally present in agricultural regions of the Middle East, South and Central America, Southern and Eastern Europe, Asia, Africa, and the Caribbean. CTRS. FOR DISEASE CONTROL & PREVENTION, ANTHRAX, *at* http://www.cdc.gov/ncidod/dbmd/diseaseinfo/anthrax_g.htm (last visited Nov. 27, 2002). Tularemia naturally occurs in North America and Eurasia. David T. Dennis et al., *Tularemia as a Biological Weapon: Medical and Public Health Management*, 285 JAMA 2763, 2764 (2001).

36. For example, *ricin*, a potent poison, can be made from castor beans. CTRS. FOR DISEASE CONTROL & PREVENTION, FREQUENTLY ASKED QUESTIONS (FAQ) ABOUT RICIN, *at* http://www.bt.cdc.gov/agent/ricin/faq/index.asp (last visited Jan. 16, 2003); *see also* Ken Silverstein & David Isenberg, *Homegrown Horror: The Prospects for All-American Bioterroism*, 13 AM. PROSPECT, Jan. 1, 2002, at 12 ("Biological agents are effective in small amounts and are relatively cheap and easy to produce. A 1999 Defense Department study found that a domestic team with biological training was able to produce two pounds of mock aerosolized anthrax for about $1.6 million.").

37. *See, e.g.*, *The Miniaturization of Mass Destruction*, 67 CAN. & WORLD BACKGROUNDER 28 (2002):

> Biological weapons are small, potent, relatively cheap, and hard to detect. According to one report, a state-of-the-art biological laboratory could be built and made operational with as little as $10,000 U.S. worth of off-the-shelf equipment and could be housed in a small room. As well, graduate university students in laboratories around the world know enough about recombinant DNA and cloning technology to design and mass-produce such weapons. Biological agents can mutate, reproduce, multiply, and spread over a large geographic area by wind, water, insect, animal, and human transmission.

Id.

dispersed and inhaled, could kill more than one million people.[38] Some biological agents that the CDC has indicated are of the greatest concern[39] can be isolated from soil samples in many parts of the world.[40] Others could potentially be purchased from countries with bioweapons programs.[41] Once a strain of the disease agent is found, it can be replicated easily, or genetically manipulated by more sophisticated miscreants to increase its virulence or resistance to drug therapy.[42]

Developing a distribution method may pose problems for some less sophisticated terrorists. The most effective method of transmission for a large-scale attack for most agents is through the airborne route,[43] by creating an aerosol of the pathogen and releasing it into the air. This

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38. Stephen S. Arnon et al., *Botulinum Toxin as a Biological Weapon: Medical and Public Health Management*, 285 JAMA 1059, 1059 (2001).

39. The CDC separates biological agents into three categories. CTRS. FOR DISEASE CONTROL & PREVENTION, BIOLOGICAL AGENTS/DISEASES, *available at* http://www.bt.cdc.gov/agent/agentlist.asp (last updated Nov. 21, 2002). Category *A* diseases (anthrax, botulism, plague, smallpox, *tularemia*, and viral hemorrhagic fevers) are "high-priority" agents because they can be easily disseminated or transmitted from person to person, result in high mortality rates, might cause public panic, and require special action for public health preparedness. *Id.* Category *B* diseases (*brucellosis, epsilon toxin*, food safety threats such as salmonella, *glanders, melioidosis, psittacosis, Q fever, ricin, staphylococcal enterotoxin B*, typhus fever, viral encephalitis, and water safety threats like *cryptosporidium*) are moderately easy to disseminate, result in moderate morbidity rates, and require enhancements of CDC's diagnostic capacity. *Id.* Category *C* diseases (emerging infectious diseases like *Nipah* virus and *hantavirus*) are the third highest priority because of their availability, ease of production, and potential for high morbidity and mortality rates. *Id.* For a discussion of the symptoms, fatality rates, and treatments for CDC Category A Disease Agents, see *infra* Appendix.

40. For example, the organisms that cause anthrax and *tularemia* are found in the soil. Dennis et al., *supra* note 35, at 2764; Thomas V. Inglesby et al., *Anthrax as a Biological Weapon: Medical and Public Health Management*, 281 JAMA 1735, 1736 (1999).

41. *See* Edward P. Richards, *The Role of Medical and Public Health Services in Sustainable Development*, 32 ENVTL. L. REP. 11299 (2002) (noting that Russia had stockpiled large amounts of smallpox virus, and that it is possible some has gotten into the hands of terrorists or rogue nations).

42. The former Soviet Union used genetic engineering to enhance the biological weapons it developed. *See* Christopher J. Davis, *Nuclear Blindness: An Overview of the Biological Weapons Programs of the Former Soviet Union and Iraq*, 5 EMERGING INFECTIOUS DISEASES 509, 510-11 (1999), *available at* http://www.cdc.gov/ncidod/EID/vol5no4/pdf/davis.pdf.

43. *See, e.g.*, Mark G. Kortepeter & Gerald W. Parker, *Potential Biological Weapons Threats*, 5 EMERGING INFECTIOUS DISEASES 523, 524-25 (1999) ("[A]nthrax and smallpox are the two with greatest potential for mass casualties and civil disruption [because] . . . [b]oth are stable for transmission in aerosol."). However, many other types of bacteria, viruses, and toxins may also be transmitted through the air. *See* VA. DEP'T OF EMERGENCY MGMT., *Virginia Terrorism Preparedness, Weapons of Mass Destruction*, *available at* http://www.vaemergency.com/prepare/terrorismtoolkit/terrguide/weapons/. For example, bacteria such as *brucellosis, glanders*, plague, *Q fever* (a *rickettsial disease*), and *tularemia* are airborne. *Id.* Viruses such as arboviral encephalitis, and *Lassa fever* are airborne. *Id.* Toxins such as *botulinum, mycotoxins, ricin*, and *staphylococcal enterotoxin B* can also be airborne. *Id.*

requires that the disease be milled to a particle size that is effectively inhaled and retained in the lungs, and does not fall to the floor or become quickly scattered by the wind.[44] However, many have overcome this difficulty;[45] for example, the October 2001 outbreak contained highly refined anthrax spores.[46] Once aerosolized, circulation systems in large office or residential complexes could efficiently distribute an agent throughout the building.[47] Additionally, even low-technology methods of distribution could be effective.[48]

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44. *See* WORLD HEALTH ORG., PUBLIC HEALTH RESPONSE TO BIOLOGICAL AND CHEMICAL WEAPONS 9 (2001) ("[M]icro-meteorological variation in the atmosphere could result either in the agent becoming diluted to harmlessness or in the cloud missing the target due to some veering of the wind."), *available at* http://www.who.int/emc/pdfs/BIOWEAPONS_exec_sum2.pdf. If the size of the aerosolized agent were too large to be inhaled, the agent would also be an ineffective weapon. *See* David Abel, *Are There Other Threats?*, BOSTON GLOBE, Nov. 4, 2001, at 14 ("Japanese cult Aum Shinrikyo tried but failed at least three times to disperse the toxin in aerosols in Japan.").

45. *See Evidence of Chemical and Biological Weapons in Iraq* (Nat'l Pub. Radio broadcast, Feb. 7, 2003) (discussing a video that Secretary of State Colin Powell alleges is Iraq using a jet to spray over 2000 liters of simulated anthrax); *see also* Joan Lowy, *Anthrax Found Around World*, MILWAUKEE J. SENTINEL, Oct. 10, 2001, at 9A ("The accidental release of aerosolized anthrax from a germ weapons facility in Sverdlovsk in the former Soviet Union in 1979 resulted in at least 79 cases of anthrax infection and 68 deaths."). *But see* Johanna McGeary, *What Does Saddam Have? Iraq May Not Have a Nuclear Bomb, But There's Strong Evidence It Has Chemical and Biological Weapons. Its Past Suggests It Wants a Bigger Arsenal*, TIME, Sept. 16, 2002, at 26 ("But weaponizing most pathogens so that airborne bombs can spray them effectively over large areas remains a challenge for Saddam's engineers."). *See generally Hearings, supra* note 19, at 8-11 (statement of Carl W. Ford, Assistant Secretary of State for Intelligence and Research) (discussing the state of delivery systems of various states).

46. *E.g.*, Earl Lane & Laurie Garrett, *Experts Say Envelope Leak a Possibility*, NEWSDAY, Oct. 23, 2001, at A2 ("[W]ell-refined anthrax powder could be sufficiently minute to escape the corners of envelopes without much more agitation than a mere tossing from one stack of mail to another.").

47. Earl Lane, *America's Ordeal; Inhalation Anthrax Disperses*, NEWSDAY, Nov. 7, 2001, at A16

> The small, easily breathable spore particles that are the most dangerous to human health behave like a gas . . . . [aerosolized anthrax spores] will remain airborne and disperse out of a building within a matter of hours . . . via either the ventilation system or natural air circulation. "Wherever air leaks out, it will get out". . . [A]n aerosol with particles in the range of 1 to 5 microns across "is like a perfume. It's in the air. It will float forever."

Id. (citing Michael Osterholm, a University of Minnesota specialist on bioterrorism). *See, e.g.*, McGeary, *supra* note 45, at 26 ("[D]isseminating [a gram of anthrax] is relatively easy: no missiles are needed, just a crop duster, backpack sprayer, even a perfume atomizer.").

48. For example, those willing to become martyrs for their cause could infect themselves with diseases like smallpox and pneumonic plague, which are transmissible from person to person, and attempt to spread the disease on crowded streets, airports, or subways.

Once the agent is reproduced, it can be brought across borders, on airplanes, and into crowded arenas without being easily detected. The pathogens themselves are small, portable, and not identified by metal detectors or current security systems.[49] While the agent's survival may require special conditions, like non-exposure to light or air,[50] such precautions are not as easily noticed as metallic objects or traces of explosives.

In addition to the relative ease with which they can be manufactured and transmitted, biological agents are efficient means of disrupting a society due to their lethality. In the anthrax attacks using the United States Postal Service, almost half of those who inhaled particles died.[51] The effects of the anthrax outbreak were attenuated, however, because anthrax does not spread from person to person.[52] Other biological agents that are currently considered to be of serious concern to government officials may

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49. *See, e.g.*, McGeary, *supra* note 45, at 26 ("[A] gram of anthrax could serve as a poor man's suitcase bomb: that's 1 trillion spores, enough for 100 million fatal doses. Hiding, transporting and disseminating that type of poison is relatively easy . . . ."); *see also Hearings, supra* note 19, at 64 (statement of Alan P. Zelicoff, Senior Scientist, Sandia National Laboratories to the Foreign Relations Committee of the U.S. Senate) (hypothesizing, "[w]ere there to be let us say a dissemination of a few pounds of anthrax from an aerosol device in downtown Washington, tens of thousands of people would become expose [sic] to anthrax spores. Most would become ill."); O'Toole et al., *supra* note 23, at 974 ("For example, William Patrick, a senior scientist in the US offensive biological weapons program before its termination in 1969, has stated that 1 g of weaponized smallpox would be sufficient to infect 100 people via an aerosol attack.").

50. *See* Peter Mazur, Letters to the Editor, *Some Facts About Anthrax Poisoning*, WALL ST. J., Sept. 26, 2001, at A21:

> [Aerosolized biological agents] have only a limited lifetime. They coalesce, they settle under gravity, and the water of which they are composed rapidly evaporates. The organisms within are also subject to biological decay (although less so for the resistant anthrax spore) from dehydration, and exposure to oxygen and sunlight. Their physical and biological effective lifetimes thus depend complexly on meteorological conditions such as relative humidity and wind velocity.

Id. However, anthrax spores are resistant to light and air:

> [Anthrax] [s]pores are dormant in soil in many places in South Dakota and can remain so for decades and are typically very resistant to adverse conditions (drying, heat, ultraviolet light, and many disinfectants). The bacteria do not form spores in living tissue; sporulation occurs only after the infected body has been opened and exposed to oxygen.

S.D. DEP'T OF HEALTH, ANSWERS TO QUESTIONS ABOUT ANTHRAX (Nov. 2, 2001), *at* http://www.state.sd.us/doh/Bioterrorism/addanthrax.htm.

51. Jernigan et al., *supra* note 22, at 942.

52. Kevin P. O'Connell et al., *Issues in Preparedness for Biological Terrorism: A Perspective for Critical Care Nursing*, 13 CLINICAL ISSUES 452 (2002).

be transmitted from person to person, exponentially increasing the number of people likely to be affected.[53] Current information regarding the mortality rate of the diseases most feared by the CDC could underestimate the lethality of these diseases. The information on the effects of diseases is gathered through experience with the naturally occurring forms of the disease. If a more effective transmission method is used, or if the disease agent is engineered to increase its lethality, the effects could be even more devastating.

In addition to the dispersal of a disease agent into the air, public health officials must guard against contamination of food and water sources. The World Health Organization considers the deliberate contamination of food "a real and current threat."[54] Contamination of food with *Salmonella typhimurium*, *botulinum toxin*, hepatitis A, or *Escherichia coli 0157:H7* could sicken thousands, if not hundreds of thousands.[55] Similarly, infecting a public water supply with *cryptosporidium* or *Giardia lamblia* could affect every member of the community.[56]

In summary, the use of bioterrorism is equally, if not more, concerning than conventional (e.g., firearms or explosives), chemical, or nuclear threats: it is readily available, inexpensive to produce, more difficult to detect, and more efficient in its lethal effects.

B. *Biological Weapons Development and Deployment by Nations and Non-State Actors*

Not only are biological weapons more efficient, certain countries and non-state actors have already developed them.[57] Countries known to have had biological weapons programs include the former Soviet Union, Japan, and Iraq.[58] More than ten other countries, including Iran, North Korea, and Syria, are suspected of having biological weapons.[59]

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53. For example, smallpox is contagious, especially in the stage where the rash is present, as is pneumonic plague. *Id.* at 461-65.

54. FOOD SAFETY DEP'T, WORLD HEALTH ORG., FOOD SAFETY ISSUES: TERRORIST THREATS TO FOOD 1 (2002), *available at* http://www.who.int/fsf/Documents/terrorism_and_food_cn.pdf.

55. *Id.* at 5.

56. *See* Lawrence O. Gostin et al., *Water Quality Laws and Waterborne Diseases: Cryptosporidium and Other Emerging Pathogens*, 90 AM. J. PUB. HEALTH 847, 847 (2000). However, the Environmental Protection Agency believes that the risk of an attack on the water supply is limited because of the "dilution effect," whereby an extremely large amount of disease agent would be required to substantially affect the system. Tim De Young & Adam Gravley, *Coordinating Efforts to Secure American Public Water Supplies*, 16 NAT. RES. & ENV'T 146, 146 (2002).

57. *See supra* notes 19-20 and accompanying text.

58. *See* Harris, *supra* note 19, at 24.

59. *Id.*

The Soviet Union began experimenting with biological weapons in the late 1920s.[60] In the 1970s, the Biopreparat, an organization designed to carry out offensive biological weapons research and development, was formed.[61] The Biopreparat produced plague, *tularemia*, *glanders*, anthrax, smallpox, and *Venzuelan-equine encephalomyelitis*.[62] In 1979, in the former Soviet Union, an apparent release of anthrax from a military facility resulted in a large outbreak.[63] More than seventy people were infected, with over sixty deaths attributed to the outbreak.[64] A few years earlier, an open-air test of a weapon containing the smallpox virus resulted in three deaths, 250 people quarantined, and 43,000 people vaccinated.[65] While the countries that comprised the former Soviet Union are not currently antagonistic towards the United States, there is concern that Soviet-trained scientists that developed the biological weapons program are now unemployed and "potentially available to the highest bidder."[66]

Japan also is known to have had an extensive biological weapons program.[67] The Japanese biological warfare group fed cultures of *Clostridium botulinum* to prisoners with lethal effect during Japan's occupation of Manchuria, which began in the 1930s.[68] During World War II, a branch of the Japanese army is reported to have dropped fleas infected with the plague over populated areas of China, causing outbreaks.[69]

Although no longer a threat, Iraq had also been reported to have developed several biological agents for use as weapons.[70] For example, Iraq had developed anthrax for biowarfare,[71] and since the Gulf War, had

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60. Davis, *supra* note 42, at 509.

61. *Id.* at 510.

62. *Id.*

63. Matthew Meselson et al., *The Sverdlovsk Anthrax Outbreak of 1979*, 266 SCI. 1202, 1202-03 (1994).

64. *Id.* at 1203.

65. David Brown, *Soviets Had '71 Smallpox Outbreak; Report: 3 Die, 43,000 Vaccinated After Test of Biological Weapon*, WASH. POST, June 16, 2002, at A25.

66. Frist, *supra* note 20, at 118. While the smallpox virus is supposed to be held only by the United States and Russia, there is wide speculation that others have it. *See* David A. Koplow, *That Wonderful Year: Smallpox, Genetic Engineering, and Bio-terrorism*, 62 MD. L. REV. 417, 466 (2003).

67. George W. Christopher et al., *Biological Warfare: A Historical Perspective*, 278 JAMA 412, 413 (1997).

68. *Id.*

69. Inglesby et al., *supra* note 35, at 2282.

70. *E.g.*, U.N. SCOR, 4701st mtg. at 8, U.N. Doc. S/PV.4701 (2003) (statement of Colin Powell, U.S. Secretary of State, noting that Iraq has declared that Iraq has 8,500 liters of anthrax although it is suspected that it has much more anthrax at its disposal and that it has several active plants that are currently producing biological agents), *available at* http://www.un.org/Depts/dhl/resguide/scact2003.htm.

