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LAW AND POLITICS, AN EMERGING EPIDEMIC: A CALL FOR EVIDENCE-BASED PUBLIC HEALTH LAW

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As Jacobson v. Massachusetts *recognized in 1905, the basis of public health law, and its ability to limit constitutional rights, is the use of scientific data and empirical evidence. Far too often, this important fact is lost. Fear, misinformation, and politics frequently take center stage and drive the implementation of public health law. In the recent Ebola scare, political leaders passed unnecessary and unconstitutional quarantine measures that defied scientific understanding of the disease and caused many to have their rights needlessly constrained. Looking at HIV criminalization and exemptions to childhood vaccine requirements, it becomes clear that the blame cannot be placed on the hysteria that accompanies emergencies. Indeed, these examples merely illustrate an unfortunate array of examples where empirical evidence is ignored in the hopes of quelling paranoia. These policy approaches are not only constitutionally questionable, they generate their own risk to public health. The ability of the law to jeopardize public health approaches to infectious disease control can, and should, be limited through a renewed emphasis on science as the foundation of public health, coordination through all levels and branches of government, and through a serious commitment by the judiciary to provide oversight. Infectious disease creates public anxiety, but this cannot justify unwarranted dogmatic approaches as a response. If we as a society hope to ensure efficient, constitutional control over the spread of disease, it is imperative that science take its rightful place at the forefront of governmental decision-making and judicial review. Otherwise, the law becomes its own public health threat.*

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I. INTRODUCTION

In *On Liberty*, John Stuart Mill warned, "[t]he preventative function of government . . . is far more liable to be abused, to the prejudice of liberty, than the punitory function . . . ."[1] This has indeed played out on numerous occasions throughout this country's history, especially when driven by the paranoia and misinformation that tends to accompany the potential spread of infectious disease.[2] "An epidemic of fear has accompanied the spread of the disease and with it, public attention has turned to quarantine, one of the oldest tools of public health."[3] Wendy Parmet wrote this in 1985 in reference to the AIDS epidemic and the call to quarantine infected individuals; nevertheless, it is equally applicable for the 2014 Ebola "outbreak" in the United States where fear spread almost uncontrollably.[4]

Mainstream media outlets ran stories with attention grabbing headlines, such as *Ebola Cases Could Reach 1.4 Million Within Four Months, C.D.C. Estimates*.[5] What likely raised more concern were the reports about the possibility, or even likelihood,[6] that the virus would mutate and become airborne.[7] With the pervasiveness of these news stories during the Ebola epidemic, it is no surprise that the United States public began to panic, with two-thirds of Americans worried about a widespread epidemic

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[1] JOHN STUART MILL, ON LIBERTY 56 (1880).

[2] Wendy E. Parmet, *J.S. Mill and the American Law of Quarantine*, 1 PUB. HEALTH ETHICS 210, 214 (2008) [hereinafter Parmet, *J.S. Mill*].

[3] Wendy E. Parmet, *AIDS and Quarantine: The Revival of an Archaic Doctrine*, 14 HOFSTRA L. REV. 53, 53 (1985) [hereinafter Parmet, *AIDS*] (footnote omitted).

[4] *See id.* Though the term outbreak was often applied, its use was questionable given the disease and threat of spreading. *See infra* notes 75-78 and accompanying text.

[5] Denise Grady, *Ebola Cases Could Reach 1.4 Million Within Four Months, C.D.C. Estimates*, N.Y. TIMES (Sept. 23, 2014), http://www.nytimes.com/2014/09/24/health/ebola-cases-could-reach-14-million-in-4-months-cdc-estimates.html?_r=0. Within the text of the story it became clear that this was merely a projection of a worst-case scenario. *Id.*

[6] Lizzie Parry, *It Is 'Very Likely' That the Ebola Virus Will Spread Through Airborne Particles, Experts Say,* DAILY MAIL (Feb. 20, 2015), http://www.dailymail.co.uk/health/article-2961381/It-likely-Ebola-virus-spread-airborne-particles-say-experts.html.

[7] Sarah Larimer, *Will the Ebola Virus Go Airborne? (And Is That Even the Right Question?)*, WASH. POST (Sept. 15, 2014), https://www.washingtonpost.com/news/to-your-health/wp/2014/09/15/will-the-ebola-virus-go-airborne-and-is-that-even-the-right-question/ [http://perma.cc/LF6Q-5ESE]; Michael T. Osterholm, *What We're Afraid to Say About Ebola*, N.Y. TIMES (Sept. 11, 2014), http://www.nytimes.com/2014/09/12/opinion/what-were-afraid-to-say-about-ebola.html. A response to Osterholm's New York Times article was published in the presumably less popular Virology Blog, explaining that the chance of Ebola mutating to create an airborne threat was "so remote that we should not use it to frighten people." Vincent Racaniello, *What We Are Not Afraid to Say About Ebola Virus*, VIROLOGY BLOG (Sept. 18, 2014), http://www.virology.ws/2014/09/18/what-we-are-not-afraid-to-say-about-ebola-virus/ [http://perma.cc/3RZM-8VJK].

breaking out in the states, even though that epidemic was almost entirely contained to West Africa.[8] After all, "[e]xaggerated risks . . . produce extreme responses."[9]

That a community can be plagued by such hysteria during an infectious disease scare is not necessarily unexpected,[10] but when fear is almost completely unfounded, hysteria generates its own potential harm. Ultimately, the Ebola "emergency" in the United States resulted in four confirmed cases and one death,[11] which is nothing to overlook, but not close to the potential airborne outbreak that many feared. Yet, the alarm and politicization of the fear turned the law into a new threat to public health.

In the aftermath of the Ebola scare, there was a failure to assess the harm caused by those in leadership positions whose desire to appease the fearful masses lead them to make decisions and wield the law in a manner that may have jeopardized disease control efforts.[12] By disregarding expertise and empirical evidence, too many public officials made uninformed decisions with indifference to the impact those decisions might have on the ability to contain the disease.[13] Moreover, both the lack of informed decision-making and the subjugation of civil liberties that ran counter to effective public health science raise serious concerns of constitutionality.

The story of Kaci Hickox, a nurse who worked with Doctors Without Borders to fight Ebola in Sierra Leone, is an example of the consequences that can result from dogmatic approaches to infectious disease control.[14] On October 24, 2014, Ms. Hickox landed at Newark Liberty International Airport,[15] the same day that the governors of New York and New Jersey announced mandatory quarantines for anyone who had contact with an individuals infected with Ebola.[16] Using a forehead scanner, officials found that Ms. Hickox had a recorded temperature of 101 degrees.[17] Given that she had an initial reading of 98 degrees, Ms. Hickox stated that the slightly elevated temperature could have been caused by being flushed, frustrated, and stressed from

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[8] Brady Dennis & Peyton M. Craighill, *Ebola Poll: Two-thirds of Americans Worried About Possible Widespread Epidemic in U.S.*, WASH. POST (Oct. 14, 2014), https://www.washingtonpost.com/national/health-science/ebola-poll-two-thirds-of-americans-worried-about-possible-widespread-epidemic-in-us/2014/10/13/d0afd0ee-52ff-11e4-809b-8cc0a295c773_story.html [http://perma.cc/GAA8-DF7D].

[9] George J. Annas, *Puppy Love: Bioterrorism, Civil Rights, and Public Health*, 55 FLA L. REV. 1171, 1178 (2003). All the more reason why public health response should be based on science for accurate risk assessment. *Id.*

[10] *See* James G. Hodge, Jr., *Legal Myths of Ebola Preparedness and Response*, NOTRE DAME J.L. ETHICS, & PUB. POL'Y 355, 357 (2015) (finding that the public's understanding of risk and governmental power can become distorted during a perceived public health threat, especially if propelled by irresponsible, misinformed media).

[11] *2014 Ebola Outbreak in West Africa – Case Counts*, CDC, (updated Mar. 3, 2016), http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html [http://perma.cc/4RP9-DXWV].

[12] *See* Mark A. Rothstein, *Ebola, Quarantine, and the Law*, HASTINGS CENTER REP. 5, 5 (2015) (blaming the United States' response to Ebola, in part, on "elected officials who ignored the advice of public health experts and imposed unnecessary quarantines that succeeded only in spreading public panic").

[13] *Id.* (finding it counterproductive for states to disregard CDC recommendations despite a lack of evidence that their measures of social distancing would improve the chance to control disease spread).

[14] Liz Robbins et al., *Unapologetic, Christie Frees Nurse From Ebola Quarantine*, N.Y. TIMES (Oct. 27, 2014), http://www.nytimes.com/2014/10/28/nyregion/nurse-in-newark-to-be-allowed-to-finish-ebola-quarantine-at-home-christie-says.html.

[15] *Id.*

[16] Governor Andrew Cuomo's Press Office, *Governor Andrew Cuomo and Governor Chris Christie Announce Additional Screening Protocols for Ebola at JFK and Newark Liberty International Airports* (Oct. 24, 2014), https://www.governor.ny.gov/news/governor-andrew-cuomo-and-governor-chris-christie-announce-additional-screening-protocols-ebola [http://perma.cc/F46Q-DHW5].

[17] Kaci Hickox, *Her Story: UTA Grad Isolated at New Jersey Hospital in Ebola Quarantine*, DALLAS MORNING NEWS (Oct. 29, 2014), http://www.dallasnews.com/ebola/headlines/20141025-uta-grad-isolated-at-new-jersey-hospital-as-part-of-ebola-quarantine.ece [http://perma.cc/ZW7L-5JME].

being in custody for four hours with little food, water, or information about why she was being detained.[18] After working for weeks to treat Ebola patients, and waiting for six hours in an airport,[19] Ms. Hickox was then taken to a tent outside of University Hospital in Newark, where she was tested again with an oral thermometer, which is more accurate.[20] Despite normal readings, negative blood tests, and no sign of symptoms, Ms. Hickox was held in the tent for eighty hours before being escorted back to her home in Maine amidst the threat of a lawsuit against the State of New Jersey.[21]

This story is just a microcosm of the manner in which politicization of public health can impact individuals and efforts to fight infectious disease. Ms. Hickox had her individual rights unnecessarily constrained, but this type of treatment of a healthcare worker could have downstream effects on the ability to convince other healthcare workers to join the frontline battle of containment and treatment. Though quarantining asymptomatic individuals is not the only manner in which misinformation, hysteria, and politics can play a large role in public health decision-making, it goes to the heart of the challenge of public health law: "the balancing of individual and societal interests."[22] Improper justification for decisions raises both public health and constitutional concerns.

Although the law establishes substantial powers to protect the public's health, it is worth considering whether the use of these powers does in fact lead to better health outcomes. The use of public health authority and coercive measures is neither necessary nor sufficient to ensure protection of the public's health, and use of this power cannot be justified unless it has a reasonable, scientifically based ability to protect the general welfare. While the law is often discussed as a way to improve health, it is important to note that the law can also have adverse health impacts. If used improperly, the use of public health powers could enable the spread of disease and, consequently, become a danger to the population's wellbeing.[23]

Part I of this article examines the foundation of public health law, which uses scientific and data-driven decision-making to justify infringement upon individual liberties. While there can be no doubt that the government has the authority, and arguably the obligation, to infringe upon individual interests for the protection of the general welfare, it is just as certain that this power in not unbounded. The individual can only be asked to sacrifice for the common good when that sacrifice is likely to in fact protect the public's health, and even then, only to the extent necessary to achieve that goal.

Part II illustrates that the scientific foundations of public health law's power are often overlooked and ignored, thereby generating an independent public health threat. While this happens in emergency situations such as an Ebola outbreak, the emergence of legal threats cannot be blamed merely on the irrationality that stems from a sudden crisis. Indeed, even policies aimed at minimizing the public health impact of HIV and childhood infectious diseases succumb to politics rather than reasoning based in the law and public health.

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[18] *Id.*

[19] *Id.*

[20] *Id.*

[21] *Id.*; Hodge, *supra* note 10, at 367-68; Sheri Fink, *Ebola Crisis Passes, but Questions on Quarantines Persist*, N.Y. TIMES (Dec. 2, 2015), http://www.nytimes.com/2015/12/03/health/ebola-crisis-passes-but-questions-on-quarantines-persist.html.

