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THE PUBLIC HEALTH DEMAND FOR REVOKING NON-MEDICAL EXEMPTIONS TO COMPULSORY VACCINATION STATUTES

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I. INTRODUCTION

In early January 2015, the California Department of Public Health was notified that an eleven-year-old unvaccinated child was suspected to have contracted the measles virus.[1] The child was exposed to the virus on a family trip to two Disneyland parks.[2] In a matter of days seven reported cases of measles were confirmed in California.[3] In a month, 125 cases were reported. California alone saw 110 cases.[4] The impact of this outbreak reached far beyond California's state lines. Children in Arizona, Colorado, Nebraska, Oregon, Texas,[5] Utah, Washington, Canada and Mexico were infected.[6] The common thread? All 125 reported cases could trace their origin to the same two Disneyland parks visited by the original child in late December.[7] Among those exposed to the Disneyland outbreak, 77 individuals were unvaccinated and 47 victims had undocumented vaccination status.[8] In response, the Center for Disease Control (CDC) offered a simple, yet poignant statement: "This outbreak illustrates the continued importance of ensuring high measles vaccination coverage in the United States."[9]

Four short years later, in 2019, the United States saw the single largest outbreak of measles in recent history. Figures in early October indicate that there

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[1] *Morbidity and Mortality Weekly Report: Measles Outbreak California, December 2014-February 2015,* CTRS. FOR DISEASE CONTROL & PREVENTION (Feb. 20, 2015), https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6406a5.htm.

[2] *Id.*

[3] *Id.*

[4] *Id.*

[5] *Morbidity and Mortality Weekly Report: Errata: Vol. 64, No. 6,* CTRS. FOR DISEASE CONTROL & PREVENTION (Feb. 27, 2015), https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6407a11.htm?s_cid=mm6407a11w (noting that shortly after news of the measles outbreak in California broke to the public and was published, the CDC amended their original list of effected states to include Texas as seeing one case of measles as a result of the original infected child in Disneyland).

[6] *Morbidity and Mortality Weekly Report: Measles Outbreak California, December 2014-February 2015, supra* note 1 (noting that there were 110 cases of measles in California, 7 cases in Arizona, 1 case in Colorado, 1 case in Nebraska, 1 case in Oregon, 3 cases in Utah, 2 cases in Washington, 1 case in Mexico and 10 in Canada).

[7] *Id.* (noting that the original infected child began showing symptoms of the virus on December 28, 2014, and the others can be linked to the original child by secondary exposure).

[8] *Id.* (commenting that among the patients in California, 49 people were unvaccinated and CDC research indicates that 28 of them were intentionally unvaccinated while 12 were children too young to be vaccinated).

[9] *Id.*

were 1,250 reported cases of measles this year alone.[10] This is the greatest number of reported cases since 2000, the year when measles was formally eliminated in the United States.[11] The 2019 outbreak, according to the CDC, was primarily caused by international travel from parts of the world where measles is still very prevalent,[12] and has been exacerbated by "pockets" of unvaccinated people.[13] Reports claim that the resurgence of measles in the United States and around the world has been fueled by the "anti-vaccination movement."[14] The recent 2019 outbreak effected communities in Rockland and Wyoming counties in New York and in El Paso, Texas very strongly.[15] Reports claim that these communities were largely effected as a result of international travel to areas like Israel where measles outbreaks persist.[16] Reports also suggest that the great deal of exposure to measles was exacerbated by the close geographic and cultural proximity within which the residents in these communities live.[17] Scientific literature has consistently demonstrated that parents of unvaccinated children tend to cluster, and thus, those communities see significantly higher rates of outbreak than others.[18] The CDC's statement from the 2015 Disneyland outbreak rings true. The continued importance of ensuring high measles vaccination cannot be overstated.

The measles crisis has prompted state legislative bodies to face a seemingly impossible dilemma: eliminate both religious and philosophical exemptions to mandatory school vaccination statutes or sit by idly and allow measles to continue to run its course. As of June 2019, five states have neither

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[10] *Measles Cases in 2019*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/measles/cases-outbreaks.html (last updated Nov. 12, 2019).

[11] *Id.*

[12] *Traveler's Health,* CTRS. FOR DISEASE CONTROL & PREVENTION, https://wwwnc.cdc.gov/travel/diseases/measles (last updated May 1, 2020) (noting that measles is still common in Europe, Asia, Africa, the Middle East, and Pacific regions and the disease is commonly transmitted back to the United States as a result of international travel).

[13] *Id.*

[14] Grace Hauck, *US in Danger of Losing Measles-Free Status, a "Mortifying Effect" of Anti-Vaxx Movement*, USA TODAY (Sept. 13, 2019), https://www.usatoday.com/story/news/nation/2019/09/13/us-could-lose-measles-free-status-if-outbreak-continues-new-york/2300281001/.

[15] *Id.* (defining an "outbreak" as 3 or more reported cases of measles).

[16] Michelle Andrews, *Why Measles Hits So Hard Within the New York Orthodox Jewish Community*, NBC NEWS (Mar. 11, 2019), https://www.nbcnews.com/storyline/measles-outbreak/why-measles-hits-so-hard-within-new-york-orthodox-jewish-n981801.

[17] *Id.*

[18] Mary Brophy Marcus, *States With the Highest Child Vaccine Rates*, CBS NEWS (Apr. 25, 2017), https://www.cbsnews.com/news/states-child-vaccination-rates-mmr-vaccine-dtap-whooping-cough-chickenpox/.

religious nor philosophical exemptions to their mandatory vaccination statutes.[19] This Note argues that states should remove all religious and philosophical exemptions to compulsory vaccination statutes. The 2019 measles outbreak demonstrates that the anti-vaccination movement poses a legitimate risk to the health of the masses, especially to the most vulnerable members of our communities. If individuals continue to opt out of compulsory vaccination requirements, diseases that were eradicated decades ago will undoubtably return to the absolute detriment of those unable to protect themselves.

Part II of this Note details the history of compulsory vaccination statutes, beginning with a discussion of the statutes that are presently in place. All fifty states have mandatory vaccination statutes for school-aged children.[20] Most states have exemptions to these vaccination requirements that allow parents to make the decision to not vaccinate their children. These exemptions fall into two broad categories: philosophical objections and religious exemptions. At present, forty-five states and Washington, D.C. allow religious exemptions to vaccination requirements, and eighteen states allow philosophical exemptions. [21]

Part III discusses the legal history of these statutes. Time and time again, the Supreme Court has maintained that it is within the police power of a state to mandate vaccination for public school children.[22] These police power cases provide the necessary framework for strengthening compulsory vaccination statutes in a way that eliminates exemptions. Part III also analyzes the complex intersection between religious freedom, personal choice, and compulsory vaccination statutes. Additionally, Part III argues that lifting all exemptions — except medical — to compulsory vaccination statutes is in the best interest of public health and therefore overrides any private interest of the individual. Part III concludes by focusing on the frightening implications of continuing to allow exemptions. Vaccines are 99% effective,[23] and those who cannot be vaccinated (for medical reasons) are often protected from these horrendous illnesses by the so-called "herd effect."[24] But in order for this "herd effect" to actually work,

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[19] *States with Religious and Philosophical Exemptions from Immunization Requirements*, NAT'L CONFERENCE OF STATE LEGISLATURES (June 14, 2019) [hereinafter *Exemptions*], http://www.ncsl.org/research/health/school-immunization-exemption-state-laws.aspx (noting that California, Mississippi, West Virginia, New York and Maine do not have these exemptions).

[20] *Id.*

[21] *Id.*

[22] Jacobson v. Massachusetts, 197 U.S. 11 (1905); *see also* Zucht v. King, 260 U.S. 174 (1922).