71. Raymond A. Zilinskas, *Iraq's Biological Weapons: The Past as Future?*, 278 JAMA 418, 419 (1997).

obtained drying machines that could be used to make a powder form of anthrax for efficient aerosol dispersal.[72] *Botulinum toxin* also had been developed,[73] as had *Clostridium perfringens*, a flesh-eating bacterium (the cause of gas gangrene),[74] and *ricin*, a potent poison.[75] Iraq had acquired methods of distributing these diseases by using crop sprayers and potentially remote-controlled helicopters designed to spray aerosolized agents.[76]

Although at one time states were the major players in the international arena, the risk from non-state actors is growing.[77] Organizations based on fringe ideology have proven to be serious threats to peace and security.[78] These non-state actors have proven capable of developing some level of biological weapons.[79]

The Japanese cult Aum Shinrikyo attempted to disperse aerosolized *botulinum toxin* in Tokyo and at several U.S. military installations in Japan between 1990 and 1995, but failed to kill anyone.[80] The group later released sarin nerve gas on the Tokyo subway, killing twelve and injuring 5000.[81] Perhaps more disconcerting, traces of anthrax were found in an al Qaeda laboratory near Kandahar, Afghanastan.[82] Al Qaeda documents indicate that Osama bin Laden was pursuing a sophisticated bioweapons program.[83] Fortunately, there is little evidence that the group has been successful in acquiring biological weapons.[84]

The risk from biological weapons has been demonstrated not just in faraway places, but within our borders. The United States had a large, active biological weapons program from 1943 to 1969.[85] The United States

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72. Matt Kelley, *Biological Weapons Could Give Iraq Way to Slow U.S. Attack*, ORLANDO SENTINEL, Dec. 28, 2002, at A3.

73. Iraq admitted to production of 19,000 liters of *botulinum toxin*. Arnon et al., *supra* note 38, at 1060.

74. Kelley, *supra* note 72.

75. Zilinskas, *supra* note 71, at 419-20.

76. Frist, *supra* note 20, at 118.

77. *See Hearings*, *supra* note 19 (discussing the potential threat of bioterrorism from non-state actors).

78. *See id.*

79. *See id.*

80. Arnon et al., *supra* note 38, at 1060.

81. Michael Day, *1,000 Times More Deadly than Cyanide*, DAILY EXPRESS (London), Jan. 8, 2003, at P4.

82. Susanne M. Schafer, *Special Forces Will Prepare Afghan Army—U.S. Reports Finding Components for Biological Weapons Factory*, STAR-LEDGER (Newark, N.J.), Mar. 26, 2002, at 3.

83. Michael R. Gordon, *U.S.: Al Qaeda was Building Lab for Bioweapons*, CHI. TRIB., Mar. 24, 2002, at 6.

84. GILMORE COMM'N, *supra* note 13, at 18.

85. INST. OF INFECTIOUS DISEASES, U.S. ARMY MED. RESEARCH, *History of Biological Warfare and Current Threat*, *in* USAMRIID'S [U.S. ARMY MEDICAL RESEARCH INSTITUTE OF

researched anthrax, *botulinum toxin*, *Francisella tularensis*, *Coxiella burnetti*, *Venezuelan-equine encephalitis* virus, *Brucella suis*, and *staphylococcal enterotoxin B*.[86] President Nixon officially ended the offensive program unilaterally in 1969,[87] and the United States ratified the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction in 1972.[88] Stockpiles of these agents were destroyed in the presence of witnesses in 1971 and 1972.[89] The United States continues to conduct a medical defensive program at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) in Fort Ditrick, Maryland.[90] The historical and current use of biological materials in the United States poses a risk that pathogens may fall into the wrong hands.[91]

Attacks in the United States have proven difficult for authorities to unravel. So far, the menace from biological weapons has been small, but the probability of future attacks may grow as the war on terrorism and the struggles in Afghanistan and Iraq continue. In 1995, an anti-tax group known as the Minnesota Patriots Council was found to have derived *ricin* poison from castor beans.[92] The cache was reportedly enough to kill more than a hundred people.[93] The group intended to murder a federal marshal by contaminating a door handle with the poison.[94] The plot was discovered when the wife of one of the men brought the poison to police.[95] The

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INFECTIOUS DISEASES] MEDICAL MANAGEMENT OF BIOLOGICAL CASUALTIES HANDBOOK (Mark Kortepeter et al. eds., 4th ed. 2001), *available at* http://www.vnh.org/BIOCASU/toc.html (last visited Feb. 12, 2003).

86. *See id.*

87. Christopher et al., *supra* note 67, at 415.

88. *Id.* One hundred forty-six countries have ratified the Convention. *List of State Parties to the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction*, U.N. Doc. BWC/CONF.V/INF.4 (2002), *available at* http://disarmament.un.org/wmd/bwc/pdf/vinf4.pdf.

89. *See* INST. OF INFECTIOUS DISEASE, U.S. ARMY MED. RESEARCH, *supra* note 85.

90. *See* GILMORE COMM'N, *supra* note 13, at E4.

91. For example, federal criminal justice authorities speculated that the anthrax outbreak may have been the work of a person with access to military sources of weaponized anthrax. *E.g.*, Kevin Coughlin, *Scientist Says She Can ID Anthrax Killer—Claims Five Insiders Gave FBI Same Name*, STAR-LEDGER (Newark, NJ), June 16, 2002, at 3 (noting that the Federal Bureau of Investigation's initial profile of the perpetrator responsible for the anthrax outbreak was "a methodical scientist with access to a top lab and military-grade anthrax"). Some argue that existing domestic and international laws are not sufficient to combat bioterrorism. *See generally* Heather A. Dagen, Comment, *Bioterrorism: Perfectly Legal*, 49 CATH. U. L. REV. 535 (2000) (suggesting means to improve laws pertaining to possession and use of agents of bioterrorism).

92. Robertson & Schlesinger, *supra* note 21.

93. *Id.*

94. *Id.*

95. *See* United States v. Baker, 98 F.3d 330, 333 (8th Cir. 1996).

perpetrators were convicted of knowingly possessing a toxin for use as a weapon.[96]

A second plot took longer to uncover. In 1984, an Oregon cult bought salmonella bacteria from a germ bank and cultured it in backyard laboratories.[97] Close to the date of a local election, the group contaminated restaurant salad bars, coffee creamers, and salad dressing with the salmonella.[98] The group hoped that enough people would become sick and unable to vote so that they could influence the election.[99] More than 750 became ill during the outbreak, although no one died.[100] It took the authorities over a year to realize that the outbreak had been intentional.[101]

Similarly, after a year and a half, the government has not been able to discover who was behind the anthrax attacks that caused general panic and sickened twenty-two people, five fatally.[102] From October until November 2001, anthrax-laced letters caused inhalational anthrax in eleven people, and cutaneous anthrax in eleven more.[103] The attacks led to widespread fear, massive nasal swab and prophylactic antibiotic campaigns, and criticism about the way the outbreak was handled.[104] Only one of the six inhalational anthrax survivors has returned to work.[105] Some feel haunted by the disease, suffering from memory loss, fatigue, and personality changes.[106] The Federal Bureau of Investigation has tried its best to discern the source of the attacks, thus far to no avail, underscoring the ease with which a user of biological weapons can go unnoticed in our society.[107]

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96. *Id.*

97. Darrin Farrant, *Germs of Mass Destruction*, SUNDAY AGE, Feb. 17, 2002, at 11.

98. *Id.*

99. *Id.*

100. *Id.*

101. Robertson & Schlesinger, *supra* note 21.

102. Kirsten Weir, *Anthrax: Year One*, 88 CURRENT SCI. 89 (2003); *see also* Jernigan et al., *supra* note 22.

103. Weir, *supra* note 102.

104. *See, e.g.*, Ceci Connolly & Avram Goldstein, *Anthrax Exposure Estimates Increased; First Capitol Hill Aides Receive Vaccine Shots*, WASH. POST, Dec. 21, 2001, at A1 (noting that government officials provided insufficient guidance on who should receive the vaccine in addition to antibiotics); Edmund Sanders, *Responses to Terror Public Health Issues: Anthrax Assurances Cited as Threat to Public Trust Terrorism: Officials Insisted Mail Was Safe but Now Wonder, Critics Call Early Response Too Hasty*, L.A. TIMES, Dec. 5, 2001, at A1; Editorial, *Headless Health Agencies*, BOSTON GLOBE, Feb. 28, 2002, at A12 (criticizing the CDC's failure to recognize the extent of the anthrax attacks).

105. Weir, *supra* note 102.

106. *Id.*; *see also* Lena H. Sun, *Anthrax Patient Has Pneumonia*, WASH. POST, Nov. 7, 2002, at B2.

107. The FBI agents searched through the New Jersey neighborhoods from which several of the letters were mailed, offered a one million dollar reward, and combed through 170,000 potential leads and tips. Robertson & Schlesinger, *supra* note 21.

Even still, the highly refined grade of the anthrax spores used may suggest a link to the U.S. military's own biological research program.[108]

C. *The Potentially Large-Scale Effects of Biological Weapons*

It is important to consider not only the probability of the risk of bioterrorism, but also the severity of harm should the risk materialize.[109] By most accounts, a well-planned release of biological agents would have a substantial effect on the public's health. In addition, containment measures and generalized fear also would have a sizable impact on the economy.

Estimating the effect an attack would have on the public's health is difficult. Information about the spread of a disease and its fatality is usually based on information gathered during naturally occurring outbreaks. In some instances, this information may underestimate the effects of the disease. Changes in the population may make people more susceptible to infection.[110] For example, risk assessments concerning smallpox, including the effects of vaccination, may differ markedly from historical understandings.[111] Today's population has a higher percentage of immuno-suppressed individuals (e.g., HIV/AIDS, cancer, and organ transplants).[112] In addition, pathogens may have evolved naturally or could

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108. *See* Coughlin, *supra* note 91.

109. Four factors that are influential in analyzing risk to evaluate public health regulations are the nature of the risk, the duration of the risk, probability of harm, and the severity of harm. GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 94-97 (discussing the four factors).

110. *See* Mary E. Wilson, *Infectious Diseases: An Ecological Perspective*, 311 BMJ 1681 (1995) (noting how migration of people is often responsible for introducing an infectious disease to a new region).

111. *See* INST. OF MED., EXECUTIVE SUMMARY: MICROBIAL THREATS TO HEALTH (forthcoming 2003) (noting the following factors that have altered the risk of infectious diseases from historical risk assessments: microbial adaptation and change, human susceptibility to infection, climate and weather, changing ecosystems, economic development and land use, human demographics and behavior, technology and industry, international travel and commerce, breakdown of public health measures, poverty and social inequality, war and famine, lack of political will, and intent to harm).

112. *See* Donald A. Henderson et al., *Smallpox as a Biological Weapon*, 281 JAMA 2127 (1999) ("Smallpox was eradicated before human immunodeficiency virus (HIV) was identified[]. . . . Vaccination of immune-deficient persons sometimes resulted in a continually spreading primary lesion, persistent viremia, and secondary viral infection of many organs.") The CDC recommends against vaccinating immuno-suppressed individuals (e.g., HIV/AIDS, cancer, and organ transplants) unless they have been exposed to smallpox. CTRS. FOR DISEASE CONTROL & PREVENTION, SMALLPOX FACT SHEET: PEOPLE WHO SHOULD NOT GET THE SMALLPOX VACCINE (2003), *available at* http://www.bt.cdc.gov/agent/smallpox/vaccination/pdf/contraindications-public.pdf/; *see* John G. Bartlett, *Smallpox Vaccination and Patients with Human Immunodeficiency Syndrome*, 36 CLINICAL INFECTIOUS DISEASES 468 (2003). Because the population, today, has a higher percentage of immuno-suppressed individuals than when past risk assessments were

be engineered to be more lethal than their natural counterparts or to be resistant to commonly used treatments.[113] The method of release also could lend itself to the development of more deadly versions of the disease.[114]

Regardless of these limitations on the usefulness of estimates, various organizations have tried to calculate the number of fatalities that could stem from a biological attack. The World Health Organization concluded that, worst-case scenario, if fifty kilograms of *Yersinia pestis* (the organism that causes the plague) were released as an aerosol over a city of five million people, 150,000 could develop pneumonic plague, and 36,000 of those may die.[115] A Congressional analysis of the potential effects of a release of 100 kilograms of aerosolized anthrax over Washington, D.C. indicated that up to three million deaths could occur.[116]

Table-top exercises, conducted by the military and various states, designed to examine governmental response to a bioterror emergency suggest similarly devastating effects to public health if an efficient biological attack were to occur.[117] In one exercise conducted in 2001, code-named "Dark Winter," prominent politicians portrayed the President of the United States and the Governor of Oklahoma.[118] The scenario was a release of smallpox in shopping malls in Oklahoma City, Philadelphia, and Atlanta.[119] Three thousand people were supposed to have been initially infected.[120] About two weeks after the attacks, it was estimated that 16,000 cases of smallpox would have been reported in twenty-five different states, with ten other countries reporting cases.[121] Figure X demonstrates the rapid spread of the disease.[122] Participating politicians found that they were unfamiliar with the nature of a biological attack and with the policy options available to them.[123] The scarcity of the vaccine posited in the

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conducted, the risk assessment necessarily differs.

113. INST. OF MED., *supra* note 111.

114. For example, the plague is usually transmitted by flea bites, and the most common manifestation is bubonic plague. Inglesby et al., *supra* note 35, at 2282. If the disease were released as an aerosol, it is likely that most would develop pneumonic plague, a more deadly form of the disease. *See id.*

115. *Id.*

116. This analysis was conducted by the Office of Technology Assessment of the U.S. Congress. CTR. FOR CIVILIAN BIODEFENSE STRATEGIES, ANTHRAX FACT SHEET, 1999 (1999), *available at* http://www.hopkins-biodefense.org/pages/agents/agentanthrax.html (last visited Nov. 27, 2002) [hereinafter ANTHRAX FACT SHEET].

117. *See supra* notes 23-27 and accompanying text.

118. O'Toole et al., *supra* note 23, at 973.

119. *Id.* at 974.

120. *Id.*

121. *Id.* at 979.

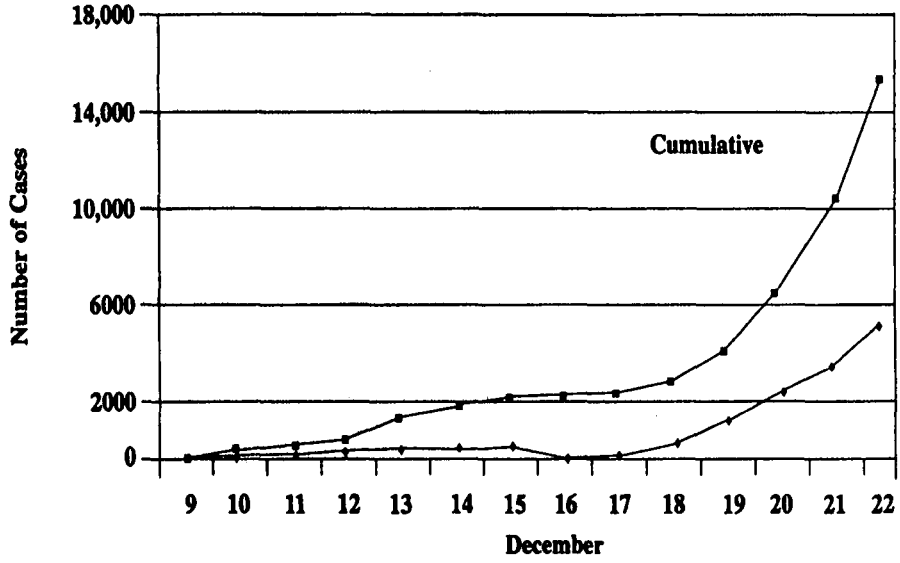
122. *Id.* at 976.

123. *Id.* at 980.

exercise created problems for rationing treatment and medication.[124] The rapidly spreading disease quickly overwhelmed the health care system.[125] In short, had the exercise been an actual emergency, the effects would have been devastating.

Figure X

Smallpox cases reported at meeting 3 of the Dark Winter simulation exercise.



Similarly, in another exercise, called "Top Official," or "TOPOFF," the federal government and the states modeled the effects of an intentional dispersal of plague.[126] The scenario involved the release of an aerosol of *Yersinia pestis* in Denver, Colorado.[127] Denver was chosen in part because

124. The organizers of the exercise made key assumptions, including the scarcity of a vaccine. *Id.* at 974. However, scarcity of a smallpox vaccine may no longer be an issue. *E.g.*, Press Release, White House, Frequently Asked Questions (Dec. 13, 2002) ("[T]here is enough smallpox vaccine to vaccinate everyone who would need it in the event of an emergency."), *available at* http://www.whitehouse.gov/news/releases/2002/12/20021213-3.html.

125. O'Toole et al., *supra* note 23, at 979-81.

126. Thomas Inglesby et al., *A Plague on Your City: Observations from TOPOFF*, 2 BIODEFENSE Q. 2 (2000), *available at* http://www.hopkins-biodefense.org/pages/news/quarter2_2.html. The exercise occurred in May 2000. *Id.*

127. *Id.* The TOPOFF exercise also involved a chemical weapon event in Portsmouth, New Hampshire and radiological event in Washington, D.C. *Id.*

it had previously received domestic preparedness training and equipment.[128] The state and county health agencies, the CDC, the Office of Emergency Preparedness, and three local hospitals participated.[129] In the exercise, which lasted four days, events progressed from the release of the aerosol in the Denver Performing Arts Center one day, to 500 people with symptoms being treated at local hospitals three days later.[130] Four days after the release of the plague, estimates of those with pneumonic plague ranged from 3700 to more than 4000, and between 950 and 2000 deaths were estimated.[131]

The exercise examined not only how many could become ill from a bioterrorism event that utilizes a contagious disease, but how well the government and public health infrastructure were able to address the emergency.[132] Those that participated in the exercise found that "the most striking observation [was] the recognition that the systems and resources now in place would be hard-pressed to successfully manage a bioweapons attack such as that portrayed in TOPOFF";[133] there was no one clearly in charge; channels of communications were blocked; and there was indecision and delays in action.[134] Antibiotic supplies became scarce; officials could not agree on whether they should be administered prophylacticly or only to those with symptoms; and distribution points became clogged.[135] Hospitals were quickly overwhelmed by the event; "[t]here were not enough places to put sick people, triage people, put dead bodies."[136] Moreover, there was no clear sense of how to handle masses of scared or sick people demanding antibiotics.[137] Public health resources in place at the time TOPOFF was conducted were insufficient to meet the demands of an epidemic, and the effects of a real plague outbreak would have been severe.