[22] Rothstein, *supra* note 12, at 5.

[23] *See* discussion *infra* Part II.

Part III makes a plea for a reemphasis of the connection between science, empirical evidence, and public health law. Regardless of the level or branch of government discussed, science too often takes a backseat to the momentum of politics and fear. To truly fight disease outbreaks, the focus must be on health—meaning that evidence-based law must be at the forefront of public health decision-making. Ad hoc, unjustifiable responses have the potential to diminish trust, drive people from the healthcare system or to conceal their potential infections, and discourage or punish essential healthcare workers. Keeping in mind the realities of limited resources, adopted policies must be likely to generate better health, which may require more stringent judicial oversight. Evidence-based law is necessary because misinformed enforcement mechanisms tend to exacerbate negative health outcomes, as well as violate constitutional standards.

II. SCIENCE AND THE FOUNDATIONS OF PUBLIC HEALTH LAW

Public health law has been defined as:

> [T]he study of the legal powers and duties of the state, in collaboration with its partners . . . to ensure the conditions for people to be healthy . . . and of the limitations on the power of the state to constrain for the common good the autonomy, privacy, liberty, proprietary, and other legally protected interests . . . .[24]

In other words, public health law means determining the appropriate balance between what the government is obligated and authorized to do to protect the public's health, and what it cannot do in terms of infringing on individual rights.[25] Implicit in this definition is that the government must take positive action to ensure the public's health, and in terms of infectious diseases, even those who argue for a limited scope of governmental public health authority find that preventing the spread of disease falls within the State's obligations.[26] The government takes public health action through the police power, which is "[t]he inherent authority of the state . . . to enact laws and promulgate regulations to protect, preserve, and promote the health, safety, morals, and general welfare of the people."[27]

In terms of infectious disease response, the balance between both the State's obligations and its limitations is key. Individuals can act as carriers and spread the

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[24] LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW: POWER, DUTY, RESTRAINT 4 (2d ed. 2008) [hereinafter GOSTIN, POWER].

[25] *See* Rothstein, *supra* note 12, at 5 (stating that "the central ethical conflict of public health [is] the balancing of individual and societal interests").

[26] GOSTIN, POWER, *supra* note 24, at 5-6 ("The government has primary responsibility for the public's health."). Those who prefer a more narrow focus on public health, rather than addressing underlying social, economic, and ecological causes of injury and disease, still include infectious disease control as a duty of the state). *Id.* at 39.

[27] *Id.* at 91–92. This authority can be used on a broad spectrum from slight inconveniences to substantial restrictions on individual liberties; for example, fluoridation of water, helmet and seat belt laws, to compulsory vaccinations, quarantine and isolation, and even forced medical treatment. Michael Ulrich, *With Child, Without Rights?: Restoring a Pregnant Woman's Right to Refuse Medical Treatment Through the HIV Lens*, 24 YALE J.L. & FEMINISM 303, 323–34 (2012) [hereinafter Ulrich, *With Child*]. Involuntary governmental administration of medical treatment is only allowable in extremely rare circumstances where there is a judicial determination that the treatment is in the best medical interest of the individual given their condition, is the least intrusive means necessary to further an essential government interest, and is substantially unlikely to have side effects inhibiting that government interest. Sell v. United States, 539 U.S. 166, 179 (2003). Despite the safety and efficacy of vaccinations, they are still only compelled indirectly. Jacobson v. Massachusetts, 197 U.S. 11, 39 (1905) (holding a statute constitutional that required a healthy individual to pay a fine for refusing to receive a smallpox vaccination).

disease; yet, a government may do more harm than good when it unnecessarily oversteps its bounds by restricting individual liberty. If people are going to be asked to sacrifice for the greater good, it is important that they only be asked to accept a limitation on their liberty when absolutely necessary, and in the least restrictive means required to achieve that end. Therefore, it is vital that these decisions be based on sound scientific evidence in order to maintain public trust, even among individuals who have their own rights constrained.

In the seminal public health law case *Jacobson v. Massachusetts*, the Supreme Court made it clear that "the liberty secured by the Constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times and in all circumstances, wholly free from restraint."[28] The Court held as "settled principle[] [that] the police power of a State must be held to embrace, at least, such reasonable regulations established directly by legislative enactment as will protect the public health and the public safety."[29] With recognized authority to limit individual liberty for the betterment of public health, the question becomes what, if anything, inhibits the ability of the government to use this power.

Subsequent cases have illustrated that the individual right in question is not a limitation because even the most fundamental constitutionally protected rights can be overridden by a duty to protect the general welfare. In *Prince v. Massachusetts*, the Supreme Court made clear that "[t]he right to practice religion freely does not include liberty to expose the community or the child to communicable disease or the latter to ill health or death."[30] Indeed, the Court has found broad discretion within the police powers.[31] Despite the fact that this authority is to be used to protect the public, a power so vast must be limited in order to limit the potential for abuse.[32] After all, "even the police power is subordinate to the Constitution."[33]

Within the *Jacobson* decision there is an inherent tension between "social-compact theory" and a "theory of limited government."[34] Yet, the opinion provides guidelines for how to balance these two competing theories.[35] First, a risk of harm or public health threat must be identified to ensure there is a necessity for government action and to prevent the government from acting arbitrarily.[36] Next, there must be an

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[28] *Jacobson,* 197 U.S. at 26.

[29] *Id.* at 25.

[30] Prince v. Massachusetts, 321 U.S. 158, 166-67 (1944).

[31] *See, e.g.*, Zucht v. King, 260 U.S. 174, 176 (1922) (citing Lieberman v. Van De Carr, 199 U.S. 552 (1905)) (noting that courts "ha[ve] settled that the municipality may vest in its officials broad discretion in matters affecting the application and enforcement of a health law").

[32] *See* Parmet, *J.S. Mill*, *supra* note 2, at 215 (finding that a "willingness to accept almost without question an official's claim that quarantine was justified opened the door to quarantine's abuse") (citation omitted).

[33] Parmet, *AIDS*, *supra* note 3, at 70.

[34] Lawrence O. Gostin, Jacobson v. Massachusetts *at 100 Years: Police Power and Civil Liberties in Tension*, 95 AM. J. PUB. HEALTH 576, 579 (2005).

[35] *See generally Jacobson*, 197 U.S. 11. It may be worth noting that Lawrence Gostin describes the floor of constitutional protection established in *Jacobson* through four overlapping standards: "necessity, reasonable means, proportionality, and harm avoidance." *Id.* at 579. Although there are similarities between his description and my own, I find that the categories and protections as I describe them are more distinct from one another and, thus, clarify the steps that should be taken when evaluating any public health measure. The approach described also fits within typical case law structure of multi-prong tests where step-by-step analysis is required.

[36] *Jacobson*, 197 U.S. at 12, 27-28 (using phrases such as "necessary for the public health," "arbitrary requirement," and "necessity of the case "); s*ee also* Parmet, *J.S. Mill*, *supra* note 2, at 213 (finding that the *Jacobson* court would only uphold the compulsory vaccination when there was evidence "that smallpox existed in the community"). *But see* Ulrich, *With Child*, *supra* note 27, at 327–28 (determining that the risk

evaluation of whether the approach taken by the state can reasonably be expected to prevent or mitigate the threat.[37] Finally, there must be a determination of whether the benefits provided by the public health measure justify the burdens it imposes on civil liberties.[38]

Inherent in each of these steps is the necessary role that science and data must play. An accurate assessment on any of the three prongs requires some expertise or empirical analysis. While scientific data may not necessarily be dispositive of any of the three prongs, it undoubtedly should help to clarify each to some degree. More importantly, the use of data adds to the objectivity and transparency of evaluating public health measures. The police power grants extremely broad discretion to infringe upon our most fundamental rights.[39] As such, the importance of scientific data in determining the legality of public health measures cannot be overstated.

Another aspect to this evaluation that is often overlooked, but can be construed as an additional protective layer of individual rights, is the burden of proof. By beginning with the threat and the means taken to mitigate that threat, the initial burden of proof inevitably lies with the State.[40] In *Jacobson*, the Court stated that smallpox, certainly a serious disease, was prevalent and that the threat was increasing.[41] The Court found that mandatory vaccination was the "method[] most usually employed to eradicate th[e] disease,"[42] and that the effectiveness of vaccines in preventing the spread of disease was accepted by "most members of the medical profession."[43] Therefore, the Court maintained that the methods taken to reduce the harm of smallpox had a "real or substantial relation to the protection of the public health."[44]

Once the Court found that vaccinations were shown to prevent the spread of smallpox without generally increasing harms, the burden shifted to the individual challenging the regulation to prove that it was invalid as applied to them.[45] Importantly, scientific evidence again takes a primary role. The *Jacobson* Court was critical of the fact that the plaintiff offered little more than his opinion about his lack of

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of transmitting HIV from woman to fetus while pregnant or during birth would not constitute a public health threat warranting governmental intrusion).

[37] *Jacobson*, 197 U.S. at 31 (evaluating whether the means utilized by the state have a "real" and "substantial relation" to the protection of the public health); *see also* Parmet, *J.S. Mill*, *supra* note 2, at 213 (stating that the Court could only uphold the policy if vaccinations were reasonably expected to prevent an epidemic).

[38] *Jacobson*, 197 U.S. at 28 (explaining that where the law "went beyond the necessity of the case and under the guise of exerting a police power invaded the domain of Federal authority and violated rights secured by the Constitution, this court deemed it to be its duty to hold such laws invalid"). This third step can be done as a facial challenge or an as-applied challenge. For example, while vaccinations may be an apt policy generally, they may be unreasonable for an individual who has contraindications such that the vaccination would seriously jeopardize their health. *See, e.g.*, *id.* at 30 (describing the statute's exception for individuals who are "unfit" to receive vaccinations). Conversely, quarantining an individual who was exposed to Ebola and had symptoms of infection may be upheld, while a policy that carried a mandatory quarantine for anyone returning from any African country, including those with no known cases, would fail due to overinclusiveness. *See, e.g.*, Order Pending Hearing at 3, Mayhew v. Hickox, No. CV-2014-36 (D. Me. Oct. 31, 2014) [hereinafter Hickox Order] (holding that the state did not prove by "clear and convincing evidence" that the requested mandatory quarantine was necessary to protect the public health).

[39] *See, e.g.*, Rebecca Haffajee et al., *What is a Public Health "Emergency"?*, 371 NEW ENG. J. MED. 986, 988 (2014) ("[C]oncerns about due process are amplified when emergency orders restrict individual freedoms and property rights.").

[40] *See* Ann L. Abbott, *A Summary of Florida's Law of Quarantine of Persons and Public Health Law Reform Issues*, 2 FL. PUB. HEALTH REV. 10, 12 (2005).

[41] *Jacobson*, 197 U.S. at 27.

[42] *Id.* at 28.

[43] *Id.* at 34.

[44] *Id.* at 31.

[45] *Id.* at 35-36.

faith in vaccinations.[46] The Court conceded that it is unconstitutional to subject an individual to vaccination whose body or health is in a condition that would render the treatment "cruel and inhuman[e]."[47] Yet, in this particular case the plaintiff had not met his burden of proof, and all evidence suggested "that the vaccine matter to be used in his case was such as any medical practitioner of good standing would regard as proper to be used."[48]

By placing the burden of proof on the State to produce evidence of a public health threat and to demonstrate a response that can mitigate that threat with benefits that generally outweigh its burdens, the judiciary increases the objectivity, transparency, and accountability of public health measures. While the explicit data analysis in *Jacobson* is a bit thin, the opinion must be understood in the context of its time. In 1905, infectious diseases were the leading cause of death, the federal government had little involvement in health matters, the Food and Drug Administration ("FDA") was not yet created, and most vaccines were fifty years away.[49] Still, subsequent public health law cases bear out the fact that data play a key role in determining constitutionality of government action.

