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INTRODUCTION

In January 2015, officials in California announced that they had linked multiple cases of measles to exposures that had occurred in Disneyland, in Orange County, California, in December 2014.[1] Within a few weeks, the outbreak expanded to include almost 100 cases in multiple states (and Mexico), with the spread of the disease certain to continue.[2] These

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1. Liz Szabo, *California Measles Outbreak Linked to Disneyland*, USA TODAY (Jan. 8, 2015, 11:45 AM), http://www.usatoday.com/story/news/nation/2015/01/07/measles-outbreak-disneyland/21402755; *see also* Jennifer Zipprich et al., *Measles Outbreak–California, December 2014-February 2014*, CTRS. FOR DISEASE CONTROL & PREVENTION (Feb. 20, 2015), http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6406a5.htm?s_cid=mm6406a5_w.

2. *See Measles: What You Need to Know*, BERKELEY WELLNESS (Jan. 28, 2015), http://www.berkeleywellness.com/healthy-community/contagious-disease/article/measles-outbreak-what-you-need-know; *see also* Connie Cone Sexton, *Officials: Up to 1K Possibly Exposed to Measles in Ariz.*, USA TODAY (Jan. 29, 2015, 8:49 AM), http://www.usatoday.com/story/news/nation/2015/01/29/officials-up-to-1k-possibly-exposed-to-measles-in-arizona/22511335 (referencing the potential for dramatic expansion). Figure 1 reveals the total number of measles cases in the

events reveal the culmination of a worrisome trend: growth in the number of measles cases in the past years, as documented by the Centers for Disease Control and Prevention ("CDC") in Figure 1 below:

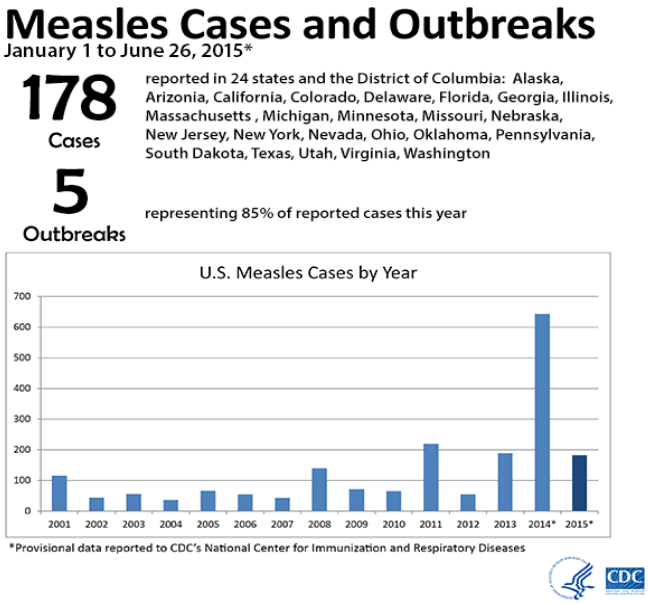

Figure 1

United States in 2014 and to date in 2015. In addition to the Disneyland outbreak, the number of measles cases was elevated in 2014 due to an outbreak in an Ohio Amish community with low vaccination rates. Although the outbreak in the Amish community involved more cases than the Disneyland outbreak, it generated less attention. This may be due to the isolation of the Amish community, which kept the outbreak contained. The Disneyland outbreak, by contrast, affected people from many states who were expected to return to their home communities, possibly spreading infection further. In addition, the general public may also have identified more closely with visitors to an outbreak in Disneyland seemed to lead many Americans to appreciate their own and their children's vulnerability to infection. *See, e.g.*, Julia Belluz, *Why America Only Cared About Measles Once It Hit Disneyland*, VOX, http://www.vox.com/2015/1/30/7948085/why-america-only-cared-about-measles-once-it-hit-disneyland (last updated Jan. 30, 2015). The high rate of infection in the Amish community also reaffirms the insight that communities with low vaccination rates are at particularly high risk of experiencing disease outbreaks.

After a long period of dramatic decline in cases of measles since the introduction of the vaccine in the 1960s, and especially after the adoption of a two-dose regimen in the early 1990s,[3] the CDC declared measles eliminated in the United States in 2000.[4] Today, however, the number of cases is rising rapidly. What are we doing wrong? The answer is clear and simple. Too many parents are not taking advantage of the available protection and are failing to give their children the measles, mumps and rubella vaccine ("MMR"). The result is therefore not surprising, in light of the uncontroverted evidence that vaccination is an essential tool that has allowed our society to control the spread of these diseases.

Vaccines are literally lifesavers. They are our best defense against dangerous diseases that can lead to long-term disability or death, given that existing treatments cannot fully ameliorate many of these diseases once contracted. Citing the CDC, the U.S. Supreme Court stated that "the elimination of communicable diseases through vaccination became 'one of the greatest achievements' of public health in the 20th century."[5] Before the widespread use of vaccines, millions of people in the United States suffered annually and thousands died from diseases that are now either distant memories (e.g., smallpox, polio, diphtheria) or that occur relatively infrequently (e.g., pertussis, measles, Hib).[6] Yet, some parents choose not to

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3. *See* Sandra W. Roush et al., *Historical Comparisons of Morbidity and Mortality for Vaccine-Preventable Disease in the United States*, 298 JAMA 2155, 2156, tbls.1 & 2 (2007).

4. Mark J. Papania et al., *Elimination of Endemic Measles, Rubella, and Congenital Rubella Syndrome from the Western Hemisphere, The US Experience*, 168 JAMA 148, 149 (2014).

5. Bruesewitz v. Wyeth, 562 U.S. 223, 223 (2011).

6. *See generally* Roush et al., *supra* note 3, at 2155-219. Tables 1 and 2 provide the number of cases and deaths for the years leading up to the vaccine for each disease. Although there have been more cases of pertussis, due in part to a less effective vaccine, the number of cases is still much smaller than in the pre-vaccine era. Furthermore, deaths are rare today, compared with the years prior to the advent of the vaccine, when thousands of young babies died from pertussis each year. *Surveillance & Reporting*, CTRS. FOR DISEASE CONTROL & PREVENTION,

vaccinate their children because the parents are influenced by widely-disseminated and misleading characterizations of the risks of vaccines.[7] These risks are, in fact, demonstrably small. Yet, the misinformation and exaggerated warnings about vaccines divert parents' attention from what has been scientifically-demonstrated and lead parents to choose the greater risk for their children: the diseases against which vaccines provide protection. Largely for this reason in recent years, parents have been seeking exemptions from vaccination requirements at increasing rates, which has, in turn, contributed to unprecedented increases in exemptions rates.[8] The increase in non-vaccination rates is a problem, not just because children whose parents forego vaccinations are at risk of contracting preventable diseases, but because their nonvaccination endangers others. Unvaccinated children are at a higher risk of contracting vaccine preventable diseases.[9] Therefore, they are also more likely than are vaccinated

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http://www.cdc.gov/pertussis/surv-reporting/cases-by-year.html (last updated Mar. 6, 2015).

7. *See, e.g.*, Steven P. Calandrillo, *Vanishing Vaccinations: Why Are So Many Americans Opting Out of Vaccinating Their Children?*, 37 U. MICH. J.L. REFORM 353 (2004); *see also* Margaret A. Maglione et al., *Safety of Vaccines Used for Routine Immunization of US Children: A Systematic Review*, 134 PEDIATRICS 325 (2014).

8. *See* Nina Blank et al., *Exempting Schoolchildren from Immunizations: States With Few Barriers Had Highest Rates of Nonmedical Exemptions*, 32 HEALTH AFFAIRS 1282, 1282 (2013); *see also* Saad B. Omer et al., *Nonmedical Exemptions to School Immunization Requirements: Secular Trends and Association of State Policies with Pertussis Incidence*, 296 JAMA 1757, 1762 (2006) [hereinafter Omer et al., *Nonmedical Exemptions*]; Saad B. Omer et al., *Vaccination Policies and Rates of Exemption from Immunization, 2005–2011*, 367 NEW ENG. J. MED. 1170, 1171 (2012) [hereinafter Omer et al., *Vaccination Policies*].

9. *See* Daniel R. Felkin et al., *Individual and Community Risks of Measles and Pertussis Associated With Personal Exemptions to Immunization*, 284 JAMA 3145, 3147-49 (2000); Jason M. Glanz et al., *Parental Refusal of Pertussis Vaccination is Associated With an Increased Risk of Pertussis Infection in Children*, 123 PEDIATRICS 1446, 1449-50 (2009) [hereinafter Glanz et al., *Parental Refusal of Pertussis Vaccination*]; Aamer Imdad et al., *Religious Exemptions for Immunization and Risk of Pertussis in New York State, 2000–2011*, 132 PEDIATRICS 37, 38 (2013); Daniel A. Salmon et al., *Health Consequences of Religious and Philosophical Exemptions From Immunization Laws: Individual and Societal Risk of Measles*, 282 JAMA 47, 48-49 (1999) [hereinafter Salmon et al., *Health Consequences*].

children to transmit the disease to those whom vaccines cannot protect, such as infants too young to be vaccinated, individuals who cannot be vaccinated for legitimate medical reasons, or those for whom a vaccine's protection is ineffective.[10] Communities with lower rates of vaccination are more vulnerable to outbreaks, placing increasing numbers of persons at risk.[11] High immunization rates, therefore, provide important public health benefits accruing to society as a whole, in addition to the direct benefits to vaccinated individuals.[12]

This Article addresses the role that the legal system can play in increasing childhood immunization rates. Part I provides a brief overview of the science underlying childhood immunization, touching on basic information about vaccine risks and benefits. Part II examines the legal framework governing vaccination, describing current legal policies requiring immunization of children prior to school entry, analyzing the legal authority for these policies, and the exemptions to these requirements available in the states. Part III reports and discusses data on recent patterns of nonvaccination and the use of legal exemptions, their interrelationships, and their connection to disease outbreaks. Part IV describes patterns and classifications of nonvaccination and the reasons behind parental refusal to vaccinate children. It examines articulated safety concerns, mistrust of government and medical professionals, preference for alternative over traditional medicine, and the invocation of claims that mandatory vaccination policies

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10. Most vaccines are reasonably effective, but none are perfect; two doses of MMR offer long-term protection to 99% of the individuals receiving them. CTRS. FOR DISEASE CONTROL & PREVENTION, EPIDEMIOLOGY AND PREVENTION OF VACCINE-PREVENTABLE DISEASES 175 (William Atkinson et al. eds., 12th ed. 2012), *available at* http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/meas.pdf. "Studies indicate that more than 99% of persons who receive two doses of measles vaccine (with the first dose administered no earlier than the first birthday) develop serologic evidence of measles immunity." *Id.*

11. *See, e.g.*, Imdad, et al., *supra* note 9; *see also* Saad B. Omer et al., *Geographic Clustering of Nonmedical Exemptions to School Immunization Requirements and Associations with Geographic Clustering of Pertussis*, 168 AM. J. EPIDEMIOLOGY 1389 (2008).

12. *See* Calandrillo, *supra* note 7, at 358.

violate civil rights. Part V examines the legal tools available to address the problem, describing their strengths, problems, and factors to consider when choosing among them.

I. VACCINES: BENEFITS AND RISKS

The development of vaccines is hailed as one of our greatest modern medical advances, appropriately credited with saving tens of millions of lives, and preventing immeasurable suffering.[13] One team of researchers estimated that administration of the recommended vaccines to the 2009 birth cohort would prevent about 42,000 early deaths and 20 million cases of disease, saving billions of dollars in direct and indirect costs.[14] Over the past several decades, medical advances have led to the development of vaccines to prevent a growing list of diseases. Currently, the CDC's schedule recommends vaccination against fourteen diseases before children reach school age: diphtheria, hepatitis A, hepatitis B, Hib, influenza, measles, meningococcal disease, mumps, pertussis (whooping cough), pneumococcal, polio, rotavirus, rubella, tetanus, and varicella (chicken pox).[15] Prior to the advent of vaccines, the toll to society in lost life and serious health complications was substantial. One cannot overestimate the beneficial changes vaccines have introduced into our lives.

Like every medical intervention—and in fact, everything in life—vaccines are not risk-free. We must always evaluate the risks together with the potential benefits. For example, a recent study examined the safety of MMR and MMRV, the two measles-containing vaccines.[16] The study found that the

13. *See* Michael Worboys, *Vaccines: Conquering Untreatable Diseases*, 334 BMJ S19 (2007).

14. Fangjun Zhou et al., *Economic Evaluation of the Routine Childhood Immunization Program in the United States, 2009*, 133 PEDIATRICS 577, 581 (2014).

15. *Vaccine-Preventable Diseases and the Vaccines that Prevent Them*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf (last updated Jan. 26, 2015).

16. Nicola P. Klein et al., *Safety of Measles-Containing Vaccines in 1-Year-Old Children*, 135 PEDIATRICS e321 (2015) [hereinafter Klein et al., *Safety of Measles-Containing Vaccines*].

risks of the vaccines included fever and febrile seizures—which, although "frightening to parents," generally do not cause long term harm.[17] The vaccine can also cause temporary low platelet count in rare cases (about 1:40,000, according to the CDC[18]), and very rarely (about 1.5 out of every million doses), a severe allergic reaction.[19]

The measles infection itself can also cause low platelet count, fever, and febrile seizures.[20] In addition, the CDC reports: "[b]efore the measles vaccination program started in 1963, we estimate that about 3 to 4 million people got measles each year in the United States. Of those people, 400 to 500 died, 48,000 were hospitalized, and 4000 developed encephalitis (brain swelling) from measles."[21] The CDC estimates the rate of complications from measles at 30%.[22] Those complications include death, encephalitis, pneumonia, deafness, and a rare but always fatal complication called subacute sclerosing panencephalitis (SSPE).[23]

The Hepatitis B immunization demonstrates, again, the high benefit/low risk profile of the vaccines on the schedule. The Vaccine Education Center of the Children's Hospital of Philadelphia (VEC) describes the risks as: pain or soreness at the injection site; low-grade fever; and severe allergic

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17. *See id.*; *see also Febrile Seizure Fact Sheet*, NAT'L INST. NEUROLOGICAL DISORDERS & STROKE, http://www.ninds.nih.gov/disorders/febrile_seizures/detail_febrile_seizures.htm (last updated Feb. 23, 2015).

18. *Measles, Mumps, and Rubella (MMR) Vaccine*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccinesafety/Vaccines/MMR (last updated Feb. 17, 2015) [hereinafter *Measles, Mumps, and Rubella (MMR) Vaccine*].