It is clear that a successful and efficient bioterrorist attack would have a significant impact on the public's health. Many would die, and even more would fall ill. In addition to the human suffering of illness and death, there would be large-scale effects on the economy.[138] There would be both

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128. *Id.*

129. *Id.* One hospital had to end its participation early because it had so many actual patients that it was unable to spare the resources the exercise required. *Id.*

130. *Id.*

131. *Id.*

132. *See id.*

133. *Id.*

134. *Id.*

135. *Id.*

136. *Id.*

137. *See id.*

138. For example, the cost of an anthrax attack is estimated to be $26.2 billion per 100,000 people exposed to the spores. CTR. FOR CIVILIAN BIODEFENSE STRATEGIES, *supra* note 116.

direct and indirect expenses from an attack. Medicine, medical equipment, and medical personnel would be needed, some of which might have to be transported from remote locations.[139] Establishing areas of quarantine and isolation would require securing buildings, ventilation equipment, food and water transported to the areas, and enforcement personnel.[140]

In addition to the expenses incurred in direct response to the attacks, there would also be indirect costs. Commerce to and from the affected areas would likely be halted, with a devastating effect on local businesses and a spiraling effect in the national economy.[141] Those quarantined or isolated would be unable to participate normally in daily life, costing employers productive workers and requiring people to fill in where necessary (e.g., daycare for children if parents are isolated). Other people, afraid of becoming infected, may flee the city and their jobs. Fear from the attacks may cause people to lose faith in the financial markets, causing panic and a drastic reduction in stock prices.[142] All of these costs would have a significant effect on the economy.

While it is difficult to quantify all of the effects in advance of an attack, the costs of an attack, both in human suffering and dollars, would be high. The harm from a well-engineered attack would therefore be severe. Compounding the effect is the fact that the public health infrastructure is not yet prepared to handle such an event.

D. *The Deteriorating Public Health Infrastructure*

The threat of bioterrorism is compounded by the inability of public health agencies to effectively detect and respond to possible incidents. Numerous reports have drawn attention to the lack of public health preparedness for bioterrorism and naturally occurring infectious diseases.[143] The Institute of Medicine's landmark report on *The Future of*

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139. *See* Joseph Barbera et al., *Large-Scale Quarantine Following Biological Terrorism in the United States: Scientific Examination, Logistic and Legal Limits, and Possible Consequences*, 286 JAMA 2711, 2714-15 (2001).

140. *See id.*

141. *See id.* at 2715.

142. Adam Shell, *Anthrax Concerns Chip Away at Stocks*, USA TODAY, Oct. 18, 2001, at B4 (noting that just as the stock market was starting to recover after September 11th, the anthrax attacks started to weaken the market); Steven Syre & Charles Stein, *Market Tugged by Light and Dark Forces*, BOSTON GLOBE, Oct. 16, 2001, at D1 (noting that on Oct. 16, 2001, the market dropped as news was released of additional anthrax attacks).

143. *See, e.g.*, *Infectious Disease Outbreaks: Bioterrorism Preparedness Efforts Have Improved Public Health Response Capacity, But Gaps Remain: Testimony Before the Committee on Government Reform, House of Representatives*, 108th Cong. 2 (2003) [hereinafter *Infectious Disease Outbreaks Hearing*] (statement of Janet Heinrich, Director, Health Care-Public Health Issues); INST. OF MED., HEALTHY COMMUNITIES: NEW PARTNERSHIPS FOR THE FUTURE OF PUBLIC HEALTH (Michael A. Stoto et al. eds., 1996); INST. OF MED., IMPROVING HEALTH IN THE

Public Health in 1988 observed that the governmental public health infrastructure was in "disarray"[144] and its 2003 report stated that in many ways it "remains in disarray today."[145] The CDC concluded that, despite recent improvements, the public health infrastructure "is still structurally weak in nearly every area."[146]

The Department of Health and Human Services' Office of the Inspector General analyzed the readiness of a sample of twelve state and thirty-six local health departments.[147] The report found that the public health infrastructure was under-prepared to detect and respond to bioterrorism.[148] In order to cope with a bioterrorism event, state and local governments must have health departments that can notice the outbreak through surveillance, discover its cause through an epidemiologic investigation, communicate effectively with response partners, have plans in place to mobilize resources, and be prepared (legally and logistically) to intervene.[149] The report found room for improvement in each of these areas.[150]

First, our surveillance systems are weak.[151] Surveillance systems require physicians and laboratories to report certain communicable diseases to state or local health departments.[152] However, many of the departments surveyed noted that reports were not always timely and complete.[153] Several of the health departments reported that they only look at the reports weekly and do not analyze them in any systematic way.[154] Such inattentive monitoring will prolong the time it takes to discover that a bioweapon has been released.

COMMUNITY: A ROLE FOR PERFORMANCE MONITORING (Jane S. Durch et al. eds., 1997); INST. OF MED., USING PERFORMANCE MONITORING TO IMPROVE COMMUNITY HEALTH: EXPLORING THE ISSUES (Jane S. Durch ed., 1996); Katherine Eban, *Waiting for Bioterror: Is Our Public Health System Ready?*, NATION, Dec. 9, 2002, at 11.

144. INST. OF MED., THE FUTURE OF PUBLIC HEALTH 19 (1988).

145. INST. OF MED., THE FUTURE OF THE PUBLIC'S HEALTH IN THE 21ST CENTURY 103 (forthcoming 2003).

146. DEP'T OF HEALTH & HUMAN SERVS., CTRS. FOR DISEASE CONTROL & PREVENTION, *Executive Summary* to PUBLIC HEALTH'S INFRASTRUCTURE: A STATUS REPORT (2001) [hereinafter HHS STATUS REPORT] (prepared for the Senate Appropriations Committee).

147. *Id.*

148. *Id.* at 3.

149. *See id.*

150. *Id.* at iii.

151. *Id.* at 8.

152. *See id.* at 8-9.

153. *See id.* at 8.

154. *See id.* at 10; *see also Infectious Disease Outbreaks Hearing*, *supra* note 143, at 6 (noting that some state public health officials reported chronic underreporting, and local public health officials reported that they lacked the resources to sustain active surveillance).

Once an outbreak is identified using reporting or other methods of surveillance, an epidemiologic investigation must be conducted. Yet, many of the health departments surveyed noted that they had inadequate staff or equipment.[155] Laboratories were overwhelmed by the relatively small outbreak of anthrax in 2001.[156] Overall, the capacity to determine that a biological attack is occurring is not yet in place.

The infrastructure for responding to an attack has serious flaws as well.[157] Some states do not have well-developed communications plans.[158] Many states have not tested their mobilization procedures and most of the health departments surveyed did not have complete plans for receiving, organizing, and distributing federal aid.[159] The report also indicated that four state and fourteen local health departments did not have all of the laws and regulations necessary to activate and enforce emergency public health and infection control measures in place.[160]

In order to respond effectively to a bioterrorism event, these faults must be considered and corrected. The current public health infrastructure is inadequate to respond to a large-scale attack. Such an attack is plausible, and likely to inflict severe damage if it occurs. In addition, strengthening the public health infrastructure will protect us from another risk—the risk from emerging infectious diseases.[161]

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155. Almost half of the local health departments did not have an epidemiologist on staff. *See* OFFICE OF INSPECTOR GEN., DEP'T OF HEALTH & HUMAN SERVS., STATE AND LOCAL BIOTERRORISM PREPAREDNESS 9 (2002) (finding that seventeen of the thirty-six local health departments surveyed did not have an epidemiologist on staff); *see also* HHS STATUS REPORT, *supra* note 146; *Infectious Disease Outbreaks Hearing*, *supra* note 143, at 7 (noting personnel shortages in public health departments and laboratories); *id.* at 11 (reporting that few hospitals have adequate medical equipment to handle a large-scale infectious disease outbreak); COUNCIL OF STATE & TERRITORIAL EPIDEMIOLOGISTS, NATIONAL ASSESSMENT OF EPIDEMIOLOGIC CAPACITY IN PUBLIC HEALTH: FINDINGS AND RECOMMENDATIONS 13 (2003) (finding that over forty percent of epidemiologists on staff at health departments lack formal academic training in epidemiology), *available at* http://www.cste.org/pdffiles/ecacover1.pdf; P'SHIP FOR PUB. SERV., HOMELAND INSECURITY: BUILDING THE EXPERTISE TO DEFEND AMERICA FROM BIOTERRORISM (2003) (discussing the deficiencies in retaining and attracting a skilled biodefense workforce at federal government agencies).

156. *Infectious Disease Outbreaks Hearing*, *supra* note 143, at 7.

157. *See also* U.S. GEN. ACCOUNTING OFFICE, REPORT TO CONGRESSIONAL COMMITTEES: BIOTERRORISM: PREPAREDNESS VARIED ACROSS STATE AND LOCAL JURISDICTIONS (2003) (discussing the results of site visits to seven cities to analyze their preparedness to respond to a bioterrorist attack).

158. *See Infectious Disease Outbreaks Hearing*, *supra* note 143, at 8.

159. *Id.* at 13.

160. *Id.* at 14.

161. The CDC notes "the importance of continuing to build a strong public health infrastructure at all levels of government in order to mount a rapid and effective response to public health emergencies and develop sustainable disease prevention strategies." CTRS. FOR DISEASE CONTROL & PREVENTION, DEP'T OF HEALTH & HUMAN SERVS., PROGRAM IN BRIEF: INFECTIOUS

After September 11th and the subsequent anthrax outbreak, the risk of bioterrorism became more salient to federal and state governments. The White House's budget for fiscal year 2003 proposed to spend $1.2 billion to increase the capacity of state and local health delivery systems to respond to bioterrorism.[162] The budget for the CDC's Bioterrorism Preparedness and Response Cooperative Agreement Program increased more than ten-fold.[163] Despite the increases, the public health infrastructure remains weak. Most resources in the President's budget are devoted to biomedical research and health care delivery rather than the public health system.[164] Further, the current state budget crisis threatens to undermine governmental services.

E. *Crossing a Threshold: The Risk Warrants a Liberty-Limiting Response*

Given that biological weapons are economical and relatively easy to develop, they pose a risk to the American public. The portability, inexpense, lethality, and low risk of detection make developing a disease as an agent of terrorism attractive to groups determined to disrupt our way of life. The fact that many countries have already developed agents for bioterrorism is further evidence of their attractiveness. Adding to the risk is the fact that non-state actors have expressed the interest, if not yet the unfettered ability, to develop their own weapons. The risk has, in at least two cases, developed into a reality on American soil.[165] Finally, the tipping point in a risk analysis is the severe harm to population health and the economy that would occur if a successful large-scale attack was carried out.

DISEASES, *available at* http://www.cdc.gov/programs/infect5.pdf (last visited Feb. 2003).

162. PRESIDENT'S 2003 BUDGET, *supra* note 34, at 19.

163. JANET REHNQUIST, OFFICE OF INSPECTOR GEN., DEP'T OF HEALTH & HUMAN SERVS., STATE AND LOCAL BIOTERRORISM PREPAREDNESS 15 (2002). The CDC's cooperative program increased from $66.7 million in 2001 to $918 million in 2002. *Id.* In February 2002, a new $125 million cooperative program with state health departments to upgrade hospital preparedness was announced. *Id.*

164. *See* Lawrence O. Gostin, *Conceptualizing the Field After September 11th: Foreword to a Symposium on Public Health Law*, 90 KY. L.J. 791, 797 (2002). *But see* Ali S. Khan & David A. Ashford, *Ready or Not—Preparedness for Bioterrorism*, 345 NEW ENG. J. MED. 287, 289 (2001) (editorial) ("[F]ederal funds for public health are not reaching the health care community, even though we all recognize the central part that physicians, associated health care providers, and acute care hospitals would play during a bioterrorist attack."); Ann McFeatters, *Some Health Programs Suffer in Budget*, PITTSBURGH POST-GAZETTE, Feb. 6, 2002, at A6 (noting that the President's budget beefs up the public health system to respond to bioterrorism at the expense of other health agencies such as the CDC).

165. *See supra* note 21 and accompanying text.

Given the evidence, it is reasonable to suggest that a threshold has been crossed justifying consideration of a liberty-limiting response to avert the risk or ameliorate the harm. Historically, infectious disease control has included measures that restrict personal privacy (e.g., surveillance), bodily integrity (e.g., vaccination and treatment), and liberty (e.g., quarantine).[166] So too has government fettered the free exercise of property rights by, for example, seizure, closure, or destruction of private property or licensing and credentialing of professionals and institutions.[167]

The fact that liberty-limiting powers are warranted still does not answer the question of how to make the hard trade-offs between personal and economic liberty on the one hand, and national health and security on the other. In the context of the homeland security project, we face difficult decisions. Both liberty and economic freedom are central to our society. Yet, these freedoms have never been absolute. Both kinds of rights, civil and economic, need reconsideration in the new context of contemporary health threats.

II. RISK REGULATION AND STATE POWER: ASKING THE RIGHT QUESTION

In response to the risk analysis just presented, federal and state governments have sought to introduce a variety of state powers designed to prevent, detect, and respond to bioterrorism.[168] The powers needed to address bioterrorism relate to planning, surveillance, and restrictions on personal and proprietary freedoms.[169] These are the powers authorized under the MSEHPA, supported by federal and state officials.[170] Several, but not all, of the powers established under the Model Act entail limitations on personal or proprietary interests.[171]

Planning provisions would put in place a process for thinking through each of the factors necessary for public health preparedness. A thoughtful strategic design must include: the actors (e.g., law enforcement, public

166. *See supra* notes 2-4 and accompanying text.

167. *See supra* note 4 and accompanying text.

168. *See, e.g.*, MSEHPA, *supra* note 8.

169. *See* sources cited *supra* note 11.

170. *Id.* The Secretary for Health and Human Services (HHS) and the CDC have urged states to ensure that they have the powers identified in the MSEHPA to prepare for, and respond to, a public health emergency. Press Release, U.S. Dep't of Health and Human Servs., Statement by HHS Secretary Tommy G. Thompson Regarding the Model Emergency Health Powers Act, (Oct. 30, 2001), *available at* http://www.hhs.gov/news/press/2001pres/20011030.html. The National Conference of State Legislatures has prepared a "checklist" of powers based on MSEHPA for consideration of the states. LISA SPEISSEGGER & CHERYL RUNYON, NAT'L CONFERENCE OF STATE LEGISLATURES, THE MODEL STATE EMERGENCY HEALTH POWERS ACT: A CHECKLIST OF ISSUES (2002).

171. *See* sources cited *supra* notes 8 and 11.

health, and emergency management); decisionmaking processes; communication networks; contingency plans, like procurement and deployment of supplies (e.g., vaccines, pharmaceuticals and hospital beds); licensing of health-care professionals; destruction or seizure of dangerous property; and safe disposal of human remains.

Surveillance provisions would authorize measures for early identification of a public health emergency. The two principal forms of surveillance are passive and active.[172] Passive surveillance includes case reporting—mandatory duties on health-care professionals and laboratories to report patients with conditions of public health importance.[173] Case reporting usually entails disclosure of a person's name and other identifying characteristics to the health department;[174] consequently, there is an invasion of privacy.[175]

Active surveillance includes powers to monitor health data to identify abnormal patterns suggestive of a public health emergency.[176] For example, agencies are interested in unusual clusters of gastrointestinal or respiratory disease in emergency rooms or managed-care organizations, inordinately large numbers of sales of anti-diarrhea medications in pharmacies, or sharp increases in absences from schools or workplaces.[177] Active surveillance may, or may not, include personal identifiers.[178] Although anonymous data are often sufficiently informative, in some cases health officials need personal identifiers to accurately track cases and avoid duplications. Surveillance, like intelligence in the criminal justice context, offers an early warning system essential for rapid identification and response to threats. At the same time, it invades a sphere of personal

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172. For a discussion on surveillance, *see* Lawrence O. Gostin et al., *supra* note 9, at 82-83. *See also* Karen H. Rothenberg, *The AIDS Project: Creating A Public Health Policy—Rights and Obligations of Health Care Workers*, 48 MD. L. REV. 93, 211 n.374 (1989).

173. *Id.*

174. For a discussion of reporting and the trade-offs between public health and informational privacy, see GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 116-21. Some reporting statutes do not require names, but may use unique identifiers, which arguably is less invasive of privacy, but also possibly less effective. *See, e.g.*, Lawrence O. Gostin et al., *National HIV Case Reporting for the United States: A Defining Moment in the History of the Epidemic*, 337 NEW ENG. J. MED. 1162, 1162-67 (1997); Lawrence O. Gostin & James G. Hodge, Jr., *The "Names Debate": The Case for National HIV Reporting in the United States*, 61 ALBANY L. REV. 679 (1998).

175. Privacy invasions occur only if the health record contains personally identifiable information. *See* Lawrence O. Gostin, *Health Information Privacy*, 80 CORNELL L. REV. 451, 519-20 (1995).

176. *See* sources cited *supra* note 172.

177. LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW POWER, DUTY AND RESTRAINT 94, 116-17 (2000) (noting, for example, that surveillance indicating clusters of "unusual pneumonia and rare cancers among gay men" ultimately lead to the identification of AIDS).

178. *See* sources cited *supra* note 172.

privacy by disclosing identifiable patient records to government health agencies.