[23] *Six Common Misconceptions About Immunization*, WORLD HEALTH ORG., https://www.who.int/vaccine_safety/initiative/detection/immunization_misconceptions/en/index2.html (last visited Nov. 10, 2020) ("The efficacy rate for two doses of measles can be as high as 99%.").

[24] Manish Sadarangani, *Herd Immunity: How Does it Work?* UNIV. OF OXFORD (Apr. 26, 2016), https://www.ovg.ox.ac.uk/news/herd-immunity-how-does-it-work; *see also* Rhea Boyd, *It Takes a Herd*, AM. ACAD. OF PEDIATRICS (Apr. 18, 2016), https://www.aap.org/en-us/aap-voices/Pages/It-Takes-a-Herd.aspx.

vaccination rates need to be somewhere between 80 and 95%.[25] Religious and philosophical exemptions to compulsory vaccination create a dangerous reality for those who cannot be vaccinated.

Part IV concludes this Note and argues that the only feasible means of successfully preventing another measles outbreak, or the outbreak of another serious disease, is to remove all non-medical exemptions to compulsory vaccination statutes. School-aged children are being put at risk to contract a deadly disease, therefore action must be taken to prevent this. The five states that do not have religious or philosophical exemptions to compulsory vaccination requirements serve as models for legislation that should be placed in every state. Precedent suggests that states would be within their police powers to eliminate all non-medical exemptions from their compulsory vaccination statutes.

II. BACKGROUND & HARM OF EXEMPTIONS

The first school vaccination requirements date back to the 1850s.[26] Massachusetts was the first state to mandate vaccines in school to prevent the transmission of smallpox.[27] As the scientific understanding of the efficacy of vaccination continued to grow, more states implemented compulsory vaccination requirements. Shortly after Massachusetts' efforts to combat smallpox began, New York, Connecticut, Pennsylvania, Indiana, Illinois, Wisconsin, Iowa, Arkansas and California[28] followed suit. Initial efforts in these states were met with significant opposition.[29] The requirements were challenging for school administrators to enforce.[30] Parents and teachers simply stating that a child was vaccinated, without further evidence or inquiry, was considered "satisfactory evidence" of compliance with school vaccination procedures.[31] Historical evidence further suggests that vaccination opposition and hesitation is not new. Since the earliest requirements for compulsory vaccination, parents have resisted the efforts. Studies show that vaccination levels would sharply increase during the

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[25] *Id.*

[26] Kevin M. Malone & Alan R. Hinman, *Vaccination Mandates: The Public Health Imperative and Individual Rights*, *in* LAW IN PUBLIC HEALTH PRACTICE 269-94 (Richard A. Goodman et al. eds., 2007), https://www.cdc.gov/vaccines/imz-managers/guides-pubs/downloads/vacc_mandates_chptr13.pdf.

[27] *Id.*

[28] Ellen Tolsma, *Protecting Our Herd: How a National Mandatory Vaccination Policy Protects Public Health by Ensuring Herd Immunity*, 18 J. GENDER, RACE & JUST. 321, 321-22 (2015) http://proxy.ulib.csuohio.edu:2067/eds/pdfviewer/pdfviewer?vid=5&sid=ce84963c-299e-4c91-9d76-4d4087fff8d1%40pdc-v-sessmgr06.

[29] *Id*. at 322.

[30] *Id.*

[31] *Id.*

time of an outbreak, only to shockingly decline once the outbreak subsided in a community.[32]

In the early 1970s, the transmission of measles began presenting great concern for school administrators.[33] In these years "states that had school vaccination laws for the measles vaccine had measles incidence rates of 40% to 51% lower than states without such laws."[34] States that took efforts to make these vaccinations widely available and those that threatened exclusion from schools for failure to comply were highly successful in the elimination and prevention of measles outbreaks.[35] More and more states began passing immunization laws. By the 1980-1981 school year, all fifty states had mandatory vaccination requirements for public school attendance.[36]

Broadly speaking, the requirements and components of compulsory vaccination statutes vary from state to state. Currently, all fifty states have compulsory vaccination statutes for school-aged children.[37] Most statutes provide a comprehensive list of mandated vaccines.[38] Poliomyelitis, diphtheria, tetanus, pertussis, red (rubeola) measles, rubella, hepatitis B, mumps, and varicella are common in many state statutes.[39] In some states, if a child's family cannot afford to pay for the required vaccination, the relevant statute provides that the town or local jurisdiction will cover the cost.[40] Forty-five states, and the District of Columbia allow religious exemptions for compulsory vaccination.[41] Fifteen states allow parents to opt their children out of vaccination requirements on philosophical, or "personal belief" grounds.[42]

States have taken nuanced and personalized approaches to exemptions. For example, the compulsory vaccine statute in Colorado requires the State to publish and make available to the public the percentage of children who have

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[32] *Id.*

[33] Malone & Hinman, *supra* note 26.

[34] *Id.*

[35] Erin Flanagan-Klygis, *School Vaccination Laws*, 5 AM. MED. ASS'N J. ETHICS 386, 386-88 (Nov. 2003), https://journalofethics.ama-assn.org/article/school-vaccination-laws/2003-11.

[36] Malone & Hinman, *supra* note 26.

[37] *Exemptions*, *supra* note 19.

[38] *See generally* ARK. CODE ANN. § 6-18-702 (West 2020); CAL. HEALTH & SAFETY CODE § 120325 et seq. (West 2020).

[39] *Id.*

[40] CONN. GEN. STAT. § 10-204a (2020).

[41] *Exemptions*, *supra* note 19.

[42] *Id.*

exemptions,[43] allowing parents to stay informed on immunity percentages in the area. Public health experts believe this type of transparency requirement advances two important societal goals. First, published records of vaccination rates allow parents of immunocompromised parents to make an informed decision about where their children can safely attend school.[44] Second, these records equip nongovernmental organizations and health care providers with the information they need to target efforts to increase vaccination rates.[45] Virginia's statute provides for the appointment of an Immunization Officer, who must be licensed in the state to practice medicine, to make all final determinations on granting exemptions.[46] Also in Virginia, it is a misdemeanor offense punishable by fine for a medical practitioner to falsify vaccination records.[47] When seeking an exemption in other states, such as Wyoming, the parent must agree that the child *will be kept out of school during an outbreak* for a time to be determined by a state health official should the parent forego immunization.[48]

Furthermore, within Washington's statute lies an interesting compromise: personal belief exemptions cannot be used for the measles, mumps, or rubeola vaccine, but are allowed for other vaccines.[49] This compromise was passed in May 2019, in direct response to the increasing threat of measles outbreaks in Washington.[50] The legislature offered a simple statement in support of the change. Recent outbreaks in the state and throughout the United States "demonstrate why the change will keep those in Washington healthy and safe from these three serious diseases."[51] Interestingly, some state statutes include this language, or similar: "In the absence of an epidemic or immediate threat thereof…parents can object based on [religious or philosophical grounds]."[52] This language begs a series of compelling questions. At what point is there an "immediate" threat of an epidemic that would prevent parents from exempting their children? Does this language suggest that legislators are tuned in to the idea that exemptions are, at

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[43] COLO. REV. STAT. §§ 25-4-902, 903 (2020).

[44] Caitlin Cardenas-Comfort & Mary Majumder, *Laws About Transparent School Vaccination Reporting: Public Health Context and Ethics*, 109 AM. J. PUB. HEALTH 1687, 1688 (2019).

[45] *Id.*

[46] VA. CODE ANN. §§ 22.1-271.2, 32.1-46 (2020).

[47] *Id.*

[48] WYO. STAT. ANN. § 21-4-309 (2020).

[49] WASH. REV. CODE ANN. §§ 28A.210.080, 90 (West 2020).