19. Klein et al., *Safety of Measles-Containing* Vaccines, *supra* note 16, at e326.

20. *Measles, Mumps, and Rubella (MMR) Vaccine*, *supra* note 18.

21. *Frequently Asked Questions about Measles in the U.S.*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/measles/about/faqs.html (last updated Mar. 20, 2015).

22. CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 10, at 174.

23. SSPE refers to a condition that causes a child to progressively lose functioning—the ability to walk, talk, and other capacities—ultimately leading to death. The condition can continue for years. While the process can be slowed, to date, it is always fatal. *Id.* at 175.

reaction (1 of 600,000 doses).[24] In comparison, those who contract hepatitis B can develop liver disease or liver cancer.[25] Before the vaccine, about 16,000 children under the age of 10 contracted hepatitis B annually, and were at a high risk of developing these complications.[26] The VEC explains: "[e]very year in the United States about 3000 people die soon after catching hepatitis B virus. In addition, every year about 10,000 people become chronically infected, putting them at a high risk of developing the long-term consequences of hepatitis B virus infection: cirrhosis and liver cancer."[27]

As these two examples demonstrate, risks from the vaccine are real but rare, and are much smaller in each case than is the risk of the disease. A recent review concluded: "[e]vidence was found for an association of several serious [adverse events] with vaccines; however, these events were extremely rare: absolute risk is low."[28]

Thus, although vaccines carry risks, those risks are quite small. Contrary to the claims of some nonvaccinators, documented risks do not include, for example, a greater likelihood of developing autism or leukemia.[29] Furthermore, the documented risks are far smaller than the benefits of vaccines and the risks of not vaccinating. Generally, for any child except the few with medical contraindications, it is better to vaccinate—for that child, and for society.

Misinformation about the alleged link between vaccines and autism has negatively affected vaccination rates. In the

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24. Vaccine Educ. Ctr., *A Look at Each Vaccine: Hepatitis B Vaccine*, CHILDREN'S HOSP. PHILA., http://vec.chop.edu/service/vaccine-education-center/a-look-at-each-vaccine/hepatitis-b-vaccine.html (last visited Feb. 4, 2015).

25. *Id.*

26. Gregory L. Armstrong et al., *Childhood Hepatitis B Virus Infections in the United States Before Hepatitis B Immunization*, 108 PEDIATRICS 1123, 1125 (2001).

27. Vaccine Educ. Ctr., *supra* note 24.

28. Maglione et al., *supra* note 7, at 334.

29. *See id.*

United States and elsewhere,[30] some parents believe vaccines are a causal factor in their child's development of autism. Historically, the first theory used to support this alleged link focused on the measles, mumps and rubella vaccine—with some parents claiming that MMR caused their child's autism.[31] Yet, the only research cited to support that purported connection is a study of twelve children, eight of them with autism, by Andrew Wakefield and twelve other authors.[32] The authors stated: "[i]n eight children, the onset of behavioral problems had been linked, either by the parents or by the child's physician, with measles, mumps, and rubella vaccination."[33] The study, however, did not find that the MMR vaccine caused, or was in any way etiologically related to, autism, notwithstanding the lead author's statement in press conferences suggesting such an effect.[34] Rather, the published study's conclusions stated: "[w]e did not prove an association between measles, mumps, and rubella vaccine and the syndrome described. Virological studies are underway that may help to resolve this issue."[35] The author's assertion of an alleged link between vaccines and autism was not supported in later large-scale studies across the globe,[36]

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30. *See, e.g.*, PAUL A. OFFIT, AUTISM'S FALSE PROPHETS: BAD SCIENCE, RISKY MEDICINE, AND THE SEARCH FOR A CURE 55, 176 (2010) [hereinafter OFFIT, AUTISM'S FALSE PROPHETS].

31. *Id.*

32. Andrew J. Wakefield et al., *Ileal-Lymphoid-Nodular Hyperplasia, Non-Specific Colitis, and Pervasive Developmental Disorder in Children*, 351 THE LANCET 637 (1998); *see* retraction of Ileal-Lymphoid-Nodular Hyperplasia, Non-Specific Colitis, and Pervasive Developmental Disorder in Children, THE LANCET, http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)11096-0/abstract (last visited Apr. 7, 2015). For a discussion of the problems with the study, see Brian Deer, *How the Case Against MMR Was Fixed*, 342 BMJ 77, 78-79 (2011).

33. Wakefield et al., *supra* note 32.

34. *See generally* SETH MNOOKIN, THE PANIC VIRUS: A TRUE STORY OF MEDICINE, SCIENCE, AND FEAR 106-17 (2012) (discussing the criticism Andrew Wakefield's paper received); OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 20-22, 43-44.

35. Wakefield et al, *supra* note 32, at 641.

36. For a list of studies examining the safety of vaccines, see Am. Acad. of Pediatrics, *Vaccine Safety: Examine the Evidence*, *available at* http://www2.aap.org/immunization/families/faq/vaccinestudies.pdf (last updated Apr. 2013); s*ee also Vaccines and Autism: What You Should Know*, VACCINE EDUC.

and Wakefield was later discovered to have hidden substantial conflicts of interest.[37] Indeed, the British General Medical Council found him guilty of multiple serious ethical violations.[38] Furthermore, documentary evidence collected suggested he may have committed fraud (although he was never subject to a judicial or disciplinary proceeding).[39] The British General Medical Council found Wakefield guilty of serious professional misconduct.[40] His license to practice medicine in Great Britain was revoked.[41] He moved to the United States, where he offers a range of "treatments" for autism, none of which have been tested in clinical trials (and many of which are criticized as potentially dangerous).[42]

CTR., http://vec.chop.edu/export/download/pdfs/articles/vaccine-education-center/autism.pdf (last visited June 4, 2015).

37. *See* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 38.

38. *See* MNOOKIN, *supra* note 34, at 301. *See generally* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30.

39. *See* MNOOKIN, *supra* note 34, at 301. *See generally* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 37-59 (discussing Andrew Wakefield's involvement with attorney, Richard Barr).

40. *See* Gen. Med. Council, *Dr. Andrew Jeremy Wakefield: Determination on Serious Misconduct (SPM) and Sanction* (May 24, 2010), *available at* http://www.briander.com/solved/gmc-wakefield-sentence.pdf.

41. *Id.*; *see also* Alice Park, *Doctor Behind Vaccine-Autism Link Loses License*, TIME (May 24, 2010), http://healthland.time.com/2010/05/24/doctor-behind-vaccine-autism-link-loses-license.

42. *See* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 52, 54. An example of a problematic treatment is chelation, a treatment for the removal of heavy metals from the body, which killed a young autistic boy in 2005. *Boy with Autism Dies After Chelation Therapy*, NBC NEWS, http://www.nbcnews.com/id/9074208/ns/health-mental_health/t/boy-autism-dies-after-chelation-therapy (last updated Aug. 25, 2005, 3:11 PM). Dr. Offit also addresses the dangers of radical diets removing dairy and gluten for young children. OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 122-23. Another alternative treatment offered for curing autism is MMS, Miracle Mineral Solution, which is actually industrial-strength bleach. *FDA Warns Consumers of Serious Harm from Drinking Miracle Mineral Solution (MMS)*, FDA (July 30, 2010), http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm220747.htm. Proponents of MMS recommend that people swallow it, bathe in it, or use it in enemas. *MMS on Trial, A Message from Jim Humble*, GENESIS II, http://genesis2church.org/mms-protocol-read-this-first.html (last visited Apr. 11, 2015). The FDA warns against using it. *Miracle Mineral Solution (MMS): Product as Consumed Produces a Potent* Bleach, FDA

Others have theorized that the preservative thimerosal, found in some vaccines, causes autism.[43] Thimerosal contains ethylmercury, a form of mercury that clears the body much more quickly than the methylmercury found, for example, in fish.[44] This theory was subject to large scale studies, which have found no support.[45] There is also no scientific support for another allegation—that the recommended vaccine schedule clusters too many vaccines too early in a child's life. Together, these multiple unsubstantiated claims have led commentators to describe the vaccine-autism story as "A Tale of Shifting Hypotheses."[46] To date, with millions of children studied, there is absolutely no support for the notion that there is any relationship between vaccines and autism.[47] By contrast, there is increasing evidence that genetic and prenatal developmental factors play major roles in the etiology of autism.[48] The vaccines-autism link has been thoroughly debunked by the scientific community.[49]

(Jul. 30, 2010), http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm220756.htm.

43. *See* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 81-106.

44. *Id.* at 63-64, 114.

45. *See, e.g.*, Eric Fombonne et al., *Pervasive Developmental Disorders in Montreal, Quebec, Canada: Prevalence and Links with Immunizations*, 118 PEDIATRICS e139 (2006), *available at* http://pediatrics.aappulications.org/content/118/1/e139.full.pdf.html; Jon Heron et al., *Thimerosal Exposure in Infants and Developmental Disorders: A Prospective Cohort Study in the United Kingdom Does Not Support a Causal Association*, 114 PEDIATRICS 577 (2004); William W. Thompson et al., *Early Thimerosal Exposure and Neuropsychological Outcomes at 7 to 10 Years*, 357 NEW. ENG. J. MED. 1281 (2007).

46. Jeffrey S. Gerber & Paul A. Offit, *Vaccines and Autism: A Tale of Shifting Hypotheses*, 48 CLINICAL INFECTIOUS DISEASES 456 (2009).

47. Most recently, a meta-analytic review reaffirmed this conclusion. *See* Luke E. Taylor et al., *Vaccines Are Not Associated with Autism: An Evidence-Based Meta-Analysis of Case-Control and Cohort Studies*, 32 VACCINE 3623 (2014).

48. *See* Trent Gaugler et al., *Most Genetic Risk for Autism Resides with Common Variation*, 46 NATURE GENETICS 881, 881-85 (2014); Rich Stoner et al., *Patches of Disorganization in the Neocortex of Children with Autism*, 370 NEW ENG. J. MED. 1209, 1209-10 (2014).

49. *See Beyond the Autism/Vaccine Hypothesis: What Parents Need to Know about Autism Research*, AUTISM SCI. FOUND., http://www.autismscience foundation.org/autismandvaccines.html (last visited June 26, 2015).

II. SCHOOL-ENTRY CHILDHOOD VACCINATIONS POLICIES: LEGAL FOUNDATIONS, FRAMEWORKS, AND EXEMPTIONS

This Part examines state authority to require childhood vaccinations as a precondition for school entry, the constitutionality of such policies, and the exemptions to these policies available in the states. As Parts III and IV reveal, parental objections to these immunizations has led to increased use of exemptions, higher rates of nonvaccination, and alarming trends in prevalence of vaccine-preventable diseases.[50] Thus, Part V will explore potential avenues of policy reform with the goal of increasing childhood vaccination rates.[51]

In 1855, Massachusetts became the first state to mandate that children be inoculated against a communicable disease (specifically, smallpox) as a condition for entering public school.[52] Adoption of similar policies across the states proceeded slowly, with most expansion occurring in the second half of twentieth century.[53] By 1963, twenty states conditioned entry to public school on evidence that children had been immunized against specific diseases.[54] All fifty states and the District of Columbia adopted school vaccination policies by 1980, as scientific developments led to safer and more effective vaccines for an increasing number of diseases.[55] Today, there are variations (sometimes based on political and fiscal considerations) among the states with

50. *See infra* Parts III & IV.

51. *See infra* Part V.

52. *See generally* James G. Hodge, Jr. & Lawrence O. Gostin, *School Vaccination Requirements: Historical, Social, and Legal Perspectives*, 90 KY. L.J. 831, 851 (2001-02). Boston was the first city to require such immunizations about three decades earlier in 1827. *Id.* Passing the first general mandatory vaccination law in 1809, Massachusetts was at the forefront of this public health effort in the U.S. *Id.* at 849 & n.126.

53. *See generally* Douglas S. Diekema, *Personal Belief Exemptions from School Vaccination Requirements*, 35 ANN. REV. PUB. HEALTH 275, 277-78 (2014); Hodge & Gostin, *supra* note 52, at 850-52.

54. Kevin M. Malone & Alan R. Hinman, *Vaccination Mandates: The Public Health Imperative and Individual Rights*, *in* PUBLIC HEALTH PRACTICE 338, 344 (Richard A. Goodman et al, eds., 2007).

55. *See* Diekema, *supra* note 53, at 268.

respect to whether and to what extent they adhere to the school-entry vaccination schedule recommended by the CDC.[56] Yet, despite such variation, all states mandate a series of vaccinations prior to public school entry.[57] The requirements typically extend as well to private schools and, in many states, day care centers, although home-schooled children may not be subject to these state regulations.[58]

The legal framework justifying these mandatory vaccination statutes involves a balancing of constitutional rights with state authority to regulate conduct. Because the targets of school entry immunization laws are children, the constitutional rights and the countervailing state interests differ in important ways (to be elaborated below) from those

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56. For summaries of the Centers for Diseases Control recommendations, see generally CTR. FOR DISEASE CONTROL & PREVENTION, *Recommended Immunization Schedules for Persons Aged 0 Through 18 Years* (Jan 1, 2015), http://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf (summarizing the CDC vaccination requirements).