Provisions for personal restrictions would follow traditional communicable disease control measures designed to secure prophylaxis against disease, reduced infectiousness, and/or behavioral change to prevent transmission. Classic interventions include: (1) vaccination to avert infection or ease its effects, which infringes on bodily integrity and perhaps freedom of conscience or religion; (2) testing and physical examination to identify persons exposed or infected, which implicate informational privacy interests; (3) medical treatment to alleviate symptoms and decrease infectiousness, which invades bodily integrity; and (4) quarantine to separate the ill from the healthy, which infringes on freedom of movement and association.[179]

Provisions for property restrictions would similarly follow standard sanitary regulations designed to diminish dangerous conditions; procure goods and services for public health uses; and assure availability and quality in health-care professions and institutions. Archetypical measures include: (1) nuisance abatements, which interfere with free enterprise and freedom of contract; (2) seizure and destruction of hazardous materials, which infringe on property rights; (3) licensing of professionals and credentialing of health-care facilities, which effect professional and business pursuits; and (4) taking property for public uses, which affects property rights and free enterprise.[180]

Critics from both ends of the political spectrum stridently oppose the exercise of many of these powers.[181] Liberty-limiting state power, they suggest, lacks justification in a liberal democracy, with its emphasis on individualism and free agency.[182] More specifically, civil libertarians express a preference for personal freedoms of autonomous rights-bearing individuals—the right to privacy, bodily integrity, and free travel.[183] Economic libertarians express a preference for economic freedoms of entrepreneurs—free enterprise, competitive markets, freedom to contract, and professional and business pursuits.[184] Often, critics frame their arguments in absolute terms (the state ought not have power over individuals) rather than in relative terms (the state should have power only in clearly specified circumstances).

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179. *See generally* GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 113-234.

180. *Id.* at 237-305. Unlike the other regulatory interventions mentioned, the taking private property for a public use does require just compensation under the Takings Clause of the U.S. Constitution. *See* U.S. CONST. amend. V.

181. *See* notes 216-24 *infra* and accompanying text.

182. *Id.*

183. *See* notes 216-38 *infra* and accompanying text.

184. *See* notes 239-59 *infra* and accompanying text.

How seriously should we take these kinds of argument leveled against the introduction of state power? Is there any reason to conclude that the powers I have just enumerated are irrational under prevailing theories of political philosophy or other forms of rigorous scholarly thought? The answer, of course, depends on the rationale for the exercise of power and the particular power sought. When deciding whether to intervene, the government must first assess the risk to the population, and then determine the means by which the risk can be managed. These two dimensions—the level of risk and the means adopted—are important in determining the legitimacy of the government action.

On the first dimension (level of risk), multiple threats exist, each with a different risk calculation. Assessing risk is not a simple task; it requires, *inter alia*, an understanding of the nature and probability of the risk and the severity of harm should the risk materialize.[185] The three risk categories presented below use simplifying assumptions designed to identify clear cases where state intervention is, or is not, justified, together with an illustration of a hard case involving complex trade-offs. The three risk categories are not mutually exclusive, but represent points on a continuum (see Table "Risk Categories").

- *Significant risk*: An agency limits liberty to avert a reasonably tangible and immediate prospect of harm. The government has detailed knowledge of the nature of the risk (e.g., the pathogen and its modes of transmission), the probability (the chances that the threat will result in harm), and the duration (the period during which the threat persists). Additionally, the state can identify a risk producer (the actor who poses the risk) and the at-risk population (the people who are likely to be harmed).

  Consider the following illustration of an agency action to avert a significant risk. The public health authority orders the compulsory vaccination, treatment, or quarantine of a currently contagious individual who poses a risk of transmission of a harmful disease such as smallpox. The nature of the risk would be known (transmission of smallpox), as would the probability and timing. The risk producer is known (the infected person), as is the population that is endangered (the contacts of the infected person). Such action would be immediately necessary to avert a significant risk of harm, but would infringe on individual rights to liberty and bodily integrity.

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185. *See, e.g.*, Sch. Bd. of Nassau County v. Arline, 480 U.S. 273, 287-89 (1987) (examining the nature, duration, probability, and severity of the risk in the context of infectious diseases). Risk assessment, of course, is highly complex, raising important problems of risk characterization, risk communication, and risk perception. For a more complete examination of risk assessment and its complexities, see GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 93-99.

Alternatively, the agency orders the abatement of a nuisance for businesses that conduct hazardous activities or possess dangerous property. Consider an agency decision to destroy a rug infested with smallpox virus or de-contaminate a building containing anthrax spores. Such action would be immediately necessary to protect the public's health, but would deprive the business of property without just compensation.[186] In these illustrations, much is known about the nature and likelihood of the risk and the potential harm if the threat is left unchecked.

- *Moderate risk*: An agency limits liberty in an environment of increased population risk (e.g., a "code orange" alert). It acts with evidence of heightened risk and has clear goals of identifying and responding to hazards. In situations of moderate risk, the government has less specific information upon which to act. It is known that the general population is at risk, but which segments of the population would be targeted or endangered is not known. In addition, little is known about the precise nature, probability, and timing of the risk.

  Consider an agency decision to monitor all emergency rooms to identify unusual clusters of infectious disease cases. The monitoring affords the agency an early warning system to detect disease outbreaks, but does not avert a known, immediate harm. The agency infringes on the right to informational privacy by reviewing patient records. Alternatively, the agency conducts routine administrative inspections of high-risk businesses. Consider an agency decision to inspect the relevant activities and records of private laboratories or pharmaceutical companies engaged in research on pathogens capable of being used as biological weapons. The monitoring may prevent the wrongful use or transfer of potential agents of bioterrorism, but the regulation may be burdensome, affecting the businesses' freedom of enterprise.

- *Negligible risk (arbitrarily exercised)*: An agency limits liberty capriciously without clear evidence of heightened risk or clear goals. In this category, the risk to the population is known to be low. Moreover, there is no reasonable suspicion based on an individualized assessment that the target of agency action poses a threat. Rather, the agency acts based on generalized or exaggerated fears.

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186. Classically, the exercise of police powers like a nuisance abatement is not a "taking" and, therefore, does not require compensation under the Fifth Amendment. *See, e.g.*, Pa. Coal Co. v. Mahon, 260 U.S. 393, 413, 417 (1922) ("As long recognized some values are enjoyed under an implied limitation and must yield to the police power."). On the more complicated issue of regulatory takings, see generally GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 263-65; Richard J. Lazarus, *Putting the Correct "Spin" on Lucas*, 45 STAN. L. REV. 1411 (1993).

Consider an agency decision to compulsorily vaccinate, treat, or isolate individuals without clear evidence of infection or exposure to infection. Alternatively, consider an agency decision to wiretap the telephone calls and monitor the e-mail communications of health care institutions and professionals without individualized evidence of risk. The agency action lacks justification because the population risk is low and the target of the intervention does not pose a known threat.

Risk Categories*

Risk Level	Elements of Risk Assessment	Illustrations	Agency Action Acceptable?
Significant An agency limits liberty to avert a tangible and immediate prospect of harm	•Nature and probability of the risk—known •Risk producer—known •At risk population—known	• Ordering vaccination, treatment, or quarantine for currently contagious individuals who pose a risk of transmission. •Destroying a rug infested with smallpox.	Yes
Moderate An agency limits liberty in an environment of increased population risk	•Nature, probability, and timing of risk—unknown •At risk population—unknown	•Engaging in active surveillance through collection and analysis of identifiable health information of private health care providers. •Routine inspection of high-risk businesses.	Hard tradeoffs between individual and collective interests
Negligible An agency limits liberty capriciously without clear evidence of heightened risk	•Population risk—low	•Conducting a suspicionless search of personal or business records. •Routinely sharing health information with law enforcement.	No

* Government Interventions: Significant and moderate risk categories assume will-targeted means. Means that exceed the scope of the threat or use public health as a pretext for discrimination are unacceptable regardless of risk category.

The second dimension is the means used to avert the threat. Of course, the government has a number of powers that can be used to minimize the effects of a threat. The government could quarantine, isolate, vaccinate, physically examine, require medical treatment, inspect businesses, destroy private property, or take private property for public uses. The power sought can vary in terms of which individual interests are affected, to what degree, and with what level of effectiveness. Rough descriptions of the extremes of governmental intervention can be constructed. These intervention categories represent the ends of a spectrum:

- *Well-Targeted Intervention*: An agency action is most appropriate if it is well-targeted in the following ways. First, the agency acts with the pure intention of mitigating risk. Second, the action is actually likely to mitigate the risk. Third, the action is well-tailored so that it is not unreasonably over- or under-inclusive. Finally, the action is the least restrictive necessary to achieve the state's legitimate goals. Consider a government decision to require directly observed therapy for multi-drug resistant tuberculosis (M.TB).[187] The agency appears to act with the intention of benefiting the person and preventing transmission of M.TB infection; the treatment is likely to achieve these goals; the treatment is well-tailored; and it is the least restrictive intervention under the circumstances.

- *Arbitrary, Excessive, or Pretextual Intervention*: Government action is least appropriate if it restricts individual interests in a way that exceeds the scope of the threat or uses public health as a pretext for discrimination. The agency may over reach by interfering with liberty more than necessary to achieve legitimate goals, or by using a significant risk as a pretext for action that is not directed toward mitigating the risk. For example, the agency may conduct a fishing expedition of personal or business records, freely sharing data with law enforcement, immigration, and other government officials. Worse still, the agency may act based on stereotypes or animus of individuals or groups based on their race, religion, or ethnicity. Consider an agency decision to quarantine all members of a particular ethnic group, but not other similarly situated ethnic group members, in a given geographic area. This action would be arbitrary, perhaps based on exaggerated fear or even animus, and would not be necessary to detect or respond to a public health emergency.

187. Directly observed therapy is a compliance-enhancing strategy in which each dose of medication is observed by a family member, peer advocate, community worker, or health care professional. OFFICE OF TECH. ASSESSMENT, U.S. CONGRESS, THE CONTINUING CHALLENGE OF TUBERCULOSIS 27, 89 (1993); *see also* Lawrence O. Gostin, *The Resurgent Tuberculosis Epidemic in the Era of AIDS: Reflections on Public Health, Law, and Society*, 54 MD. L. REV. 1, 124 (1995).

Means-End Categories

Means	Elements	Illustrations	Agency Action Acceptable?
Well-Targeted Intervention	•Agency acts with intention to mitigate risk •Governmental action is likely to mitigate risk •Action is well tailored •Action is the least restrictive necessary	•Requiring directly observed therapy for patients with multi-drug resistant tuberculosis	Yes
Arbitrary, Excessive, or Pretextual Intervention	•Government intervention restricts liberty in a way that exceeds the scope of the threat •Government uses public health as a pretext for discrimination	•Conducting a fishing expedition of personal records, freely sharing data with law enforcement •Quarantining members of an ethnic or religious group, but not others similarly situated.	No

The risk dimension and the means-ends dimension are interwoven. In any given case, the legitimacy of government action depends on the risk posed and the means used to diminish the risk. The state acts at its highest level of legitimacy when the risk is significant and the means well-targeted. The state acts at its lowest level of legitimacy when the risk is low and the means are ill-suited to achieve legitimate ends. It is important to stress that even in high-risk settings, means that exceed the scope of the threat or use public health as a pretext for discrimination are unacceptable.

My principal argument is that the state's claim to possess appropriate liberty-limiting power is unmistakably valid for certain risk categories, assuming the proposed intervention is well targeted. In the significant risk hypothetical, I intend to demonstrate that mainstream political theories support the exercise of appropriate authority.[188] No hard choices are presented because the state restricts freedom of action to avert a tangible harm.[189]

For the moderate risk category, the state's claim does present a harder problem, even if the governmental intervention is well-targeted. In the moderate risk hypothetical, critics have at least a *prima facie* case that the state should not possess liberty-limiting power. Hard choices are required

188. As mentioned, police powers exercised to avert a significant risk are also supported by historical practice and constitutional analysis. *See* sources cited *supra* note 9.

189. On the other hand, even significant risk does not justify an inappropriate governmental use of power.

because this kind of case places in conflict alternative values—one preferring personal liberties and the other public goods. Here, I will suggest that, since two sets of values collide, it is necessary to take a position preferring one value over another or, at least, to weigh one value more heavily in constructing a public policy. Still, I will not accede to the prevalent liberal view of the unwavering primacy of the individual, but argue that individualism needs to be balanced against equally valid ideals of community safety.

For still other risk categories, the state's claim is almost certainly invalid. In the negligible risk or arbitrary action hypothetical, no liberty-limiting state power is permissible. This kind of intervention finds little support in serious political-philosophical traditions because it violates basic tenets of liberalism (e.g., freedom and fairness) while failing to substantially advance any collective interest in health and security. Although illustrations of the exercise of authority against ethnic or religious groups can be found in American history, the courts often repudiate them as an abuse of power.[190]

It should be clear when examining these scenarios that commentators often ask the wrong question when inquiring about the appropriate scope of state authority in a public health emergency. They ask whether the law should afford public health authorities the power to limit the freedoms of individuals and businesses.[191] Indeed, the journals, newspapers, and Internet are replete with claims that no legal authority should exist to vaccinate, treat, and quarantine individuals, or to abate nuisances, seize property, or take property for public uses.[192] These arguments purport to apply, without differentiation, to all risk categories described above. However, as I will demonstrate, the significant risk scenario unequivocally justifies the exercise of appropriate state power, and the moderate risk category arguably justifies limits on individual interests. The argument

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190. See the judicial repudiation of police powers against Chinese Americans at the turn of the 20th century discussed in notes 260-64 *infra* and accompanying text.

191. *See, e.g.*, Annas, *supra* note 5.

192. These arguments manifest themselves in critiques of the Model Act. *See, e.g., id.* at 1341 (suggesting that the Model Act unnecessarily sacrifices civil liberties in the name of public health); Wendy Mariner, *The Wrong Response*, NAT'L L.J., Dec. 17, 2001, at A20; Jason Mercier, Evergreen Freedom Found., *Emergency Health Powers Act Threatens Liberty*, (Jan. 2, 2002), *at* http://www.effwa.org/opeds/2002_01_02.php; *AAPS Analysis: Model Emergency Health Powers Act (MEHPA) Turns Governors Into Dictators*, Ass'n of Am. Physicians and Surgeons, Inc. (Dec. 3, 2001), (describing the Model Act as a prescription for tyranny), *at* http://www.aapsonline.org/testimony/emerpower.htm [hereinafter *AAPS Analysis*]; Press Release, Tetrahedron, CDC Advances Totalitarian Legislation Under Guise of 'Public Health': Forced Drugging and Injections Are On the Horizon (Nov. 9, 2001), *at* http:www.tetrahedron.org/news/NR011109.html.

that law ought not afford liberty-limiting powers to public health agencies finds no support in philosophical tradition, history, or constitutional law.

The central inquiry, then, is not whether government should have the power to act. It is overly simplified to suggest, as critics do, that liberty is always preferable to public health or that voluntarism is always preferable to coercion. Rather, the proper inquiry is under what circumstances power can be exercised—the standards, processes, and safeguards that fetter, but do not obviate, government power. By setting precise standards and requiring sound fact-finding procedures, the law seeks to differentiate between the valid and unjustified use of authority.

In the following part, I examine public health powers through the lens of political theory, principally liberalism and communitarianism. This assessment will demonstrate that liberty-limiting state power is justified at least in some cases. My inquiry ends with an examination of the conditions in which power should be exercised. This is far from an easy task because any framework is necessarily influenced by personal choice and political ideology.

III. POLITICAL THEORY: LIBERAL AND COMMUNITARIAN RESPONSES TO LIBERTY-LIMITING STATE POWER

My purpose in this part is to demonstrate that prevailing theories of political philosophy support the exercise of liberty-limiting state power under certain circumstances. Those expressing extreme viewpoints imply that *any* exercise of public health power is unwarranted. Yet, they rely on assertion rather than on established political or social theory.[193]

A. *Liberal Theory*

Liberalism has become the *de facto* political philosophy in late twentieth and early twenty-first century America.[194] Liberalism is, in some ways, a rejoinder to utilitarianism.[195] Liberals prefer a normative focus on

193. *See, e.g.*, Annas, *supra* note 5.

194. Kevin P. Quinn, *Viewing Health Care as a Common Good: Looking Beyond Political Liberalism*, 73 S. CAL. L. REV. 277, 290 (2000).

195. *See, e.g.*, RONALD DWORKIN, TAKING RIGHTS SERIOUSLY 94-96 (1977) (suggesting that rights are not rights at all if they can be trumped by consequential goals); ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 149 (1974) (defending the ideal of a minimalist state and unencumbered individual freedom); JOHN RAWLS, A THEORY OF JUSTICE 30 (1971) (setting forth a theory of justice that does not rely on consequences, but maintains that although his theory "characterize[s] the rightness of institutions and acts independently from their consequences . . . [a]ll ethical doctrines worth our attention take consequences into account in judging rightness"). However, not all liberal theorists reject utilitarianism. Indeed, some theorists use utilitarian reasoning to support liberal ideas. *See, e.g.*, JOHN STUART MILL, ON LIBERTY 68 (Gertrude Himmelfarb ed., Penguin Books 1974) (1859).

personal autonomy and reject the utilitarian ideal of weighing benefits and burdens.[196] Respect for the individual in the Kantian tradition[197] demands a strong sphere of personal sovereignty.[198] Each autonomous individual is perceived as having an interest in self-direction, shaped by her own desires and preferences.[199] This individual interest deserves respect, meaning that persons should be entitled to pursue their goals without external hindrances.[200]

While liberalism's true core is autonomy, it also encompasses the value of pluralism.[201] Liberal pluralism recognizes that individuals have different conceptions of a satisfying life and that each conception deserves equal respect.[202] According to liberal theory, government should remain neutral about the meaning of a good life, allowing individuals a private sphere to choose among their different conceptions.[203] Freedom to implement these choices by engaging in personal and economic activities, then, becomes a hallmark of liberal theory.[204]

Liberalism, of course, is not a single, fixed set of values, but a spectrum ranging from libertarianism to egalitarianism.[205] Libertarianism,

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196. *See generally* JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION (J.H. Burns & H.L.A. Hart eds., Hafner Press 1948) (1789).

197. Immanuel Kant's theory is often referred to as deontological because it holds that "certain features of action other than or in addition to consequences make actions right or wrong." TOM L. BEAUCHAMP & JAMES F. CHILDRESS, PRINCIPLES OF BIOMEDICAL ETHICS 348-49 (5th ed. 2001). Kant held that moral obligation is determined by rules. *Id.* at 349-50. One such rule or maxim is to "[a]ct so that you treat humanity, whether in your own person or in that of another, always as an end and never as a means only." IMMANUEL KANT, FOUNDATIONS OF THE METAPHYSICS OF MORALS AND WHAT IS ENLIGHTENMENT? 47 (Lewis White Beck trans., Macmillan 1959) (1785).