In *Boone v. Boozman*, the plaintiff challenged the state requirement that children be immunized against Hepatitis B to attend school.[50] After acknowledging the state's authority under the police power to infringe upon fundamental rights of religious freedom and parental rights in favor of the benefit of the public's health, the court turned to the threat in question.[51] As the plaintiff argued, and the court conceded, Hepatitis B did not present the same public health emergency of harm that smallpox did.[52] Nonetheless, the court held, correctly, that *Jacobson* did not limit its holding "to diseases presenting a *clear and present danger.*"[53] To make a determination whether Hepatitis B created a threat that warranted state action, the court turned to science and empirical evidence.[54]

There is no defined threshold of what constitutes a threat warranting state action, but the use of scientific data adds transparency to the determination, which can be more accurately evaluated at a later time.[55] Thus, while the facts alone may not be dispositive of appropriate government intervention, the examination of the facts is a requirement. In the case of Hepatitis B, the court recognized that the virus is spread by bodily fluids and can survive on surfaces for up to a month.[56] "Hepatitis B [infection] can lead to sclerosis, scarring and fibrosis of the liver, or liver cancer after chronic infection[,] . . . . [and] [g]lobally [it] is [the] second . . . leading cause of cancer."[57] The court noted that approximately 1.25 million people have chronic Hepatitis B infection in the United States, with an estimated 80,000 individuals contracting the virus each

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[46] *Id.* at 35-37.

[47] *Id.* at 38–39.

[48] *Id.* at 37.

[49] Wendy K. Mariner et al., Jacobson v. Massachusetts*: It's Not Your Great-Great-Grandfather's Public Health Law*, 95 AM. J. PUB. HEALTH 581, 582 (2005).

[50] Boone v. Boozman, 217 F. Supp. 2d 938, 941 (E.D. Ark. 2002).

[51] *Id.* at 954.

[52] *Id.*

[53] *Id.* (emphasis added).

[54] *See id.*

[55] *See generally* Ronald Bayer, *The Continuing Tensions Between Individual Rights and Public Health: Talking Point on Public Health Versus Civil Liberties*, 8 EMBO REPS. 1099 (2007) (discussing the lack of any clear criteria for what constitutes a public health threat, and exploring the resulting tensions between exercises of police power and civil liberties).

[56] *See* Boone v. Boozman, 217 F. Supp. 2d 938, 954 (E.D. Ark. 2002).

[57] *Id.*

year.[58] Finding this to be a credible public health threat, the court held that immunization of school children, which has been an accepted use of police power since the early twentieth century, was reasonable given its "real and substantial relation to the protection of the public health . . . ."[59]

Interestingly, the court went beyond this initial assessment to examine risk factors, noting that "groups at highest risk for Hepatitis B are unlikely to self-identify and pursue the vaccine."[60] The court felt this, in addition to the fact that it was a recommended strategy, further justified the required vaccinations.[61] Widely used vaccinations almost always pass the balancing test due to their minute risk of harm to the average individual and their substantial effectiveness in prevention.[62] With the plaintiff unable to then meet her burden of proof with evidence that the child would suffer uncommon harm that would outweigh the benefits, the court upheld the measure.[63]

Conversely, cases decided in the name of public health law that do not use appropriate evaluation and evidentiary standards can set unlawful precedent that endangers the health and welfare of society. One of the most egregious examples is *Buck v. Bell*, where the Court cited to *Jacobson* for sustaining the forced sterilization of an eighteen-year-old mentally disabled woman in the name of protecting the public welfare.[64] This case was wrong in every conceivable way, and if it seems misplaced in a public health discussion, that is because it indisputably should not have been upheld under the authority of public health law—or any other law for that matter. Yet, it provides an extreme example of a court blindly paying deference to an overly broad concept of police powers, with the Court holding that the "principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes."[65]

In a short opinion considering the unlawful invasion of bodily integrity, the threat to general welfare that the Court cites is that institutionalized "defective[]" persons may become "a menace" and that the reduction of this population would "prevent our being swamped with incompetence."[66] The Court states that "heredity plays an important part in the transmission of insanity, imbecility," and that the plaintiff "is the probable potential parent of socially inadequate offspring."[67] Offering no science, data, or analysis to support the connection between this supposed threat to society and sterilization reducing such a threat, the Court held that if the State is of the "opinion that it is for the best interests of the patient and of society" that an individual be sterilized, this opinion alone was satisfactory.[68]

The Court enforced no burden of proof on the State[69] and unconstitutionally accepted the State's opinion as fact. In balancing the benefits against the burdens on the individual, the Court found little risk of harm at all, and instead concluded that the sterilization procedure could be conducted "without detriment to her general health

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[58] *Id.*
[59] *Id.* at 954, 956.
[60] *Id.* at 954.
[61] *See id.*
[62] *See, e.g.*, Natalia A. Escobar, *Leaving the Herd: Rethinking New York's Approach to Compulsory Vaccination*, 80 BROOK. L. REV. 255, 268 (2014) (discussing the large amount of discretion afforded to states regarding mandatory immunizations).
[63] *See Boone*, 217 F. Supp. 2d at 955.
[64] *See* Buck v. Bell, 274 U.S. 200, 205 (1927).
[65] *Id.* at 207.
[66] *Id.* at 205-07.
[67] *Id.* at 206-07 (internal quotation marks omitted).
[68] *Id.* at 206.
[69] *See id.* at 206-07.

and that her welfare and that of society will be promoted by her sterilization."[70] As a result of this decision, more than 60,000 people were sterilized, most of whom were poor women.[71] Though this case may seem draconian and unrealistic in a modern discussion of public health law, the fact that sterilizations under this holding continued into the late 1970s displays the dangers of evaluation without the requirement of science and how public health law can be misused for targeted discrimination.[72] In *Buck*, the Court discussed the procedural requirements for evaluating the case of someone suggested for sterilization.[73] Yet, what good is the right to due process if it entails little more than judicial deference to decisions made in the name of public welfare but that are based simply on opinion?

Certainly "science is not value neutral" and can be distorted.[74] Its inclusion in no way guarantees a just outcome nor eliminates the risk of abusing power. However, placing the burden of proof upon the State to justify the means of protecting the public's health with empirical evidence should deter abuses of authority when the State faces a threat of infectious disease. It also empowers the judiciary to eschew an archaic era of judicial deference and earnestly balance the liberties of individuals against state efforts to protect society at large.

III. FEAR AND POLITICS: HOW THE LAW BECOMES A PUBLIC HEALTH THREAT

As we continue to battle infectious diseases in the future and determine how best to approach the threat posed to the public, the role of scientific data and empirical evidence must be at the forefront of the discussion. Though this point may seem obvious, there are countless examples through our nation's history that prove otherwise. Indeed, infectious diseases present an appealing study in public health law because their connection to science is so readily apparent, yet there is an abundance of examples exhibiting the ease with which the role of science can be forgotten. As fear, misinformation, and politics push the objectivity of empirical evidence to the outer edges of infectious disease response, the data-driven requirements of the law are often ignored.

The spread of paranoia creates questions in terms of the legality of public health measures. Without sound scientific reasoning, many infectious disease responses may in fact be unconstitutional. Moreover, when decisions are made based on distorted information and lobbying for public approval, they can in actuality generate their own potential harm to the community. By succumbing to the politicization of how to handle infectious disease, state officials often ignore their constitutional obligations to protect the public health through reasonable approaches that have a substantial chance to mitigate the risk to the general welfare. While it may be suspected that this is most likely to occur during emergencies, the power of panic and personal beliefs can transform the law into its own hazard even when it comes to more chronic infectious diseases.

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[70] *Id.* at 207 (internal quotation marks omitted).
[71] Mariner et al., *supra* note 49, at 584.
[72] *See id.*
[73] *Buck*, 274 U.S. at 206-07.
[74] Joseph J. Fins, Editorial, *Ideology and Microbiology: Ebola, Science, and Deliberative Democracy*, 15 AM. J. BIOETHICS, Apr. 2015, at 2.

A. EBOLA AND PUBLIC HEALTH "EMERGENCIES"

The recent Ebola outbreak presents an interesting example of the reaction to public health emergencies because there is debate over whether it can actually be considered a public health emergency. The Ebola outbreak in West Africa certainly qualifies, with over 28,000 cases and over 11,000 deaths.[75] But when focusing on the threat in the United States, the appropriateness of the label "emergency" is less clear. There were four confirmed cases of Ebola in the United States, with one death;[76] yet, the media coverage made it seem as though the country was in the midst of an emerging epidemic.[77] In reality, "[a] handful of domestic cases of a non-airborne, slowly-spreading condition like [Ebola] does not constitute an imminent threat to the larger population's health."[78] In fact, only Connecticut declared a state of emergency,[79] but at least twenty-three states enacted quarantine measures.[80]

Though there is some question as to the severity and scope of the threat that Ebola posed, quarantine under the right circumstances could be a reasonable method to control the spread of the disease.[81] However, despite the mishandling of the initial Ebola patient in Dallas, Texas,[82] and the highly publicized travels through New York City of a doctor who was infected,[83] the response was unnecessarily extreme. The Centers for Disease Control and Prevention ("CDC") issued guidance on risk categories and justifications for quarantine and isolation measures,[84] yet it was summarily rejected by the twenty-three states passing quarantine measures, which all opted for stricter policies.[85]

To be sure, states are under no legal obligation to follow the CDC's recommendations.[86] However, they are still obligated to meet constitutional requirements when using their police power and rejecting the guidance of a federal agency, whose expertise is in creating a patchwork approach to infectious disease

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[75] *2014 Ebola Outbreak in West Africa – Case Counts*, *supra* note 11.

[76] *Id.*

[77] Hodge, *supra* note 10, at 361-62.

[78] *Id.* at 363.

[79] *Id.* at 364.

[80] AMERICAN CIVIL LIBERTIES UNION & YALE GLOBAL HEALTH JUSTICE PARTNERSHIP, FEAR, POLITICS, AND EBOLA: HOW QUARANTINES HURT THE FIGHT AGAINST EBOLA AND VIOLATE THE CONSTITUTION 26 (2015), https://www.aclu.org/sites/default/files/field_document/aclu-ebolareport.pdf [http://perma.cc/MVA7-KWZA] [hereinafter ACLU & GHJP].

[81] *See* Andrew C. McCarthy, *Ebola-Quarantine Objections Are Frivolous*, NATIONAL REVIEW (Nov. 1, 2014), http://www.nationalreview.com/article/391642/ebola-quarantine-objections-are-frivolous-andrew-c-mccarthy [http://perma.cc/GAV9-3386].

[82] Rothstein, *supra* note 12, at 5.

[83] Marc Santora, *Doctor in New York City Is Sick with Ebola*, N.Y. TIMES (Oct. 23, 2014), http://www.nytimes.com/2014/10/24/nyregion/craig-spencer-is-tested-for-ebola-virus-at-bellevue-hospital-in-new-york-city.html.

[84] *See generally* ACLU & GHJP, *supra* note 80. Though the terms isolation and quarantine are often conflated, it should be noted that they are indeed different. GOSTIN, POWER, *supra* note 24, at 428. "[I]solation is the separation, for the period of communicability, of *known* infected persons in such places and under such conditions as to prevent or limit the transmission of the infectious agent." GOSTIN, POWER, *supra* note 24, at 429 (emphasis in original). "[Q]uarantine is the restriction of the movement of persons who have been exposed, or potentially exposed, to infectious disease, during its period of communicability, to prevent transmission of infection during the incubation period." GOSTIN, POWER, *supra* note 24, at 429. This paper will focus on quarantine, which is a more controversial and questionable infringement on the freedom of movement given that the individual being quarantined is not in fact infected with the disease.

[85] ACLU & GHJP, *supra* note 80, at 26.