57. For detailed summaries of state laws governing vaccination requirements, see generally *State School Immunization Requirements and Vaccine Exemption Laws*, CTR. FOR DISEASE CONTROL & PREVENTION (Mar. 2015), http://www.cdc.gov/vaccines/imz-managers/laws/state-reqs.html. *See also State Information: State Mandates on Immunization and Vaccine-Preventable Diseases,* IMMUNIZATION ACTION COALITION (last visited Apr. 12, 2015), http://www.immunize.org/laws. Typically, states require vaccinations for diphtheria, pertussis, tetanus, measles, mumps, rubella, polio, and Hib (*Haemophilus Influenzae* Type B, a bacterial disease that can lead to bacterial meningitis, pneumonia and other severe complications). All but a small handful of states require hepatitis B and varicella (chicken pox) immunization or evidence of documented history of disease. *Id.*

58. *See* Bonnie K. Choi & Mary Lou Manning, *The Immunization Status of Home-Schooled Children in America*, 24 J. PEDIATRIC HEALTH 42, 44 (2010); Donya Khalili & Arthur Caplan, *Off the Grid: Vaccinations Among Home Schooled Children*, 24 J.L. MED. & ETHICS. 471, 471-72 (2007). Concerns about increasing rates of nonvaccination in the home-schooled population have led some states to rethink the exclusion of home-schooled children from the vaccination requirements. *See, e.g.*, VA. CODE ANN. § 22.1-271.4 (West 2014) ("[A]ny parent, guardian or other person having control or charge of a child being home instructed, exempted or excused from school attendance shall comply with the immunization requirement . . . in the same manner and to the same extent as if the child has been enrolled in and is attending school.").

relevant to analyses of policies compelling vaccination of adults.[59]

A. Jacobson v. Massachusetts *and its Current Viability*

Most analyses of the legal justification for mandatory childhood vaccination policies begin with *Jacobson v. Massachusetts*.[60] Pursuant to statutory authority granted by the legislature of the Commonwealth of Massachusetts, the Board of Health of the City of Cambridge, Massachusetts, adopted a measure that required its inhabitants to be vaccinated against smallpox or pay a $5 penalty.[61] *Jacobson* is an appropriate starting place—even though Jacobson was an adult—because this 1905 case laid the groundwork for public health laws more generally; it held that the government has the authority to restrict the liberty of adult citizens by compelling vaccination in order to prevent the spread of a life-threatening contagious disease.[62] The Court observed that all members of society owe a duty to one another and that persons may not endanger the general welfare, even if personal liberties must be restricted to accomplish that end.[63] The Court in *Jacobson* grounded the state's authority in the police power,[64] which it determined to be potent enough to outweigh the liberty interests cited by Mr. Jacobson.[65] The Court emphasized that "persons and

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59. *See infra* Part II.B and accompanying text.

60. 197 U.S. 11 (1905); *see, e.g.*, Hodge & Gostin, *supra* note 52, at 854-58.

61. *See Jacobson*, 197 U.S. at 12-13.

62. *See id*. at 26-31.

63. The Court referred to the principle of the "social compact" whereby individuals submit to governance by laws "for 'the common good, for the protection, safety, prosperity, and happiness of the people'" even where such submission restricts "liberty itself, the greatest of all rights." *Id.* at 26-27 (citation omitted).

64. *Id.* at 25 ("[T]he 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."). The police power, more generally, is that state's authority to regulate the conduct of individuals in order to promote the general welfare and protect society. For further elaboration on this concept and on its application to regulation of children's lives, see *infra* note 98.

65. The Court summarized its conclusion as follows:

property are subjected to all kinds of restraints and burdens in order to secure the general comfort, health, and prosperity of the state."[66]

There has been commentary on *Jacobson*'s continuing viability, much of it published around the 100th anniversary of the case.[67] Observers point out that much has changed in the intervening century.[68] Certainly, constitutional jurisprudence has evolved substantially. Well before the advent of tiered scrutiny, the Court in *Jacobson* judged the Massachusetts compulsory vaccination statute against a

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> [T]he liberty secured by the Constitution . . . does not import an absolute right in each person to be . . . wholly freed from restraint. There are manifold restraints to which every person is necessarily subject for the common good. On any other basis organized society could not exist with safety to its members. Society based on the rule that each one is a law unto himself would soon be confronted with disorder and anarchy. Real liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own, whether in respect of his person or his property, regardless of the injury that may be done to others.

Jacobson, 197 U.S. at 26.

66. *Id.*

67. *See, e.g.*, James Colgrove & Ronald Bayer, *Manifold Restraints: Liberty, Public Health, and the Legacy of* Jacobson v. Massachusetts, 95 AM. J. PUB. HEALTH 571 (2005); Lawrence O. Gostin, Jacobson v. Massachusetts *at 100 Years: Police Power and Civil Liberties in Tension*, 95 AM. J. PUB. HEALTH 576 (2005); Ben Horowitz, *A Shot in the Arm: What a Modern Approach to* Jacobson v. Massachusetts *Means for Mandatory Vaccinations During a Public Health Emergency*, 60 AM. U. L. REV. 1715 (2011); 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 (2005); Wendy E. Parmet et al., *Plenary Program:* Jacobson v. Massachusetts, 33 J. L. MED. & ETHICS 24 (2005); Christopher Richins, Jacobson *Revisited: An Argument for Strict Judicial Scrutiny of Compulsory Vaccination*, 32 J. LEGAL MED. 409 (2011); Michael H. Shapiro, *Updating Constitutional Doctrine: An Extended Response to the Critique of Compulsory Vaccination*, 12 YALE J. HEALTH POL'Y L. & ETHICS 87, 91-122 (2012); Note, *Toward a Twenty-First-Century* Jacobson v. Massachusetts, 121 HARV. L. REV. 1820 (2008); Jacobson v. Massachusetts *and Public Health Law: Perspectives in 2005*, PUB. HEALTH CURRICULUM GUIDE, http://web1.sph.emory.edu/media/JVM/pdfs/public_health_guide.pdf (last visited June 28, 2015).

68. *See supra* note 67.

highly deferential standard of reasonableness[69]—which we might view as a rudimentary precursor to a rational basis test. In the context of substantive due process and equal protection claims, the rational basis test requires a court to sustain laws that are rationally related to a legitimate or permissible governmental purpose.[70] The Court in *Jacobson* focused primarily on the legitimacy of the state's purpose, and declined to review the means used by the state to achieve its goal of protecting the public health.[71] Indeed, it explicitly shunned a role for the courts in revisiting the legislative findings of fact underlying the challenged law, such as those concerning the efficacy and potential harms of vaccinations.[72] Many modern courts are substantially more involved in the process of scrutinizing the factual basis of legislative findings, including those grounded in science.[73] It is also unclear what level of scrutiny would characterize judicial review today. Under modern jurisprudential standards, if the interest restricted by the state rises to the level of a fundamental right, strict judicial scrutiny must be applied, placing the burden on the state to demonstrate that its regulation seeks to achieve a *compelling* state interest, and

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69. *Jacobson*, 197 U.S. at 25 ("[T]he 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.").

70. *See* ERWIN CHEMERINSKY, CONSTITUTIONAL LAW: PRINCIPLES & POLICIES 539-40, 546 (3d ed. 2006). The level of deference to legislative determinations has varied substantially over time and across cases, triggering considerable commentary, and some uncertainty as to the outcome of review. *See, e.g.*, *id.* at 677-89; Miranda Oshige McGowan, *Lifting the Veil on Rigorous Rational Basis Scrutiny*, 96 MARQ. L. REV. 377, 388-404 (2012).

71. "The mode or manner in which those results [safeguarding the public health and safety] are to be accomplished is within the discretion of the state." *Jacobson*, 197 U.S. at 25.

72. *See id.* at 30-31.

73. For a discussion of the role of the courts in scrutinizing the factual bases of legislative findings, see DAVID L. FAIGMAN, CONSTITUTIONAL FICTIONS: A UNIFIED THEORY OF CONSTITUTIONAL FACTS 129-34 (2008); Caitlin E. Borgmann, *Rethinking Judicial Deference to Legislative Fact-Finding*, 84 IND. L.J. 1 (2009); Neal Devins, *Congressional Factfinding and the Scope of Judicial Review: A Preliminary Analysis*, 50 DUKE L.J. 1169-70 (2001). S*ee generally* Bertrall L. Ross II, *The State as Witness: Windsor, Shelby County, and Judicial Distrust of the Legislative Record*, 89 N.Y.U. L. REV. 2027 (2014).

that the means used to achieve this interest *are most narrowly tailored*.[74] Requiring strict scrutiny review certainly increases the likelihood that a challenged statutory provision will be struck down.

Jacobson claimed a violation of his liberty interest, recognized by the *Jacobson* Court as "the greatest of all rights."[75] Modern constitutional jurisprudence clearly identifies a 14th Amendment liberty interest broad enough to encompass refusal of unwanted medical intervention that was not expressly recognized when *Jacobson* was decided.[76] While some iterations of this right have been regarded as fundamental when graced with the label "privacy"—requiring strict scrutiny review to determine if an infringement is constitutional[77]—more recent characterizations suggest that any of a range of arguably less-stringent alternative modes of analysis may be constitutionally required, depending on the characterization of the right allegedly infringed, the context, and quite possibly, the competing values.[78] Indeed, no cases decided by

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74. CHEMERINSKY, *supra* note 70, at 794-98.

75. *Jacobson*, 197 U.S. at 26-27.

76. *See, e.g.*, Planned Parenthood of Southeastern Pennsylvania v. Casey, 505 U.S. 833, 848-49 (1992); Cruzan v. Dir., Missouri Dept. of Health, 497 U.S. 261, 278 (1990); Washington v. Harper, 494 U.S. 210, 221-22 (1990); Eisenstadt v. Baird, 405 U.S. 438, 453-55 (1972).

77. *See, e.g.*, Roe v. Wade, 410 U.S. 113, 152-56 (1973).

78. *See, e.g.*, Lawrence v. Texas, 539 U.S. 558 (2003). In *Lawrence*, the Supreme Court explicitly reversed its 1986 decision in *Bowers v. Hardwick*, 478 U.S. 186 (1986), and held unconstitutional criminalization of private, consensual, noneconomic intimate relations between two adults. *Id.* at 578. Despite the fact that *Lawrence* relied on precedents establishing a fundamental substantive due process right of privacy, the Court characterized the right it protected in *Lawrence* as a liberty interest, indicating that "liberty presumes an autonomy of self that includes freedom of thought, belief, expression, and certain intimate conduct. The instant case involves liberty of the person both in its spatial and in its more transcendent dimensions." *Id.* at 562. The Court did not apply strict scrutiny, nor did it explicate its mode of analysis. Indeed, in his *Lawrence* dissent, Justice Scalia roundly criticized the majority for this failure. *Id.* at 586 (Scalia, J., dissenting). Indeed, in several privacy-like cases decided by the Court in the early-1990s, the Court likewise declined to identify the right in question as the fundamental right of privacy and applied either a balancing test, *see, e.g.*, *Cruzan*, 497 U.S. at 278 (1990), or the undue burden test as in *Planned Parenthood v. Casey*, 505 U.S. at 878 (1992). For an analysis of these trends, see generally

the U.S. Supreme Court in the last several decades have required strict scrutiny when adjudicating the constitutionality of a substantive due process right in the health care context. Despite this fact, the level of deference accorded to the legislature in *Jacobson* may be viewed as quite high when judged against most of these modern standards.

It is possible that Jacobson, a reverend, might today raise a religious objection to Massachusetts' mandatory vaccination policy under the First Amendment, even though he was unable to do so in 1905, given that First Amendment claims against states had not yet been determined to be actionable.[79] Such constitutional claims have been recognized since 1940.[80] In the past several decades, there have been substantial shifts, accompanied by some lack of doctrinal clarity, as to the level of scrutiny required in the adjudication of First Amendment free exercise claims under the federal Constitution.[81] The case that remains the applicable standard today is *Employment Division v. Smith*, decided by the U.S. Supreme Court in 1990.[82] In *Smith*, the Court interpreted its prior jurisprudence, and held that "an

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David L. Faigman, *Madisonian Balancing: A Theory of Constitutional Adjudication*, 88 NW. U. L. REV. 641 (1994).

79. The Free Exercise Clause of the First Amendment was held to be applicable to the states through the doctrine of incorporation. Cantwell v. Connecticut, 310 U.S. 296, 303 (1940) ("The fundamental concept of liberty embodied in [the Fourteenth] Amendment embraces the liberties guaranteed by the First Amendment.").

80. *See id.*

81. For a discussion of the doctrinal and legislative shifts in free exercise jurisprudence in the second half of the twentieth and early twenty-first centuries, see Burwell v. Hobby Lobby Stores, Inc., 134 S. Ct. 2751, 2760-62 (2014); Marci A. Hamilton, Employment Division v. Smith *at the Supreme Court: The Justices, the Litigants, and the Doctrinal Discourse*, 32 CARDOZO L. REV. 1671-74 (2011); Linda C. McClain, *Religious and Political Virtues and Values in Congruence or Conflict?: On* Smith*,* Bob Jones University*, and* Christian Legal Society, 32 CARDOZO L. REV. 1959, 1962-63 (2011). *See generally* John D. Inazu, *The Four Freedoms and the Future of Religious Liberty*, 92 N.C. L. REV. 787 (2014); Mark L. Rienzi, *The Case for Religious Exemptions—Whether Religion is Special or Not*, 127 HARV. L. REV. 1395 (2014).

82. *See* Emp't Div. v. Smith, 494 U.S. 872, 888-90 (1990); *see also* Hobby Lobby, 134 S. Ct. at 2760-62.

individual's religious beliefs [do not] excuse him from compliance with an otherwise valid law prohibiting conduct that the State is free to regulate"[83] and that such governmental actions substantially burdening religious practice need not be justified by a compelling governmental interest.[84] Yet, the Court rendered the application of this ostensibly straightforward doctrinal principle less clear by noting an exception when the claimed constitutional violation involves not only an alleged infringement of religious liberty, but also of another constitutional protection, such as freedom of speech, press, or of parental authority to direct their children's education.[85] Commentators have struggled with the meaning and implication of the "hybrid rights" exception, which some assert, mandates application of strict scrutiny to free exercise claims that invoke other constitutional liberties as well as religious freedom.[86] Arguably, the right to refuse vaccination mandates might be characterized as hybrid. As noted above, autonomy-based rights in the context of medical care implicate at least a liberty interest. Yet, when applied to parental decisionmaking for children, the right to decline vaccinations involves the same constellation of parental claims raised in *Wisconsin v. Yoder*,[87] (cited in *Smith* as a quintessential example of a "hybrid situation"[88]). On this basis, one could argue that strict scrutiny review of

83. *Smith*, 494 U.S. at 878-79.

84. *Id.* at 882-90.

85. *Id.* at 881-82.

86. *See, e.g.*, Steven H. Aden & Lee J. Strang, *When a "Rule" Doesn't Rule: The Failure of the Oregon* Employment Division v. Smith *"Hybrid Rights Exception,"* 108 PENN ST. L. REV. 573-74 (2003); *see also* Timothy J. Santoli, *A Decade After* Employment Division v. Smith*, Examining How Courts are Still Grappling with the Hybrid Rights Exception to the Free Exercise Clause of the First Amendment*, 34 SUFFOLK U. L. REV. 649, 665-68 (2001); James R. Mason, III, Comment, Smith's *Free-Exercise "Hybrids" Rooted in Non-Free-Exercise Soil*, 6 REGENT U. L. REV. 201, 202, 211 (1995). *But see* Kyle Still, Smith's *Hybrid Rights Doctrine and the Pierce Right: An Unintelligent Design*, 85 N.C. L. Rev. 385, 391, 415 (2006) (arguing that rational basis review is appropriate, even in cases of "hybrid rights").