[50] *MMR Vaccine Exemption Law Change 2019*, WASH. STATE DEP'T OF HEALTH, https://www.doh.wa.gov/CommunityandEnvironment/Schools/Immunization/ExemptionLawChange (last visited Nov. 10, 2020).

[51] *Id.*

[52] ALA. CODE § 16-30-3 (2020); *see also* MASS. GEN. LAWS ch. 76, § 15 (2020).

some point, dangerous? And perhaps most concerning, vaccinations are preventative health measures; once an outbreak exists, is it not too late to vaccinate?

A. Religious and Personal Belief Exemptions

Religious exemptions exist in forty-five states and the District of Columbia.[53] Parents can obtain a religious exemption in most of the states that allow it by simply filling out paperwork and submitting it to the child's school. Some states require religious exemption forms to be signed by a medical doctor. Approximately 75% of the world's population practices one of the five most influential religions of the world: Buddhism, Christianity, Hinduism, Islam and Judaism.[54] Buddhism and Hinduism have no prohibition against vaccination.[55] Most Christian faith denominations do not have theological objections to immunization.[56] Historically, some Christian faith traditions suggested objections to vaccination because fetal tissue from aborted fetuses were used in some vaccine formulations.[57] Currently however, only Dutch Reformed Congregations[58] and other Faith Healing denominations such as Christian Scientists object to vaccination.[59] Faith Healing denominations, for instance, believe that the use of vaccinations interfere with divine providence, and therefore abstain.[60]

The Islamic faith tradition does not have a prohibition against vaccination.[61] Historically, observers of Islam objected to vaccines because of

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[53] *Exemptions*, *supra* note 19.

[54] Stephen Juan, Ph.D. *What Are the Most Widely Practiced Religions of the World?* THE REGISTER (Oct. 6, 2006), https://www.theregister.co.uk/2006/10/06/the_odd_body_religion/.

[55] *Immunization and Religion*, VANDERBILT UNIV. MED. CTR. (Aug. 27, 2013), https://www.vumc.org/health-wellness/news-resource-articles/immunizations-and-religion.

[56] *Id.*

[57] Meredith Wadman, *Fact Checking Congress's Fetal Tissue Report*, SCI. MAGAZINE (Jan. 5, 2017), https://www.sciencemag.org/news/2017/01/fact-checking-congress-s-fetal-tissue-report.

[58] *Immunization and Religion*, *supra* note 55.

[59] *Id.; see also A Christian Scientist's Perspective on Vaccination and Public Health*, CHRISTIAN SCI. COMM. ON PUBL'N (Feb. 22, 2019), https://www.christianscience.com/press-room/a-christian-scientist-s-perspective-on-vaccination-and-public-health (noting some members of the Christian Scientists faith may object to vaccines based on a belief that disease can be cured and prevented by focused prayer, but there are not strict rules against vaccination and members may elect to be vaccinated).

[60] *Immunization and Religion*, *supra* note 55 ("Some members decline [vaccines] because it interferes with divine providence, others accept them [vaccines] as a gift from God to be used with gratitude.").

[61] *Immunization and Religion*, *supra* note 55.

dietary restrictions that prevented the consumption of pork. Some vaccinations contain pork-derivatives most typically in the form of gelatin. In 2003, however, over one hundred Islamic legal scholars gathered to discuss the use of gelatin in vaccines and other medical capsules.[62] The leaders concluded that pork-derivatives, when used for vaccines and other medicine packaged in gelatin capsules, were converted substantially enough to transform into another substance.[63] Consequently, the scholars agreed that it would be permissible for observant Muslims to receive vaccines containing gelatin.[64] Similar concerns arose in the Jewish tradition. Presently, those practicing Judaism support vaccination as both a means to protect children from future harm and also as a means to maintain health.[65] However, there were historical concerns over the same pork-derived gelatin for those observing Jewish dietary restrictions. Leading Jewish scholars have since dismissed these concerns and encouraged the use of vaccines.[66] With all major world religions supporting vaccination, one is left wondering who is actually pursuing religious exemptions to compulsory vaccination statutes.

Some scholars are concerned that parents are using religious exemptions without *really* having a religious objection to vaccines.[67] Religious exemptions are becoming a loophole.[68] Moshe Friedman, a Hasidic Jewish yeshiva graduate, highlights the complicated situation surrounding religious exemption in his community.[69] Friedman suggests that low vaccine rates in his community in particular are a result of scientific denialism and a high susceptibility to anti-vaccination propaganda.[70] Friedman believes religious leaders in his community have "fostered an atmosphere where thorough research is sneered at, the scientific method is doubted, and the motivations of professionals are assumed to be

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[62] *Religious Leaders Approval of Use of Vaccines Containing Porcine Gelatin*, INST. FOR VACCINE SAFETY (July 21, 2003), http://www.vaccinesafety.edu/Porcine-vaccineapproval.htm.

[63] *Id.*

[64] *Id.*

[65] *Id.*

[66] *Id.*

[67] Sarah Pulliam Bailey, *Some Anti-Vaccination Parents Cite Religious Exemptions. Measles Outbreaks Could Change That,* WASH. POST (Feb. 21, 2019), https://www.washingtonpost.com/religion/2019/02/21/some-anti-vaccination-parents-cite-religious-exemptions-measles-outbreaks-could-change-that/.

[68] *Id.*

[69] Moshe Friedman, *My Fellow Hasidic Jews Are Making a Terrible Mistake About Vaccinations*, N.Y. TIMES (Apr. 23, 2019), https://www.nytimes.com/2019/04/23/opinion/my-fellow-hasidic-jews-are-making-a-terrible-mistake-about-vaccinations.html.

[70] *Id.*

nefarious and steeped in anti-religious animus."[71] Friedman's op-ed suggests that to combat anti-vaccination sentiment in religious and non-religious contexts, state legislatures must be not only prepared to revoke unnecessary exemptions, but also, be prepared to unleash a complex and highly pervasive education campaign aimed at tackling anti-vaccination misinformation. A secondary educational campaign, released in tandem with legislative action to revoke non-medical exemptions, will be necessary to combat the cultural vaccination-doubt that has become so engrained in our culture. Without these efforts, people will undoubtably continue to resist vaccination.

Currently, eighteen states offer personal belief or philosophical exemptions to their mandatory school vaccination requirements.[72] Philosophical exemptions to vaccine statutes find their roots in the commonly known anti-vaccination movement that began in the late 1990s and early 2000s.[73] Philosophical exemptions arose largely as a result of the Lancet[74] paper, which famously linked vaccination to autism.[75] The paper has since been retracted and debunked time and time again by reputable scientists.[76] The harm that the Lancet paper caused continues to permeate our culture and influence parents to refrain from vaccinating their children. While philosophical exemptions vary, many parents do still consider the alleged link between autism and vaccination when making the choice to refrain from vaccinating children. Philosophical exemptions are deeply harmful to the children themselves that are exempted, and the larger community. Experts on vaccination suggest that parental choice to refuse vaccination stems from two emotional responses: fear and control.[77]

A survey conducted by the Children's Hospital of Philadelphia recounts the so-called irony of vaccination resistance.[78] Immunizations are one of the best-studied and safest medical efforts of our time, yet their use is consistently shrouded in fear of efficacy and safety. The Children's Hospital survey suggests

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[71] *Id.*

[72] Andrews, *supra* note 16.

[73] Johnathan Bowes, *Measles, Misinformation, and Risk: Personal Belief Exemptions and the MMR Vaccine*, 3 J.L. & BIOSCIENCES 718 (2016), https://academic.oup.com/jlb/article/3/3/718/2566733.