[86] *Id.* at 36-37.

containment across multiple states, is highly questionable.[87] It raises concern about the scientific justification that the State is using for its own approach, if there is any, and makes it more difficult for the public to understand what criteria or threshold is being used in any given state.[88]

The fact that every state that rejected the guidelines of the CDC opted for stricter quarantine guidelines, thereby further imposing on individual rights, runs contrary to the precedent that the government must undertake the "least restrictive alternative."[89] In many of these states, the governors were facing reelection.[90] For example, Governor Christie of New Jersey, in a reelection campaign, declared that any healthcare workers returning to his state from treating Ebola patients in West Africa were going to be subject to mandatory quarantine for up to three weeks.[91] This led to the highly publicized quarantine of Kaci Hickox, discussed earlier, who was held for eighty hours in a makeshift tent with little evidence of infection other than a temporary reading of a fever from a forehead scanner, which was later found to be inaccurate.[92] New Jersey was by no means the only state to implement a mandatory twenty-one day quarantine: in Connecticut, Governor Dan Malloy, in a tight race for reelection, implemented mandatory quarantines for anyone traveling from Liberia, Sierra Leone, and Guinea, regardless of whether they had any contact with Ebola victims.[93] Further, once Ms. Hickox was released to return to her home in Maine, the governor there also unnecessarily placed her under mandatory quarantine, although this quarantine was to take place in her home.[94]

In a scientific and data-based opinion, a district court judge held that Maine's mandatory quarantine was invalid.[95] The court relied on information about Ebola and the dangers of infection provided by members of the CDC, including the fact that "[i]ndividuals infected with Ebola Virus Disease who are not showing symptoms are not yet infectious."[96] Applying this information and the standards set under *Jacobson*, the court held that the State did not meet its burden of establishing "clear and convincing evidence" that the mandatory quarantine was necessary to protect the public's health.[97]

The court also made a point to recognize "the misconceptions, misinformation, bad science and bad information being spread from shore to shore in our country with respect to Ebola," and did not succumb to the political pressures to stray from the precedential requirements of public health law.[98] Following sound public health policy, the court employed the least restrictive means necessary and ordered Ms. Hickox to participate in direct active monitoring, to coordinate her travel with public health authorities, and to immediately notify officials if any symptoms appeared.[99] The

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[87] *See* Gregg Gonsalves & Peter Staley, *Panic, Paranoia, and Public Health—The AIDS Epidemic's Lessons for Ebola*, 371 NEW ENG. J. MED. 2348, 2348 (2014) (noting that states rejecting scientific evidence of the CDC undermines their credibility and risks the country's ability to respond to future threats efficiently).

[88] *See* Rothstein, *supra* note 12, at 5.

[89] *See* Parmet, *J.S. Mill*, *supra* note 2, at 213.

[90] ACLU & GHJP, *supra* note 80, at 26.

[91] *See* Hodge, *supra* note 10, at 366.

[92] Fink, *supra* note 21; Hickox, *supra* note 17.

[93] ACLU & GHJP, *supra* note 80, at 8, 25-26; Gonsalves & Staley, *supra* note 87, at 2348.

[94] Hodge, *supra* note 10, at 368.

[95] *See generally* Hickox Order, *supra* note 38.

[96] *Id.* at 1.

[97] *Id.* at 3.

[98] *Id.*

[99] *Id.*

contrast between this approach and that of Governor Christie, who initially quarantined Ms. Hickox and refused to admit overstepping legal authority, demonstrates the difference between effective, legally sound public health law and an authoritarian approach to protecting the general welfare.[100]

Scientific and medical institutions, along with infectious disease experts, spoke out against unjustified and unnecessary quarantine measures.[101] The quarantine of individuals who are asymptomatic or who have not been exposed to Ebola is scientifically baseless and, thus, a violation of their constitutional rights.[102] Given its restriction on individual freedom, quarantine is perhaps the most intrusive public health measure outside of treatment by force.[103] As such, it should not be undertaken lightly.

"[Q]uarantine is justified only when there is no other intervention available to prevent the spread of disease that would be less restrictive of liberty."[104] Yet, in Connecticut alone, at least nine people were quarantined who had no "documented exposure to patients with disease."[105] These numbers, however, are only those that the state has reported. There was at least one other person in Connecticut who was unofficially quarantined in a hotel room for two days.[106] The lack of data and transparency around quarantine actions creates an inability to accurately assess and account for the constitutional violations and burdens suffered.[107]

A recent report analyzed public accounts to determine that at least forty people were formally quarantined in eighteen states, with another 233 individuals under "voluntary" quarantine.[108] These voluntary quarantines are perhaps most troubling, as effectuating due process rights becomes even more difficult if there is no formal request for quarantine. The use of coercion makes the infringement on liberties even more unsettling, and likely increases the harm to the public by inducing stress and elevating the psychological toll these people suffer. For example, a physician at Stanford was threatened with six months in jail if he fought a quarantine and then received professional scorn for hurting the recruitment of volunteers to help fight

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[100] *See* Robbins et al., *supra* note 14 (quoting Governor Christie as stating that the "obligation of elected officials is to protect the public health of all people, and if that inconvenienced her for a period of time, that's what we need to do to protect the public"). Further demonstrating a focus on political posturing, Governor Christie also stated that there was a need to go "above and beyond what the CDC is recommending," and that the CDC "eventually will come around to our point of view on this." ACLU & GHJP, *supra* note 80, at 25 (internal quotation marks omitted).

[101] *See, e.g.*, Gonsalves & Staley, *supra* note 87 at 2348 (describing "[t]he argument against these [quarantines] is based on the lack of scientific grounds for the quarantine criteria, the likelihood that unnecessary restrictions on those returning from the region will dissuade health care workers from volunteering to help fight the epidemic, [and] the implicit and erroneous public health message sent by these quarantines that asymptomatic persons are a danger to their communities . . . ."); Josh Barro, *AIDS Activists Oppose Cuomo on Ebola Quarantines*, N.Y. TIMES (Oct. 27, 2014), http://www.nytimes.com/2014/10/28/upshot/aids-activists-oppose-cuomo-on-ebola-quarantines.html (stating that Dr. Anthony Fauci, who heads the National Institutes of Allergy and Infectious Diseases criticized the quarantining of asymptomatic individuals).

[102] *See* Gonsalves & Staley, *supra* note 87, at 2348 (discussing states disregarding CDC guidance that asymptomatic individuals did not need to be quarantined).

[103] Parmet, *J.S. Mill*, *supra* note 2, at 210; *see* Rothstein, *supra* note 12, at 6 ("[Q]uarantine is the most intrusive public health measure . . . .").

[104] Parmet, *J.S. Mill*, *supra* note 2, at 213 (citation omitted).

[105] Gonsalves & Staley, *supra* note 87, at 2348.

[106] ACLU & GHJP, *supra* note 80, at 28.

[107] Requests for data were submitted to all fifty states, but only six responded. *Id.*

[108] *Id.* at 29.

Ebola abroad when public officials announced in the press that he was voluntarily quarantining himself.[109]

These examples demonstrate the indirect harms that are suffered in addition to the violation of rights and freedoms. As misinformation and fear spread, however, the government is not the only threat capable of causing indirect harm and coerced quarantines. In Oklahoma, under public pressure, a teacher agreed to a "voluntary" quarantine for twenty-one days after a trip to Rwanda, which had zero cases of Ebola and is thousands of miles away from the western portion of Africa where the Ebola outbreak occurred.[110] Another teacher in Kentucky resigned amidst pressure after she returned from a mission trip to Kenya, which is also thousands of miles from where the outbreak occurred and had no reported Ebola cases.[111] Meanwhile, at least twenty children nationwide were banned from school due to Ebola paranoia, including a seven year old girl who "traveled to Nigeria after it had been declared Ebola-free by the [World Health Organization]."[112] These actions only help to spread hysteria and lead to drastic consequences: for example, two boys who were beaten by other students in the Bronx after returning from a trip to Senegal, which had one case of Ebola.[113]

"Th[is] toxic mix of scientific ignorance and paranoia" was endemic in every facet of society.[114] From the media, to politicians, and to the public, each one seemed to feed off of the erroneous information and anxiety of the other.[115] The Ebola response can be directly linked to "misinformation, politicization," and hysteria,[116] which ultimately lead to the law becoming a threat to fundamental rights and the public's health. Quarantine is warranted when exposure is coupled with indicators of infection. Therefore, "wholesale quarantines of [healthcare workers] lacks a scientific [validation]" and the necessary balance of benefits over burdens required under *Jacobson*.[117]

B. REMOVING THE EMERGENCY EXCUSE

1. HIV Criminalization

The rush to quarantine individuals due to a distorted understanding of public health and public health law is nothing new. In the 1980s there was a strong push to quarantine any individual who tested positive for HIV to help control the epidemic.[118] "There was an AIDS-quarantine ballot initiative in California, and various states

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[109] *Id.* at 27.

[110] Amanda Terkel, *Oklahoma Teacher Will Have to Quarantine Herself After Trip to Ebola-Free Rwanda*, HUFFPOST POLITICS (Oct. 28, 2014, 3:28 PM), http://www.huffingtonpost.com/2014/10/28/ebola-rwanda-oklahoma-teacher_n_6062726.html [http://perma.cc/Q7DK-6P3V] (discussing two students in New Jersey who "were forced to delay their first day of school" after moving from Rwanda and a teacher in North Carolina forced to stay home after returning from South Africa).

[111] Allison Ross, *Teacher Leaves Catholic School Amid Ebola Fears*, COURIER-JOURNAL (Nov. 4, 2014, 9:49 AM), http://www.courier-journal.com/story/news/education/2014/11/03/louisville-catholic-teacher-resigns-amidst-ebola-fears/18417299/ [http://perma.cc/SVM6-UR3E].

[112] ACLU & GHJP, *supra* note 80, at 29.

[113] Terkel, *supra* note 110.

[114] Gonsalves & Staley, *supra* note 87, at 2348.

[115] Fins, *supra* note 74, at 1 (describing the first U.S. case of Ebola as leading to a "predictable media deluge, a good bit of hysteria, and predictable political posturing").

[116] Rothstein, *supra* note 12, at 5.

[117] Hodge, *supra* note 10, at 366; *see supra* note 35 and accompanying text.

[118] Gonsalves & Staley, *supra* note 87, at 2348; *see also* Parmet, *AIDS*, *supra* note 3, at 53-54 (discussing the range of public figures calling for isolation of those carrying the disease).

threatened or passed conditional quarantine measures."[119] These measures were infrequently used, and states eventually abandoned the idea of quarantine as an appropriate response to controlling the spread of HIV.[120]

Having dealt with the HIV epidemic for over three decades, the current spread of the now chronic condition can hardly be categorized as an "emergency."[121] Yet, the manner in which some states choose to minimize the spread of the disease lacks scientific reasoning, and appears more likely to be based on stigma, stereotypes, and an uneducated comprehension of the condition.[122] Despite medical progress and enhanced knowledge about the disease, HIV stigma and discrimination are still prevalent.[123] Unsurprisingly, a majority of states utilize criminal laws to prosecute HIV-positive individuals for certain behavior, thereby using the criminal law as a deterrent and a means to control the spread of the disease.[124]

Between 2008 and 2013, there were at least 180 prosecutions of individuals under HIV criminalization laws.[125] Most importantly, many of the laws used for these prosecutions do not require intent to transmit the virus or actual transmission of the virus.[126] Consequently, these laws ignore much of what we know today about viral loads and the risks of transmission. With advanced medical understanding of HIV, we now know that if the virus is detected early enough and if medication is taken regularly, an individual can reduce his or her viral load to the point where it is nearly impossible to transmit the virus.[127] Hence, prosecution of these individuals lacks scientific justification when considering risk of transmission, especially if additional measures are taken, such as using a condom.

Nevertheless, that is exactly what happened to a man in Iowa who was sentenced to twenty-five years in prison for a one-time sexual encounter when he had an undetectable viral load and used a condom.[128] The prosecution was based on the fact that he knew he was HIV-positive and did not disclose it to his sexual partner.[129] Prior to sentencing, he spent nine months in prison because he could not afford his $250,000 bond, six weeks of which were spent in solitary confinement.[130] Spending twenty-three hours a day in a cell, he served another four months of his twenty-five year sentence before a letter-writing campaign had his sentence reduced to time served and required he register as a sex offender.[131] These types of prosecutions are easily distinguished

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[119] Gonsalves & Staley, *supra* note 87, at 2348.

[120] *See id.*

[121] *See HIV in the United States: At a Glance*, CDC, http://www.cdc.gov/hiv/statistics/overview/ataglance.html [http://perma.cc/4WCW-5URS] (finding "the annual number of new HIV infections has remained relatively stable" in recent years).

[122] *See, e.g.*, *supra* notes 14-21, 91-94 and accompanying text (describing the quarantine of Kaci Hickox when she returned from West Africa).

[123] Jeffrey S. Crowley et al., *The Americans with Disabilities Act and HIV/AIDS Discrimination: Unfinished Business,* 314 J. AM. MED. ASS'N 227, 227-28 (2015).