198. Kant, *supra* note 197, at 70-73. The word "autonomy" literally means self-governance (the Greek *autos* or "self" and *nomos* or "law," "rule," or "governance"). *See* THE OXFORD CLASSICAL DICTIONARY 224 (Simon Hornblower & Antony Spawforth eds., 3d ed. 1996). It is what one makes of one's own life. Autonomy refers to an interest in self direction or freedom of will in the Kantian doctrine. *See id.; see generally* Bruce J. Winick, *On Autonomy: Legal and Psychological Perspectives*, 37 VILL. L. REV. 1705 (1992).

199. *See generally* Winick, *supra* note 198.

200. *See generally id.*

201. Quinn, *supra* note 194, at 289-90 (citing JOHN KEKES, AGAINST LIBERALISM 6-15 (1997)).

202. JOHN KEKES, AGAINST LIBERALISM 6 (1997).

203. *See* DAVID JOHNSTON, THE IDEA OF A LIBERAL THEORY 24-26 (1994).

204. KEKES, *supra* note 202, at 12 ("This is the liberalism of Mill . . . Berlin . . . Friedrich Hayek . . . and Robert Nozick . . . among others.").

205. *See id.* at 12-13. Egalitarians, while adhering to ideals of freedom, also see individuals as deserving fundamental goods needed for living according to any conception of a good life. *See id.* at 14. These goods include the bare necessities of life like food, shelter, and health care. *See id.* at 13. The state, under egalitarian understandings, should afford welfare rights to individuals. *See id.* These rights, moreover, should be justly distributed among the population—for example, distributed based on need. *See* RAWLS, *supra* note 195, at 60-61.

a form of "hard" liberalism, holds that respect for individuals is at the heart of a free society.[206] Libertarians see personal freedom, civil and economic, as critical to personal well-being and societal functioning.[207] They insist on near unfettered liberty to act and to resist state intervention.[208] Government's role, according to libertarian understandings, is to afford maximal levels of political and social space to facilitate individual action.[209]

In most political discourse, libertarianism of the ideological left (i.e., civil libertarianism) and the ideological right (i.e., economic libertarianism) are seen as diametric opposites.[210] Yet, civil and economic libertarians, in certain ways, look more alike than dissimilar. Each side of the political spectrum stresses individual freedom: civil libertarians prefer freedom of personal action (e.g., bodily integrity, informational privacy, and freedom of movement and association), while economic libertarians prefer freedom of enterprise (e.g., freedom to contract, use property, and engage in business activities).[211]

The libertarian critique is notable for its characterization of personal interests as "rights," with its exaggerated absoluteness, its hyperindividualism, its insularity, and its silence with respect to personal, civic, and collective responsibilities.[212] It is distinctly anti-government and anti-regulation in tone.[213] Government is viewed as pondering,

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> I shall now state in a provisional form the two principles of justice that I believe would be chosen in the original position. . . . First: each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty to others. Second: social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all.

Id. For egalitarians, government's responsibility to afford people a certain level of health and security is foundationally important because these goods are necessary for the exercise of civil and political rights. NORMAN DANIELS, JUST HEALTH CARE 17 (1985) ("Even in the US, which has a much less egalitarian health-care system than many other industrialized capitalist or socialist countries, there is the belief that health care should be distributed more equally than many other social goods.").

206. *See generally* DAVID BOAZ, LIBERTARIANISM: A PRIMER 59-93 (1997) (enumerating the many rights with which libertarians believe government may not interfere).

207. *Id.*

208. *Id.*

209. *Id.*

210. *See* Gostin, *Public Health Law in the Age of Terrorism, supra* note 11, at 80.

211. *See id.*

212. MARY ANN GLENDON, RIGHTS TALK: THE IMPOVERISHMENT OF POLITICAL DISCOURSE 109 (1991).

213. Gostin, *Public Health Law in the Age of Terrorism, supra* note 11, at 80.

bureaucratic, and inefficient.[214] In addition, state regulation and taxation are seen as burdensome and excessively meddlesome.[215]

Not surprisingly, the predominant critique of emergency health powers comes from the libertarian perspective.[216] While the libertarian critique does not always deny the need to attend to the public interest, it insists that any diminution of individual rights must be so encumbered with demanding standards and rigorous process that it effectively thwarts the exercise of power.[217]

Some hard liberals go further, claiming that coercion is virtually never appropriate to achieve public health goals.[218] They argue, *inter alia*, that individuals have "fundamental rights" to refuse physical interventions such as testing, medical examinations, vaccination, and treatment;[219] restrictions on liberty like isolation and quarantine are unnecessary.[220] These libertarians claim that voluntariness is virtually always preferable to coercion and that "trade-offs" between personal rights and common goods are not required.[221] They support these claims normatively, based on the inherent right to personal dignity, and instrumentally, based on an assertion that coercion sends an epidemic underground, so that people avoid health care and public health professionals.[222]

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214. *Id.*

215. *Id.*

216. For an account of the major critiques of emergency health legislation and a response to these critiques, *see id.* (discussing the libertarian claims of federalism, triggering a public health emergency, and abuse of government power).

217. *See* Amitai Etzioni, *Public Health Law: A Communitarian Perspective*, 21 HEALTH AFF. 102 (2002):

> Although [liberals] do not deny the need to attend to the public interest (which courts often define as attending to public safety and to public health), they demand that any diminution of rights, as they define them, must pass numerous tests to show that there is indeed a need to so act.

Id.

218. *See, e.g.*, Annas, *supra* note 13.

219. *See, e.g.*, *id.* at 96 ("'[I]ndividuals have a fundamental right to refuse medical treatment, testing, physical or mental examination, vaccination, participation in experimental procedures and protocols, collection of specimens and preventative treatment programs.'") (quoting 2002 Minn. Laws 402).

220. *See* Annas, *supra* note 5, at 1339.

221. *See, e.g.*, *id.* at 1339-40 ("[T]he argument that, in a public health emergency, there must be a trade-off between effective public health measures and civil rights is simply wrong."); Annas, *supra* note 13, at 97 ("Ultimately, public health must rely not on force but on persuasion. . . ."); Mariner, *supra* note 192 (noting that no force was needed to ensure that those exposed to anthrax began taking the antibiotic Cipro).

222. *See, e.g.*, Annas, *supra* note 13, at 96 (stating that the prospect of compulsion "would rightly engender distrust in government and public heath officials and could actually discourage

Libertarians characterize emergency health powers in provocative, sensational ways to stir controversy—describing the Model Act[223] as a prescription for tyranny that "turns governors into dictators," permitting them to "create a police state by fiat."[224] Although the Model Act has many supporters,[225] the media and journals give libertarian views a certain salience, perhaps believing that audiences prefer simplified dichotomies rather than nuanced argument.[226]

Despite the critics' strident arguments, a more careful examination shows that liberal theory (perhaps except in its most extreme forms) would actually support liberty-limiting state power.[227] Most liberals agree with public health powers narrowly tailored to avert a significant risk of harm. Support for this position, moreover, would come from both the ideological left and ideological right.

1. Civil Libertarian Conceptions of Risk: The Harm Principle

At first glance, liberals would be expected to oppose liberty-limiting state power. After all, public health powers encroach on some of the most fundamental civil liberties such as privacy, bodily integrity, and freedom of movement, association, and religion. Sanitary regulations similarly violate basic economic liberties such as freedom of contract, pursuit of professional status, use of private property, and competitive markets. However, liberalism, properly conceived, would support state power to avert a significant risk of harm; and liberals may not even be adverse to action to avert a moderate risk.

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those who might have been exposed from seeking treatment at all—even encourage them to escape to another state").

223. *See supra* notes 10-11 and accompanying text.

224. Ass'n of Am. Physicians and Surgeons, Inc., *supra* note 192. AAPS characterizes itself as a libertarian organization.

225. As of February 1, 2002, twenty-one states (Arizona, Delaware, Florida, Georgia, Hawaii, Maine, Maryland, Minnesota, Missouri, New Hampshire, New Mexico, North Carolina, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, and Wisconsin) and the District of Columbia have enacted legislation influenced by the Model Act. *See* Shenna Bradshaw, Note, *Quarantined: Is Missouri Prepared to Sacrifice Some of Its Constitutional Freedoms to Ensure Public Health Safety in an Outbreak?*, 71 U. MO.-KAN. CITY L. REV. 939, 947 (2003); *see also* Justin Gillis, *States Weighing Laws to Fight Bioterrorism*, WASH. POST, Nov. 19, 2001, at A1 (discussing the antiquated nature of existing state public health laws).

226. Historians from Columbia University, for example, have traced the extreme libertarian views associated with MSEHPA. Bayer & Colgrove, *Bioterrorism, Public Health, and the Law*, *supra* note 13; Bayer & Colgrove, *Public Health vs. Civil Liberties*, *supra* note 13; Sarah Lueck, *States Seek to Strengthen Emergency Powers—Movement Is Raising Privacy and Civil-Liberties Concerns*, WALL ST. J., Jan. 7, 2002, at A26.

227. *See, e.g.*, Thaddeas Mason Pope, *Balancing Public Health Against Individual Liberty: The Ethics of Smoking Regulations*, 61 U. PITT. L. REV. 419, 431 (2000).

Liberal philosophers focus their attention primarily on limiting regulation of self-regarding behavior.[228] They believe the state has no warrant for interfering with behavior that affects primarily the individual herself.[229] Consequently, liberals reject public health paternalism in the form of, say, regulation of motorcycle helmets, seatbelts, and water fluoridation.[230] They are especially critical of the "new" public health, with its emphasis on the prevention of behaviors causing chronic disease—e.g., cigarette smoking, consumption of high fat foods, and unsafe sex.[231] These behaviors, according to liberal philosophy, belong in the private (unregulated) sphere because they do not affect others;[232] autonomous individuals, under this account, are responsible for their personal choices.

Although liberals condemn paternalism, they have traditionally acknowledged the legitimacy of state power where necessary to avert a significant risk of harm to others.[233] Classic liberal philosophers from John

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228. *See, e.g.*, JOEL FEINBERG, HARM TO SELF 8-9 (1986), *cited in* Pope, *supra* note 227, at 498 n.8; *see also* Henry Mather, *Natural Law and Liberalism*, 52 S.C. L. REV. 331, 335 (2001) (discussing a common theme among liberals that paternalistic laws can seldom be justified).

229. *See, e.g.*, Mather, *supra* note 228, at 335.

230. Philip Cole, *The Moral Bases for Public Health Interventions*, 6 EPIDEMIOLOGY 78 (1995).

231. *See* SALLY SATEL, HOW POLITICAL CORRECTNESS IS CORRUPTING MEDICINE (2002); Miquel A. Faria, Jr., *Public Health—From Science to Politics*, 6 MED. SENTINEL 46, 46-49 (2001); Sally Satel & Theodore R. Marmor, *Does Inequality Make You Sick?: The Dangers of the New Public Health Crusade*, WKLY. STANDARD, July 16, 2001, at 18; Sally Satel, *The Indoctrinologists Are Coming*, ATLANTIC MONTHLY, Jan. 2001, at 59; Jacob Sullum, *The Tyranny of Public Health*, 4 MED. SENTINEL 100, 100-02 (1999).

232. MILL, *supra* note 195, at 68-69. Mill argues that, subject to background duties of justice and fair contribution, state coercion is justified only to prevent or punish acts causing harms to other persons, not harms to self. *Id.* Harm to others can be found in almost any type of behavior; indirect harm is subject to limitless expansion. Those who support apparently paternalistic policies often identify ostensible harms to others, such as financial burdens and social costs associated with the risk behavior (e.g., costs of emergency response and health care for injuries attributable to failing to wear a seat belt or motorcycle helmet). *See* Simon v. Sargent, 346 F. Supp. 277, 279 (D. Mass. 1972) ("We do not understand a state of mind that permits plaintiff [a motorcyclist] to think that only he himself is concerned."). Similar ideas are evident in tobacco regulation, which is often justified by the ostensible harms to third parties from exposure to second hand smoke. *See, e.g.*, Pope, *supra* note 227, at 435-45 (applying the harm principle to smoking regulations).

233. MILL, *supra* note 195, at 68:

> [T]he sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others.

Id. The orthodox jurisprudential analysis of harm is an interest invaded, but there is disagreement about the scope of the harm that "counts" in applying the harm principle—e.g., moral harms (harms to character), vicarious harms, on posthumous harms. JOEL FEINBERG, RIGHTS, JUSTICE, AND THE

Stuart Mill[234] to Joel Feinberg,[235] argue that, while individual freedom to engage in self-regarding behavior is near absolute, "other-regarding" behaviors have distinct limits.[236] Known as the "harm principle," liberals concede the legitimacy of state authority to prevent a significant risk of harm to others.[237]

The regulation of infectious disease provides a classic illustration of the harm principle. Certainly, persons with particular communicable infections can interact in society with perfect safety. For example, persons living with HIV/AIDS who do not engage in unprotected sex or needle sharing pose no appreciable risk. However, if a person behaves in a way that carries a real risk of transmission of a serious infection, the harm to others is palpable. Thus, if an autonomous individual engages in behavior that involves a primary route of disease transmission, unknowing third

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BOUNDS OF LIBERTY: ESSAYS IN SOCIAL PHILOSOPHY 45 (1980). No one doubts that prevention or punishment of physical harms, such as contracting an infectious disease, warrants state coercion. *See* 1 JOEL FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW: HARM TO OTHERS 31 (1984) (arguing that the state's primary tools for harm reduction include public health and safety agencies).

234. MILL, *supra* note 195, at 68-69 (arguing that state coercion is justified only to prevent or punish acts causing harms to other persons, not harms to self). Many modern liberals disagree with the inflexibility of the Millian harm principle. *See, e.g.*, H.L.A. HART, LAW, LIBERTY, AND MORALITY 30-34 (1963); *see also* Bernard E. Harcourt, *The Collapse of the Harm Principle* 90, J. CRIM. L. & CRIMINOLOGY 109 (1999).

235. FEINBERG, RIGHTS, JUSTICE, AND THE BOUNDS OF LIBERTY, *supra* note 233, at 45:

> Most writers agree, after all, that the prevention of harms is a legitimate aim of both the criminal law and the coercive parts of the civil law, though of course there is much disagreement over whether it is the *sole* proper concern of coercive law, over *whose* harms are properly considered, and over which types of harm have priority in cases of conflict.

Id. See generally, FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW, *supra* note 233.

236. William J. Novak, *Private Wealth and Public Health: A Critique of Richard Epstein's Defense of the "Old" Public Health* (forthcoming 2003) (noting the flaws in Mill's harm principle, which limited public health intervention to where there was a "certainty of danger" to others, as applied in today's advanced society: "The changed conditions of twentieth-century America (especially mechanization, concentration, standardization, and corporate organization) demanded new technologies of social, political, and economic action—a 'renascent liberalism'—if old individual values were to be realized in new times. Mill's harm principle [was] no longer enough."); *see also* JOHN DEWEY, *Liberalism and Social Action*, *in* 2 JOHN DEWEY, THE LATER WORKS, 1925-1953 (Jo Ann Boydston ed., 1991), *cited in* Novak, *supra* note 236 (a "famous critique" of Mill's harm principle).

237. *See supra* notes 233-35 and accompanying text; *see also, e.g.*, Richard C. Turkington, *Confidentiality Policy for HIV-Related Information: An Analytical Framework for Sorting Out Hard and Easy Cases*, 34 VILL. L. REV. 871, 887-89 (1989) (noting that the interest in avoiding harm to others is a "reasonable justification for disclosure of HIV-related information [if] the recipient of the information is at significant risk of infection and disclosure will significantly reduce or eliminate that risk").

parties are affected. Consider the transmission of airborne disease by entering a crowded place; transmission of bloodborne disease by engaging in unprotected sex without disclosure of serological status; or transmission of foodborne disease by cooks or servers touching patrons' food. In each case, an autonomous individual's behavior has the potential to cause harm to others.

Infectious disease regulations targeted toward individuals who pose risks of tangible and immediate harm to others (as in the significant risk scenario above) are well within traditional liberal understandings of the legitimate role of the state.[238] Consequently, liberals would be expected to support liberty-limiting infectious disease control measures (e.g., vaccination, physical examination, treatment, and quarantine), at least in high-risk circumstances.

2. Economic Libertarian Conceptions of Risk: Correcting Negative Externalities

Economic libertarians also are not adverse to the use of state power to avert harm to others. Preferring the language of economics, they recognize the legitimacy of government intervention to correct negative externalities. An externality occurs when the actions of one person or entity directly affect the interests of another person or entity in a way that is incidental to the primary transaction.[239] A negative externality is "a spillover" harm that extends outside the market and affects third parties, often innocent bystanders. Negative externalities are important in economics because they are inefficient. Without incentives to consider the effects on others, there will be external diseconomies—individuals are more likely to engage in activities where others experience the harms, costs, or burdens.

Industrial pollution that causes nuisance or harm to others provides a classic illustration of a negative externality.[240] Pollution represents an

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238. *See, e.g.*, Amy Darby, *The Individual, Health Hazardous Lifestyles, Disease and Liability*, 2 DEPAUL J. HEALTH CARE L. 787, 814-15 (1999) (noting that the harm principle might support public health paternalism in order to thwart the spread of a contagious disease to the community).

239. An externality exists whenever an individual's actions affect the well-being of another—whether beneficial (external economy or positive externality) or harmful (external diseconomy or negative externality)—in ways that need not be paid for according to the existing definition of property rights in the society. *See* RICHARD A. POSNER, SEX AND REASON 183 (1992) (stating that an externality "is an effect (beneficial or harmful) that the person creating it will not take fully into account in deciding whether or how much to engage in the activity that produces it"); R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 1 (1960); Carl J. Dahlman, *The Problem of Externality*, 22 J.L. & ECON. 141, 141 (1979).