[74] A.J. Wakefield, S.H. Murch, A. Anthony, J. Linnell, D.M. Casson, M. Malik*, Retracted: Ileal-lymphoid-nodular Hyperlasia, Non-Specific Colitis, and Pervasive Development Disorder in Children*, THE LANCET (Feb. 28, 1998), https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)11096-0/fulltext.

[75] Bowes, *supra* note 73.

[76] *Id.*

[77] *News & Views: Philosophical and Personal Belief Exemptions from Vaccines*, CHILDREN'S HOSP. OF PHILA. (Mar. 25, 2015), https://www.chop.edu/news/philosophical-and-personal-belief-exemptions-vaccines.

[78] *Id.*

that philosophical exemptions may result from uncertainty related to the fact that vaccine-preventable illnesses are themselves, largely unknown. "In the United States, parents benefit from living without the constant fear of these [vaccine-preventable] diseases thanks to vaccines. Unfortunately, vaccines do not benefit because parents no longer think they are necessary."[79] Philosophical exemptions rooted in the need for control present a similarly puzzling dichotomy. Parents who vaccinate have almost *ultimate control* over their child's exposure to vaccine-preventable illness when they do choose to vaccinate. Parents are aware of the exact date of exposure and particular dosage of each disease that their child was exposed to.[80] In contrast, parents who exempt their children from vaccination expose themselves, and their child, to a great deal of uncertainty should the child be exposed to the diseases naturally.

At present, the vast majority of states do not allow these philosophical exemptions.[81] The states that do offer philosophical, or personal belief exemptions, employ a variety of procedures for parents to obtain the exemption. Exemption rates are significantly higher in the states where the exemption is more challenging to obtain.[82] Some states require minimal effort—a parent may simply sign a form to exempt the child.[83] In these states, exemption rates are high. Other states that offer philosophical exemptions have significantly lower exemption rates because they require signatures from state health departments,[84] or require the signature of a health care provider that minimum vaccination efficacy education has been shared with the parent.

B. The Harm

Historically speaking, measles is one of the most contagious infectious diseases.[85] The most effective means to combat the spread of measles is to maintain high vaccination rates. State's efforts of adopting vaccination statutes for school children were an integral part of measles elimination efforts in the 1970s and 1980s.[86] The disease was formally eliminated in the United States, as declared

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[79] *Id.*

[80] *Id.*

[81] Andrews, s*upra* note 16, at 4. (noting only 18 states offer the philosophical exemptions, meaning a strong majority of states, 32, do not allow the exemption).

[82] Douglas Diekema, *Personal Belief Exemptions From School Vaccination Requirements*, 35 ANN. REV. PUB. HEALTH 275, Mar. 2014, https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-032013-182452.

[83] *Id.*

[84] *Id.*

[85] Jonathan Lambert, *Is Measles Here to Stay?* NPR (Apr. 30, 2019), https://www.npr.org/sections/health-shots/2019/04/30/718220586/is-measles-here-to-stay.

[86] *Id.*

by the Pan American Health Organization in 2000.[87] As a result of the 2019 measles outbreaks, the United States is at risk of losing its measles elimination status. Measles free status is compromised by vaccination refusal.[88]

"Herd immunity"[89] has prevented major outbreaks from threatening the elimination status in the past.[90] "Herd immunity"[91] refers to the concept of a complete eradication or removal of a disease from a society.[92] Whereas the decrease in transmission of the disease is the "herd effect".[93] The herd effect is benefitted by a so-called "buffer" that is created when enough members of the population are immunized.[94] The herd effect and herd immunity are created when a large enough portion of the population develops immunity to a disease.[95] Immunity is developed when people are introduced to a disease through vaccination or infection.[96] Herd immunity is the "primary mechanism" through which individuals who cannot be vaccinated for medical reasons are protected from disease.[97] Herd immunity protects the immuno-compromised individuals, those whose immune systems cannot withstand the dose of a virus in a vaccine,

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[87] *Id.*

[88] *Id.*

[89] *Vaccines & Immunizations, Glossary*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/vaccines/terms/glossary.html#c (defining herd immunity, also known as community immunity, as, "[a] situation in which a sufficient proportion of the population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community.").

[90] Lambert, *supra* note 85.

[91] Mary Holland & Chase Zachary, *Herd Immunity and Compulsory Childhood Vaccination: Does the Theory Justify the Law?* 93 OR. L. REV. 1, 8 (2014).

[92] *Id.* (noting that the theory of herd immunity has been called into question, specifically after measles outbreaks in highly vaccinated communities, suggesting that this is a result of a "quasi-sterile environment," and explaining that stable immunity relies on "re-infection" cycles, which is not necessarily possible in communities that are not constantly exposed to the infection).

[93] Holland & Zachary, *supra* note 91.

[94] *Id.* at 9. (explaining that although the terms "herd immunity" and "herd effect" are sometimes used interchangeably, herd immunity refers to the elimination of a disease from a society, whereas the "effect" is a concept of infection control, and compulsory vaccination statutes achieve herd effect).

[95] Diekema, *supra* note 82.

[96] *Id.*

[97] *Id.*

from the spread of disease.[98] Particularly, very young children, the elderly, and the sick cannot be vaccinated. These individual's only defense to these diseases is other vaccinated people. Increasing vaccine refusal rates greatly threaten herd immunity.

The current threshold for measles immunity is 93%-95%.[99] Once immunization levels reach this critical threshold the disease cannot spread.[100] Below this threshold, however, the virus can spread and becomes most dangerous to the members of the population who cannot be vaccinated.[101] Vaccines allow each of us to participate in making our communities a safer place. "Herd immunity is important because it uniquely protects the most vulnerable members of our communities, including infants and pregnant women."[102] Dr. Rhea Boyd, writing for the American Academy of Pediatrics said; "We often say it takes a village to raise a child, but the truth is, it takes a herd."[103] For the sake of the herd, we must eliminate philosophical and religious exemptions to compulsory vaccinations statutes. The inaction of a few, those who exempt for non-medical reasons, compromise the health individuals who cannot be vaccinated, the most vulnerable members of our communities.[104] The recent outbreaks of measles highlight the fragility of herd immunity. When those who can be vaccinated elect not to, they directly threaten the health of their neighbors.

State compelled vaccination was one of the most momentous societal and medical achievements of the nineteenth and twentieth centuries.[105] Scientific and

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[98] Romina Libster, *Why We Must Get Vaccinated: To Protect the People Who Can't*, TED IDEAS (2015), https://ideas.ted.com/why-we-must-get-vaccinated-to-protect-the-people-who-cant/.

[99] Jonathan Lambert, *How Did We Get Here? 7 Things to Know About Measles*, NPR (Apr. 20, 2019), https://www.npr.org/sections/health-shots/2019/04/30/718820350/how-did-we-get-here-7-things-to-know-about-measles#targetText=7%20Things%20To%20Know%20About%20Measles,-Facebook&targetText=Measles%20vaccination%20rates%20need%20to%20be%20at%2093%25%20to%2095,be%20exposed%20to%20the%20virus.

[100] *Id.*

[101] *Id.*; *see also Who Should NOT Get Vaccinated with these Vaccines*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/vaccines/vpd/should-not-vacc.html (last updated Apr. 2, 2020) (explaining who should *not* be vaccinated against measles medical reasons: people who had a previous allergic reaction to MMR, pregnant women, those with weakened immune systems, condition that makes someone bruises or bleeds easily, recent recipient of a blood transfusion, tuberculosis, other vaccines in 4 weeks).

[102] Boyd, *supra* note 24.

[103] *Id.*

[104] *Id.* (noting that Dr. Adalja suggests these are the serious risks that high refusal rates are creating).