87. *See* Wisconsin v. Yoder, 406 U.S. 205, 207-09 (1972).

88. *Smith*, 494 U.S. at 881.

mandatory vaccination requirements is required.[89] On the other hand, it appears that in *Burwell v. Hobby Lobby Stores, Inc.*, the precedential value of *Yoder* as a free exercise case was limited further when the Court characterized *Smith* as "largely repudiat[ing] the method of analyzing free-exercise claims" used in cases such as *Yoder*.[90]

In addition, following *Smith*, Congress enacted the Religious Freedom Restoration Act ("RFRA"), which sought to require that neutral laws of general applicability be strictly scrutinized if they substantially burden free exercise of religion.[91] The Supreme Court held that Congress exceeded its authority in enacting RFRA to the extent that it applied to the states, although RFRA still governs federal laws and regulations.[92] Subsequently, several states passed statutes with language similar to RFRA, although the constitutionality and efficacy of these statutes in achieving legislators' goals remain uncertain.[93] In those states with a

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89. The precedential value of *Wisconsin v. Yoder* as a case delineating the relative authority of parents and the state in making decisions for children is discussed further below. *See infra* notes 175-76 and accompanying text.

90. *Hobby Lobby*, 134 S. Ct. at 2760.

91. 42 U.S.C. § 2000bb-1 (2015). The statute reads, in pertinent part:

> (a) In general.
>
> Government shall not substantially burden a person's exercise of religion even if the burden results from a rule of general applicability, except as provided in subsection (b) of this section.
>
> (b) Exception.
>
> Government may substantially burden a person's exercise of religion only if it demonstrates that application of the burden to the person—
>
> (1) is in furtherance of a compelling governmental interest; and
>
> (2) is the least restrictive means of furthering that compelling governmental interest
>
> . . . .

Id.

92. *See* City of Boerne v. Flores, 521 U.S. 507, 536 (1997); *see also Hobby Lobby*, 134 S. Ct. at 2760-62.

93. *See* Erwin Chemerinsky, *Do State Religious Freedom Restoration Acts Violate the Establishment Clause or Separation of Powers?* 32 U.C. DAVIS L. REV. 645-46 (1999); Arnold H. Loewy, *Rejecting Both* Smith *and RFRA*, 44 TEX. TECH. L. REV. 231-32 (2011); Christopher C. Lund, *Religious Liberty After* Gonzales*: A Look at State RFRAs*, 55 S.D. L. REV. 466-67 (2010).

RFRA, vaccine opponents may again find a basis for arguing that heightened scrutiny must be applied.[94] Yet, the level of scrutiny, while extremely important, is not necessarily dispositive.

Although one can speculate that *Jacobson* might be decided differently today, to date no decisions have expressly undercut its authority. To the contrary, *Jacobson* has been cited with approval by the U.S. Supreme Court dozens of times, including in recent decades, and by other federal and state courts several hundred times.[95] The general principles set forth in *Jacobson* are sound and well-established. That said, different fact patterns might yield different results. *Jacobson* concerned vaccinations against an easily-transmitted disease with a high fatality rate during an epidemic,[96] and at a time when smallpox and other infectious diseases were a leading cause of death.[97] Attempts to compel competent adults to undergo vaccinations for less dangerous or less easily-transmitted diseases, or at a time when the disease is not posing an immediate threat to the population, may lead to a different result.

B. *Constitutionally Distinguishing State Intervention in the Lives of Children versus Adults Where Police Power and* Parens Patriae *Justifications Converge*

Jacobson remains the appropriate starting point for our analysis of the constitutionality of mandated vaccinations for children prior to school entry. Yet, factual and doctrinal factors distinguishing *Jacobson* from the context of school-entry vaccination requirements are noteworthy. An initial distinction relates to state authority to promote *parens*

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94. Douglas Laycock, *Religious Liberty and the Culture Wars*, 2014 U. ILL. L. REV. 839, 844 n.26 (2014).

95. *See, e.g.*, Gonzales v. Carhart, 550 U.S. 124, 163 (2007); Kansas v. Hendricks, 521 U.S. 346, 356-57 (1997); Dunn v. White, 880 F.2d 1188, 1195 (10th Cir. 1989); Love v. Superior Court, 276 Cal. Rptr. 660, 662 (Cal. 1990).

96. *Smallpox Disease Overview*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.bt.cdc.gov/agent/smallpox/overview/disease-facts.asp (last visited Mar. 29, 2015).

97. Gostin, *supra* note 67, at 577; Mariner et al., *supra* note 67, at 581-82.

patriae interests in the lives of children versus competent adults.

There is little question today that competent adults have an almost absolute right to refuse health care interventions, including lifesaving and life-sustaining treatment, unless their refusal has a *direct impact on the welfare of others*.[98] This right to control one's own body is now a well-established principle in constitutional, common, and statutory law at the federal and state levels.[99] This right was most famously

98. Thus, as is the subject of this Article, police power considerations such as the communicability of an illness to others may limit an individual's legal authority to reject treatment. Another exception to personal autonomy in health care decisionmaking involves circumstances in which individuals with diagnosed mental disorders can be treated over their objections with psychiatric treatment such as psychotropic medication or involuntary hospitalization. *See, e.g.*, SLOBOGIN ET AL., LAW AND THE MENTAL HEALTH SYSTEM: CIVIL AND CRIMINAL ASPECTS 1082-1121 (6th ed. 2014). Although it is more commonly recognized that psychiatric patients who are not legally competent may have their decisions overridden, patient competence may not be a consideration in settings where the justifying state concerns focus on danger to others. *See, e.g.*, Washington v. Harper, 494 U.S. 210 (1990) (rejecting prison inmate's challenge against policy permitting administration of involuntary psychotropic medication without requiring a prior finding of incompetence); Rogers v. Comm'r, 458 N.E.2d 308 (Mass. 1983) (authorizing administration of psychotropic medication over a competent patient's objection if patient "poses an imminent threat of harm to himself or others" where there is no "less restrictive alternative" to such treatment).

Certain less direct effects of nontreatment upon others have been found not to invoke state interests to a sufficient extent to override the right to refuse treatment. Thus, for example, modern jurisprudence does not allow the state to impose lifesaving treatment on a competent adult, even if that person's treatment refusal will lead to that person's death, leaving a child or children without that adult as a parent. *See, e.g.*, Pub. Health Trust of Dade Cnty. v. Wons, 541 So. 2d 96, 97, 101, 103 (Fla. 1989) (declining to find the patient's children's right to be reared by two parents "sufficient to trigger the state interest in protection of innocent third parties" where the patient rejected life-saving blood transfusions for religious reasons).

99. *See, e.g.*, Cruzan v. Dir., Missouri Dep't of Health, 497 U.S. 261 (1990) ("The principle that a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment may be inferred from our prior decisions."); Bouvia v. Super. Ct., 225 Cal. Rptr. 297 (Cal. Ct. App. 1986) ("The right to refuse medical treatment is basic and fundamental [in California]."); *see also* UNIF. HEALTH-CARE DECISIONS ACT § 11 (1993), *available at* http://www.uniformlaws.org/shared/docs/health%20care%20decisions/uhcda_final_93.pdf (individuals are presumed to have capacity to make health care decisions, which includes authority to create advanced directives and identify surrogate

articulated by Justice Benjamin Cardozo, writing for New York's highest court, in *Schloendorff v. Society of New York Hospital*: "Every human being of adult years and sound mind has a right to determine what shall be done with his own body."[100] Thus, while the police power clearly remains an obstacle to many forms of health-related action or inaction by competent adults[101] consistent with principles laid out in *Jacobson*, *parens patriae* justifications[102] are typically insufficient to override a *competent* adult's decision to refuse treatment.[103]

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decisionmakers). For general discussion of the development and application of these concepts in selected contexts, see Dennis E. Chicon, *The Right to "Just Say No": A History and Analysis of the Right to Refuse Antipsychotic Drugs*, 53 LA. L. REV. 283 (1992) (psychiatric patients); Lois Shepherd, *The End of End-of-Life Law*, 92 N.C. L. REV. 1693 (2014) (end-of-life decisions).

100. Schloendorff v. Soc'y of N.Y. Hosp., 105 N.E. 92, 93 (N.Y. 1914).

101. Thus, for example, immunization mandates for adults grounded in the police power, such as certain requirements that health care workers and college students be vaccinated, have withstood constitutional scrutiny when challenged. *See infra* note 104. Although the use of quarantine in response to cases of Ebola in the United States has been controversial, many commentators assert that narrowly-tailored application of this intervention is constitutional. *See, e.g.*, Sarah Pope et al., *Protecting Civil Liberties During Quarantine and Isolation in Public Health Emergencies*, LAW PRACTICE TODAY (Apr. 2011), http://www.americanbar.org/publications/law_practice_today_home/law_practice_today_archive/april11/protecting_civil_liberties_during_quarantine_and_isolation_in_public_health_emergencies.html. For an examination of the complex and unresolved legal issues affecting quarantine powers, see, e.g., Jared P. Cole, *Federal and State Quarantine and Isolation Authority*, CONG. RESEARCH SERV. (Oct. 9, 2014), https://www.fas.org/sgp/crs/homesec/RL33201.pdf.

102. "*Parens patriae*, literally 'parent of the country,' is the government's power and responsibility, beyond its police power over all citizens, to protect, care for, and control citizens who cannot take care of themselves . . . ." Natalie Loder Clark, Parens Patriae *and a Modest Proposal for the Twenty-first Century: Legal Philosophy and a New Look at Children's Welfare*, 6 MICH. J. GENDER & L. 381, 382 (2000). More generally, the state's *parens patriae* power refers to its paternalistic authority to regulate the lives of individuals to protect and promote those persons' own welfare. *Parens patriae* regulations are typically aimed at those persons viewed as unable to protect and care for themselves. Children are viewed as the quintessential population requiring such protection. Thus, much of state regulation affecting children is justified, at least in part, by this state authority. *See id.* at 397-98.

103. By contrast, adults with mental disorders whose competence is uncertain or impaired, may have treatment preferences overridden based, in part, on *parens patriae* considerations. *See, e.g.*, Jennifer Colangelo, *The Right to Refuse*

But today's mandatory vaccination policies do not typically target adults. They target minor children.[104] The

Treatment for Mental Illness, 5 RUTGERS J. L. & PUB. POL'Y 492, 498 (2008); Douglas S. Stransky, *Civil Commitment and the Right to Refuse Treatment: Resolving Disputes from a Due Process Perspective*, 50 U. MIAMI L. REV. 413, 424-26 (1996).

104. There exist several exceptions to the focus on children as targets for vaccination mandates. Those exceptions include policies mandating immunization of college students and adult health care workers, as well as policies giving government the authority to mandate vaccination during public health emergencies. For example, many states require that college students be immunized for meningitis, although there is variability in the type of institutions and categories of students encompassed by those mandates. *See State Information: Meningococcal Prevention Mandates for Colleges and Universities*, IMMUNIZATION ACTION COAL., http://www.immunize.org/laws/menin.asp (last updated Jan. 15, 2015). Some states require immunization for additional diseases. *See, e.g.*, *Immunization Handbook for New York State Post-Secondary Institutions: Section I-Requirements*, N.Y. STATE DEP'T OF HEALTH, https://www.health.ny.gov/prevention/immunization/handbook/section_1_requirements.htm (last visited June 28, 2012). College and university policies may require additional vaccinations beyond legal requirements.

Although the CDC recommends that healthcare workers be fully immunized against most of the same diseases as it mandates for children, and annually against influenza, *see Recommended Vaccines for Healthcare Workers*, CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 15, 2015), http://www.cdc.gov/vaccines/adults/rec-vac/hcw.html, these immunizations are not routinely compelled by state law. Some states attempt to regulate vaccination of health care workers by requiring health care facilities and institutions to develop vaccination requirements for particular categories of employees. *See* Megan C. Lindley et al., *Assessing State Immunization Requirements for Healthcare Workers and Patients*, 32 AM. J. PREV. MED. 459 (2007). A recent review found that twenty states had policies focusing on influenza vaccination. *See* Alexandra M. Stewart & Marisa A. Cox, *Influenza Vaccination of the Health Care Workforce: Developing a Model State Law*, GEO. WASH. UNIV. SCH. OF PUB. HEALTH & HEALTH SERVS. 1, 6 (2011), *available at* http://publichealth.gwu.edu/departments/healthpolicy/influenza/MODEL%20LAW%20REPORT.pdf. States vary in permissible exemptions and how they instruct facilities and institutions to address employee noncompliance. *See id.* at 18-22. In 2009, New York mandated health care workers at a range of facility types to be vaccinated for influenza and allowed only medical exemptions. *See* Jared P. Cole & Kathleen S. Swendiman, *Mandatory Vaccinations: Precedent and Current Laws*, CONG. RESEARCH SERV. 1, 5 (May 21, 2014), http://www.fas.org/sgp/crs/misc/RS21414.pdf. Legal challenges ensued, but were made moot by a vaccine shortage that led the state to rescind the requirements. *Id.* For further discussion of such state requirements and legal challenges, see for example, Wendy E. Parmet, *Pandemic Vaccines—The Legal Landscape*, 362 NEW ENG. J. MED. 1949 (2010).

legal frameworks governing decisionmaking for children's health care differ in important ways from those regulating decisions affecting competent adults.[105] The Court has recognized repeatedly that its authority to regulate the lives of children far exceeds its authority to intervene in the lives of adults.[106] The reasons are several. First, the police power concerns are substantially broader in the case of children.[107] Not only is the state concerned with containing public health risks and requiring children, like adults, to refrain from engaging in dangerous conduct that directly harms others, but it is even more fundamentally concerned with promoting the overall healthy development and socialization of those who will become tomorrow's adults.[108] Children are our

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Some healthcare organizations have required employees to be immunized against specified diseases, even when not so required by state law. *See* Cole & Swendiman, *supra*, at 6-7. Although challenged by some employees, these policies have been upheld by reviewing courts. *Id.*; *see also* Alexandra M. Stewart, *Mandatory Vaccination of Health Care Workers*, 361 NEW ENG. J. MED. 2015 (2009); Alexandra M. Stewart & Sara Rosenbaum, *Vaccinating the Health-Care Workforce: State Law vs. Institutional Requirements*, 125 PUB. HEALTH REPORTS 615 (2010).

Some states also have legal provisions authorizing governmental authorities to mandate vaccination during a public health emergency. *See* Parmet, *supra*, at 1949; *see also* Cole & Swendiman, *supra* at 7-8.