[124] Gonsalves & Staley, *supra* note 87, at 2348. As of October 2013, "[f]orty-three states criminalize actions by HIV-positive individuals[,]" either through HIV-specific criminal laws or by prosecuting certain behavior of HIV-positive individuals under general criminal statutes. *HIV Criminalization by State Map*, LAWATLAS: THE POLICY SURVEILLANCE PORTAL, http://lawatlas.org/query?dataset=hiv-criminalization-statutes [http://perma.cc/SCT7-CHT7].

[125] Gonsalves & Staley, *supra* note 87, at 2348.

[126] *HIV Criminalization by State Map*, *supra* note 124.

[127] Suzanna Attia et al., *Sexual Transmission of HIV According to Viral Load and Antiretroviral Therapy: Systematic Review and Meta-Analysis*, 23 AIDS 1397, 1397-98 (2009).

[128] Saundra Young, *Imprisoned Over HIV: One Man's Story*, CNN (Nov. 9, 2012), http://www.cnn.com/2012/08/02/health/criminalizing-hiv/index.html [http://perma.cc/L3MR-UXXV].

[129] *Id.*

[130] *Id.*

[131] *Id.*

from those involving people who lie and intentionally expose unknowing partners to the virus, such as a man in Michigan who "admitted to police that he was trying to infect as many people as possible" and had unprotected sex with thousands of partners.[132]

Criminalization of sexual encounters that contain little risk of transmission are not even the most egregious examples of laws that run counter to empirical evidence. Despite the fact that the CDC has concluded that spitting has never been shown to transfer HIV,[133] numerous states have laws criminalizing spitting on others for HIV-positive individuals.[134] Contradictory to scientific understanding, convictions have occurred as recently as 2014,[135] and in 2010 an "HIV positive [man] was sentenced to five years in prison for second-degree assault after he was convicted of spitting on a police officer."[136]

Without proper scientific justification, these laws are not only objectionable from a legal standpoint, but they are also bad public health policy as well.[137] To be punished under these statutes a person must know they are HIV-positive.[138] Therefore, these laws might incentivize people to avoid learning their status. Public health officials have spent years encouraging everyone to get tested, and research funding is being directed at discovering easier ways for people to determine whether they are HIV-positive.[139] Yet, these laws counteract those efforts. They further compound their ineffectiveness by perpetuating stigma of both the disease and the HIV-positive community, which only stands to exacerbate the public health harm these laws create.

2. Childhood Vaccinations

Another example of the tension between science, politics, and paranoia outside of the context of an emergency is the seemingly endless debate over childhood vaccination requirements. It is unquestioned that states have the authority to pass compulsory vaccination laws, and every state mandates that children be vaccinated to

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[132] *Id.*

[133] *HIV Transmission*, CDC, http://www.cdc.gov/hiv/basics/transmission.html# [http://perma.cc/B9Q5-NGMA].

[134] *See generally* RASHIDA RICHARDSON ET AL., THE CENTER FOR HIV LAW AND POLICY, ENDING & DEFENDING AGAINST HIV CRIMINALIZATION: A MANUAL FOR ADVOCATES: STATE AND FEDERAL LAWS AND PROSECUTIONS, (vol. 1 2d ed. 2015), http://www.hivlawandpolicy.org/sites/www.hivlawandpolicy.org/files/HIV%20Crim%20Manual%20%28updated%205.4.15%29.pdf [http://perma.cc/K95L-CA9Z] (noting that there have been prosecutions in at least seventeen states for spitting, biting, or blood exposure).

[135] *See, e.g.*, *id.* at 123 (describing the story of "a 51-year-old HIV positive man was charged with exposing another to HIV, among other things, after spitting in the face of a police officer during an arrest"). In 2014, a man was also charged with aggravated assault, battery, and knowingly transmitting HIV after biting someone, despite the CDC finding that the risk of transmission from biting is "negligible." *Id.* at 185 (internal quotation marks omitted).

[136] *Id.* at 102.

[137] An interesting counter example to HIV criminalization laws is the prevalence of needle-sharing programs. *See* Abu S. Abdul-Quader et al., *Effectiveness of Structural-Level Needle/Syringe Programs to Reduce HCV and HIV Infection Among People Who Inject Drugs: A Systematic Review*, 17 AIDS & BEHAVIOR 2878, 2878–79 (2013). Though drug use is illegal, several state have needle-sharing programs based on scientific evidence that they are effective measures in the effort to constrain the spread of infectious diseases. *Id.*

[138] *See, e.g.*, ALA. CODE § 22-11A-21 (1975) (creating a requirement that the infected person knows of his or her infected status); IDAHO CODE § 39-608 (2011) (requiring knowledge of infected status).

[139] For example, there has been a strong push for effective home kits to increase the number of people who are aware of their status, see *First Rapid Home-Use HIV Kit Approved for Self-Testing*, FDA, http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm310545.htm [http://perma.cc/JSV3-QSMR] (approving a home-testing kit that does not require sending off blood samples).

attend school.[140] But all states allows exemptions for medical contraindications to immunization, which are justified because the harms to the individual are not outweighed by the benefits since herd immunity can be achieved without vaccinating individuals who fall under this exemption.[141] Controversy exists because forty-seven states allow religious exemptions and twenty states allow philosophical exemptions, with Mississippi, West Virginia, and now California allowing neither.[142]

As discussed earlier, religious exemptions for generally applicable vaccination laws are not constitutionally required.[143] Therefore, philosophical exemptions are not required either.[144] In fact, the reason that Mississippi does not allow for religious exemptions is because the Supreme Court of Mississippi declared them unconstitutional in *Brown v. Stone*.[145] In this case, the court held the exemptions violated the Equal Protection Clause of the Fourteenth Amendment "in that it would require the great body of school children to be vaccinated and at the same time expose them to the hazard of associating with children exempted under the religious exemption . . . ."[146]

Meanwhile, other courts have questioned the ability and wisdom of the State in attempting to evaluate which beliefs properly fall within these exemptions.[147] States have varying requirements for obtaining religious and philosophical exemptions, ranging from signing a standardized form to a more arduous screening process.[148] In *LePage v. State*, the Wyoming Supreme Court had "questions concerning the extent to which the government should be involved in the religious lives of its citizens."[149]

Meanwhile, the court in *Sherr v. Northport-East Northport Union Free School District* struck down the exemption in the statute that was limited to "bona fide members of a recognized religious organization."[150] The court utilized the three-prong test established by the Supreme Court in *Lemon v. Kurtzman* to determine the constitutionality of laws challenged under the Establishment Clause, and held that this exemption provision violated the Establishment Clause and the Free Exercise Clause of the First Amendment.[151] The court opined that governmental investigation into a person's beliefs "in essence puts the individual on trial for heresy."[152]

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[140] Lawrence O. Gostin, *Law, Ethics, and Public Health in the Vaccination Debates: Politics of the Measles Outbreak*, 313 J. AM. MED. ASS'N 1099, 1099 (2015) [hereinafter Gostin, *Politics*].

[141] *Id.*

[142] *Id.* California recently passed legislation allowing medical exemptions, but prohibiting religious exemptions. Adam Nagourney, *California Mandates Vaccines for Schoolchildren*, N.Y. TIMES (June 30, 2015), http://www.nytimes.com/2015/07/01/us/california-mandates-vaccines-for-schoolchildren.html?_r=0.

[143] *See, e.g.*, Boone v. Boozman, 217 F. Supp. 2d 938, 954 (E.D. Ark. 2002) (citing Prince v Massachusetts, 321 U.S. 158, 166-67 (1944)) ("The constitutionally-protected free exercise of religion does not excuse an individual from compulsory immunization; in this instance, the right to free exercise of religion and parental rights are subordinated to society's interest in protecting against the spread of disease."); *see also* Gostin, *Politics*, *supra* note 140, at 1099 ("Because vaccine laws are generally applicable to all school-aged children and in the public interest, the courts find no overriding right to religious freedom.").

[144] Gostin, *Politics*, *supra* note 140, at 1099.

[145] Brown v. Stone, 378 So. 2d 218, 223 (Miss. 1979).

[146] *Id.* at 223.

[147] *See generally* Michael R. Ulrich, *Guidance from Vaccination Jurisprudence*, 13 AM. J. BIOETHICS, Sept. 2013, at 40-42 (analyzing court precedent in relation to evaluating religious exemptions to vaccination requirements).

[148] Gostin, *Politics*, *supra* note 140, at 1099.

[149] *In re* LePage v. State, 18 P.3d 1177, 1181 (Wyo. 2001).

[150] Sherr v. Northport-East Northport Union Free Sch. Dist., 672 F. Supp. 81, 91 (E.D.N.Y. 1987) (internal quotation marks omitted).

[151] *Id.* at 89-91.

[152] *Id.* at 94.

In *McCarthy v. Boozman*, the religious exemption in question was analyzed under the *Lemon* test as well and was judged to have failed at least the second and third prongs, if not all three.[153] The court found that because there was a limited religious scope and only certain denominational preferences were afforded the choice, the exemption failed under the Free Exercise Clause of the First Amendment as well as the Equal Protection Clause of the Fourteenth Amendment.[154] While there is a legitimate state interest in trying to limit improper evasion of immunization, it is clear that this interest cannot compel the state to deem certain beliefs more valid than others.[155] Consequently, it appears the safest way to include a constitutional exemption is to allow anyone who wants to opt out of vaccinations to do so, which would jeopardize the entire purpose of a mandatory vaccination law.

If these exemptions are not constitutionally required and they are so difficult to constitutionally implement in a manner that would limit their exploitation, why do so many states incorporate them into their vaccination laws? Again, it can be traced largely to misinformation, fear, and politics.[156] A distorted view of the risks associated with childhood vaccination stems from a fraudulent report connecting the Measles, Mumps, and Rubella ("MMR") vaccine to autism; however, there are also individuals who believe vaccines can cause other dangers to children.[157] Meanwhile, a growing number of parents do not believe that vaccines fit in their vision of an organic, all-natural upbringing.[158]

Despite vaccinations being one of the greatest public health achievements, and the scientific consensus that childhood vaccines are safe and effective, a large number of children are being put at risk due to political pressures and misrepresentations of facts.[159] "Vaccine refusal has been associated with outbreaks of invasive *H. influenzae* type b disease, varicella, pneumococcal disease, measles, and pertussis."[160] The CDC "declared endemic measles eliminated in 2000" and, yet, in 2014 the United States had the largest number of cases since 2000 with 644.[161] In 2015, the CDC reported 121

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[153] McCarthy v. Boozman, 212 F. Supp. 2d 945, 948-49 (W.D. Ark. 2002).

[154] *Id.* at 949.

[155] *See id.* ("[T]he exemption fails to measure up under the third *Lemon* factor because the State is required to involve itself in religious matters to an inordinate degree by delving into religious dogma to determine whether a church or religious denomination is worthy of official recognition.").

[156] Gostin, *Politics*, *supra* note 140, at 1099-1100.

[157] *Id.* at 1100. "Senator Paul referred to 'many tragic cases of walking, talking, normal children who wound up with profound mental disorders after vaccines.'" *Id.* Because the MMR-autism study was first published in a reputable, scientific journal, there is a strong argument that at the time this provided some empirical evidence to question the benefits and burdens evaluation of the vaccine. *See* Jeffrey S. Gerber & Paul A. Offit, *Vaccines and Autism: A Tale of Shifting Hypotheses*, 48 CLINICAL INFECTIOUS DISEASES 456, 456 (2009). But this case study also provides an example of the importance of scientific consensus and the need to assess research methodology. In the case of a connection between MMR and autism, this one study was proven to be improper science, and numerous studies followed that have subsequently shown there is no connection between the two, providing a more rigorous scientific consensus. *See* Gerber & Offit, *supra*, at 456. A more lengthy discussion of what constitutes scientific consensus and what would be an appropriate response to a study such as the initial autism publication is important, but beyond the scope of this article.

[158] *See, e.g.*, Jack Healy & Michael Paulson, *Vaccine Critics Turn Defensive Over Measles*, N.Y. TIMES (Jan. 30, 2015), http://www.nytimes.com/2015/01/31/us/vaccine-critics-turn-defensive-over-measles.html (describing that some parents are "suspicious of pharmaceutical companies and big business [because] . . . 'they [try to] raise their children in a natural, organic environment'").