240. *See, e.g.*, Richard A. Epstein, *Nuisance Law: Corrective Justice and Its Utilitarian Constraints*, 8 J. LEGAL STUD. 49, 101-02 (1979) (discussing why public regulation is acceptable to address the nuisance of air pollution).

external cost because damages associated with it are borne by society as a whole and are not reflected in market transactions. It also is possible to conceptualize activities that transmit infectious disease as producing external costs. The burdens of behavior posing a risk of disease transmission are borne by other specific individuals (close contacts or sexual partners)[241] or by the population at large (unspecified individuals or groups at risk of contracting infection). Individuals have diminished incentives to reduce risk behaviors because the burdens of unsafe activity do not affect them directly, but fall primarily on others.

Economists, of course, regard the existence of an externality or other source of market failure as a necessary rather than sufficient condition for public intervention.[242] Intervention is justified on economic grounds only when it will produce a net increase in social welfare—e.g., the common law and/or the market could not provide adequate remedies or the regulation is less burdensome than the external cost.[243]

Legal economists regard the case of infectious disease as quintessentially suitable for government regulation.[244] Why allow

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241. Richard Posner notes, for example, that the concealment of a sexually transmitted disease from one's sexual partner "is itself a serious form of sexual fraud, properly considered a legal wrong." POSNER, *supra* note 239, at 183.

242. *See* TOMAS J. PHILIPSON & RICHARD A. POSNER, PRIVATE CHOICES AND PUBLIC HEALTH: THE AIDS EPIDEMIC IN AN ECONOMIC PERSPECTIVE 126 (1993).

243. *See, e.g.*, RICHARD A. EPSTEIN, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN 107-45 (1985) (analyzing police power); RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 276 (2d ed. 1977) (arguing that for direct regulation of safety and health, the common law and/or the market often provide adequate remedies); Epstein, *supra* note 240, at 98-102 (stating that public regulation is justified in the case of air pollution because there is not an adequate private remedy "given the administrative complications that they spawn, even after taking into account the utilitarian constraints"); Tomas Philipson & Richard A. Posner, *Public Spending on AIDS Education: An Economic Analysis*, 37 J.L. & ECON. 17, 35 (1994) (finding that public spending on AIDS education may not be justified from an economic perspective because it may actually lead to an increase in the spread of the disease); *see also* Jane E. Larson, *The New Home Economics*, 10 CONST. COMMENT. 443, 450-51 (1993) (reviewing POSNER, *supra* note 239) (noting that Richard Posner, a noted economic libertarian, disagrees with social conservatives because, while he supports public intervention only to correct externalities, he does not consider deviations from moral norms as externalities).

244. *See, e.g.*, POSNER, *supra* note 239, at 163-64 (stating that infectious diseases cause externalities sufficient to justify public intervention); Richard A. Epstein, *Let the Shoemaker Stick to His Last: A Defense of the "Old" Public Health*, 46 PERSP. BIOLOGY & MED. 5138, 5138 (2003) [hereinafter *Let the Shoemaker Stick to His Last*] (observing that the "traditional forms of public health law were directed largely toward communicable diseases and other externalities, such as pollution, with negative health impacts"); Richard A. Epstein, *Waste and the Dormant Commerce Clause: A Reprise*, 3 GREEN BAG 2d 363, 365 (2000) [hereinafter *A Reprise*] (expressing that the "exclusion [of persons with communicable disease] has to be considered as a principled response"); Richard A. Posner, *The Cost of Rights: Implications for Central and Eastern Europe—And for the United States*, 32 TULSA L.J. 1, 16-19 (1996) (noting that *limited* public intervention in the form of government food and water inspections is appropriate to combat food-borne and water-borne

regulation to control infectious disease and not for other modern public health problems associated with smoking, diet, and exercise? Private incentives, like negative health consequences for the individual and higher health insurance premiums, can be effective deterrents in the case of smoking, diet, and exercise. But, in the context of infectious disease, the theory and practice of private remedies (e.g., voluntary contract, injunction, and tort actions) break down, making public remedies attractive.[245] Private remedies are unavailable because it is difficult to identify a wrongdoer to enjoin or sue.[246] In most cases, it is unclear who transmitted the infection.[247] It is similarly difficult to assign responsibility—was the act of transmission wrongful or merely unknowing or inadvertent (as a sneeze)?[248] Police power regulation holds out the possibility of increasing security for all at the expense of liberty, but all people gain from the social exchange.[249] People agree to the public intervention because absent it, they could not take effective steps to diminish risks common to all.[250]

Richard Epstein, a noted economic libertarian, is even prepared to support quarantine and vaccination in the right circumstance.[251] As for quarantine, he observes, "little can be done to fight [infectious disease] on a piecemeal basis."[252] It is because individuals do not have adequate private defensive remedies that public coercion is allowable. The gains to the safety of countless others so outweighs the restriction of liberty that it

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diseases).

245. *See* Epstein, *Let the Shoemaker Stick to His Last*, *supra* note 244, at 5143.

246. *See id.*

247. *See id.*

248. See *id.*

249. *See* Posner, *supra* note 244, at 16-19. Law and economic scholars are not as convinced of the suitability of police powers to prevent the spread of HIV and other sexually transmitted infections because the negative externalities are not as large as generally believed and there exist private means of protecting against infection. *See* PHILIPSON & POSNER, *supra* note 242, at 126; POSNER, *supra* note 239, at 164. Because these diseases are primarily, although not always, spread through voluntary contact, individuals are more to likely to protect themselves, even without public intervention. *Id.* at 163-64. In a similar manner, rational individuals in high-crime areas may also be likely to take self-protective measures (ranging from installing a home alarm system to owning a gun) to offset the risks of being a victim of crime. Tomas J. Philipson & Richard A. Posner, *The Economic Epidemiology of Crime*, 39 J.L. & ECON. 405, 407-12 (1996). For a good discussion of the economics of private protection compared to public intervention to combat crime (without commenting on the correct balance of private and public intervention), see *id.*

250. Communitarian theorists would come to a similar conclusion. Michael Walzer reasons that individuals form political communities primarily for the communal provision of security and welfare. *See* MICHAEL WALZER, SPHERES OF JUSTICE: A DEFENSE OF PLURALISM AND EQUALITY 64 (1983). Public health is the "easy" case of a general communal provision because individuals acting alone cannot assure their health and safety. *Id.*

251. Epstein, *Let the Shoemaker Stick to His Last*, *supra* note 244, at 5145.

252. *Id.*

is "well-nigh impossible to mount a principled categorical attack against this form of regulation."[253]

Vaccination presents a slightly more difficult case for economic libertarians.[254] If vaccination is one hundred percent effective, then individuals have a readily available method of self-help. Most vaccines, of course, do not afford perfect protection, so individuals cannot avoid all risk through voluntary vaccination. Rational individuals, moreover, may not volunteer for vaccination if they rely on others to do so. The exercise of police powers, then, may be a justifiable counter to the prisoner's dilemma[255] or to a collective action problem.[256] A rational actor understands that he incurs less risk if he foregoes vaccination while others in society submit to it. By doing so, he gains herd immunity[257] (assuming

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253. *Id. Accord* Epstein, *A Reprise*, *supra* note 244, at 365 ("Exclusion [of persons with infectious disease] has to be considered as a principled response.").

254. *See* PHILIPSON & POSNER, *supra* note 242, at 224 (noting that vaccination "presents a variety of subtle and neglected economic issues, including the cost of vaccination in lowering natural immunity and the rapid diminution of its benefits when the prevalence of the disease drops to extremely low levels" (footnotes omitted)).

255. To understand the prisoner's dilemma, consider what happens when a prosecutor offers two prisoners a deal in exchange for his/her testimony about the other prisoner. *See* Steven Kuhn, *Prisoner's Dilemma*, in THE STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Edward N. Zalta ed., Winter 2001), *available at* http://plato.stanford.edu/archives/win2001/entries/prisoner-dilemma/ (last modified Oct. 12, 2001). The deal is contingent on one of the prisoners remaining silent. *See id.* If both remain silent, the prosecutor will be forced to pursue a lesser charge against both. *See id.* If both confess, the prosecutor will recommend an early parole. *See id.* Regardless of what the other prisoner does, the prisoner is better off if he confesses than if he remains silent. *See id.* Yet, if both prisoners confess, the result is worse than if neither confesses. *See id.*

256. The collective action problem arises when there is no incentive for persons to individually contribute to a public good because the public good will be equally available to both contributors and free-riders. *See* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 2 (1971) (stating "unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests" (emphasis omitted)). In the case of vaccination, because there are risks associated with vaccination, a free-rider may decide to avoid individual risk by foregoing his vaccination while still taking advantage of others' receipt of vaccination.

257. Herd immunity is an epidemiological concept suggesting that if sufficient numbers of people in a population are immune from disease, all members of that population are protected. *See* Alan R. Hinman et al., *Childhood Immunization: Laws That Work*, 30 J.L. MED. & ETHICS 122, 125 (2002):

> If a large enough proportion of individuals in a community is immunized, this proportion serves as a protective barrier against transmission of the disease in the community, thus indirectly protecting those who are not immunized for whatever reason as well as those few who received vaccine but are not protected (vaccine failures). The proportion of the population that must be immune to provide this herd immunity varies according to the infectiousness of the agent. For poliomyelitis, it is considered to be on the order of 80%, whereas for measles it

others choose to vaccinate) and he avoids risks of vaccine-induced injury. Affording individuals the right of voluntary choice to vaccination, then, is not for the greatest good of the community. Rather, as Garrett Hardin suggests, voluntarism can contribute to a "tragedy of the commons" if too many people make the decision not to immunize.[258] In this case, all individuals are better off with legally-enforced, universal coverage than they would be with insufficient voluntary coverage.[259]

3. Liberal Perspectives on the Low Risk, Arbitrary Action Scenario

Just as liberals (both civil and economic) would support restraints on liberty to avert a significant risk, so too would they all agree that state interference is illegitimate in the absence of appreciable risk. Similarly, liberals would peremptorily reject state power exercised arbitrarily or discriminatorily. The reasons are straightforward. These interventions violate core tenets of liberalism and egalitarianism—personal freedom and fair allocation of burdens. As a result, the negligible-risk category poses little trouble for liberals because limits on autonomy are not justified by the need to defend the interests of other persons.

Liberals' antipathy to public health power exercised arbitrarily or pretextually is understandable, both historically and constitutionally. Public health agencies have engaged in patently wrongful activity in the past. During the turn of the twentieth century, for example, public health officials in San Francisco imposed vaccination and quarantine requirements that operated exclusively against the Chinese community.[260] In the guise of protecting the public's health against bubonic plague, thousands were deprived of their autonomy and freedom unfairly.[261] The courts saw through the pretext of using public health as a vehicle for discrimination.[262] Even before the advent of heightened scrutiny, and in an

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is in excess of 90%.

Id.

258. Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1244, 1246 (1968).

259. *See* Epstein, *Let the Shoemaker Stick to His Last*, *supra* note 244, at 5146-47.

260. Jew Ho v. Williamson, 103 F. 10, 13 (C.C.N.D. Cal. 1900) (noting that over 10,000 of the 15,000 persons who resided in the quarantined Chinatown district were Chinese); Wong Wai v. Williamson, 103 F. 1, 3 (C.C.N.D. Cal. 1900) (noting that over 25,000 Chinese persons were subject to the public health measure). *See generally* MARILYN CHASE, THE BARBARY PLAGUE: THE BLACK DEATH IN VICTORIAN SAN FRANCISCO (2003); CHARLES J. MCCLAIN, IN SEARCH OF EQUALITY: THE CHINESE STRUGGLE AGAINST DISCRIMINATION IN NINETEENTH-CENTURY AMERICA 234-76 (1994) (discussing the impact of the plague in Chinatown on the Chinese).

261. *See* sources cited *supra* 260.

262. *Id.*

era of extreme deference to public health authority,[263] the courts found public health agencies were acting "with an evil eye and an unequal hand."[264]

The same kind of judicial scrutiny could be found in economic contexts. Legal economists cite with approval older commerce clause cases where infectious disease powers masked protectionism.[265] Courts struck down police powers that were simply a sham to exclude goods or services.[266] Thus, courts sought to distinguish between legitimate public health powers (designed to exclude obvious health threats) from illegitimate powers (designed to undermine competition).[267] Thus, liberals, whether civil or economic, insist on inquiring whether an infectious disease threat is real or simply masks group prejudice or economic self-protection.

4. Liberal Perspectives on the "Hard Case" of Moderate Risk

Liberal theory, then, supports state action to avert a significant threat and denounces state action arbitrarily or pretextually exercised. For liberals, however, evaluating the legitimacy of targeted state action to reduce a moderate risk to the population presents a much harder case. It is difficult because the government acts with evidence of a serious potential threat to health and security and employs plausible means to diminish the risk. However, the state is unable to be specific about the threat's nature (i.e., which biological agent will be deployed and how), timing (when the event will occur), or probability (how likely is the event) of the threat.[268]

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263. *See* State *ex rel.* Conway v. Southern Pac. Co., 145 P.2d 530, 532 (Ariz. 1943) (quoting that "where the police power is set in motion in its proper sphere, the courts have no jurisdiction to stay the arm of the legislative branch") (quoting State *ex rel.* McBride v. Superior Court, 174 P. 973, 976 (Wash. 1918)); *see also* LEROY PARKER & ROBERT H. WORTHINGTON, THE LAW OF PUBLIC HEALTH AND SAFETY, AND THE POWERS AND DUTIES OF BOARDS OF HEALTH 5 (Albany, N.Y., 1892) (M. Bender) ("[T]he legislature has a discretion which will not be reviewed by the courts; for it is not a part of the judicial functions to criticise the propriety of legislative action in matters which are within the authority of the legislative body.").

264. *Jew Ho*, 103 F. at 24 (invalidating the quarantine requirement); *Wong Wai*, 103 F. at 1 (invalidating the vaccination requirement); *see also* Yick Wo v. Hopkins, 118 U.S. 356, 373-74 (1886) (finding unlawful discrimination when a San Francisco ordinance prohibiting persons from operating public laundries without consent of the Board of Supervisors was enforced only against Chinese owners).

265. Epstein, *Let the Shoemaker Stick to His Last*, *supra* note 244, at 5139-48.

266. *See id.* at 5145.

267. In *Railroad Co. v. Husen*, 95 U.S. 465, 472-74 (1877), the Supreme Court "unhesitatingly admitted" that the state's police power allows a prohibition against entrance of people, animals, and goods that carries with it the danger of transmitting any contagious or infectious disease. However, the Court invalidated the state regulation at issue under the dormant commerce clause because the state went "beyond what was absolutely necessary for its self-protection." *Id.* at 472.

268. For a more complete discussion, see *supra* Part I.

The state cannot point to any particular person whose actions pose the risk. Instead, the government sweeps more broadly to collect the data needed to inform itself about threats to health and security.

The moderate risk scenario poses the usual trade-offs seen in the homeland security project. The public appears to accept some diminution of privacy in exchange for a greater level of security (e.g., searches of property and persons at airports), but not all diminution (e.g., profiling at airports).[269] These trade-offs occur in the public health context as well. Agencies conduct surveillance of personally identifiable health records to serve as an early warning system of bioterrorism or naturally occurring disease threats.[270] Liberals are conflicted about this scenario. Most liberals agree with named reporting for certain diseases (e.g., tuberculosis and smallpox), but not other diseases (HIV).[271] Most also agree with routine surveillance hedged with rigorous safeguards, but oppose broader surveillance, particularly where safeguards are diminished in a public health emergency.[272]

Liberals stress autonomy and privacy over public goods. If the conflict can be avoided almost entirely (in the significant and well targeted categories), liberalism will support diminished autonomy. However, if the conflict is unmistakable (in the moderate risk category), liberal instincts are to prefer individual rights over public goods. For a liberal, much of the calculation depends on the details: how invasive is the intervention and how strong are the safeguards against abuse? As we will see, communitarians also seek a balance, but their instincts are decidedly in the opposite direction.

B. *Communitarianism*

Support for public health and security comes more naturally to a communitarian than to a liberal.[273] Communitarianism is a philosophy that

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269. *See* Editorial, *The New Airport Profiling*, N.Y. TIMES, Mar. 11, 2003, at A24 (opposing electronic profiling of air travelers for security purposes and noting similarities with the Pentagon's proposed Total Information Awareness project designed to track the activities of millions of Americans).

270. *See* Gostin & Hodge, *supra* note 174, at 689.

271. Civil libertarians, for example, oppose named HIV reporting, but agree to AIDS reporting. *See id.* at 684-86; Gostin et al., *supra* note 174, at 1162.

272. For example, civil libertarians supported the Model State Public Health Privacy Act, which permitted surveillance under strict conditions, but rejected the MSEHPA because the surveillance was too broad and safeguards insufficient. *Compare* Lawrence O. Gostin et al., *Informational Privacy and the Public's Health: the Model State Public Health Privacy Act*, 91 AM. J. PUB. HEALTH 1388, 1389 (2001), *with* Mariner, *supra* note 192.

273. The most prominent modern communitarian thinkers include: ALASDAIR MACINTYRE, AFTER VIRTUE 156 (2d ed. 1984) (claiming that the notion of the political community as a common project is alien to the modern liberal individualist world); MICHAEL J. SANDEL, DEMOCRACY'S

holds that individuals can flourish as moral beings and political agents only within the context of a community.[274] The idea of community (characterized by a shared set of social bonds or a social web) is not precise,[275] but includes the role and value of social and civic institutions in shaping people's lives—e.g., families, neighborhoods, churches, and schools.[276] Sometimes, of course, communitarians favor community values that are inconsistent with the public's health. For example, certain religious or family values urge sexual abstinence over proven disease control measures, like condom use. Nevertheless, modern communitarians

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DISCONTENT: AMERICA IN SEARCH OF A PUBLIC PHILOSOPHY 11-13 (1996) (critiquing liberalism's core assumption that society is composed of autonomous individuals who freely choose values for themselves, given that most individuals are enshrined in networks they do not choose, like family ties and religious organizations); CHARLES TAYLOR, SOURCES OF SELF (1989) (arguing that individuals exist in a neutral framework, constituted by universally valid commitments existing in a moral space, and defined in the sense in which things have significance to the particular individual); ROBERTO M. UNGER, POLITICS: A WORK IN CONSTRUCTIVE SOCIAL THEORY (1987) (championing emancipation from false necessity, whereby no particular form of social constraint is necessary or inescapable); WALZER, *supra* note 250, at 29 (advocating for multiple spheres of justice, and declaring community "conceivably the most important good.").