105. Oddly, much of the scholarly literature discussing the current constitutional status of mandatory childhood vaccination policies analyze the constitutional issues as if adults were the persons to be immunized. We argue that the jurisprudential precedents relating to *parental authority to make health care and educational decisions for their children* are the most pertinent. The precedents regarding adults' rights to make autonomous health care decisions certainly inform the analysis, but only take us part of the way.

106. *See* Lois A. Weithorn, *Envisioning Second-Order Change in America's Responses to Troubled and Troublesome Youth*, 33 HOFSTRA L. REV. 1305, 1401-07 (2005) [hereinafter Weithorn, *Envisioning*].

107. *Id.*

108. Elsewhere Weithorn has distinguished between two subtypes of police power state interests concerning children: a public-safety oriented interest, justifying state regulation of children's lives in order to protect society from dangers presented by the children (e.g. exposure to a disease that might be transmitted by an unvaccinated child), and a socialization-oriented interest, justifying state regulation of children's lives "to further the common good by promoting the child's healthy development into well-educated, productive, . . . well-adjusted," and healthy adults. *Id.* at 1403-04.

nations' natural resources; our future social capital.[109] The success of our society, its general welfare, hinges in part on many aspects of children's upbringing and experiences. This notion of the police power therefore helps justify fairly intrusive regulation of children's lives, including laws that govern much of what happens during a substantial proportion of children's waking hours: compulsory schooling laws and child labor restrictions. Although pursuant to *Meyer v. Nebraska* and *Pierce v. Society of Sisters* parents have a say in what types of schools their children attend, and various other features of their children's academic lives,[110] the state's authority to insist on an education that meets at least minimal state standards and achieves a range of state goals is quite broad.[111]

Second, children are not vested with the same decisional autonomy rights as are competent adults.[112] Indeed, the Court tells us that the constitutional rights of children are not commensurate with that of adults, citing factors such as children's immaturity, children's vulnerability, and the guiding role of parents in children's upbringing.[113] Children

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109. *See* Clark, *supra* note 102, at 392 ("[C]hildren may be special objects of governmental coercion, not because they need the state but because they are needed by the state [as future citizens].").

110. Pierce v. Soc'y of Sisters, 268 U.S. 510 (1925); Meyer v. Nebraska, 262 U.S. 390 (1923). For discussion of the current status and future of the "Meyer-Pierce Right," see, for example, Jennifer Adams Emerson, *"Who's in a Family?": Parental Rights and Tolerance-Promoting Curriculum in Early Elementary Education*, 40 J.L. & EDUC. 701, 705-10 (2011).

111. *See, e.g.*, Combs v. Homer Ctr. Sch. Dist., 540 F.3d 231 (3d Cir. 2008) (upholding Pennsylvania law that authorizes state educational superintendent review of home-schooled children's educational progress against parental claims of unconstitutionality); Parker v. Hurley, 514 F.3d 87, 91-92 (1st Cir. 2008) (upholding Massachusetts' school district's policy of exposing children to books designed to promote tolerance toward gays and lesbians, without providing opt-out choice or prior notice to parents).

112. *See, e.g.*, Parham v. J.R., 442 U.S. 584, 602 (1979) (observing that the law presumes that minors' immaturity, inexperience, and undeveloped capacity for judgment limit their ability to direct their own lives).

113. *See, e.g.*, Bellotti v. Baird, 443 U.S. 622, 634-39 (1979) ("We have recognized three reasons justifying the conclusion that the constitutional rights of children cannot be equated with those of adults: the peculiar vulnerability of children;

are dependents, generally presumed to be incapable of acting wisely and independently in line with their own best interests. Therefore, the state assumes a protective role, overseeing many aspects of children's lives. Indeed, state involvement in children's lives provides the quintessential example of the expression of its *parens patriae* concerns.[114] There is a range of exceptions to the rule that children are devoid of legal authority to govern their own lives, and older children in particular may, and arguably should, have a say in their own health care.[115] But, particularly when we are talking about very young children, such as those who require vaccinations prior to school attendance, decisions regarding children's health care are vested in the parents, subject to state regulation pursuant to the state's police power and *parens patriae* concerns.[116]

In *Jacobson*, the state didn't rely on, or even address, *parens patriae* justifications for its authority, even though the smallpox vaccine Jacobson refused would have benefitted him as well as his community.[117] This is because the state's authority to impose unwanted medical treatment on competent adults is grounded almost exclusively in justifications related to the welfare of *others*. Focusing on the benefits of vaccination to Jacobson himself would not have advanced or strengthened the state's case. By contrast, the *parens patriae* power plays a prominent role in our justifications for state intervention in the lives of children, and therefore for the current mandatory vaccination policies affecting children. It would be an oversimplification and analytically incorrect to analogize what is frequently referred to as "parental autonomy" to a competent adult's autonomous health care decision when examining the constitutionality of state mandates for health care interventions for children, such as mandatory vaccination laws. *Parents'*

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their inability to make critical decisions in an informed, mature manner; and the importance of the parental role in child rearing.").

114. *See, e.g.*, Weithorn, *Envisioning*, *supra* note 106, at 1402.

115. *See, e.g.*, Elizabeth S. Scott, *The Legal Construction of Adolescence*, 29 HOFSTRA L. REV. 547, 566-76 (2000).

116. *See* Weithorn, *Envisioning*, *supra* note 106.

117. Jacobson v. Massachusetts, 197 U.S. 11 (1905).

decisionmaking for children does not have the same constitutional authority and protection against state intervention as does a competent adult's personal health care decisionmaking. Adults are legally permitted to make foolish, unwise, and unpopular choices regarding their own health care with little state oversight other than to ensure that the decisionmaking is competent, assuming there are no countervailing police power considerations.[118] By contrast, although parents have substantial discretion in raising their children, including making health care decisions, parental authority in this realm is grounded on the presumption that parents act *in their children's best interests*.[119]

Constitutional jurisprudence has clarified that there exists a Fourteenth Amendment fundamental right of parental discretion in decisionmaking regarding many aspects of their minor children's welfare. First recognized by the Court in *Meyer v. Nebraska*[120] and *Pierce v. Society of Sisters*,[121] doctrine has further expanded the range of contexts in which these rights are characterized as fundamental.[122] While the law grants substantial deference to parental choice, that choice is not unlimited. For example, although one might initially expect that strict scrutiny would be applied when state laws interfere with parental authority over their children's lives, the Supreme Court has typically

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118. *See* Daniel S. Reich, *Modernizing Local Responses to Public Health Emergencies: Bioterrorism, Epidemics, and the Model State Emergency Health Powers Act*, 19 J. CONTEMP. HEALTH L. & POL'Y 379, 402-03 (2003) ("While forcing treatment upon an unwilling competent adult in order to preserve that person's own life has been held a violation of the person's right to refuse treatment, courts are willing to allow compulsory treatment where the person poses a danger to others."); *supra* notes 98-103 and accompanying text.

119. *See* Parham v. J.R., 442 U.S. 584, 602 (1979); *see also* Jennifer L. Rosato, *Using Bioethics Discourse to Determine When Parents Should Make Health Care Decisions for their Children: Is Deference Justified?*, 73 TEMP. L. REV. 1 (2000).

120. 262 U.S. 390 (1923).

121. 268 U.S. 510 (1925).

122. In *Troxel v. Granville*, 530 U.S. 57, 63-66 (2000), the Court elaborated upon "the fundamental right of parents to make decisions concerning the care, custody, and control of their children[,]" citing its application in the context of parents' "companionship, care, custody, and management of . . . children" and to "direct the education and upbringing of one's children."

applied alternative modes of analysis, such as balancing tests, customized to the particular issues and constellation of parties and interests.[123] These context-specific modes of analyses clearly acknowledge the state's special relationship with children, and the delicate balance between respecting parental autonomy, protecting children's welfare, and promoting the common good.

The state typically defers to parental decisions regarding children's health care. Yet, parental discretion is not unlimited, and some parental choices may be scrutinized and overridden where parents' decisions are deemed to endanger children's welfare.[124] The often-quoted language in the U.S. Supreme Court's 1944 decision in *Prince v. Massachusetts* reminds us that while parents can make allegedly unwise decisions for themselves—even sacrificing their own welfare in the service of their beliefs—they are not legally permitted to sacrifice their children's well-being for such causes.[125] In

123. For example, in *Troxel v. Granville*, the Court held that a custodial mother's fundamental right to control the upbringing of her children creates a presumption that her judgments regarding her child's best interests deserve deference. Therefore, a family court must accord her preferences "special weight," in considering whether to award grandparents certain visitation rights over parental objection. 530 U.S. at 68-74. The Court did not apply strict scrutiny analysis to either a facial or "as applied" review of the statute. *Id.* at 74-75. In *Bellotti v. Baird*, 442 U.S. 622 (1979) and *Parham v. J.R.*, 442 U.S. 584 (1979), the Court applied a balancing test to its consideration of the respective interests of parents, minors, and the state in the context of minors' challenges to state statutes governing consent to abortion and psychiatric hospitalization, respectively.

124. *See, e.g.*, Newmark v. Williams, 588 A.2d 1108 (Del. 1991); Custody of a Minor, 379 N.E.2d 1053 (Mass. 1978). Parents have an obligation, laid out in each state's child maltreatment statutes, to provide their children with adequate medical care. *See, e.g.*, CAL. WELF. & INST. CODE § 300(b)(1) (West 2014) (juvenile court may determine a child is a dependent of the court if "the child has suffered, or there is a substantial risk that the child will suffer, serious harm or illness . . . by the willful or negligent failure of the parent or guardian to provide the child with adequate . . . medical treatment . . . ."). For a summary and analysis of medical neglect laws, see SAMUEL M. DAVIS ET AL., CHILDREN IN THE LEGAL SYSTEM 573-618 (5th ed. 2014).

125. "Parents may be free to become martyrs themselves. But it does not follow they are free, in identical circumstances, to make martyrs of their children before they have reached the age of full and legal discretion when they can make that choice for themselves." Prince v. Massachusetts, 321 U.S. 158, 170 (1944). In *Prince*, a child's guardian allowed the child to sell religious literature on the

the case of parents who are otherwise providing adequate care for their children, interference with parental health care decisions for minors is usually reserved for circumstances in which the challenged parental decision is viewed as seriously endangering the child's welfare.[126] In cases where the benefits to the child are uncertain or outweighed by risks, deference to parents typically prevails.[127] Although the majority of states contain language in their civil child maltreatment statutes permitting deference to parents who prefer "spiritual" over conventional responses to their children's medical problems, most statutes authorize state intervention when failure to provide conventional treatment places the child's health at serious risk.[128] There is one noteworthy and

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streets and was held liable for violating a child labor law. The Court held that her First and Fourteenth Amendment rights to religious freedom and discretion in raising one's children must yield to the state's authority to protect the child's welfare.

126. *See, e.g.*, Newmark v. Williams, 588 A.2d 1108 (Del. 1991); *Custody of a Minor*, 393 N.E.2d at 1053. Parents have an obligation, laid out in each state's child maltreatment statutes, to provide their children with adequate medical care. *See, e.g.*, CAL. WELF. & INST. CODE § 300(b) (juvenile court may determine a child is a dependent of the court if "the child has suffered, or there is substantial risk that the child will suffer, serious harm or illness . . . by the willful or negligent failure of the parent or guardian to provide the child with adequate . . . medical treatment."). For a summary and analysis of medical neglect laws, see DAVIS ET AL., *supra* note 124, at 573-618. The state typically reserves intervention in parental decisionmaking for instances where the child's health is at serious risk, when parents are otherwise providing adequate care of their children. However, where parents manifest global inadequacy of caregiving, the state will likely intervene in a far wider range of health care decisions, including those decisions viewed as routine, even where there is no present serious risk to the child. In these latter cases, parental decisions not to seek medical treatment may result not from an affirmative decision by a parent to reject traditional treatment, but from a pervasive indifference to, or inability to meet, the child's health care needs. In such cases, the threshold for state intervention in parental decisionmaking tends to be lower.

127. *See, e.g.*, *Newmark*, 588 A.2d at 1120. In *Newmark*, parents lodged religious objections to a risky and painful cancer treatment which had only a 40% chance of extending their young son's life for several years. The court never reached the religious objections, concluding that the balance of interests, risks, and benefits was insufficient to outweigh parental discretion. *Id.* at 1110-11, 1114, 1120.

128. *See, e.g.*, CAL. WELF. & INST. CODE § 300(b)(1) (2015) (giving deference to parental decisions to pursue spiritual rather than traditional medical treatment, except where the state determines it must override parental choice as "necessary

highly controversial exception from this trend in that some states permit parental refusal of low-risk/high-benefit treatments for children suffering from life-threatening conditions by allowing religious exemptions to child neglect statutes or to criminal liability where a child dies after treatment refusal.[129] In these cases, however, the state's

to protect the child from suffering serious physical harm or illness"); *see also* OKLA. STAT. tit. 10A, § 1-6-105(a)(4) (2014) ("Nothing contained in this paragraph shall prevent a court from immediately assuming custody of a child . . . and ordering whatever action may be necessary, including medical treatment, to protect the child's health or welfare."). For a compilation of current state abuse and neglect statutes, including provisions governing religious exemptions to medical treatment, see *Definitions of Child Abuse and Neglect,* CHILD WELFARE INFORMATION GATEWAY 1, 5-91 (Apr. 20, 2014), https://www.childwelfare.gov/pubPDFs/define.pdf. For a discussion of state policies and their evolution, see, for example, DAVIS ET AL, CHILDREN IN THE LEGAL SYSTEM, *supra* note 124, at 612-15. For a discussion of the history and current status of religious exemption statutes, see, for example, Shirley Darby Howell, *Religious Treatment Exemption Statutes: Betrayest Thou Me with a Statute*?, 14 SCHOLAR 945 (2012). For additional commentary, see, for example, James G. Dwyer, *Spiritual Treatment Exemptions to Child Medical Neglect Laws: What We Outsiders Should Think*, 76 NOTRE DAME L. REV. 147 (2000) [hereinafter Dwyer, *Spiritual Treatment Exemptions*]; Jennifer L. Rosato, *Putting Square Pegs in A Round Hole: Procedural Due Process and the Effect of Faith Healing Exemptions on the Prosecution of Faith Healing Parents*, 29 U.S.F. L. REV. 43, 64 (1994).