[105] Alicia Novak, *The Religious and Philosophical Exemptions to State-Compelled Vaccination: Constitutional and Other Challenges*, 7 U. PA. J. CONST. L. 1101, 1105 (2005); *see also* Ross D.

medical advancements in the area of vaccination have since continued to thrive. Present statistics indicate that vaccines are 99% effective.[106] The scientific proof is strong: vaccinations are effective. So, what exactly leads parents to decide to refrain from vaccinating their children? Speaking generally, there is no succinct reason why parents opt out of vaccinations. This Note explores the common religious and philosophical grounds of objection and aims to clarify this challenging question. This Note argues that the anti-vaccination crisis movement presents an immediate threat of transmission of vaccine-preventable diseases that should prevent parents from exempting children. Additionally, with recent action being taken in some states to revoke non-medical exemptions, this Note argues that legislatures *are* in-tune with the dangers that exemptions present, and those that *aren't* should take immediate action to revoke exemptions.

III. ARGUMENT

Compulsory state vaccination statutes have been in existence for centuries in the United States. These statutes, as the above background information indicates, look differently for many states. Their requirements, punishments for failure to comply, and the specifics of implementation vary. The Analysis portion of this Note suggests that vaccination statutes have been tested many times in the legal system. And, importantly, the results of these cases indicate that Federal Courts are satisfied with the determination that states operate within their police powers when they compel vaccines for school-aged children. Additionally, to the point of this Note, some states have already taken measures to eliminate exemptions from their statutes in response to the recent measles outbreak.[107] The case law analysis that follows addresses religious and philosophical objections separately but operates with the understanding that these objections are deeply entangled with each other. Some individuals suggest that their exemption is rooted in religious beliefs but manifests itself as a philosophical exemption.[108] This is to suggest that each analysis, while different, likely overlaps in application for legislators who would consider revoking both religious and philosophical exemptions.

Silverman, *No More Kidding Around: Restructuring Non-Medical Childhood Immunization Exemptions to Ensure Public Health Protection*, 12 ANNALS HEALTH L. 277, 281-82 (2003).

[106] *Id.*

[107] *See* discussion *supra* Section I.

[108] Bailey, *supra* note 67 ("Researchers believe some parents use states' religious exemptions even though they don't necessarily have a religious objection," says a dean of the Baylor College of Medicine, Peter Hotez. This article goes further to suggest that parents could use religious exemptions as a "loophole.").

A. Case Law Supports Lifting Exemptions to Compulsory Vaccination Statutes

Under Supreme Court precedent, states would be free to revoke their personal and religious belief exemptions to compulsory vaccination statutes. Since the early 1900s, compulsory vaccinations statutes have been tested in the Court system. The Supreme Court has consistently determined that compulsory vaccination for school-aged children is within the police power of the state to mandate.[109] The most pivotal and directive case on compulsory vaccination is *Jacobson v. Massachusetts,* decided in 1905. Despite its vintage, this challenge to mandatory vaccination has guided legal discussion on the issue for many decades. *Jacobson* established that it is well within a State's police power to enact compulsory vaccination requirements.[110] In its opinion, the Court emphasized that it was the State legislature's decision to require mandatory vaccination.[111] The statute at issue allowed for no exceptions, other than those medically necessary.[112] In *Jacobson*, "the state legislature proceeded upon the theory which recognized vaccination as at least an effective if not the best-known way in which to meet and suppress the evils of a smallpox epidemic that imperiled an entire population."[113] The Court went further. Not only is it within the police power of the state to regulate and require vaccination, but also, state and local legislatures have a duty to take measures to guard the public health. "The safety and health of the people are, in the first instance, for that Commonwealth to guard and protect."[114] It is the duty of state and local governments to ensure it is taking measures to protect and promote the public health. Similarly, in *Zucht v. King*, 260 U.S. 174 (1922), plaintiff Rosalyn Zucht was kept out of school for failing to get vaccinated.[115] The Court determined that the questioned ordinance was valid because it is constitutional for a state to delegate to a municipality authority to determine the conditions that health regulations become operative.[116]

The holdings of *Jacobson* and *Zucht* have never been invalidated. The Court's well settled precedent on compulsory vaccination indicates that states act well within their police powers when they mandate vaccination for children. The significance of these cases today cannot be overstated. The *Jacobson* court emphasized the importance of State legislative control over its constituents.

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[109] Jacobson v. Massachusetts, 197 U.S. 182, 184 (1905).

[110] *Id.* at 39.

[111] *Id.* at 27.

[112] *Id.* at 30.

[113] *Id.* at 30.

[114] *Id.* at 38.

[115] Zucht v. King, 260 U.S. 174, 175 (1922).

[116] *Id.*

Today, the solution to the anti-vaccination crisis lies in the halls of state and local legislatures. Within the legislative body lies the resources and tools to compel higher vaccination rates by eliminating abused exemptions.

B. Religious Exemptions

In June 2019, New York ended exemptions based on religious beliefs.[117] Governor Andrew Cuomo stated: "The science is crystal clear: vaccines are safe, effective, and the best way to keep our children safe."[118] The Governor went further to acknowledge the complicated intersection that this move had with religious beliefs. "While I understand and respect freedom of religion, our first job is to protect the public health."[119] Lawmakers in New York were faced with angry opposition to this measure.[120] Many of them relied on personal experiences with their own children, and the response that they were forced to take as a result of the 2019 outbreak when considering this measure.[121] One lawmaker Kenneth Zebrowski, who represents Rockland County where measles impacted over 260 children this year, had to get his child vaccinated before her regularly scheduled immunization was going to begin.[122] "We had to get our kids *over*-vaccinated because of this epidemic."[123] Assembly member Zebrowski's comments highlight an important aspect of this crisis. The burden of anti-vaccination falls heavily on the shoulders of those doing all they can to protect their children. Other states, such as Oregon, Mississippi and Arizona, have also contemplated measures to revoke exemptions to vaccine statutes this year.[124]

Despite research that suggests that a majority of world religions support vaccination practices, there is a significant portion of the population that secures religious exemptions from compulsory vaccine requirements. This puzzling dichotomy suggests a disconnect between religious teachings and practices in response. And while proposing that all religious exemptions be lifted from compulsory vaccination statutes seems admittedly extreme, the threat of

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[117] Bobby Allyn, *New York Ends Religious Exemptions for Required Vaccines*, NPR (June 13, 2019), https://www.npr.org/2019/06/13/732501865/new-york-advances-bill-ending-religious-exemptions-for-vaccines-amid-health-cris.

[118] *Id.*

[119] *Id.*

[120] *Id.*

[121] *Id.*

[122] *Id.*

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

[124] Chris Amico & Jason Breslow, *Vaccine Requirements: State by State*, FRONTLINE, http://apps.frontline.org/vaccines/ (noting that currently, Maryland, North Carolina, Rhode Island and Vermont State legislative bodies are considering legislation that would leave these states free from both philosophical and religious exemptions).

continued spread of preventable disease mandates it. Revoking religious exemptions to compulsory vaccination statutes presents a question of an unlawful violation of religious freedom. Particularly relevant here for its specific connection to mandated vaccination, in *Prince v. Massachusetts*, the Court said: "he cannot claim freedom from compulsory vaccination for the child more than for himself on religious grounds. The 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."[125] In cases where religious beliefs are juxtaposed against the public welfare, as in *Prince*, the public welfare takes precedence. Religious exemptions to compulsory vaccination statutes expose the community and the specific child to highly communicable diseases. Therefore, in the interest of public health these exemptions should be lifted.