274. Communitarianism can be traced to Aristotle who argued that moral and political virtue could be achieved only in the *polis*. *See* ARISTOTLE, POLITICS bk. I, ch. 2, 53-55 (Benjamin Jowett trans., The Modern Library 1943) (n.d.):

> When several villages are united in a single complete community, large enough to be nearly or quite self-sufficing, the state comes into existence, originating in the bare needs of life, and continuing in existence for the sake of a good life. . . . The proof that the state is a creation of nature and prior to the individual is that the individual, when isolated, is not self-sufficing; and therefore he is like a part in relation to the whole. . . . For man, when perfected, is the best of animals, but, when separated from law and justice, he is the worst of all. . . . But justice is the bond of men in states, for the administration of justice, which is the determination of what is just, is the principle of order in political society.

Id. (footnotes omitted). The linguistic and historical origins of the police power demonstrate a close association between government and civilization: *politia* (the state), *polis* (city), and *politeia* (citizenship). *See* GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 48. Similarly, Hegel stressed the importance of various forms of community—the family, civic community, and the state. G.W.F. HEGEL, PHILOSOPHY OF RIGHT §§ 158-360 (S.W. Dyde trans., G. Bell & 1896); *see also* DANIEL BELL, COMMUNITARIANISM AND ITS CRITICS 1 (1993) (citing the Preamble to "The Responsive Communitarian Platform Rights and Responsibilities," signed by over fifty communitarians: "Neither human existence nor individual liberty can be sustained for long outside the interdependent and overlapping communities to which we all belong.").

275. Commentators criticize communitarian thinking because of its imprecision, using concepts like community and common goods. *See, e.g.*, Allen E. Buchanan, *Assessing the Communitarian Critique of Liberalism*, 99 ETHICS 852, 855 (1989).

276. *See* AMITAI ETZIONI, *Old Chestnuts and New Spurs*, *in* NEW COMMUNITARIAN THINKING: PERSONS, VIRTUES, INSTITUTIONS, AND COMMUNITIES 16, 17, 49 (Amitai Etzioni ed., 1995).

do stress the value of healthy people in healthy communities, which is highly compatible with population health.[277]

Just as liberals often define themselves through a repudiation of utilitarianism, so too do modern communitarians define themselves through a critique of liberalism.[278] Liberal individualists who conceptualize the self and human dignity exclusively in terms of autonomy and self-direction, do not recognize the value of community as constitutive of moral character, and strictly prioritize the "right" over the "good."[279] Liberals write as if the major concern of social morality were the protection of individual interests and rights against state incursion.[280] Communitarians see the intense focus on personal rights and the dichotomy between individuals and the state as imbalanced and overly simplistic.[281]

Communitarians understand the undeniable desire and need of people for vigor and long life, paying special attention to the public's health.[282] Security of mind and body is every bit as essential to human flourishing as autonomy and freedom.[283] Human health holds a singular importance in all societies, irrespective of culture and religion.[284] The normative standing of health can be explained by its value to individuals and communities as a whole.[285]

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277. *See, e.g.*, Etzioni, *supra* note 217, at 102.

278. *See, e.g.*, STEPHEN MULHALL & ADAM SWIFT, LIBERALS AND COMMUNITARIANS 157-64 (1992). Communitarians also reject egalitarian theory like John Rawls' difference principle, which provides that although there must be equal basic liberties, there may be "inequalities that benefit the least-advantaged members of society." *See* Michael J. Sandel, *The Procedural Republic and the Unencumbered Self*, 12 POC. THEORY 81, 88-90 (1984):

> What the difference principle requires, but cannot provide, is some way of identifying those among whom the assets I bear are properly regarded as common, some way of seeing ourselves as mutually indebted and morally engaged to begin with. . . . [T]he constitutive aims and attachments [that is, a role in a community that could define a person in such a significant manner that the person could not understand himself without it] that would save and situate the difference principle are precisely the ones denied to the liberal self; the moral encumbrances and antecedent obligations they imply would undercut the priority of right.

Id.

279. *See supra* notes 194-200 and accompanying text.

280. *See* BEAUCHAMP & CHILDRESS, *supra* note 197, at 355-57.

281. *See* AMITAI ETZIONI, THE NEW GOLDEN RULE: COMMUNITY AND MORALITY IN A DEMOCRATIC SOCIETY 244-27 (1996).

282. *See id.*

283. *See, e.g.*, HANDBOOK OF SOCIOLOGY 574-81 (Neil J. Smelser ed. 1988) (noting the position of health in our society and the impact that ill-health can have on a society).

284. *See id.*

285. GOSTIN, PUBLIC HEALTH LAW, *supra* note 2, at 9.

The benefits of health to each person are indisputable. Health has compelling value in itself because it is important for much of the joy, creativity, and productivity that a person derives from life. A certain level of vitality and absence from pain or disability allows individuals to function in society. Healthy people, for example, are better able to assure their survival by attaining the necessities of life—food, water, clothing, and shelter. And they are better able to pursue their hobbies, projects, ambitions, and dreams.

Perhaps not as obvious, however, health also is essential for communities. Without minimal levels of health, populations cannot fully engage in the social, economic, and political interactions necessary for community survival. Health is foundational for engaging in many aspects of public life—e.g., participation in the political process, generation of wealth and economic prosperity, and provision for the common defense and welfare. Public health, then, becomes a transcendent value because a basic level of human functioning is a prerequisite for engaging in activities that are critical to communities.[286]

Theories of democracy (which are closely connected to communitarian thinking)[287] help explain the value of public health and security. One proponent of democratic theory, Michael Walzer, has articulated an essential truth about the nature and purposes of political communities: "Membership is important because of what the members of a political community owe to one another. . . . And the first thing they owe is the communal provision of security and welfare."[288] Public health, according to Walzer, is a clear example of a general communal provision because state action is intended to benefit all or most of the population.[289]

A political community stresses a shared bond among members: organized society safeguards the common goods of health, welfare, and security, while members subordinate themselves to the welfare of the community as a whole.[290] Public health can be achieved only through collective action, not through individual endeavor.[291] The community has a stake in hygiene and sanitation, clean air and surface water, uncontaminated food and drinking water, and control of infectious disease. Acting alone, individuals cannot assure even minimum levels of health.

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286. *See generally* DANIELS, *supra* note 205; Dan W. Brock & Normal Daniels, *Ethical Foundations of the Clinton Administration's Proposed Health Care System*, 271 JAMA 1189 (1994).

287. Some commentators do not regard the theories of democracy offered by Michael Walzer and others as within the mainstream of communitarian thought, but many do. *See, e.g.*, Buchanan, *supra* note 275, at 852.

288. WALZER, *supra* note 250, at 64.

289. *Id.* at 65-66.

290. *Id.* at 64-66.

291. *Id.* at 65.

Although individuals may procure personal medical services and many of the necessities of living (e.g., a person of means can purchase a home, clothing, and food), no single individual or group of individuals can assure his or her health. Meaningful protection and assurance of the population's health require communal effort. Similarly, in terms of the homeland security project, individuals cannot realistically protect themselves, but rather they rely on government to guard against conventional, biological, chemical, and radiological threats.

At first sight, liberal and communitarian responses to the legitimacy of state power appear quite different. However, these two philosophical traditions diverge only in the harder cases. Like liberals, communitarians have little trouble recognizing the legitimacy of state action to avert a significant threat. After all, government is most assuredly within its valid range of authority when intervening to prevent probable and serious harms to populations. So too would communitarians join liberals in rejecting state action to avert a negligible risk, or where the state acts arbitrarily (without good reason) or disingenuously (e.g., as a subterfuge for discrimination). In this scenario, communitarians realize there are few tangible benefits to collective health and security. Indeed, capricious or discriminatory interventions have adverse effects on community because they unravel the social fabric. People feel exposed and vulnerable to state overreaction to low-level risk.

Like liberals, communitarians would have a more difficult time with the hard case of moderate risk, but they would grant the state more latitude. They would recognize the deficiencies in government claims—lack of specificity in the risk assessment and lack of clarity in the efficacy of the intervention. Yet, they would stress the government's obligation to safeguard health and security. Communitarians would not see a stark conflict between individuals and the oppressive state. Rather, they would perceive the government, acting on behalf of the population, as seeking to reduce a risk common to all. Ideas of community would lead them to conclude that everyone would be better off if each person ceded a small amount of liberty to achieve a safer and more secure population. Communitarians, like liberals, would be concerned with the details: How can legitimate communal interests be balanced against *bona fide* individual claims in any given case? In theory and practice, liberals and communitarians would make the calculations differently. In Part IV of this Article, I present a framework for balancing that, while not resolving the disagreements, offers a principled basis for liberty-limiting public health interventions.

IV. A FRAMEWORK FOR BALANCING THE GOODS OF PERSONAL FREEDOM AND PUBLIC SECURITY

As described in Part I, bioterrorist attacks from rogue countries or non-state actors pose a risk to the public's health. The relative low cost, ease of transport, and difficulty of detection makes bioweapons attractive to those intending to inflict harm and widespread fear on civil society. The fact that several countries have developed such weapons and fringe groups have used them (with minor success), is further evidence that bioweapons are technically feasible and that some people desire the capability. Biological agents already have been used within the United States, and there are strong indicators that the public health infrastructure is currently unprepared to cope with a large-scale attack. These risks require society to contemplate measures designed to avert an attack or minimize the impact should an attack occur.

The question faced is not whether the government should have liberty-limiting authority designed to cope with an attack, but what powers the state should have under what circumstances. American society prizes liberty and freedom, openness and tolerance; these values are part of the national identity and seem sometimes to rise to the level of inviolable tenets. These values, important in their own right, need to be balanced against equally valid values of population health and safety.

The task for society is to grant government power in a way that clearly separates the warranted (true-risk reduction) from the unwarranted (negligible-risk reduction or pretext for unfair treatment). That task is difficult enough even though most clear thinkers agree in principle about the legitimacy of state action in these contexts. What is still more difficult is setting justifiable boundaries for state action to address moderate risk situations where government cannot be sure of the precise parameters of the threat society faces. How can the law help assure that citizens' lives are secure, while preserving their values?

The answer to this question first requires a careful balance between individual and collective interests. The law must seriously consider authentic liberal claims to human dignity and tolerance of ethnic and religious minorities. At the same time, legal scholars should recognize that individual choices are shaped by the social context in which people live. The law also must take account of *bona fide* group interests, including a community's claim to a certain level of health, safety, and security. The law's objective, then, should be to take both private (personal freedom) and public (the social dimensions of human existence) interests seriously, recognizing that neither is dispensable.[292]

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292. *See* BELL, *supra* note 274, at 11-13.

The problem with constructing legal standards and procedures for state action is that any formulation necessarily expresses a preference for one set of interests over another, even if government seeks to respect both. Setting the legal standard too high effectively thwarts legitimate collective interests because, in practice, government action is chilled if not blocked. Setting the standard too low results in the opposite error of excessive deference to state action. The law cannot calibrate precisely enough to split the difference exactly.

Society's preferred values will become transparent in the political process. My point, however, is that there is no reason, *a priori*, for choosing one set of values over the other. In particular, I do not concede that liberalism should be the default preference. Rights, in other words, do not invariably trump common good. Thus, if government can point to a moderate risk and propose interventions that are reasonably well targeted and not unduly burdensome, the law should permit a sphere of state action. By doing so, each person bears a small burden (equitably distributed), but as members of a community all gain in the social exchange.

My refusal to cede to the primacy of individualism is animated by my concern for public safety in a health emergency. It is important that the government has the authority to act quickly should a bioterrorist attack occur. Quick action will be required on the part of both federal and local governments to minimize the impact of the attack and to protect the population.[293] The federal government will need to move supplies from the National Pharmaceutical Stockpile[294] in ways that distribute resources fairly and quickly enough to help those affected. Similarly, plans designed to mobilize experts from the CDC must provide for a prompt response,[295] and the federal government must be prepared to provide support for state

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293. *See e.g.*, Timothy Aeppel, *Early-Warning Bioterrorism Project Puts University of Pittsburgh on Bush Itinerary*, WALL ST. J., Feb. 5, 2002, at A20 (noting that "[s]peed is critical. 'For an hour lost, the number of deaths can be in the hundreds or thousands. This tight coupling between detection and response is vital to stemming the numbers of illnesses and death that can occur using slower methods of detection'" (quoting Dr. Michael Wagner)); *see also* Erin McClam, *CDC: Faces Harsh Criticism*, AM. HEALTH LINE, Oct. 24, 2001 (noting the criticism that the CDC received for failing to immediately test persons suspected of coming in contact with anthrax and for delaying treatment).

294. The National Pharmaceutical Stockpile was developed to provide pharmaceuticals, antidotes, and other medical supplies and equipment in the event of a biological or chemical attack on civilian populations. Ctrs. For Disease Control & Prevention, *Strategic National Stockpile*, (Aug. 11, 2003), *available at* http://www.bt.cdc.gov/stockpile/index.asp. Twelve-hour Push Packages (so named because they are intended to arrive within twelve hours or less) and other vendor-managed inventory supplies are stored in strategic locations around the country. *Id.* The packages are designed to include nearly everything a state will need to respond to a broad range of threats.

295. Currently, the CDC plans to deploy a team of five or six experts at the same time the twelve-hour Push Package is delivered. *Id.* The teams include pharmacists, emergency responders, and logistics experts. *Id.*

and local governments that may be overwhelmed by the sudden drastic increase in public health needs.

State and local governments must have the ability to act quickly as well. If a contagious disease agent is used, compulsory powers, like quarantine, will be effective only if they are used during the early stages of the outbreak.[296] Otherwise, those who were initially infected will spread the disease to their contacts, and those contacts to their own contacts, until the geographical area affected is too vast to make quarantine plausible and effective.[297] Laws and regulations that provide for compulsory powers in a fair and expeditious manner must be in place in order to avoid delays that would render the quarantine moot. In addition, state and local governments must have surveillance mechanisms in place for early detection. Timely identification of a health threat will facilitate distribution of needed resources (e.g., medical personnel, medicine, and hospital equipment) in an equitable and expedient way. While careful consideration of policy choices and extensive deliberation are hallmarks of democracy, this reflection must take place now, so that when the government is called upon to act, it is able to do so in time to be useful.

A. *Elements of the Framework*

A successful framework would allow the government to act quickly in response to an emergency, but not allow individual liberties to be reduced to an unacceptable level.[298] The best way to work toward this balance is to make use of traditionally successful mechanisms, like the democratic process, checks and balances, clear criteria for decisionmaking, and judicial procedures designed to control the abuse of power by governmental agencies. In addition, the framework could adopt the modern concept of "shielding"—the governmental duty to engage the community in voluntary measures of self-protection as a "less restrictive alternative" to compulsion.[299] This would involve government/community partnerships, including effective state communication about health risks and self-preservation.

In truth, adoption of this framework will not guarantee an appropriate balance between liberty and security. The framework cannot assure that politically accountable government will act for the common good if

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296. *See* Aeppel, *supra* note 293.

297. *See* Barbera et al., *supra* note 139, at 2711.

298. *See generally* David Fidler, Legal Issues Surrounding Public Health Emergencies, Address at the Second National Symposium on Medical & Public Health Response (Nov. 29, 2000) (suggesting an approach to respond to the risk of bioterrorism given the current state of our legal and public health system), *available at* http://www.hopkins-biodefense.org/sympcast/transcripts/trans_fidl.html.

299. *See infra* notes 313-19 and accompanying text.

liberalism remains the prevalent social value. The framework, however, is more likely to prevent government overreaching because it relies on a model of separation of powers. Yet, if the electorate gains confidence that checks on power will prevent governmental excesses, perhaps it will cede greater authority to the state to protect the public's health. That, at least, is the theory behind strong powers hedged with substantive and procedural safeguards.

1. The Democratic Process

Public health policy is riddled with contradictions. Agency officials seek power without constraint. Since they are "experts," they resist substantive or procedural fetters on their decisions. Public health officials often distrust the lay public or their elected representatives, believing they do not understand the sciences of public health and are ill-suited to make sound judgments about infectious disease.[300] The liberal public, on the other hand, prefers strict limits on agency action. They, in turn, often do not trust "experts" to provide objective information and respect individual rights.[301]

The resolution of these differences should take place in the policy making branch of government. Legislators, although not experts, have a fiduciary duty to the public, which should include assuring the public's health and safety. At the same time, the legislature is accountable to the electorate and should avoid undue restrictions on individual freedoms. Legislatures obviously cannot make detailed choices in response to an emergency but, as suggested below, should put in place clear criteria and procedures for agency action.

One of the best ways to ensure that trade-offs are legitimate is to submit them to the democratic process. Democracy, of course, is a highly complex abstraction, but I use it here in at least two respects: civic deliberation and representational policy-making. As to the first, forward thinkers urge greater community involvement in public health decisionmaking so that policy formation becomes a genuinely civic endeavor.[302] Under this view, citizens would strive to safeguard their

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300. *See, e.g.*, John M. Colmers & Daniel M. Fox, *The Politics of Emergency Health Powers and the Isolation of Public Health*, 93 AM. J. PUB. HEALTH 397 (2003).

301. *See id.* at 398-99 (explaining distrust of public health in the political arena). For example, only 60% of Americans have confidence that the CDC will provide correct information to protect them from anthrax. *Id.* at 399.