129. *See, e.g.*, Hermanson v. State, 604 So.2d 775 (Fla. 1992). In *Hermanson*, the child suffered from juvenile diabetes and would have likely been successfully treated if her parents had not refused standard medical care. The Florida Supreme Court held that the parents were exempt from criminal liability for her avoidable death because of a *civil* statutory religious exemption. Although the exemption in the civil statute did not create an exemption from criminal liability, the court agreed with the parents that the interrelationship of the civil and criminal statutes was sufficiently unclear to laypersons (and some legal observers as well) to deprive the parents of due process if criminally prosecuted because of insufficiently fair notice as to possible criminal liability. *Id.* at 777, 781-82; *see also* Commonwealth v. Twitchell, 617 N.E.2d 609, 619 (Mass. 1993) (same, with the further complication of a misleading Attorney General interpretation of the law). Other states have sustained criminal convictions under similar circumstances. *See, e.g.*, Walker v. Superior Court, 763 P.2d 852 (Cal. 1988).

The development and evolution of statutes exempting parents from liability for religiously-based treatment refusals is complex, see discussion in DAVIS ET AL, *supra* note 124, at 612-13. There also exists substantial commentary critiquing the continued existence of the remaining exemptions. *See, e.g.*, Ashley Dose, *Government Endorsement of Living on a Prayer Religious Exemptions from the Duty to Provide Medical Treatment for Children*, 30 J. LEGAL MED. 515 (2009) [hereinafter Dose, *Government Endorsement*]; Dwyer, *Spiritual Treatment Exemptions*, *supra* note 128; James G. Dwyer, *The Children We Abandon:*

power to intervene is grounded solely on its *parens patriae* authority. By contrast, it is the convergence of *parens patriae* and police power interests which justifies mandatory childhood vaccination and vests the government with even more potent authority to supervene parental discretion.

Mandatory vaccination policies, because they fall within this police power/*parens patriae* intersection, can be distinguished from most other health care decisions. The current mandatory vaccination requirements for children are justified by a robust alliance of police power and *parens patriae* state concerns, which in the context of state regulation of children's lives confers breathtakingly broad authority to override parental decisionmaking. This convergence also permitted unprecedented state control over children's daily lives with the advent of compulsory school attendance laws and child labor restrictions.[130] Modern Americans take for granted the existence of compulsory education and child labor laws. Yet, at their initiation, these laws represented the most sweeping intrusions on parental discretion our society had ever seen, and remain unrivaled today. The child protection system and earlier iterations of the juvenile justice system have likewise been grounded on the convergence of police power and *parens patriae* authority.[131] *Prince v. Massachusetts* is an extraordinary case in its articulation of the dual police power and *parens patriae*

Religious Exemptions to Child Welfare and Education Laws as Denials of Equal Protection to Children of Religious Objectors, 74 N.C. L. REV. 1321 (1996) [hereinafter Dwyer, *The Children We Abandon*]. Arguably, however, after *Employment Division v. Smith*, state statutes permitting parents to subject their children to substantial health dangers on religious grounds are not constitutionally required, particularly in light of the state's strong interest in protecting the health and welfare of the child. *See, e.g.*, B. Jessie Hill, *Whose Body? Whose Soul? Medical Decision-Making on Behalf of Children and the Free Exercise Clause Before and After* Employment Division v. Smith, 32 CARD. L. REV. 1857 (2011); *see also* Dose, *Government Endorsement*, *supra*.

130. *See* LAWRENCE KOTIN & WILLIAM F. AIKMAN, LEGAL FOUNDATIONS OF COMPULSORY SCHOOL ATTENDANCE 221 (1980).

131. *See* Weithorn, *Envisioning*, *supra* note 106, at 1440-42 (addressing dual goals underlying creation of juvenile justice system); *see also* Kay P. Kindred, *Of Child Welfare and Welfare Reform: The Implications for Children When Contradictory Policies Collide*, 9 WM. & MARY J. WOMEN & L. 413, 455-56 (2003) (addressing dual goals underlying child protection system).

interests and the delicate balance between those state powers and the default of parental autonomy.[132]

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132. The Supreme Court's analysis of the competing interests first emphasized that deference to parental authority is the default in the balance between parents and state:

> It is cardinal with us that the custody, care and nurture of the child reside first in the parents, whose primary function and freedom include preparation for obligations the state can neither supply nor hinder. And it is in recognition of this that these decisions have respected the private realm of family life which the state cannot enter.

Prince v. Massachusetts, 321 U.S. 158, 166 (1944). The Court proceeded, noting that when parental conduct does not adequately protect children's welfare, the state may step in to promote children's best interests pursuant to is *parens patriae* authority:

> But the family itself is not beyond regulation in the public interest, as against a claim of religious liberty. And neither rights of religion nor rights of parenthood are beyond limitation. Acting to guard the general interest in youth's well-being, the state as *parens patriae* may restrict the parent's control by requiring school attendance, regulating or prohibiting the child's labor, and in many other ways. Its authority is not nullified merely because the parent grounds his claim to control the child's course of conduct on religion or conscience.

Id. Finally, the Court explained that the police power further empowers the state to intervene in the family when parental action or inaction threatens the general welfare, whether through creation of direct dangers to the community (citing nonvaccination), or resulting from inadequate socialization of children. Its reference to the state's authority to compel vaccination appears at the nexus of its discussions of the *parens patriae* and police power authorities.

> Thus, 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.
>
> . . . .
>
> The state's authority over children's activities is broader than over like actions of adults. This is peculiarly true of public activities and in matters of employment. A democratic society rests, for its continuance, upon the healthy, well-rounded growth of young people into full maturity as citizens, with all that implies. It may secure this against impeding restraints and dangers within a broad range of selection . . . . It is too late now to doubt that legislation appropriately designed to reach such evils is within the state's police power, whether against the parents claim to control of the child or one that religious scruples dictate contrary action.

Prince v. Massachusetts, 321 U.S. at 166-69.

The primary prevention model driving today's mandatory vaccination of children can be closely analogized to the forward-looking goals of compulsory school attendance and restrictions on child labor. In these contexts, the policies, while seeking to provide benefits and prevent harms to children contemporaneous with the restrictions, also emphasize long-term benefits to the children and to society. Many of these benefits are to be realized *when the children become adults*.[133] Thus, although child labor restrictions were motivated in part to protect children from the immediate risks of workplace dangers,[134] concerns about children's overall socialization and availability for educational opportunities predominate in justifying these regulations in modern times.[135] These restrictions on parental autonomy, therefore, do not require the urgency of the emergency-like circumstances of a smallpox epidemic as in *Jacobson*.

Yet, there are exceptions to both compulsory education and child labor policies.[136] How do these comport with the existing and sought-after exemptions from mandatory childhood vaccination policies? Are the existing statutory

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133. *See, e.g.*, Wisconsin v. Yoder, 406 U.S. 205, 221 (1972) ("The State advances two primary arguments in support of its system of compulsory education. It notes, as Thomas Jefferson pointed out early in our history, that some degree of education is necessary to prepare citizens to participate effectively and intelligently in our open political system if we are to preserve freedom and independence. Further, education prepares individuals to be self-reliant and self-sufficient participants in society.").

134. *See, e.g.*, JAMES D. SCHMIDT, INDUSTRIAL VIOLENCE AND THE LEGAL ORIGINS OF CHILD LABOR (2010); *see also* Lois A. Weithorn, *Protecting Children from Exposure to Domestic Violence: The Use and Abuse of Child Maltreatment Statutes*, 53 HASTINGS L.J. 1, 51-52 (2001) (discussing workplace harms and conceptualizing various forms of child labor as child maltreatment).

135. *See* KOTIN & AIKMAN, *supra* note 130, at 74, 87.

136. *See infra* notes 165-68 and accompanying text (summarizing certain exceptions to compulsory education laws); *see also* Stephanie A. Koltookian, *Some (Don't) Like it Hot: The Use of the "Hot Goods" Injunction in Perishable Agriculture*, 100 IOWA L. REV. 1841, 1851-52 (2015) (noting child labor law exceptions in the agriculture industry); Jessica Krieg, *There's No Business Like Show Business: Child Entertainers and the Law*, 6 U. PA. J. LAB. & EMP. L. 429 (2004) (noting exceptions to child labor laws for children working in the entertainment industry).

exemptions for mandatory vaccinations constitutionally required?

C. *Exemptions to School-Entry Childhood Vaccination Policies*

Across the states, there are three types of legal exemptions to vaccination requirements: medical exemptions, religious exemptions, and personal belief or philosophical exemptions. All fifty states allow parents to exempt their children from certain vaccinations if the parents can provide satisfactory documentation that the particular vaccine is medically contraindicated for their child based on the child's medical status.[137] Among the most common bases for medical exemptions: that a child is immune-compromised, that she has allergies to vaccine ingredients, or that she has a documented adverse reaction to a prior vaccine administration.[138]

Forty-eight states currently provide some form of religious exemption.[139] Mississippi and West Virginia diverge from the others in that they do not provide such an exemption. In 2011, in an unpublished federal Fourth Circuit Court of Appeals decision, the West Virginia policy of denying a religious exemption was upheld against a challenge by a parent whose child was excluded from school because of

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137. Calandrillo, *supra* note 7, at 413.

138. *See, e.g.*, *Vaccination Exemptions*, THE HISTORY OF VACCINES, http://www.historyofvaccines.org/content/articles/vaccination-exemptions (last updated July 31, 2014). Recent studies have indicated that states vary substantially in the stringency of the standards and procedures for obtaining medical exemptions. *See, e.g.*, Stephanie Stadlin et al., *Medical Exemptions to School Immunization Requirements in the United States—Association of State Policies with Medical Exemption Rates (2004–2011)*, 206 J. INFECTIOUS DISEASES 989 (2012). Some commentators assert that greater monitoring is needed to ensure that these exemptions are only available to children for whom they are medically necessary. *See id.*

139. *See States with Religious and Philosophical Exemptions from School Immunizations Requirements*, NAT'L CONF. ST. LEGISLATURES, http://www.ncsl.org/issues-research/health/school-immunization-exemption-state-laws.aspx (last updated June 26, 2015). Beginning July 1, 2016, when the recently-passed California Senate Bill 277 takes effect, only forty-seven states will provide a religious exemption. *See infra* notes 185, 336 and accompanying text.

parental refusal to vaccinate on religious grounds.[140] The court held that the statute did not violate the First Amendment, the Equal Protection, or Due Process Clauses of the Fourteenth Amendment.[141] Mississippi statutes contained a religious exemption until 1979. In a case challenging the constitutionality of the state's mandatory vaccination law, the Mississippi Supreme Court held that the religious exemption violated the Equal Protection Clause.[142]

Religious exemptions in the remaining forty-eight states vary somewhat, particularly with respect to the ease with which they can be obtained.[143] Many states initially restricted the availability of religious exemptions to parents who are members of "recognized religious organizations," the

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140. Workman v. Mingo Cnty. Bd. of Educ., 419 F. App'x 348 (4th Cir. 2011).

141. *Id.* at 352-57. The court noted the parties' disagreement as to the appropriate level of scrutiny to be applied in the analysis, acknowledging *Smith* and the possible hybrid-rights exception. *See supra* notes 82-94 and accompanying text. Rather than decide what level of scrutiny was due, the court determined that the mandatory vaccination law at issue in West Virginia withstood even strict scrutiny. *Workman*, 419 F. App'x. at 353. The court's application of strict scrutiny, however, appears analytically incomplete. While the court provides a thorough and persuasive analysis of the state's compelling interest in mandating vaccination of school prior to school entry, it fails to analyze whether the state's means for achieving that interest are *necessary*, or the *narrowest possible*, to achieve that end. *See supra* note 74 for discussion of the analytic requirements of strict scrutiny review. This omission is particularly unfortunate, because it is the means—vaccination mandates without the plaintiffs' sought-after exemptions—that constitute the most contentious aspect of this dispute. It is noteworthy that, despite the non-publication of the case, a 2006 revision to Federal Rules of Appellate Procedure 32.1 permits citation to this and other unpublished decisions. Yet, the incomplete nature of the analysis creates a substantive limitation on the value of the precedential value of the application of strict scrutiny used in the case. *See* FED. R. APP. P. 32.1, *available at* http://www.nonpublication.com/32.1.HTML; *see also* Notice from Clerk Patricia S. Connor for the Fourth Circuit Court of Appeals (June 1, 2006), *available at* http://www.nonpublication.com/4thCirRule.pdf.

142. Brown v. Stone, 378 So.2d 218 (Miss. 1979).

143. *See, e,g.*, Dorit Rubinstein Reiss, *Thou Shalt Not Take the Name of the Lord Thy God in Vain: Use and Abuse of Religious Exemptions from School Immunization Requirements*, 65 HASTINGS L.J. 1551, 1556-57 (2014) [hereinafter Reiss, *Thou Shall Not Take the Name of the Lord Thy God in Vain*]; *see also* Blank et al., *supra* note 8, at 1285. For a table listing the types of vaccine exemption policies in the fifty states and the District of Columbia, with statutory cites, see NAT'L CONF. OF ST. LEGISLATORS, *supra* note 139.

tenets of which prohibit vaccinations.[144] These limitations on the availability of religious exemptions have been held unconstitutional in certain jurisdictions, such as New York and Arkansas, on Establishment Clause grounds (in that the determination of which religions and religious beliefs "qualify" for the exemption is tantamount to government approval of some religions and not others) and/or Equal Protection grounds (in that such a regulation discriminates against members of certain religions).[145] These definitions still stand in certain other jurisdictions,[146] although their constitutionality is suspect in light of the analyses laid out in New York and Arkansas. New York's requirement that the religious views be "genuine and sincerely held" is still enforced.[147]

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144. Allan J. Jacobs, *Do Belief Exemptions to Compulsory Vaccination Programs Violate the Fourteenth Amendment?*, 42 U. MEM. L. REV. 73 (2011).

145. *See* Dalli v. Bd. of Educ., 267 N.E.2d 219, 221 (Mass. 1971) (holding that state statute restricting religious exemption to those who subscribe to the "tenets and practice of a recognized church or religious denomination" was unconstitutional under the First and Fourteenth Amendments of the U.S. Constitution); *see also* McCarthy v. Boozman, 212 F. Supp. 2d 945 (W.D. Ark. 2002) (holding religious exemption provision unconstitutional, while sustaining statutory immunization requirements), *appeal dismissed*; Boone v. Boozman, 217 F.Supp.2d 938 (E.D. Ark. 2002) (same), *appeal dismissed*; Sherr v. Northport-East Northport Union Free Sch. Dist., 672 F. Supp. 81, 91-92 (E.D.N.Y. 1987) (holding that New York's statute restricting religious exemption to "bona fide members of a recognized religious organization" whose doctrines oppose vaccination violates Establishment and Free Exercise Clauses of the First Amendment).