[159] *See* Alina Sadaf et al., *A Systematic Review of Interventions for Reducing Parental Vaccine Refusal and Vaccine Hesitancy*, 31 VACCINE 4293, 4293 (2013) (citation omitted) ("The success of vaccines in reducing disease-associated mortality is second only to the introduction of safe drinking water.").

[160] Daniel A. Salmon et al., *Vaccine Hesitancy: Causes, Consequences, and a Call to Action*, 49 AM. J. PREVENTATIVE MED. S391, S395 (2015) (footnotes omitted).

[161] Gostin, *Politics*, *supra* note 140, at 1099.

measles cases in a little over a month stemming from an outbreak that began at Disneyland in California.[162] The Disneyland outbreak was so severe that there may have been a greater risk of death from the spread of measles than from the Ebola "emergency."[163]

Meanwhile, pertussis, or whooping cough,[164] has reemerged with a study showing "that states with easy nonmedical exemption[s]" have a fifty percent higher rate of the disease.[165] During an outbreak in between 2011 and 2012, forty-nine states reported a surge in cases and "20 deaths [were] reported nationally."[166] And in 2013, there were approximately 25,000 cases across the country.[167]

While parental rights are important and deserve respect, they do not supersede state obligations to protect the public's health or the health of any child.[168] Courts have consistently held that the religious or philosophical beliefs of a parent do not grant them a constitutional right to place their child at risk of harm simply because they are not at the age of majority.[169] Certainly few people would question judicial intervention to overrule a parent's decision to forgo a child's blood transfusion due to religious or personal beliefs.[170] Yet thousands of children are needlessly placed at risk as a result of the politics and personal philosophies that reject an abundance of empirical evidence demonstrating vaccine safety, efficacy, and public health benefit.

IV. PUTTING THE PUBLIC HEALTH BACK IN PUBLIC HEALTH LAW

"If there is one article of faith in public health, it is that policy should be based on objective and rigorous scientific methodologies."[171] This sentiment seems so obvious and, yet, there are countless examples of how public health law, whether being exercised through the legislative, executive, or judiciary branch, has failed to meet this standard. It is important to reiterate that this not only raises constitutional concerns, it ultimately is bad for the public's health. When the law becomes its own threat to general welfare, concern should arise about the sincerity of whether the state actually has society's best interest as its primary concern. When decisions are hastily made or

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[162] *Id* .; Adam Nagourney & Abby Goodnough, *Measles Cases Linked to Disneyland Rise, and Debate Over Vaccinations Intensifies*, N.Y. TIMES (Jan. 21, 2015), http://www.nytimes.com/2015/01/22/us/measles-cases-linked-to-disneyland-rise-and-debate-over-vaccinations-intensifies.html.

[163] *See* Hodge, *supra* note 10, at 363. This outbreak also is likely what led to California passing legislation to eliminate religious and philosophical exemptions. Jennifer Medina, *California Set to Mandate Childhood Vaccines Amid Intense Fight*, N.Y. TIMES (June 25, 2015), http://www.nytimes.com/2015/06/26/us/california-vaccines-religious-and-personal-exemptions.html.

[164] *Help Protect Babies from Whooping Cough*, CDC (last updated Feb. 11, 2016), http://www.cdc.gov/features/pertussis/ [http://perma.cc/ T76G-HQ4J].

[165] Gostin, *Politics*, *supra* note 140, at 1099.

[166] Elizabeth R. Wolf et al., *Impact of a Pertussis Epidemic on Infant Vaccination in Washington State*, 134 PEDIATRICS 456, 457 (2014).

[167] Jessica E. Atwell & Daniel A. Salmon, *Pertussis Resurgence and Vaccine Uptake: Implications for Reducing Vaccine Hesitancy*, 134 PEDIATRICS 602, 602 (2014).

[168] *See, e.g.*, Boone v. Boozman, 217 F. Supp. 2d 938, 954 (E.D. Ark. 2002) ("It is well established that the State may enact reasonable regulations to protect the public health and the public safety, and it cannot be questioned that compulsory immunization is a permissible exercise of the State's police power.") (citing Zucht v. King, 260 U.S. 174, 176 (1922)).

[169] Gostin, *Politics*, *supra* note 140, at 1099. Indeed, the *parens patriae* power granted to the state is for the explicit purpose of protecting persons under legal disability, such as minors. GOSTIN, POWER, *supra* note 24, at 95–96.

[170] *See* Morrison v. State, 252 S.W.2d 97, 101-03 (Kan. City Ct. App. 1952) (holding that courts have jurisdiction to intercede when a parent decides to place their theological beliefs above their duty to preserve the life of their child).

[171] GOSTIN, POWER, *supra* note 24, at 73.

based more on public fear and political pressures, the public trust in public health law is inevitably going to falter.[172] Through a refocused effort to recognize the scientific foundations of public health law, a coordinated effort among state and federal public health partners, and more appropriate judicial oversight, we may be able to restore the legality of, and faith in, the law's ability to protect, and even improve, society's well-being.

A. RENEWED FOCUS ON HEALTH

Though Ebola is not the only infectious disease of concern, and quarantine is not the only public health measure that can be deleterious to health when misused, the mishandling of the Ebola "outbreak" in the United States provides a tangible, recent example of what can go wrong when decisions are made without a focus on science and data. The emphasis on scientific data as justification for actions to control infectious disease is not only necessary to protect civil liberties, but also to increase the chance that policies will improve health outcomes. "[W]e have no hope for meaningfully and effectively responding to pressing societal challenges if we distort the facts to engineer outcomes that satisfy our preexisting biases or political allegiances."[173] Providing sound, data-driven justifications for infringing upon individual rights enables a more efficient public health response by building trust with the population whose constitutional rights are being limited.[174] It creates public trust not only by encouraging confidence in the rationale for the decisions made, but also in the accountability of those making the decisions.[175]

Public trust is key to an effective public health response. Providing the public with data enables them to better understand the threat and what they can do individually to help mitigate potential harm. A lack of trust could cause many to "cease complying with . . . recommendations," thereby exacerbating the risks of spreading the disease.[176] Compulsory measures should be a last resort, not just to protect liberty, but because encouraging voluntary measures helps to maintain the belief that the citizenry has a role to play in controlling the disease.[177] A dictatorial response is likely to cause people to feel they have no say in the matter.[178] Feeling a lack of control, especially in

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[172] *See* Mariner et al., *supra* note 49, at 588 ("[Twenty-first]-century public health depends on good science, good communication, and trust in public health officials to tell the truth.")

[173] Fins, *supra* note 74, at 2.

[174] *See* James F. Childress et al., *Public Health Ethics: Mapping the Terrain*, 30 J.L. MED. & ETHICS 170, 173 (2002) ("When public health agents believe that one of their actions, practices, or policies infringes one or more general moral considerations, they also have a responsibility, in our judgment, to explain and justify that infringement. . . . [P]ublic health agents should offer public justification for policies in terms that fit the overall social contract in a liberal, pluralistic democracy. . . . Transparency is also essential to creating and maintain public trust . . . .").

[175] *See id.*

[176] *See* Parmet, *J.S. Mill*, *supra* note 2, at 218. This may be especially problematic in minority and low-income populations that may already have a lack of trust in the medical community and compulsory governmental action, and who already suffer disproportionately from health burdens. History suggests "that coercive laws have largely targeted disadvantaged minorities[,] . . . . [with] [q]uarantine laws . . . most often directed at disfavored immigrant groups." Mariner et al., *supra* note 49, at 588.

[177] *See* Childress et al., *supra* note 174, at 174.

[178] *See* Mariner et al., *supra* note 49, at 588 ("The public will support reasonable public health interventions if they trust public health officials to make sensible recommendations that are based on science and where the public is treated as part of the solution instead of the problem.").

public health emergencies where anxiety is heightened, enhances the possibility that people will become more defiant.[179]

The emergence of Severe Acute Respiratory Syndrome ("SARS") presents another recent example that illustrates the importance of public trust in their government's methods of handling infectious diseases.[180] Despite the severe and sudden emergence of SARS, there was little need to install compulsory quarantines by force because, as with most serious public health threats, most people were happy "to take precautionary measures voluntarily."[181] Yet, in Beijing, China, a rumor that the government was planning an involuntary, large-scale quarantine caused nearly 250,000 people to flee, unquestionably increasing the risk that the disease would spread.[182] Again, the suspicion of government abuse of coercive powers increased the probability of harm.[183]

The unwillingness of states to utilize self-monitoring is even more puzzling in the case of Ebola. Many individuals quarantined were healthcare workers returning from efforts to stem the tide of the epidemic in West Africa, trained professionals with Ebola experience and expertise, and people familiar with the transmission, symptoms, and consequences of the disease.[184] Moreover, these individuals understood that their best chance for survival was to report any symptoms as soon as they arose.[185] This is a group that is best equipped to self-monitor, and if the government refuses to trust them, what are the odds that they would trust anyone else in a future infectious disease scenario?

And, certainly, the media has a role to play.[186] Even though Dr. Spencer traveled throughout New York City before reporting to the hospital with a fever, his eventual reporting should have been hailed as an example of the ability of healthcare workers to self-monitor.[187] After forty years of accruing scientific data on Ebola, we know that individuals are not contagious in early symptomatic stages when they are experiencing a fever, and so Dr. Spencer reported to the hospital to be tested before becoming contagious.[188] Indeed, despite the hysteria surrounding his travels within the city, no other individual contracted Ebola from Dr. Spencer's decision to go bowling or use public transportation.[189] Yet, his ability to move freely is one of the primary thrusts behind political and public support of mandatory quarantines.

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[179] *See* Annas, *supra* note 9, at 1179 (discussing the great blackout of 2003 as an example of how a calm, rational response by government officials help to reduce the public panic and generate a paralleled calm response).

[180] *See* Mariner et al., *supra* note 49, at 587.

[181] *Id.*

[182] *Id.*

[183] *See* Annas, *supra* note 9, at 1179 ("[A] government response that is seen by its citizens as arbitrary and compulsory will backfire, and actually be counterproductive . . . ."). Annas, too, blames the fear of marshal law in China during the SARS epidemic for causing hundreds of thousands to flee and increase the spread of disease. *Id.*

[184] *See* ACLU & GHJP, *supra* note 80, at 16.

[185] *See id.*

[186] *See, e.g.*, *id.* at 17 (noting that this is not the first time American health care workers have traveled abroad to fight infectious disease epidemics. It is not even the first time they have done so for Ebola. Yet, the media, politics, and fear created a perfect storm of paranoia around this outbreak that led to a much more extreme response).

[187] Santora, *supra* note 83; *see* Fink, *supra* note 21.

[188] ACLU & GHJP, *supra* note 80, at 11-13 (quoting Jeffrey M. Drazen, et al., *Ebola and Quarantine*, 371 NEW ENG. J. MED. 2029, 2029 (2014)) ("[F]ever precedes the contagious stage, allowing workers who are unknowingly infected to identify themselves before they become a threat to their community.").

[189] *Id.* at 11 ("[T]he risk of transmission to others from Dr. Spencer was practically non-existent."); Santora, *supra* note 83.

The continued politicization of infectious disease response only stands to enhance the lack of confidence in government decision-making, especially absent objective scientific justification. For example, seventy-six percent of Democrats had a favorable view of the federal government's Ebola response, as compared to fifty-four percent of Republicans.[190] Meanwhile, "72% of Republicans expressed confidence in the federal government's response. . . . to [the] avian flu in 2006" when their party was in power, while 52% of Democrats approved.[191] Given the importance demonstrated in public trust and cooperation to control the spread of disease, these statistics are quite interesting. During infectious disease outbreaks, apprehensiveness is high, and government officials may feel political pressure to take strong action.[192] Yet, it is exactly in these circumstances when abuses of power are most likely to occur.[193] Empirical evidence is critical to the public's acceptance of whether these decisions are justifiable, and to persuade them that they are based on more than the momentum of politics.[194]

In addition to increasing the community's cooperation, trust, and adherence to public health policies, a sound scientific foundation can improve the response to control the disease in indirect yet very important ways. With years of funding cuts and political apathy stripping funds available for public health response, it is imperative that frontline efforts of healthcare workers, such as physicians and nurses, be encouraged.[195] Needlessly forcing quarantines on those we rely on to stay the spread of disease is counterproductive and a waste of limited resources.[196] Compulsory policies that lack scientific justification are likely to discourage healthcare workers from voluntarily putting themselves at risk.[197] Moreover, the cost of placing twenty-four hour surveillance and unnecessarily quarantining 2815 military members at $2000 per person hardly seems worth the expenses demanded from taxpayers.[198]

Unreasonably quarantining people not only restricts their freedoms by constraining them to a specified location, but it places them at risk of secondary harms as well. There are lost wages that accrue from being unable to work, and a risk of losing one's job entirely, which in turn has disparate impact on those of low socioeconomic status.[199] A small minority of states have enacted laws prohibiting employment discrimination against individuals in quarantine, but many of those laws

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[190] Fins, *supra* note 74, at 2.