Some of the most seminal cases on religious freedom and public welfare have involved the practice of polygamy and the practices of members of the Jehovah's Witnesses. Members of the Church of Jesus Christ of Latter-day Saints (Mormons), have turned to the courts to challenge a variety of statutes prohibiting the practices of polygamy and bigamy. In *Reynolds v. United States* in 1879, Reynolds challenged Utah's statutory prohibition against bigamy.[126] Reynolds married a second wife while still married to his first wife.[127] The plaintiff argued that it was a religious duty for male members of his church to practice polygamy.[128] The Supreme Court disagreed. The Court famously wrote: "laws are made for the government of actions, and while they cannot interfere with mere religious belief and opinions, they may with practices." In disallowing the practice of polygamy, the Court emphasized that people can hold whichever beliefs they choose. People may not, however, act in whichever way they choose. This distinction is critical here.

Religious choices, such as the choice to not vaccinate one's children, falls within what should be considered a "religious practice" rather than a "religious belief." Parents may believe that vaccination is contrary to their religion. However, the practice of, or rather, the lack-of-practice that is exempting children goes much further to affect the greater population. Just as the court found that states can freely prevent the practice of polygamy, states should also be free to revoke religious exemptions. As suggested previously, no major world religion is expressly "anti-vaccination." And while religion is a deeply personal aspect of an individual's life and religious preferences dictate a great deal of day-to-day existence, a religious practice that sacrifices the health of the masses cannot be permissible.

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[125] Prince v. Massachusetts, 321 U.S. 158, 167 (1944) (citing People v. Pierson, 176 N.Y.S. 201, XX (N.Y. App. Div. 1903)).

[126] Reynolds v. United States, 98 U.S. 145, 154 (1878).

[127] *Id.* at 153.

[128] *Id.* at 161.

In a similar vein, members of the Jehovah's Witnesses have challenged state action as it relates to compelled medical care, based on their religious beliefs. In particular, in *Jehovah's Witnesses of Washington v. King County Hospital*,[129] Plaintiff parents challenged a Washington State statute that allowed state officials to perform blood transfusions on children, despite parental objections. The statute identified children as grossly and willfully neglected as to medical care when parents refused certain treatments for the child. The children were made wards of the state so that medical care could be implemented. In *King* specifically, parents objected to their children getting blood transfusions.[130]

Plaintiff parents challenged the statute on many Constitutional grounds. They argued that the statute violated their rights to family privacy protected by the Ninth and 14th Amendments, that it violated their right to Freedom of Association and Free Exercise of Religion protected by the First Amendment, and that the practice deprived them of Due Process codified in the 14th Amendment. *King* is instructive here for many reasons. First, it suggests an additional layer that could be added to compulsory vaccination statutes. The statute in *King* allowed for the state to make a finding of gross and willful medical neglect, premised on a belief that the blood transfusion was necessary to save the life of the child. This finding designated the child a ward of the state and imposed a duty on the state to supply blood transfusions despite the parent's objections. As applied to compulsory vaccines, states could make a finding of medical neglect based on a parents' philosophical or religious objection to vaccination. The state could therefore impose a duty on state medical officials to supply the vaccines despite parental objection.

Additionally, it echoes the discussion above.[131] The notion that there are boundaries to parental decision making when it comes to children's medical treatment based on religious exemptions, is strikingly similar to the delineation between regulating religious practices and religious beliefs. Parents in *King* reject blood transfusions for their children based on a religious belief. While withholding lifesaving blood transfusion treatments from their children crosses the line to become a practice. The state in *King* did not violate free exercise principles when it determined that children were being placed at too high a risk for serious illness and death when parents withheld treatment. "The right to practice religion freely does not include liberty to expose the child to ill health or

[129] Jehovah's Witnesses of Wash. v. King Cty. Hosp., 278 F. Supp. 488 (W.D. Wash. 1967).

[130] *Id.* at 50 (Jehovah's Witnesses do not consent to blood transfusions based on the admonition of their Almighty God Jehovah found in the bible. The command tells them to "abstain from blood." This belief places a positive religious duty on God to protect and provide for his children and it is seen as the responsibility of the father in particular, to make sure that no member of the family gets a blood transfusion. If they do receive a blood transfusion, it is seen as causing permanent spiritual harm to both the child and the parent.).

[131] *See* discussion *supra* identifying the differences between religious practices and religious beliefs.

death."[132] Children must be protected from communicable diseases and with technological advancements making vaccinations 99% effective,[133] the United States is in a position to ensure childhood health. Revoking religious exemptions to state vaccination statues does not present a Free Exercise dilemma.

C. Philosophical "Personal Belief" Exemptions

Philosophical or "personal belief" exemptions exist in only 15 states.[134] As the measles crisis has evolved in recent years, a variety of states have begun considering removing both philosophical and religious exemptions to compulsory vaccination statues.[135] States that have taken the step to revoke philosophical exemptions have been met with challenges to the Constitutionality of this action. The analysis that follows suggests that states do not infringe on personal liberty rights of individuals when this action is taken. Furthermore, state officials have a compelling state interest —promoting public health— to remove these exemptions and should do so.

In *Love v. State Dept. of Education,* 29 Cal. App. 5th 980 (Cal. App. Ct. 2018), plaintiffs challenged state legislators' action of revoking personal belief exemptions from compulsory vaccines statutes following a massive measles outbreak.[136] The plaintiffs asserted that revoking personal belief exemptions violated their substantive due process rights by infringing on their rights to bodily integrity, arguing that vaccination was placing an unlawful condition on their right to attend public school.[137] Plaintiffs also argued the revocation negated their rights to make decisions on how to raise their children.[138] The California court relied heavily on *Jacobson* and *Zucht*[139] to articulate two important holdings relevant here. First, the court determined that the plaintiff's substantive due process argument failed because vaccination promotes a compelling government interest, ensuring public health and safety.[140] The court also determined that compulsory vaccination was not contrary to a fundamental interest in education

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[132] Jehovah's Witnesses of Wash. v. King Cty. Hosp., 278 F. Supp. 488, (W.D. Wash. 1967).

[133] *Exemptions supra* note 19.

[134] *Id.*

[135] Dirk Vanderhart, *Amid Measles Outbreaks States Consider Revoking Religious Vaccine Exemptions*, NPR (May 6, 2019), https://www.npr.org/2019/05/06/720673193/amid-measles-outbreaks-states-consider-revoking-religious-vaccine-exemptions.

[136] Love v. Cal. Dep't of Educ., 29 Cal. App. 5th 980, 985 (Cal. App. Ct. 2018).

[137] *Id.* at 988.

[138] *Id.*

[139] Friedman, *supra* note 69.

[140] *Love*, 29 Cal. App. 5th at 993-94.

and the right to attend school codified in the California state Constitution.[141] This California case is demonstrative and provides a reasonable basis to conclude that States may revoke personal belief exemptions to mandatory vaccination statutes for school-aged children. Further, because most individuals who are seeking and obtaining religious exemptions to compulsory vaccination statutes are doing so based on philosophical grounds, it is appropriate for this reasoning to translate to greatly restricting and or revoking entirely religious exemption.

In *Hanzel v. Arter,*[142] parents challenged an Ohio vaccination statute on philosophical grounds. The parents subscribed to a belief in "chiropractic ethics," which teaches that "injection of foreign substances into the body is of no benefit and can only be harmful."[143] The children's school did not allow an exemption, suggesting that these beliefs did not constitute "good cause" for an exemption as required by the statute.[144] In contemplating the party's equal protection challenge, the Court noted that "philosophical beliefs do not receive the same deference in our legal system as do religious beliefs, even when the aspirations flowing from each set of beliefs coincide."[145] The Court evaluated the equal protection challenge under a rational basis standard.[146] The Court found that the school's exercise of discretion in determining that the party's philosophical objection was not a "good cause" under the meaning of the statute, was not a violation of the equal protection clause.[147]

Hanzel is instructive here. The involved parents subscribed to a philosophical teaching that prevented them from vaccinating their children. The Court found no constitutional violation for the state making a determination that the parents' objection was not "good cause" to exempt their children. Thus, it can be inferred that states may safely revoke their philosophical exemptions from compulsory vaccination statutes. Further, the *Hanzel* court indicated that religious beliefs receive more deference in our legal system. If, as the above analysis suggests, religious exemptions may be safely removed without posing a constitutional violation, so too may philosophical exemptions.