146. *See, e.g.*, IOWA CODE ANN. § 139A.8 (4)(b) (2015) (exempting a child where "the parent or legal guardian [ ] submits an affidavit . . . stating that the immunization conflicts with the tenets and practices of a recognized religious denomination of which [they are] an adherent or member."); *see also* N.M. STAT. ANN. § 24-5-3 (A)(2) (2015)(exempting from immunization requirements children for whom "affidavits or written affirmation from an officer of a recognized religious denomination that such child's parents or guardians are bona fide members of a denomination whose religious teaching requires reliance upon prayer or spiritual means alone for healing."); UTAH CODE ANN. § 53A-11-302(3)(c) (2015) (exempting a student from receiving the required immunizations with documentation "that the person is a bona fide member of a specified, recognized religious organization whose teachings are contrary to immunizations.").

147. *See, e.g.*, N.Y. PUB. HEALTH LAW § 2164(9) (2015) (exempting from immunization requirements "children whose parent, parents, or guardian hold genuine and sincere religious beliefs which are contrary to the practices herein

States vary in the ease with which parents can obtain an exemption.[148] In some jurisdictions, parents merely need to check a box on a form.[149] In other states, such as New York, the scrutiny is intense, and much litigation has ensued as parents try to prove that their views are indeed religious in nature (rather than the product of secular, medical, philosophical, or moral considerations).[150] Distinguishing between religious and secular justifications for opposition to vaccination can be quite challenging, and can lead to substantial debate.[151]

According to one recent survey, twenty states have "philosophical" or "personal belief" exemptions, including California.[152] These policies allow parents to opt out of vaccinating their children if they certify that immunization, for example, "conflicts with . . . [the] philosophical beliefs of

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required"); Phillips v. City of N.Y., 775 F.3d 538, 540-41, 543 (2d Cir. 2015) (upholding constitutionality of immunization statute in case of child denied religious exemption and excluded from school during chicken pox outbreak); Caviezel v. Great Neck Pub. Sch., 701 F. Supp. 414 (E.D.N.Y. 2010) (applying religious exemption to New York's immunization statute).

148. *See, e.g.*, Blank et al., *supra* note 8, at 1282, 1286; Omer et al., *Nonmedical Exemptions*, *supra* note 8, at 1757-63; Omer et al., *Vaccination Policies*, *supra* note 8, at 1170.

149. *See* Calandrillo, *supra* note 7, at 360; Omer et al., *Vaccination Policies*, *supra* note 8, at 1170.

150. *See, e.g.*, *Caviezel*, 701 F. Supp. 2d at 427-30; Turner v. Liverpool Cent. Sch., 186 F. Supp. 2d 187, 188-92 (N.D.N.Y. 2002).

151. *See generally* Reiss, *Thou Shall Not Take the Name of the Lord Thy God in Vain*, *supra* note 143.

152. *See* NAT'L CONF. OF ST. LEGISLATORS, *supra* note 139. Another review, however, examining exemption policies through 2012, concluded that twenty-two states had philosophical exemptions. Denise F. Lillvis et al., *Power and Persuasion in the Vaccine Debates: An Analysis of Political Efforts and Outcomes in the United States, 1998-2012*, 92 MILBANK Q. 475, 481 (2014). The latter review characterizes some state laws as allowing both religious and philosophical exemptions because the language is sufficiently broad or ambiguous to encompass, or potentially encompass, both types. *Id.* at 480. As noted above, see *supra* note 139, the recent passage of legislation in California eliminates the personal belief exemption commencing July 1, 2016. *See also infra* notes 185, 336 and accompanying text. Legislators in several other states are also working to tighten exemption laws. *See infra* notes 337-39.

the parent or guardian,"[153] is contrary to their "personal beliefs,"[154] or on any grounds, not necessarily those that are religiously-based.[155] As in the case of religious exemptions, state policies vary in the ease of obtaining such accommodations. Some commentators have used the phrase "exemptions of convenience" to refer to some philosophical exemptions because it may be easier for parents to check the box requesting an exemption than it is to get the immunizations, perhaps encouraging some parents to exercise a right to an exemption even in the absence of deeply-held views opposing vaccination.[156] In recent years—in response to the reduction in vaccination rates—some states, such as California, Oregon, and Washington have tightened the requirements, for example, by obligating parents to consult with a health care practitioner to become better informed about the benefits and risks of childhood vaccinations before exercising the exemption option.[157]

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153. ARK. CODE ANN. § 6-18-702(d)(4)(A) (2014).

154. ARIZ. REV. STAT. ANN. § 15-873(A)(1) (2015) ("The parent or guardian of the pupil submits a signed statement to the school administrator stating that the parent or guardian has received information about immunizations provided by the department of health services and understands the risks and benefits of immunizations and the potential risks of nonimmunization and that due to personal beliefs, the parent or guardian does not consent to the immunization of the pupil.").

155. *See, e.g.*, IDAHO CODE ANN. § 39-4802(2) (2015) ("Any minor child whose parent or guardian has submitted a signed statement to school officials stating their objections on religious or other grounds shall be exempt from the provisions of this chapter.").

156. *See, e.g.*, Calandrillo, *supra* note 7, at 360.

157. CAL. HEALTH & SAFETY CODE § 120365 (b)(1) (2015) ("A signed attestation from the health care practitioner that indicates that the health care practitioner provided the parent or guardian of the person who is subject to the immunization requirements of this chapter . . . with information regarding the benefits and risks of the immunization and the health risks of the communicable diseases . . . to the person and to the community. This attestation shall be signed not more than six months before the date when the person first becomes subject to the immunization requirement for which exemption is being sought."); OR. REV. STAT. § 433.273(9)-(11) (2015) ("(i) A signature from a health care practitioner verifying that the health care practitioner has reviewed with the parent information about the risks and benefits of immunization that is consistent with information published by the Centers for Disease Control and Prevention and the contents of the vaccine educational module approved by the authority pursuant to rules

Are these three types of exemptions constitutionally required? Answering that question depends, in part, on the level of scrutiny applied to the constitutional review. It is likely that medical exemptions would be constitutionally required under any form of constitutional review. Indeed, *Jacobson* even implied as much, by noting with approval that the Massachusetts statute under review permitted the exemption of children who were not "fit subjects" for vaccination.[158] While the police power authorizes some restrictions on individual liberty for the benefit of society at large, the policy should be implemented, if possible, without placing the health of highly-vulnerable individuals at serious risk. Furthermore, these vulnerable individuals should be able to rely on the state and their fellow citizens for protection from medical risks to the greatest extent scientifically possible. Fortunately, as scientists predict, and as the recent history of successful inoculation policies reveals, if all or almost all persons healthy enough to tolerate the inoculations are vaccinated, herd immunity will protect the population at-large and operate to reduce or eliminate the likelihood that such medically-vulnerable individuals will be exposed to the disease.[159]

While the constitutional status of religious exemptions to vaccination requirements has not been resolved by the federal courts, modern constitutional jurisprudence indicates that a state's refusal to recognize a religious exemption need not be subjected to strict scrutiny. We recognize that the hybrid rights exception to *Smith* implies the possibility that

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adopted under ORS 433.273; or (ii) A certificate verifying that the parent has completed a vaccine educational module [consistent with] ORS 433.273."); WASH. ADMIN. CODE § 246-105-050 (2015) ("(1) Before a child may attend a school or child care center, a parent must provide proof of immunization status using the following documentation: . . . (iii) A place to indicate whether the parent is claiming a medical, religious, personal, or philosophical exemption. This must include: (A) A statement signed and dated by a health care practitioner stating that he or she has provided the parent information about the benefits and risks of immunization to the child as a condition of obtaining a medical, religious, personal, or philosophical exemption.").

158. *See* Jacobson v. Massachusetts, 197 U.S. 11, 12 (1905).

159. Paul Fine et al., *"Herd Immunity": A Rough Guide*, 52 VACCINES 911, 912, 914-15 (2011); Paul E. M. Fine, *Herd Immunity: History, Theory, Practice*, 15 EPIDEMIOLOGICAL REVS. 265, 296 (1993).

strict scrutiny would be required in adjudicating a religious challenge to vaccination laws that do not provide religious exemptions. Strict scrutiny would place the burden on the state to demonstrate that its regulation seeks to achieve a *compelling* state interest, and that the means used to achieve this interest *are most narrowly tailored.* Whether mandating vaccinations prior to enrollment in school serves a compelling state interest depends, in part, on the real-world consequences of failure to vaccinate children—both for the community (police power) and for the children themselves (*parens patriae*). Factors such as the statistical likelihoods of death, suffering, and disability must be considered and weighed against the nature and probability of risks to individuals from the vaccines. The *means* used, making school attendance conditional on immunization, and applying that requirement to all children except those covered by whatever exemptions the state permits, must be *necessary* to achieve this goal, with no less restrictive or less intrusive means capable of averting the harms the statutes are designed to prevent.[160] Factors such as modes of

160. Children are in close physical proximity with one another in school, and diseases can spread easily from child to child. Because of that proximity, outbreaks are particularly likely to occur in schools. Muireann Brennan et al, *Evidence for Transmission of Pertussis in Schools, Massachusetts, 1996: Epidemiologic Data Supported by Pulsed-Field Gel Electrophoresis Studies*, 181 J. INFECTIOUS DISEASES 201, 214 (2000); Dieter Schnezle, *An Age-Structured Model of Pre- and Post-Vaccination Measles Transmission*, 1 MATHEMATICAL MED. & BIOLOGY 169 (1984). For these reasons among others, school immunization requirements were adopted as early as the nineteenth century. *See, e.g.*, Duffield v. Williamsport Sch. Dist., 29 A. 742 (Pa. 1894). The Supreme Court held such policies to be constitutional in 1922. *See generally* Zucht v. King, 260 U.S. 174 (1922). Some states, such as California, apply childhood vaccination requirements to daycare and preschool settings to address the susceptibility of children to infection in such congregate settings, even before entry into elementary schools. *See* CAL. HEALTH & SAFETY CODE § 120335 ("The governing authority shall not unconditionally admit any person as a pupil of any private or public elementary or secondary school, child care center, day nursery, nursery school, family daycare home, or development center, unless, prior to his or her first admission to that institution, he or she has been fully immunized."). Other states may not require vaccination for entry to such programs prior to elementary school. By contrast, some states, such as Ohio, do not require vaccination prior to elementary school entry. *See, e.g.*, OHIO REV. CODE ANN. § 3313.671 (2015). Delaying vaccination until elementary school entry is problematic in that children under five are at higher risk of complication if infected with certain vaccine-preventable diseases

transmission, levels of contagiousness and role of herd immunity for each disease are relevant.

Yet, notwithstanding the hybrid rights exception to *Smith*, in *Smith* the Court identified "compulsory vaccination laws" as among the types of statutes that need not be reviewed with strict scrutiny to be permissible under the First Amendment.[161] Furthermore, it is not clear what mode of analysis is required under *Smith* if the hybrid rights exception does not lead to a requirement of heightened scrutiny. Some scholars and lower courts have concluded that rational basis review applies, requiring the state to demonstrate only that the statute is rationally related to a legitimate or permissible state purpose.[162] Using this mode of analysis, it is far less likely that a religious exemption would be constitutionally required than where strict scrutiny is required. Yet, Justice Scalia has interpreted his majority opinion in *Smith* as requiring *no judicial scrutiny*.[163] Indeed, no rational basis review was applied by the Court to Mr. Smith's claims, a fact that provides support to this interpretation.[164] Of course, the absence of any requirement

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than are older children, and immunization at the age of five or six does not protect against these risks. Pertussis (e.g. whooping cough) is most dangerous for infants, as contrasted with older children. *See* PAUL A. OFFIT & CHARLOTTE A. MOSER, VACCINES AND YOUR CHILD: SEPARATING FACT FROM FICTION 123 (2011). Children under five are more likely to suffer complications from measles than are older children. *Id.* at 166. Most Hib disease cases (about 90%) occur in children under five years old. *Id.* at 141-44.

161. Emp't Div. v. Smith, 494 U.S. 872, 888-89 (1990).

162. *See, e.g.*, Cent. Rabbinical Cong. of U.S. & Canada v. New York City Dep't of Health & Mental Hygiene, 763 F.3d 183, 186 (2d Cir. 2014); CHEMERINSKY, *supra* note 70, at 1248 ("[After *Smith*,] a neutral law of general applicability only has to meet rational basis review"); John D. Inazu, *More is More: Strengthening Free Exercise, Speech, and Association*, 99 MINN. L. REV. 485, 498-99 (2014) ("*Smith* also introduced another significant doctrinal change in free exercise law: the move from strict scrutiny to rational basis scrutiny for claims challenging generally applicable laws."). *But see* Alan E. Garfield, *The Mischief of* Cohen v. Cowles Media Co., 35 GA. L. REV. 1087, 1109 (2001).

163. *See* Garfield, *supra* note 162, at 1109 ("That standard, which Scalia announced in *Employment Division v. Smith*, provides for no judicial scrutiny of conduct regulation unless it is targeted at a religious practice.").

164. In his concurrence, in *Barnes v. Glen Theatre, Inc.*, which involved free speech claims, rather than free exercise claims, Justice Scalia opined: "[i]n my view, however, the challenged regulation must be upheld, not because it survives

for review beyond the question of the general applicability of the statute would virtually guarantee the constitutional survival of vaccination requirements in the face of free exercise challenges, given the general applicability of those statutes.