302. *E.g.*, Bruce Jennings, *The Liberal Neutrality of Living and Dying: Bioethics, Constitutional Law, and Political Theory in the American Right-to-Die Debate*, 16 J. CONTEMP. HEALTH L. & POL'Y 97, 104 (1999); *see generally* NANCY KARI ET AL., HEALTH AS A CIVIC QUESTION (Nov. 28, 1994) (prepared for the American Civic Forum); Bruce Jennings, *Health Policy in a New Key: Setting Democratic Priorities*, 49 J. SOC. ISSUES 169 (1993).

communities by civic participation, open fora, and capacity building to solve health problems. Public health authorities, for example, might practice more deliberative forms of democracy, involving closer consultation with consumers and the voluntary organizations that represent them (e.g., town meetings and consumer membership on government advisory committees). Meaningful public involvement should result in stronger support for health policies and encourage citizens to take a more active role in protecting themselves and their neighbors.[303]

Representational policy-making is the process through which hard choices are submitted to the legislature for decision. However, in many cases, public health officials, outside the gaze of the media and the political process, make choices covertly. Alternatively, society sometimes appears willing to wait until a public health emergency arises to submit the problem to the legislature. Representational policy-making works best when the legislative branch deliberates well in advance of a disaster. Through rigorous debate, legislators can consider the relative importance of community values, in addition to various alternatives for accomplishing goals. Democratic deliberation allows key issues to be contemplated publicly, and elected officials to be held accountable for the decisions made. It is important that these discussions take place overtly; the alternative is for a reactionary approach to emergency management that has less potential for considered decisionmaking.[304]

2. Checks and Balances

Although the legislative branch should set the broad parameters for public health policy, there ought to be an important role for the other branches of government. The executive branch is responsible for implementing public health policy. Public health agencies have flexibility to interpret legislative standards, set regulatory policy, and exercise judgment in enforcement actions. The judiciary's role is to ensure that the legislature sets policy (and the executive enforces policy) within constitutional parameters;[305] the agency acts within the scope of the

303. *See infra* notes 313-19 and accompanying text for a discussion of "shielding."

304. This was the theory behind the drafting of the MSEHPA. *See supra* notes 11-13 and accompanying text. The Model Act was designed after reviewing emergency health powers that were available in different states and localities. *See* Gostin, *Public Health Law in an Age of Terrorism*, *supra* note 11, at 83. The Model Act was then distributed widely, and has sparked numerous controversies described above. Each state that considered adopting all or a portion of the Model Act debated the provisions, and made decisions that best reflected the different values in their respective community.

305. *See, e.g.*, M. Elizabeth Magill, *Beyond Powers and Branches in Separation of Powers Law*, 150 U. PA. L. REV. 603, 610 (2001):

legislative delegation of power;[306] and the agency complies with legislative criteria and procedures for action.[307] Distributing power throughout the three branches of government allows some assurance that none of the branches will overreach in ways that are detrimental to individual freedoms.[308]

A system of checks and balances provides the best prospect for sorting out warranted from unwarranted use of power. If the public health agency acts to reduce a significant health risk, it will be more likely to gain support from other branches of government. If it acts arbitrarily or discriminatorily, the other branches are more likely to hold the agency to account.[309]

Although a classic design for separation of powers is important, it helps solve only one of the problems addressed in this Article. Checks and balances primarily restrain government by making it more difficult for any single branch to act. This has the undisputed value of curbing abuse of power, but may dampen decisive action to avert health threats. Separation of powers offers little to ensure that government meets its responsibilities of public security.

> Professor Redish, for example, explains that under his approach, the Court's role in separation-of-powers cases is to be limited to determining whether the challenged branch action falls within the definition of that branch's constitutionally derived powers—executive, legislative or judicial. If the answer is yes, the branch's action is constitutional; if the answer is no, the action is unconstitutional. No other questions are to be asked; no other countervailing factors are to be taken into account.

Id. (citing MARTIN H. REDISH, THE CONSTITUTION AS POLITICAL STRUCTURE 101 (1995)); *see also* THE FEDERALIST NO. 78 (Alexander Hamilton) (noting that the judiciary's sole role is to enforce the constitution—i.e., the judiciary must ensure that both the executive and the legislative branches are acting within the powers enumerated to them in Articles I and II of the Constitution).

306. Administrative Procedures Act, 5 U.S.C. § 706 (1994).

307. *Id.*

308. The Model Act follows a classic design for separation of powers. The Governor is empowered to declare a public health emergency. *See* MSEHPA, *supra* note 8, § 401. Declaring such an emergency gives the Governor certain powers over property and persons. *E.g.*, *id.* § 403. However, the legislative branch checks the executive: the legislature sets the standards for a declaration and, by majority vote, it may terminate the declaration. *E.g.*, *id.* § 405(c). This ensures that an overzealous Governor will not have extraordinary powers if they are not appropriate. Not only will he or she be accountable at the time of the next election, but also the legislature retains oversight. *E.g.*, *id.* § 405(c). The Act permits the courts to review the decisions of the Governor and public health agency. *Id.* § 706. If the executive does not adhere to legislative standards or procedural due process, its decisions can be overturned. *E.g.*, *id.* § 706.

309. *See, e.g.*, *supra* notes 260-64 and accompanying text (discussing the judicial role in prohibiting discriminatory use of quarantine during the San Francisco bubonic plague epidemic).

3. Standards of Decisionmaking

The legislature also should specify clear criteria for the exercise of public health powers. Objective standards have at least two positive effects. First, the political branch of government specifies in advance of a threat the conditions under which it will countenance the use of compulsion. The legislature, as discussed above, can deliberate about the appropriate conditions for coercion and remains politically accountable. Second, the use of clear criteria has a constraining effect on public health agencies. Deciding ahead of time what elements must be present for the executive branch to intervene offers some protection against policy based on suspect motives or irrational public fear. By circumscribing the conditions under which agencies can exercise power, it is possible to permit effective action while reigning in governmental excesses.

Most existing infectious disease statutes afford agencies broad discretion without setting clear standards for the exercise of power.[310] This approach affords public health officials broad authority and makes it difficult to hold them accountable. Although health officials may prefer wide statutory mandates that grant them flexibility, they are not well served by such legislative inattention to standards. If agencies need to exercise strong power, they are more likely to gain political and public acceptance if they can point to a clear legislative standard supporting their decisions.[311]

4. Procedural Protections

Clear standards for agency action can limit discretion, helping ensure that power is exercised only where needed. Yet, there is still a need for procedural safeguards. Procedural due process has an instrumental and normative value in the context of a public health emergency. Primarily, due process helps ensure that compulsory powers are correctly applied. By affording individuals the right to a fair hearing, there is increased certainty that the individual actually is infectious, poses a risk to others, and cannot or will not comply with public health advice.

Even if due process cannot always ensure the accuracy of decisionmaking, there is a normative value in granting a right to a hearing.

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310. *See* Gostin et al., *supra* note 9.

311. The Model Act sets clear standards both for the Governor's declaration and for the agency's exercise of power. The Model Act allows a Governor's Declaration only on a finding of a "public health emergency," based on scientific risk assessment. MSEHPA, *supra* note 8, § 401. To declare an emergency there must be a potential for serious or long-term health consequences for the population. *Id.* § 104(m). Similarly, public health agencies cannot exercise compulsory power without a showing of significant risk to the public. *Id.* § 104(m); § 403. Cabining state power through explicit criteria is important to a successful framework for emergency preparedness.

Government demonstrates respect for individuals by allowing them to see the evidence against them and present their case to an impartial fact finder. There is a self-expressive importance to procedural due process; fair procedures allow individuals to convey a sense of grievance that has intrinsic worth. There also is a value to racial, ethnic, or religious groups that feel singled out unfairly for coercion. By allowing members of the group to articulate the perceived unfairness in an open and deliberative process, the group gains a collective sense of being heard.

Procedural due process also is important to public acceptance of the legitimacy of the governmental action. The public is more likely to agree to liberty-limiting powers if there is recourse for challenging those that are perceived as unjust. Procedural safeguards can be seen as a hedge against many of the wrongful actions of government such as arbitrary interference, individual discrimination, and group prejudice. As a result, procedural protections should be integrated into the law whenever serious curtailments of individual liberty are envisioned.[312]

5. "Shielding": Government/Community Relationships as a Less Restrictive Alternative to Coercion

Some scholars advocate government engagement with the community to promote measures of self-protection—a modern concept known as "shielding."[313] Shielding operates on a macro-level, known as "community-shielding," and on a micro-level, labeled "self-shielding."[314] It empowers the public to engage in protective measures that have positive security and protective impact at the individual, community, and ultimately, national level.[315] To be successful, shielding requires "partnership of government, business, media, and the public, operating under the best scientific and medical practices, to break the disease cycle and ensure minimal disruption to the routine activities of the nation."[316]

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312. The Model Act sets a high standard for procedural due process by requiring notice, representation, and a judicial hearing when quarantine or isolation is sought. *Id.* § 9-103. Of course, in order for the quarantine and isolation to be effective, agency action may have to be taken quickly. In such cases, the Model Act allows for prompt review after the quarantine or isolation to protect individual rights and the public good. *Id.* § 9-103(b). Similarly, the Model Act provides for judicial review of agency decisions that deprive businesses of property interests. *Id.* § 9-103(e). Without judicial review and procedural protections in place, the government is unconstrained and can more easily abuse emergency powers.

313. *See* M. Barkun, *Community Shielding and the Political System*, 4 INT'L J. EMERGENCY MENTAL HEALTH 265 (2002); S.E. Spaulding et al., *Legal Framework for Shielding*, 4 INT'L J. EMERGENCY MENTAL HEALTH 259 (2002); *see generally* CRITICAL INCIDENT ANALYSIS GROUP, WHAT IS TO BE DONE? EMERGING PERSPECTIVES ON PUBLIC RESPONSE TO BIOTERRORISM (2002).

314. *See* sources cited *supra* note 313.

315. *See id.*

316. S.D. Prior et al., *Foundations of Shielding*, 4 INT'L J. EMERGENCY MENTAL HEALTH 235

Shielding often is seen as an alternative to compulsory measures. Scholars particularly urge its use as a noncoercive model of mass civil confinement: "a form of insulation wherein individuals and groups employ a self-imposed isolation, or quarantine, within their natural surrounding for a temporary period of time."[317] Under this reasoning, government, far in advance of an actual attack, should "prepare the public to stay in place voluntarily, to resist the impulse to flee to family and friends outside the initial danger zone."[318]

The shielding concept could usefully be placed within the legal framework for bioterrorism preparedness by requiring government to supplement (although not supplant) compulsory powers with voluntary approaches. As a form of least drastic means, the law would require public health authorities to provide mechanisms for keeping the public informed about the health emergency, its effects, and the ways in which the public can minimize the impact of the event on themselves and their communities. Preparing a means of effective communication is important in gaining the public's trust and avoiding panic. In addition, it allows the state to use the resources of the community effectively.

Public cooperation is important to the success of counter-bioterrorism interventions. If resources, like medicines, vaccines, or other supplies, need to be distributed, the public will need to follow public health advice and approach distribution points in a rational state of mind to prevent chaos. Similarly, if quarantine or isolation is mandated, the cooperation of the public is crucial to its success. A panicked public will require a much greater force of peacekeepers—police or the National Guard, for instance—to maintain order. Building the public's trust through communicating correct and timely information is crucial to successful management of any emergency.

In addition to helping maintain order, communicating clearly with the public will contribute to individuals coping with the threat. Community members can make real contributions to emergency management.[319] Civic groups can use existing channels of communication to organize volunteers or serve as distribution points and educators can be used to spread important messages. In addition to building trust and reducing panic, effective communication can ensure that existing community resources are used to the maximum benefit.

(2002).

317. *Id.; see* OFFICE FOR HOMELAND SEC., NATIONAL STRATEGY FOR HOMELAND SECURITY (2002), *available at* http://www.whitehouse.gov/homeland/book.

318. David Glenn, *Panic Button*, CHRON. HIGHER EDUC., Mar. 14, 2003, at A14.

319. In fact, nonprofessionals have saved the majority of those rescued in disasters. Thomas A. Glass & Monica Schoch-Spana, *Bioterrorism and the People: How to Vaccinate a City Against Panic*, 34 CLINICAL INFECTIOUS DISEASES 217, 219 (2002).

The framework offered contemplates strong public health powers hedged by classic safeguards—democratic processes, checks and balances, substantive criteria, procedural due process, and less restrictive alternatives. Rather than shying away from effective government action, the framework authorizes it within clearly defined parameters. The framework, therefore, takes both personal and collective interests seriously. It aspires to sort out clearly warranted (the significant risk category) from unwarranted (the arbitrary or discriminatory category) state action. Ultimately, policy will be formed within the political process. This will leave some discontented, particularly those who believe strongly that either individualism or public security is sacrosanct.

V. JUSTIFYING LIBERTY-LIMITING PUBLIC HEALTH POWER

In this Article, I ask how far personal and economic liberties can be restricted to protect the public's health and security. My answer, far from being simple, posits three risk categories. Category one involves well-targeted state action designed to avert a significant risk to the public's health. Here, I demonstrate why there is a convergence of liberal and communitarian thought, both supporting state action. This analysis should help scholars and policy makers to reject extreme political arguments that voluntarism is always preferable to compulsion, and that no trade-offs are required between private rights and public goods.

The second risk category involves state power exercised arbitrarily or pretextually. Here, I also demonstrate a convergence of political thought, both rejecting state power. Political theory should support widely-shared intuitions that government interventions in the absence of risk or motivated by animus are illegitimate.

The final risk category involves state action to avert a moderate risk. In this classification, the government has good grounds for believing the risk is real and its methods are well targeted to reduce the risk. However, there are key deficiencies in the state's case, like the absence of an identifiable person threatening harm and the absence of sufficient evidence about the nature and probability of the risk. Here, I suggest that there are hard trade-offs and that there is no reason, *a priori*, to prefer personal over collective interests, or vice versa. Decisions of this kind ought to properly be determined within the political process, although I express my own preference for treating both sets of interests seriously.

The Article is more explanatory and analytical than prescriptive. I do suggest a framework for sorting out warranted from unwarranted state action and for working through the hard cases. Nevertheless, the framework offered cannot do the hard work required to resolve the inevitable tensions. What it can do is structure decisions to prevent state overreaching. By providing classic safeguards, the framework might

facilitate political decisions to allow the exercise of power to safeguard the public's health. In the end, it is likely that neither side of the political divide will be entirely satisfied. For those who see the world as a struggle between an oppressive state and individuals desiring freedom, even strong safeguards may not suffice. For those who see a beneficent government seeking to protect its citizens, the framework offers little encouragement because of its focus on governmental restraint. My overriding purpose is to build a bridge between two often diametrically opposed political theories, demonstrating why each has importance in the perennial, often contentious debate, on liberty and the public's health.

APPENDIX: CDC Category A Disease Agents

	Description	Symptoms	Fatality Rate	Treatment
(Inhalational) Anthrax (*Bacillus anthracis*)	Inhaled spores germinate and release toxins, causing swelling in the chest cavity. Possible blood and brain infection. Not contagious from person to person.	Fever, fatigue, malaise, starting within 2 to 46 days; progresses to chest pain, cough, rapid deterioration of health.	Kills more than 85 percent of those it infects, often within one to three days after symptoms appear.	Antibiotics (preferably ciprofloxacin) should be given before symptoms appear. Vaccine available, though not for civilians.
Smallpox (*Variola major*)	Very contagious, airborne disease.	About 12 to 14 days after infection. Fever, aches, vomiting, rash of small red spots that grow into larger painful pustules covering the body.	Fatal in 30 percent of unvaccinated patients.	No treatment, but there is evidence that vaccination within 4 days of initial exposure may offer some protection.[1]
(Pneumonic) Plague (*Yersinia pestis*)	Natural, flea-borne form usually causes bubonic plague. Gravest threat is posed by aerosol, leading to pneumonic plague. Contagious.	High fever, headache, and bloody cough; progresses to labored breathing, bluish-grayish skin color, respiratory failure, and death.	If untreated, a person with pneumonic plague will almost always die within one to two days after symptoms begin.	Various antibiotics, including streptomycin and gentamicin. Patients must be isolated.
Viral Hemorrhagic Fevers	Highly infectious RNA viruses including Ebola, Marburg, Lassa, and Dengue fever. Spread by rodents, ticks, and mosquitoes.	Vary from one type of HFV to the next. Include fever, muscle aches, exhaustion, internal bleeding.	Varies. Death rate from Dengue is as low as 1 percent. Ebola fatality rates have reached 90 percent.	Mainly supportive therapy. Antiviral drug ribavirin useful in treating some viruses but not others (Ebola, Marburg).
(Inhalational) Botulism (*Clostridium botulinum*)	Produces toxin that blocks nerve signals, inhibits muscle movement. Weapon would most likely aerosolize toxin.	Difficulty swallowing food, mental numbness, muscle paralysis, possible breathing failure.	Inhalational form: Difficult to say since only a handful of cases have been reported.	Patients with respiratory paralysis must be placed on ventilator. Antitioxin given early may prevent progression.
Tularemia (*Francisella tularensis*)	Very infectious, but not contagious. Natural infection comes from insect bites, handling infected animal tissues, contact with contaminated water, food, or soil, or inhaling infectious aerosols.	Fever, headaches, chills, and body aches, beginning from 2 to 14 days after exposure and progressing to lung infection or possible eye, skin, or mucosal infection in the case of an aerosol attack.	Untreated pneumonic and severe cases have a fatality rate as high as 30 to 60 percent. The overall mortality rate is less than 2 percent.	Various antibiotics including Streptomycin and Gentamicin can successfully treat most cases of naturally occurring tularemia.

SOURCES: Gostin's reader (U.S. Centers for Disease Control and Prevention/U.S. Army Military Research Institute of Infectious Diseases) and for Tularemia section: David T. Dennis, et al., *Tularemia as a Biological Weapon: Medical and Public Health Management*, 285 J. Am. Medical Assoc. 2763 (2001) and Kevin P. O'Connell, *Issues in Preparedness for Biological Terrorism: A Perspective for Critical Care Nursing*, 13 Clinical Issues 452 (2002).

1. Kevin P. O'Connell et al., *Issues in Preparedness for Biologic Terrorism: A Perspective for Critical Care Nursing*, 13 Clinical Issues 452 (2002).