D. Public Health Demands Revoking Exemptions to Compulsory Vaccination: Herd Effect and Other Considerations

Public health ethics specialists have tackled the anti-vaccination crisis in their literature. Scholars of this field recognize vaccination regulation as

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[141] *Id.* at 995.

[142] Hanzel v. Arter, 625 F. Supp. 1259 (S.D. Ohio 1985).

[143] *Id.* at 1261.

[144] *Id.*

[145] *Id.* at 1265.

[146] *Id.*

[147] *Id.* at 1266.

presenting a significant dilemma between individual choice and community health. "In a very real sense vaccination debates are similar to other types of decisions that constitute the unspoken social contract—membership in a community often places citizens in the position of supporting actions or policies judged to be for the overall benefit of society."[148] Public health specialists also suggest that the anti-vaccination issue highlights a clear distributive justice issue.[149] Everyone who is able to, should bear the burden of vaccination in order to reap the benefits of being protected from the spread of vaccine-preventable illness.[150] Ethicists have noted that the way that exemptions are handled needs to be reevaluated.[151] Many solutions to the anti-vaccine crisis have been suggested by lawmakers and ethics leaders alike. Some of which include ramping up education efforts to inform parents of the risks associated with exempting their children.[152] Others recommend increasing the difficulty in obtaining an exemption, increasing enforcement of state-vaccination laws, expanding requirements to childcare facilities and pre-schools, and even keeping non-vaccinated children out of school when the threat of an outbreak arises.[153] These proposed solutions are however, shortsighted. Revoking non-medical exemptions to compulsory vaccination statutes provides a comprehensive solution to a problem that is increasing in severity.

Other specialists in the area of public health ethics suggest that in order to tackle the anti-vaccination crisis the narrative must be shifted away from parents' choice. Vaccine requirements, should not be a matter of parental choice, but rather an obligation that a society owes children.[154] Just society, these ethicists argue, are obligated to vaccinate children for vaccine-preventable illnesses.[155] And furthermore, those children who cannot be vaccinated for medical reasons, can similarly expect to be protected by herd immunity.[156] This perspective shifts

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[148] Kristin S. Hendrix, PhD, Lynne A. Sturm, PhD, Gregory D. Zimet, PhD & Eric M. Meslin, PhD, *Ethics and Childhood Vaccination Policy in the United States*, 106 AM. J. PUB. HEALTH 275 (2016).

[149] *See generally Distributive Justice*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Sept. 26, 2017), https://plato.stanford.edu/entries/justice-distributive/.

[150] Hendrix et al., *supra* note 148, at 276.

[151] *Id.*

[152] *Id.*

[153] Diekema, *supra* note 82 (noting many state statutes already allow schools to keep non-vaccinated kids out of school if an outbreak presents itself).

[154] Johan Bester, *Not a Matter of Parental Choice but of Social Justice Obligation: Children and Owed Measles Vaccination*, 32 WILEY BIOETHICS 611 (2018), http://proxy.ulib.csuohio.edu:2067/eds/pdfviewer/pdfviewer?vid=2&sid=173194c9-d518-414c-ab60-aac5957cdc81%40sessionmgr101.

[155] *Id.* at 613.

[156] *Id*. at 616.

the focus from a matter of parental choice to an issue of moral obligation. By considering vaccination as a social, moral obligation owed by a society to its children, one understands the necessity to remove all legislative barriers to improving vaccination rates.

Public health historian at Columbia University, James Colgrove has suggested that vaccination programs and initiatives are often victims of their own success.[157] "The better vaccines work, the more people think they don't need them anymore."[158] Colgrove's insight speaks to how critical continued vaccination education is. Without serious and targeted efforts to educate people on the risks associated with opting out of vaccines —not only to themselves, but also to the larger population— measles will return and it will kill. "Statistically speaking, once we get above 1,000 cases of measles, we're going to have a death. For an entirely preventable disease, that's unacceptable."[159] The surest means of preventing the loss of elimination status is for state legislatures to revoke non-medical exemptions for compulsory vaccination statutes and commit to highly pervasive educational efforts that raise awareness for vaccination safety, efficacy, and herd immunity protections.

IV. CONCLUSION: THE SOLUTION

The measles outbreak in 2019 placed the United States on the brink of losing its measles elimination status that was formally achieved in 2000.[160] Not only would this be a devastating blow to the efforts of health officials since 1996 when the elimination task was announced, but this would also put the country at great risk for a measles epidemic.[161] Losing elimination status could mean that the United States finds itself back in a position where there were three to four million cases of measles a year.[162] Losing elimination status is no longer a hypothetical worst case scenario for the United States. In early September, 2019, officials in New York announced that the alarming outbreak in Rockland County was stopped.[163] This is great news, except for the fact that if just *one* more case had been reported in New York before October 2019, elimination status would have

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[157] Diekema, *supra* note 82.

[158] *Id.*

[159] *Id.*

[160] Julia Ries *U.S. Might Lose Measles Elimination Status: Why You Should Care*, HEALTHLINE (Sept. 10, 2019), https://www.healthline.com/health-news/will-the-us-lose-its-measles-elimination-status-next-month#Measles-is-on-its-way-to-becoming-endemic-again.

[161] *Id.*

[162] *Id.*

[163] *Id.*

been destroyed.[164] Measles elimination status is lost if the transmission chain for a given outbreak is greater than 12 months.[165] We did not lose elimination status, however, as Secretary of Health and Human Services Alex Azar said, "this past year's outbreak was an alarming reminder about the dangers of vaccine hesitancy and misinformation."[166] Without improving vaccination rates, we place ourselves at risk for another measles outbreak, which could easily compromise elimination status once again. The easiest, and most effective means of preventing this situation is to lift all non-medical exemptions to compulsory vaccination statutes.

By eliminating exemptions to compulsory vaccination statutes, we can take steps to reverse some of this misinformation and promote educational efforts about the importance of vaccines. More importantly, we will protect our future generations. We should not vaccinate now simply in an effort to protect our children. We must vaccinate to protect our grandchildren and great-grandchildren. "Our children don't get smallpox shots anymore because the disease no longer exists. Smallpox is now only a memory, and if we keep vaccinating against other diseases, the same will someday be true for them too."[167] We are lucky to live in a time that does not have to witness first-hand the horrifying reality of since-eradicated communicable diseases. Every effort should be taken to maintain elimination status of vaccine-preventable diseases. And, as this Note suggests, state legislators operate within their police powers when they mandate compulsory vaccines. The legislators may freely strengthen pre-existing vaccine statutes to revoke philosophical and religious exemptions without presenting a Constitutional dilemma.

The anti-vaccination crisis is particularly complex because it reaches nearly every community, and every walk of life. Researchers have suggested that there is no correlation between immunization attitude and socio-economic status or education level.[168] In order to combat the anti-vaccination crisis, a solution must be developed that targets every community in America. Among the best predictors for anti-vaccination attitudes are high levels of conspiratorial thinking and low tolerance for an infringement on perceived personal liberties.[169] A frustrating reality facing those who are attempting to change anti-vaccination

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[164] *Id.*

[165] *Id.*

[166] *With End of New York Outbreak, United States Keeps Measles Elimination Status*, U.S. DEP'T OF HEALTH AND HUMAN SERVICES (Oct. 4, 2019), https://www.hhs.gov/about/news/2019/10/04/end-new-york-outbreak-united-states-keeps-measles-elimination-status.html.