[191] *Id.*

[192] Parmet, *J.S. Mill*, *supra* note 2, at 216; *see also* Hodge, *supra* note 10, at 373 ("[A] toxic mix of public health measures may be grounded more so in fervor to respond than efficiency of results or legality to act.").

[193] *See* Parmet, *J.S. Mill*, *supra* note 2, at 216.

[194] *Id.*

[195] *See* James G. Hodge, Jr. et al., *Law, Medicine, and Public Health Preparedness: The Case of Ebola*, 130 PUB. HEALTH REP. 1, 1 (2015)); *see also* Mariner et al., *supra* note 49, at 588 ("[T]here is a danger that legislatures will turn to laws that restrict personal liberty as a substitute for providing the resources necessary for positive public health programs that actually prevent disease and improve health.").

[196] *See* Rothstein, *supra* note 12, at 5 (finding that health care workers would be discouraged from fighting Ebola if there is a chance they will be unnecessarily confined).

[197] Gonsalves & Staley, *supra* note 87, at 2348 ; *see also* Hodge et al., *supra* note 195, at 3 (discussing the 2003 SARS outbreak where many "health care workers were instructed to self-quarantine as needed [unless] they developed [symptoms]").

[198] Fink, *supra* note 21.

[199] *See* Rothstein, *supra* note 12, at 6 ("For people with limited resources, staying away from work for twenty-one days–or even a few days–can be an economic hardship. During the SARS epidemic, [many] . . . countries [passed] legislation prohibiting discrimination [for those] in quarantine and affording them income replacement.").

that have been passed are quite "weak."[200] Some do not apply to those who voluntarily enter quarantine, and Iowa is the only state affording a remedy of reinstatement.[201] Meanwhile, Massachusetts is the only state to offer compensation, but a 1907 law limits that compensation to three dollars per day.[202]

There is also the damage caused by stigmatization, which is largely fueled by misinformation. Many people, who never became infected, were never symptomatic, never exposed, or never in the vicinity of where Ebola victims, were tormented, mistreated, and unable to return to work or school.[203] The inability of the government to provide accurate information to the public and enact complimentary legislation to minimize harms suffered only adds to the injurious effects of infectious diseases. Too often public health decisions are made with a narrow focus. The aggregated costs suffered due to inefficient and unnecessary state action certainly outweigh the benefits of over-inclusive public health policies.[204] Given the diminished resources of the public health infrastructure, evidence-based practice in infectious disease is not only a legal imperative, but a moral imperative as well.[205]

B. COORDINATION OVER FEDERALISM

It is unquestioned that states have the constitutional authority and obligation to protect the public's health through their police power.[206] Yet, it is important to remember that they do not hold exclusive jurisdiction over public health matters.[207] A debate over federalism is beyond the scope of this paper and, arguably, should be beyond the scope of infectious disease response.[208] A discussion over the role of the states versus the federal government in controlling the spread of disease should remain pragmatic to ensure an efficient and effective response. "A national, state, and local presence exists in most spheres of public health"[209] and, in terms of constraining infectious diseases, especially during emergency epidemics, the role of each is critical.

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[200] *Id.*

[201] *Id.*

[202] *Id.*; *see also* Annas, *supra* note 9, at 1184 ("[W]hen public health officials detain or injure individuals because they are acting to protect the community as a whole, the individual should be compensated for harm by the community.").

[203] Jane E. Jordan et al., *Legal, Operational, and Practical Considerations for Hospitals and Health Care Providers in Responding to Communicable Diseases Following the 2014 Ebola Outbreak*, 23 U. MIAMI BUS. L. REV. 341, 349 n.36 (2015) (citing Kevin Sack et al., *Life in Quarantine for Ebola Exposure: 21 Days of Fear and Loathing*, N.Y. TIMES (Oct. 18, 2014), http://www.nytimes.com/2014/10/19/us/life-in-quarantine-for-ebola-exposure-21-days-of-fear-and-loathing.html) (stating that some of the individuals who had contact with the original Ebola victim Eric Duncan "were stigmatized or unable to return to work or school", despite never becoming infected); *see also supra* notes 98-108 and accompanying text (discussing a few examples of the detriment endured by some due to ignorance and hysteria).

[204] *See* Parmet, *J.S. Mill*, *supra* note 2, at 218 ("Mill argued that policymakers must look beyond the direct costs of the deprivation of liberty of those who are detained.").

[205] Though the example of quarantine was used often in this section, this issue could be applied to evaluations of vaccine exemptions as well. Given limited resources, there is an ethical question of whether there is a justification for using resources for unnecessary evaluations of religious and philosophical exemptions, especially given the fact that they tend to increase the risk of harm to the public.

[206] *See supra* notes 27–39 and accompanying text.

[207] Control of Communicable Diseases, 70 Fed. Reg. 71,892, 71,893 (Nov. 30, 2005) (noting that the federal government's insertion into public health matters dates at least as far back as 1796, when it enacted the first federal quarantine law in response to yellow fever); Parmet, *AIDS*, *supra* note 3, at 57.

[208] *See* Wendy E. Parmet, *After September 11: Rethinking Public Health Federalism*, 30 J.L. MED. & ETHICS 201, 201 (2002) [hereinafter Parmet, *Sept. 11*] (stating that the determination of boundaries between federal and state authority should be conducted with protection of public health as the "dominant value").

[209] GOSTIN, POWER, *supra* note 24, at 80.

Unlike most advanced industrial countries, the United States does not have a national public health agency.[210] As such, coordination and collaboration among the various levels of government are vital to successfully counter disease outbreaks.[211] State and local authorities will be able to assess the circumstances on the ground and respond swiftly;[212] therefore, it would be counterproductive to remove their power to address these diseases. However, depending on the magnitude of the crisis, an appropriate response likely still requires coordination among the states rather than ad hoc approaches that may counteract one another and confuse the public.[213]

It would seem logical to enable the CDC to coordinate large-scale, multistate responses, as they already provide states with "technical assistance, research, [data, and] guidance."[214] However, states' willingness to disregard the CDC's expert recommendations undermines the CDC's credibility and authority on disease control.[215] The CDC was criticized and questioned once Ebola entered the United States and began to spread to multiple states while local officials simultaneously ignored the CDC's guidance.[216] Some even questioned how or why states would fail to follow CDC's guidance, as this failure displayed a lack of understanding and transparency of the roles of federal versus state authorities.[217] While the states are under no statutory obligation to follow the CDC,[218] the federal agency with expertise in infectious diseases should be empowered to coordinate efforts among the states and to educate the public to minimize fragmentation and misunderstanding.[219]

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[210] Rothstein, *supra* note 12, at 5.

[211] Lawrence O. Gostin et al., *Is the United States Prepared for Ebola?*, 312 J. AM. MED. ASS'N 2497, 2497 (2014) (The importance of coordination is recognized in the fact that the Pandemic and All-Hazards Preparedness Act was passed, and reauthorized in 2013, to ensure effective coordination between federal, state, and local health departments during disasters.).

[212] *See generally* Lainie Rutkow, *An Analysis of State Public Health Emergency Declarations*, 104 AM. J. PUB. HEALTH 1601 (2014).

[213] Gonsalves & Staley, *supra* note 87, at 2348 ; s*ee also* Rothstein, *supra* note 12, at 5 (discussing how "interstate variations" tend to "confuse the public"); Jason W. Sapsin et al., *SARS and International Legal Preparedness*, 77 TEMPLE L. REV. 155, 167 (2004) (quoting U.S. GENERAL ACCOUNTING OFFICE, GAO-03-373, BIOTERRORISM PREPAREDNESS VARIED ACROSS STATE AND LOCAL JURISDICTIONS: REPORT TO CONGRESSIONAL COMMITTEES 5 (Apr. 7, 2003), http://www.gao.gov/new.items/d03373.pdf [http://perma.cc/2R92-S6CE]) (during the SARS outbreak "states lacked sufficient coordination with their neighboring states"). To facilitate collaboration, it is also important that federal, state, and local laws be examined carefully to ensure they do not impede efficient responses to emergencies. *See* Rutkow, *supra* note 212, at 1601 ("This collaboration can be facilitated or impeded by laws at all levels of government."). In fact, "the Institute of Medicine recently recommended that state and local governments review and modernize their laws . . . to [improve their ability] . . . to address contemporary challenges to population health.'" Lainie Rutkow et al., *The Public Health Workforce and Willingness to Respond to Emergencies: A 50-State Analysis of Potentially Influential Laws*, 42 J.L. MED. & ETHICS 64, 64 (2014) (quoting INSTITUTE OF MEDICINE, FOR THE PUBLIC'S HEALTH: REVITALIZING LAW AND POLICY TO MEET NEW CHALLENGES 2 (2011), http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2011/For-the-Publics-Health-Revitalizing-Law-and-Policy-to-Meet-New-Challenges/For%20the%20Publics%20Health%202011%20Report%20Brief.pdf [http://perma.cc/8L4V-K8SN]).

[214] Rothstein, *supra* note 12, at 5.

[215] *Id.*

[216] *See* Hodge, *supra* note 10, at 364-67. Certainly some missteps by the CDC helped to fuel the fire by providing enabling politicians to point to mistakes as a justification for not following any of the agency's guidance. *See* ACLU & GHJP, *supra* note 80, at 20-21.

[217] Hodge, *supra* note 10, at 367.

[218] *Id.* at 367 (finding that state officials do not have to follow CDC guidance outside of a federally-declared emergency or federal funding tied to adherence to federal conditions).

[219] *See* Rothstein, *supra* note 12, at 5 (discussing the decentralized and fragmented system of public health responsibility and the counterproductive nature of ignoring CDC guidance). At the federal level alone, an infectious disease emergency can require efforts from the Department of Homeland Security, Department of Transportation, Customs and Border Protection, Food and Drug Administration, National

The CDC bases its recommendations on research and data,[220] with less political influence than state politicians. A stronger role of a federal, expert authority basing decisions on objective measures, rather than poll numbers, would increase the likelihood that decisions are made in the best interest of health. At the federal level, there is additional insulation from more localized political pressures, which creates a better environment for making data-driven decisions.

During the Ebola scare, there were demands made for President Obama to employ closure strategies along the border and install travel restrictions to and from certain countries.[221] Yet, President Obama resisted,[222] following the guidance of the World Health Organization (WHO) and the CDC.[223] Border closures and travel restrictions hurt the fight against Ebola by making it more difficult to get supplies, personnel, and resources to West Africa to fight the disease, and by potentially driving the disease "underground, causing the outbreak to spread undetected and continue indefinitely."[224] This is not to say, however, that mistakes or questionable decisions cannot happen at the federal level. President Obama's decision to implement enhanced screening for Ebola at five domestic airports has been described as "wasteful, specious, and harmful to the public's health," with a feeling that the decision was made due to pressure from Congress and media scrutiny.[225]

There is also a question as to how intrastate any infectious disease can truly be anymore. "We live in a world where we are all connected by the air we breathe, the water we drink, the food we eat, and by airplanes that can bring disease from anywhere to anywhere in a day."[226] While deliberations over the role of state versus federal government "seem to arise in nearly every major, modern infectious disease health threat[,]"[227] these debates seem out of date and ignorant of modern times. Illustrative of this point is the measles outbreak mentioned earlier, which began in Disneyland in California and quickly spread to seventeen states.[228] Again, the point is not to remove the role of the state and local officials to respond to the needs and health of their citizens. It is merely to accept the fact that to tackle most infectious diseases, or at least

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Institutes of Health, and the Department of Defense, among others. *Id.* Often overlooked is the fact that the government's ability to manage and disseminate accurate information is one of the best ways to manage the public response to a crisis. Annas, *supra* note 9, at 1181-82.