[167] *Id.*

[168] Christopher Swingle, *How Do We Approach Anti-Vaccination Attitudes*? 115 MO. MED.180 (2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6140172/#b3-ms115_p0180.

[169] *Id.*

sentiment is confirmation bias.[170] Confirmation bias refers to the tendency to process information by interpreting it in a way that is already consistent with one's existing beliefs.[171] It is one example of the human tendency to process information in a manner that is biased or illogical.[172] Anti-vaccination parents, when presented with pro-vaccination information, have a tendency to reject the information out of hand.[173]

Further complicating the efforts of proper vaccine education is the "modern Pandora's box"[174] created by the internet.[175] The internet allows any and all opinions to spread at an instantaneous speed. Individuals and groups can disseminate information without filter or review.[176] Research has shown that over half of internet users believes that "almost all" or "most" information available on the internet is accurate and credible.[177] Parents who exempt their children, particularly for philosophical reasons, are likely to have obtained their vaccine information on the internet. A comprehensive study on vaccine information available on the internet suggested that most anti-vaccination sites, 75% of them to be exact, contained information suggesting vaccine conspiracy theories.[178] These theories include the notion that the government and regulatory bodies have information about the risks associated with vaccination that they are withholding from the public, and suggestions that vaccination is simply a profit-motivated concern.[179] Anti-vaccination information is widely available. And while pro-vaccination information is available too, it is clear, particularly in the United

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[170] *Id.*

[171] Bettina, J. Casad, *Confirmation Bias*, BRITANNICA (Oct. 9, 2019), https://www.britannica.com/science/confirmation-bias.

[172] *Id.*

[173] Swingle, *supra* note 168, at 181.

[174] Anna Kata, *A Postmodern Pandora's Box: Anti-Vaccination Misinformation on the Internet*, 28 VACCINE 1709 (2010).

[175] *Id.*

[176] *Id.* at 1709.

[177] *Id.*

[178] *Id.* at 1712.

[179] *Id.* at 1713 (suggesting that 63% of anti-vaccination sites include accusations of collusion between physicians and pharmaceutical companies who would "benefit" from vaccine reactions that would develop more patients, and noting 50% of these websites suggested that the government was protecting manufacturers of vaccines and doctors from the harm of vaccines).

States that American parents are more likely to encounter anti-vaccination information on the internet than parents in other countries.[180]

An educational campaign coupled with the aggressive legislative approach of eliminating non-medical exemptions to mandatory vaccination requirements must be carefully tailored in order to be successful. Educational campaigns have been attempted before. And they have, unfortunately, fallen short of success. For instance, campaigns that have been directed at pro-vaccination messages, directly targeting vaccine misinformation, have not been successful.[181] These efforts seemed to further reinforce perception of vaccination risk, even when they were conducted using materials made by the Centers for Disease Control.[182] So, what will work? Research has shown that educational efforts that are not focused on vaccine misinformation, but rather focus on the *personal consequences* of not vaccinating children, have been more successful.[183] These efforts have involved showing target anti-vaccination parents pictures of children with measles and mumps, as well as letters that are written by parents who have children with vaccine-preventable diseases.[184]

The most effective solution to the anti-vaccination crisis would be a comprehensive approach, as advocated for in this Note. Vaccine hesitancy is an issue that has permeated our culture for hundreds of years. It is not an issue that one can expect to be solved quickly or solved with immediate consensus of the people. The approach advocated for in this Note suggests first, a comprehensive legislative approach to eliminate all non-medical exemptions to public school vaccination mandates. This approach, while admittedly aggressive, would pass constitutional challenge and such effort would be permissible under the police power of each state. Furthermore, parents would be forced to reevaluate their interest in exemptions under a new light. Under this approach, parents would be forced to make the choice between a vaccination and their child's public-school education. This approach allows the most vulnerable members of our society to take solace, knowing that they will continue to be protected by the herd immunity created by high vaccination rates.

This legislative measure will undoubtedly be met with opposition from pro-exemption parents and communities. Thus, state legislatures must also be prepared to dedicate significant resources to a thorough educational campaign to increase awareness on the effectiveness and safety of vaccines. This campaign will require intense dedication from state authorities. The vaccination issue is one

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[180] *Id.* at 1711 ("Overall American searches returned more anti-vaccination results (24%) than Canadian searches (6%), indicating American parents are more likely to encounter anti-vaccination sites via Google than are Canadian parents.").

[181] *Id.* at 1714.

[182] *Id.*

[183] Swingle, *supra* note 168.

[184] *Id.* (noting that these efforts were less successful when they focused specifically on the vaccine-autism link.)

that crosses nearly all cultural and socio-economic boundaries. An effective campaign will be one that will be effective for all communities, perhaps indicating that states must be prepared to unleash multiple iterations of the campaign. Furthermore, reflecting on past educational efforts, and the wisdom of public health specialists, the campaign must be one that focuses on the social obligation to children's health, not parental choice.

This year public health moved to the forefront of the world's collective mind, when Covid-19 emerged and a global pandemic ensued. Countless lives were and are still affected by this illness.[185] This pandemic asked each individual to make sacrifices in their daily lives in order to protect the public health. Countries and states alike issued "stay at home" orders, asking citizens to take shelter in their own homes—only leaving for necessities like grocery shopping and trips to the pharmacy. Businesses closed forcing people to seek unemployment compensation. The American stock market began to plummet. Students, from kindergarten through high school took to the internet to complete their curriculum for the year. College dorms emptied as governor's issued orders for colleges and universities to send their students home for the remainder of the year. Retirement communities and homes closed their doors to visitors. Life changed. For every single person. Americans became incredibly familiar with the phrases "flatten the curve" and "social distancing." State and Federal officials echoed these anthems, begging citizens to stay home in order to preserve precious hospital resources. Covid-19 has forever changed the current population's understanding of public health. As an illness that is not currently vaccine preventable, the world was left scrambling to find a solution to stop the spread.

The world will undoubtably emerge from the Covid-19 crisis. Countries, states, cities and towns will eventually return to normal life. Students will return to school, businesses will re-open, we will once again embrace our friends and families as we did before. The public health landscape has forever changed from the experience that this illness has created. Public health orders to "stay at home" and "flatten the curve" were initiatives aimed at protecting the health of the world's most vulnerable. In some way, perhaps the Covid-19 pandemic will serve as a catalyst for more public health initiatives to excel. A world that has experienced a global pandemic is one that should be committed to taking steps to prevent new epidemics and pandemics from emerging. Covid-19 is not a vaccine-preventable illness at this time, and while resources are being dedicated to develop a vaccine, the only means of preventing the spread is self-quarantine and social distancing efforts. Measles, by contrast, is a vaccine-preventable illness. The vaccine is safe, widely available, and the only effective means of preventing a measles outbreak from occurring. The solutions to the anti-vaccination crisis presented in this Note offer steps that can and should be immediately taken to

[185] This note was written from September 2019-April 2020, when the United States was battling Covid-19. More specifically, this Note was written in Ohio, where a "stay at home" order was initiated on March 23, 2020 to last until April 6, 2020 (unless extended further.) For Information on Ohio's stay in place order, *see generally* https://governor.ohio.gov/wps/portal/gov/governor/media/news-and-media/ohio-issues-stay-at-home-order-and-new-restrictions-placed-on-day-cares-for-children.

prevent the spread of vaccine-preventable illness. The world saw the importance of public health move to the forefront of all of our minds when the Covid-19 pandemic emerged and spread. With these concerns now at the front of our minds, perhaps the world will be more supportive of vaccination efforts, including removing non-medical exemptions from compulsory vaccination requirements.