[220] *Mission, Role and Pledge*, CDC (last updated Apr. 14, 2014), http://www.cdc.gov/about/organization/mission.htm [http://perma.cc/GSH8-3U88].

[221] Hodge, *supra* note 10, at 360. There were even calls to close the U.S.-Mexico border, despite the fact that Mexico did not have any Ebola cases. ACLU & GHJP, *supra* note 80, at 22.

[222] Gostin et al., *supra* note 211, at 2498.

[223] Jordan et al., *supra* note 203, at 350-51.

[224] *Id.* at 350–51; *see also* Gostin et al., *supra* note 211, at 2498 (explaining that "impeding the flow of [health care] workers and supplies . . . exacerbates" the problem because the only way to truly protect the spread of Ebola to other countries is to control the disease in West Africa).

[225] Hodge, *supra* note 10, at 369-70. Part of the concern over this policy was the likelihood that fevers detected at the airport would be false-positives, resulting in unnecessary quarantine of individuals. Gostin et al., *supra* note 211, at 2498. Of course, this scenario came to fruition at least once, as the quarantine of Kaci Hickox demonstrated. *See* Jordan et al., *supra* note 203, at 350 (reiterating that Ms. Hickox never actually contracted Ebola). "[P]ublic health officials [who] are much more concerned with false negatives . . . than with false positives" can generate these types of unnecessary intrusions. Annas, *supra* note 9, at 1180. There is also a question as to whether screening procedures are the best use of limited resources given the potential for false-positives and the possibility that they drive the disease underground. Hodge, *supra* note 10, at 370.

[226] *See* Jordan et al., *supra* note 203, at 344 (quoting Emory Medicine 1 (2014), http://emorymedicinemagazine.emory.edu/issues/2014/fall/print.pdf [http://perma.cc/L7S5-R5E6]) (internal quotation marks omitted) (quoting CDC Director Dr. Thomas Frieden).

[227] *See* Hodge, *supra* note 10, at 357.

[228] *See* Gostin, *Politics*, *supra* note 140, at 1099.

a true outbreak, there needs to be a coordinated interstate effort that is well informed on best practices for protecting the public's health.[229]

C. SCIENCE AS A CONSTITUTIONAL REQUIREMENT AND THE ROLE OF THE JUDICIARY

"In a constitutional democracy, particularly in a field in which empirical information is critical, there is always a question of what role courts should play in reviewing the decisions of the politically accountable branches."[230] As previously mentioned, the State is within its right to infringe upon individual rights for the protection of the public's health.[231] But given the advances in law and science, a court granting unquestioned deference to the State would be archaic.[232] Indeed, a willingness to unquestioningly accept the government's claim of justification is what "opens the door to . . . abuse."[233]

The judiciary has a strong obligation to scrutinize these decisions, as it is also quite clear that there are limits on the power to restrain civil liberties in the name of the general welfare. After all, "[t]o what purpose are powers limited, and to what purpose is that limitation committed to writing, if these limits may, at any time, be passed by those intended to be restrained?"[234] In the public health sense, it is required that there be a sufficient risk of harm, a manner which can be rationally thought to mitigate that harm, and that the burdens of restricting individual rights are sufficiently outweighed by the benefits.[235] Thus, "[i]t is emphatically the province and duty of the judicial department to say what the law is"[236] and to enforce those constitutional limitations when the other branches of government overstep their bounds.

The judiciary's role in providing a check on unnecessary public health measures is nothing new. In 1900, the court in *Jew Ho v. Williamson* struck down a quarantine imposed on Chinese residents in San Francisco not only because of its discriminatory intent, but also because it did not have the requisite ability to actually control the spread of disease.[237] Physicians submitted expert opinions on the ability of the quarantine to achieve the government's stated goal, and the court found that it "cannot ignore this evidence . . . as to the ineffectiveness of this method of quarantine against such a disease as this."[238]

Despite the court relying on experts over a century ago to determine whether a state order would actually improve the public's health, this precedent has not held through the years. For example, during World War I over 20,000 women were quarantined "on suspicion of spreading syphilis and gonorrhea" when many of those being held had neither disease.[239] Most of these women were suspected prostitutes, begging the question of whether these measures were undertaken for public health or criminal purposes.[240] Unfortunately, through the years the precedent of deference has

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[229] *See* Parmet, *Sept. 11*, *supra* note 208, at 207 ("[A]s the world has become more complex and interdependent, local efforts have increasingly appeared incapable of solving grave threats.").

[230] Parmet, *J.S. Mill*, *supra* note 2, at 220.

[231] *See supra* text accompanying notes 24-29.

[232] Parmet, *AIDS*, *supra* note 3, at 75.

[233] Parmet, *J.S. Mill*, *supra* note 2, at 215.

[234] Marbury v. Madison, 5 U.S. (1 Cranch) 137, 176 (1803).

[235] *See* Jacobson v. Massachusetts, 197 U.S. 11, 27-31 (1905).

[236] *Marbury*, 5 U.S. (1 Cranch) at 177.

[237] Parmet, *J.S. Mill*, *supra* note 2, at 213.

[238] Jew Ho v. Williamson, 103 F. 10, 23 (9th Cir. 1900).

[239] Gonsalves & Staley, *supra* note 87, at 2349.

[240] *See* Parmet, *AIDS*, *supra* note 3, at 66. This comingling of public health law and criminal law has been replicated in the HIV criminalization discussed earlier. *See supra* Part III.B.1. Though public health is

seemed to carry more weight than the precedent of stringent evaluation of a reasonable connection to the government's means and the public health ends.[241]

Not all cases will involve such overt invidiousness as the *Jew Ho* case, and absent this blatant disregard for equal protection many courts simply look the other way.[242] Courts must reassert themselves as the last line of protection for civil rights when there is a risk of governmental abuse of power. With a clear restriction on individual liberties, the judiciary must require "clear and convincing evidence."[243] It is in times of panic when there is greater potential for authoritarian governance that judicial oversight is most sorely needed.

The recent Ebola scare exposes the discrepancy of consequences that can occur when there is proper judicial appraisal and when it is absent. Kaci Hickox was stuck for over eighty hours in a tent without cause or sufficient explanation, and with no judicial approval prior to the quarantine.[244] Conversely, it was the sound legal analysis of a judge in Maine that released Ms. Hickox from an unnecessary quarantine for lack of sufficient scientific evidence.[245] While Ms. Hickox was eventually released from an excessively overbearing restriction, countless others were held absent sufficient evidence-based reasoning.[246] Given the severe deprivation of liberty that quarantine entails, courts cannot continue the habit of providing "rubber stamp[s]" of approval.[247]

As stated previously, the abuse of quarantine power is but one example of the potential for unjustifiable laws in the name of public health. Similar to the quarantine of prostitutes under the guise of preventing the spread of venereal disease, HIV criminalization laws unjustifiably conflate public health and criminal laws.[248] Courts must carefully examine these laws when cases come before them. "The courts must obey the constitution, rather than the lawmaking department of government, and must, upon their own responsibility, determine whether, in any particular case, these limits have been passed."[249]

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the outward claim made for justification, an examination of science and evidence reveal what is more likely discriminatory practices against stigmatized populations. *See supra* Part III.B.1.

[241] *See* Parmet, *J.S. Mill*, *supra* note 2, at 217.

[242] *See id.* at 213-14.

[243] City of New York v. Antoinette R., 630 N.Y.S.2d 1008, 1011 (N.Y. Sup. Ct. 1995).

[244] *See* Hodge, *supra* note 10, at 367. In comparison, in *State v. Snow* the statute required judicial approval prior to quarantine, enabling the court to reverse a state order of quarantine for tuberculosis and prevent the plaintiff from having to spend any time in an unwarranted quarantine. Parmet, *AIDS*, *supra* note 3, at 78. In many circumstances, allowing for judicial review prior to quarantining an individual fits within the requirement of least restrictive means to protect public health. Gonsalves & Staley, *supra* note 87, at 2349.

[245] *See* Hickox Order, *supra* note 38, at 3.

[246] ACLU & GHJP, *supra* note 80, at 28-29 (including both the compelled quarantine and many of the voluntary quarantines that were brought about through coercive measures).

[247] *See* Gonsalves & Stanley, *supra* note 87, at 2349 (quoting Michael C. Dorf, *Containing Ebola: Quarantine and the Constitution*, VERDICT (Oct. 8, 2014), https://verdict.justia.com/2014/10/08/containing-ebola-quarantine-constitution [http://perma.cc/YL7E-F3SK]) (quoting Professor Michael Dorf that "judicial review of government officials' claims that a quarantine is necessary to protect public health should not be a mere rubber stamp"). The passive role so often played by courts belies the function they are already required to play in evaluating the procedural due process requirements of quarantine: "adequate written notice of the reason for detentions and the factual basis for it, the right to counsel and appointment of counsel if necessary, the right to present, cross-examine and confront witnesses, and the application of a clear and convincing standard of proof." Parmet, *J.S. Mill*, *supra* note 2, at 215. Not surprisingly, some public health officials claim these protections are "burdensome and impractical" in many situations. *Id.*

[248] *See supra* Part III.B.1.

[249] Jew Ho v. Williamson, 103 F. 10, 17 (9th Cir. 1900) (quoting Mugler v. Kansas, 123 U.S. 623, 661 (1887)) (internal quotation marks omitted).

Ignorance of empirical evidence can no longer be an excuse for unconstitutional public health policy. It is inaccurate to understand courts as simply deciding the case before them because, just as laws can impact stigma and social understanding of infectious disease, so too do courts play an instrumental role in establishing the norms of society.[250] Their power to create precedent carries weight not only with other courts or future cases, but also with public perception. Therefore, it is imperative that courts accept their role and duty to uphold evidence-based standards in public health law and to force the often slow evolution of politics to hasten itself toward justice.

V. CONCLUSION

This emphasis on scientific evidence is no panacea for every public health matter where a just balance must be struck between individual rights and the general welfare. Indeed, empirical evidence is not required in all legal determinations, and in many disputes data is unlikely to be dispositive.[251] Furthermore, scientific facts will not answer normative questions or make inherently difficult decisions in times of crisis easier to make.[252] But what it will do is restore a rational and constitutional approach to improving the public's health.

The Ebola "outbreak" in the United States was relatively small and, yet, hundreds of lives were impacted by the actions of the government, rather than by the disease itself. If a similar approach is taken for a larger epidemic in this country, the burdens suffered from state action could be even more severe, not only in terms of direct and indirect harms from government measures, but also from the potentially unwarranted actions that may increase the spread of disease. With the increase of social media, the twenty-four-hour news cycle, and partisan politics, the risk of fear driving legal decision-making may be rising. There must be a reemphasis on the scientific requirements of public health law now—not once another infectious disease has emerged.

"Experience should teach us to be most on our guard to protect liberty when the Government's purposes are beneficent. . . . The greatest dangers to liberty lurk in insidious encroachment by men of zeal, well-meaning but without understanding."[253] It is long past the time when experience should have taught us that the best means for protecting civil liberties and the public's health in the context of infectious disease is to require scientific support for governmental action. The politicization of public health has grown into its own epidemic and has transformed the law into a public health threat. The most disappointing aspect of the response is that the antidote—utilizing empirical evidence—is already available, but this remedy needs to be taken much more regularly.

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[250] *See* Parmet, *J.S. Mill*, *supra* note 2, at 220.

[251] *See, e.g.*, John D. Kraemer & Lawrence O. Gostin, *Science, Politics, and Values: The Politicization of Professional Practice Guidelines*, 301 J. AM. MED. ASS'N 665, 666 (2009) ("Science, for example, cannot resolve the never-ending debate over abortion in the United States.").

[252] *See id.* (discussing "the [tension] between . . . science and the normative function of value systems and political thought").

[253] Olmstead v. United States, 277 U.S. 438, 479 (1928) (Brandeis, J., dissenting).