As noted below, we also contend that the convergence of the dual police power and *parens patriae* state purposes in the regulation of children's lives creates a particularly robust foundation for state intervention, and has authorized what

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some lower level of First Amendment scrutiny, but because, as a general law regulating conduct and not specifically directed at expression, *it is not subject to First Amendment scrutiny at all*." 501 U.S. 560, 572 (1991) (Scalia, J., concurring) (emphasis added). He continued by referring to *Smith* as precedent for this approach:

> We have explicitly adopted such a regime in another First Amendment context: that of free exercise. In *Employment Div., Dept. of Human Resources of Ore. v. Smith,* 494 U.S. 872, 110 S. Ct. 1595, 108 L.Ed.2d 876 (1990), we held that general laws not specifically targeted at religious practices did not require heightened First Amendment scrutiny even though they diminished some people's ability to practice their religion. "The government's ability to enforce generally applicable prohibitions of socially harmful conduct, like its ability to carry out other aspects of public policy, 'cannot depend on measuring the effects of a governmental action on a religious objector's spiritual development.'" *Id.,* at 885 [110 S. Ct., at 1603], quoting *Lyng v. Northwest Indian Cemetery Protective Assn.,* 485 U.S. 439, 451, 108 S. Ct. 1319, 1326, 99 L.Ed.2d 534 (1988); *see also Minersville School District v. Gobitis,* 310 U.S. 586, 594–595, 60 S. Ct. 1010, 1012–1013, 84 L.Ed. 1375 (1940) (Frankfurter, J.) ("Conscientious scruples have not, in the course of the long struggle for religious toleration, relieved the individual from obedience to a general law not aimed at the promotion or restriction of religious beliefs."). There is even greater reason to apply this approach to the regulation of expressive conduct. Relatively few can plausibly assert that their illegal conduct is being engaged in for religious reasons; but almost anyone can violate almost any law as a means of expression. In the one case, as in the other, if the law is not directed against the protected value (religion or expression) the law must be obeyed.

Barnes v. Glen Theatre, Inc., 501 U.S. 560, 579 (1991) (Scalia, J., concurring). Justice Scalia's interpretation of *Smith's* requirements are supported by the fact that in analyzing Smith's claims, the Court did not apply rational basis review. Rather, once the Court concluded that the peyote prohibition at issue in the case was a generally applicable and constitutional criminal prohibition, it stated conclusively that the denial of Mr. Smith's employment compensation, which relied on the criminal nature of Smith's peyote use, was also constitutional. Emp't Div. v. Smith, 494 U.S. 872, 890 (1990).

are arguably the most far-reaching intrusions of parental autonomy that exist in American law. Examining the exceptions to one of those policies (compulsory education) may provide additional insight as to whether it is constitutionally necessary to allow parents to opt out of state childhood vaccination mandates.

All fifty states provide a home schooling exemption to compulsory education laws.[165] These statutes, however, in no way create a wholesale exemption to the requirement of childhood education. In all jurisdictions, parents who opt to home-school their children are expected to provide their children with an education commensurate with that available to children in their jurisdiction's public schools.[166] States vary, however, on the standards that govern parental obligations and modes of regulation.[167] Courts and observers disagree as to whether current standards and evaluative procedures are sufficient for the educational needs of home-schooled children, and whether states should tighten and/or loosen requirements.[168] Yet, while some home-schooled children may, in fact, receive an education that would be viewed by state officials as inadequate if scrutinized, no child is formally exempt from the compulsory education requirement. Thus, religious exemptions that permit parents to opt out of *all* required vaccinations are substantially more deferential to parental preferences than are the exceptions to compulsory education laws and are most likely far more deferential than is constitutionally required.

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165. *See, e.g.*, DAVIS ET AL., *supra* note 124, at 34.

166. *See* Dwyer, *The Children We Abandon*, *supra* note 129, at 1350 & n.113; *see also* Judith G. McMullen, *Behind Closed Doors: Should States Regulate Homeschooling?*, 54 S.C. L. REV. 75, 98-100 (2002); Timothy Brandon Waddell, *Bringing it all Back Home: Establishing a Coherent Constitutional Framework for the Re-regulation of Homeschooling*, 63 VAND. L. REV. 541, 560-61, 570 n.202 (2010).

167. *See* DAVIS ET AL., *supra* note 124, at 33-38.

168. *See, e.g.*, Paul A. Alarcón, *Recognizing and Regulating Home Schooling in California: Balancing Parental and State Interests in Education*, 13 CHAP. L. REV. 391, 395, 398-99, 405 (2010). *See generally* Ralph D. Mawdsley, *Parental Rights and Home Schooling: Current Home Schooling Litigation*, 135 ED. LAW REP. 313 (1999).

In *Wisconsin v. Yoder*, several Amish parents sought an exemption from the high school enrollment requirement for their children who had completed public school through eighth grade.[169] In *Yoder*, the age of legal school exit was 16, and the children in question were ages 14 and 15.[170] Thus, the families had thus far largely complied with the compulsory education mandate, and were requesting a religious accommodation that modified their obligation for continued compliance. The parents argued that the curriculum of public high schools posed unique challenges for their ability to educate their children in their religion, and thus claimed interference with their free exercise and due process rights.[171] The parents asserted that they and their Amish community would provide an alternative educational experience—a position that was particularly persuasive to the Court.[172] In concluding that a religious accommodation was constitutionally required, the Court emphasized that the state's purposes in compelling children's education were indeed satisfied by the educational experiences available in the Amish community.[173] It further emphasized that the unique features of the Amish community, including its insularity and the productivity of its members, rendered this an appropriate case for an exemption.[174]

Wisconsin v. Yoder is therefore an exceptionally narrow case which in no way creates a wholesale religious exemption to compulsory school attendance.[175] Rather, its holding might

169. *See* Wisconsin v. Yoder, 406 U.S. 205, 205-07 (1972).

170. *Id*. at 207.

171. *See id*. at 208-11.

172. *See id*. at 212-13, 223.

173. *See id*. at 224-25.

174. *See id*. at 211-13, 234-36.

175. In fact, courts have typically refused to extend *Yoder* to grant requests for religious exemptions to school attendance requirements beyond the facts of the case. *See, e.g.*, James G. Dwyer, *The Good, the Bad, and the Ugly of* Employment Division v. Smith *for Family Law*, 32 CARDOZO L. REV. 1781, 1783 (2011) (noting that "lower courts . . . have read the *Yoder* holding as severely limited in scope, not simply confined to conflicts over education but actually confined to just the Amish and groups very much like the Amish."); Ira C. Lupu, Hobby Lobby *and the Dubious Enterprise of Religious Exemptions*, 38 HARV. J. L. & GENDER 35, 53 (2015) (noting that lower courts have "systematically found ways to distinguish

be characterized as recognizing the constitutional necessity of allowing a slight modification of compulsory education requirements as an accommodation to religious objections where there has already been substantial compliance with the compulsory education law, and where the child will be participating in a suitable alternative program through which the *state's purposes in compelling education are achieved*. Religious exemptions that allow parents permanently to exclude their children from all required vaccinations do not comport with this limited precedent and therefore cannot be said to be protected under *Yoder*. Parents can choose alternative schooling options, including parochial, private, or home schooling. Likewise, some limited accommodations in childhood vaccination requirements might be constitutionally required to address certain religious objections, analogous to some of the more limited accommodations available to families in the compulsory education context (e.g., *Yoder*).[176] But across-the-board exemptions to all vaccinations exceed constitutional mandates.[177]

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*Yode*r when other religiously motivated actors sought to remove their children from school.").

176. But, those opposing mandatory vaccinations for their children on religious grounds typically refuse *all* vaccinations and are unlikely to be satisfied with limited accommodations. Such limited accommodations might be those that permit parents greater discretion to refuse vaccinations that prevent diseases less likely to be spread by their children (e.g. tetanus), for which post-exposure inoculation can reduce likelihood of infection (e.g. tetanus) or for which infection is more common in adulthood, therefore making delay of vaccination decisions until adulthood a possible compromise position (e.g. Hepatitis B), even though vaccination in childhood is clearly more beneficial to the individuals vaccinated and others to whom the disease can be spread.

177. *See supra* notes 139-76.

There is frequently-cited commentary in *Prince v. Massachusetts*,[178] *Yoder*,[179] *Roe v. Wade*,[180] and *Cruzan v. Director, Missouri Department of Health*,[181] all in dicta, supporting the general principle of mandatory vaccination policies. In these commentaries, the Court does not address the question of whether nonmedical exemptions are required, but approves the principle that the police power allows the state to restrict individual liberty in the context of health care decisionmaking. In *Prince* and *Yoder*, which directly involved children, the Court reinforced that the police power combined with the *parens patriae* power authorizes limitations on parental discretion in childrearing in the context of vaccination policy. The outcomes of the challenges cited above in Mississippi and West Virginia, which have not been disturbed, further support the conclusion that across-

178. Prince v. Massachusetts, 321 U.S. 158, 166-67 (1944):

> [N]either rights of religion nor rights of parenthood are beyond limitation. Acting to guard the general interest in youth's well being, the state as *parens patriae* may restrict the parent's control. . . . Its authority is not nullified merely because the parent grounds his claim to control the child's course of conduct on religion or conscience. Thus, 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 . . . [T]he state has a wide range of power for limiting parental freedom and authority in things affecting the child's welfare; and that this includes, to some extent, matters of conscience and religious conviction.

179. *Yoder*, 406 U.S. at 230 (citing *Jacobson* with approval in distinguishing the instant case from "one in which any harm to the physical or mental health of the child or to the public safety, peace, order, or welfare has been demonstrated or may be properly inferred"). Indeed, in *Yoder*, the Court explicitly and repeatedly distinguished the narrow educational exemption it granted the families from adherence to regulations that are in place to protect the health of children. *Id.* at 228-32.

180. Roe v. Wade, 410 U.S. 113, 154 (1973) (citing *Jacobson* and vaccination policies for the proposition that "[t]he privacy right . . . cannot be said to be absolute. . . . The Court has refused to recognize an unlimited right of this kind in the past.").

181. Cruzan v. Dir., Missouri Dep't. of Health, 497 U.S. 261, 278 (1990) (citing *Jacobson* and discussing vaccination policies: "The principle that a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment may be inferred from our prior decisions.").

the-board religious exemptions to mandatory vaccination policies are not constitutionally required.[182]

The argument that personal belief exemptions to vaccination laws are constitutionally required is substantially weaker given the absence of a free exercise claim. Generally, parents are afforded substantial discretion in making health care decisions for their children, with state intervention reserved for only the most serious threats to children's health. Yet, as noted previously, in the context of ordinary health care decisionmaking, state authority to intervene in the family is grounded primarily in the state's *parens patriae* authority, bolstered by its police power interest in promoting a child's healthy maturation into a contributing adult member of society. Parents' personal beliefs are typically a permissible basis to refuse many recommended medical treatments that might benefit their children, particularly where the harm resulting from non-treatment is not expected to be substantial.[183] That said, the additive weight of the *parens patriae* and police power justifications for mandatory childhood vaccination laws creates a potent challenge to secular parental objections.[184]

Analogizing the childhood vaccination laws to compulsory education laws, we note that parents' personal beliefs are not a basis for wholesale exemption from mandatory school requirements. Parents can choose among various nonpublic schools and home schooling options as alternative educational settings for their children, subject to state regulatory requirements. But, consistent with the analysis above regarding religious exemptions, no parent can legally opt a child out of receiving a childhood education because of secular personal beliefs. Furthermore, no court has held that personal belief exemptions to vaccinations are

182. Despite this conclusion, the repeal of religious exemption statutes may be a politically-disfavored response to the current non-vaccination trends. Legislatures may be hesitant to deny religious objectors their preferences for a variety of reasons. Yet, policy-based and politically-strategic legislative choices must be distinguished from those that are constitutionally required.

183. *See supra* notes 120-29 and accompanying text.

184. As in the context of religious exemptions, the result of constitutional review could vary with the particular vaccination and features of the diseases that the inoculations are intended to prevent, as well as the risks and benefits of the particular vaccinations.

constitutionally-required. To the contrary, numerous state and lower court decisions have reinforced the constitutionality of current state vaccination laws. Thus, the over one-third of states that permit personal belief exemptions to vaccination policies clearly are doing so for policy-based or political reasons, rather than in compliance with a constitutional mandate.

In light of the research cited below, indicating that reductions in vaccination rates and increases in disease outbreaks are associated with liberal exemption policies, we encourage policymakers to reexamine the rationales, operation, and effects of permissive exemption laws. The Disneyland measles outbreak has led several states to do so. For example, California legislators recently passed Senate Bill 277, which eliminates the personal belief exemption and allows only medical exemptions to school immunization mandates.[185] More than ten states have proposed legislation restricting or eliminating non-medical exemptions.[186] While it is not known if these bills will pass, state legislators are clearly concerned about recent outbreaks of vaccine-preventable diseases, and are considering and reevaluating their options. In the latter part of this Article, we offer additional mechanisms, beyond tightening school immunization requirements, that may operate to increase immunization rates.

III. THE IMPACT OF VACCINE REFUSAL PATTERNS

Scientists, policymakers, and the media have taken note of the recent reported rise in the United States in outbreaks of vaccine-preventable diseases, particularly measles and

185. For the language of the final bill signed by the Governor, see *SB-277, Public Health: Vaccination*, CAL. LEGISLATIVE INFO., https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB277. For a discussion of the bill's purpose and primary provision, see the summary by one of the bill's proponents, State Sen. Richard Pan, *Senate Bill 277 Introduced to End California's Vaccine Exemption Loophole* (Feb. 19, 2015), http://sd06.senate.ca.gov/news/2015-02-19-senate-bill-277-introduced-end-california%E2%80%99s-vaccine-exemption-loophole.

186. Dorit Rubinstein Reiss, *Vaccines, Measles, and Rights*, 2 WAKE FOREST L. REV. 138 (2015).

pertussis.[187] In 2014, the CDC announced that the number of reported cases of measles for the first five months of 2014 was the highest reported since measles elimination was documented in 2000.[188] According to the CDC, not surprisingly, the majority of people who have developed measles are unvaccinated.[189] Most who become ill are *intentionally* unvaccinated.[190] Many are children whose parents did not obtain vaccinations for them. As herd immunity breaks down, however, also caught in the net and falling ill are those who cannot be vaccinated for medical reasons, those who are too young to be fully vaccinated, and others for whom vaccines have not provided complete protection.[191]

A series of recent studies by public health researchers reveals relationships between this rise in the incidence of vaccine-preventable diseases and patterns of nonvaccination.[192] And, not surprisingly, studies reveal that

187. *See supra* notes 1-4; *infra* notes 188-91; *see also* Michaeleen Doucleff, *How Vaccine Fears Fueled The Resurgence of Preventable Diseases*, NPR (Jan. 25, 2014, 1:13 PM), http://www.npr.org/blogs/health/2014/01/25/265750719/how-vaccine-fears-fueled-the-resurgence-of-preventable-diseases; Tasneem Raja & Chris Mooney, *How Many People Aren't Vaccinating Their Kids in Your State?*, MOTHER JONES (Feb. 17, 2014 7:00 AM), http://www.motherjones.com/environment/2014/02vaccine-exemptions-states-pertussis-map.

188. *See Press Release: Measles in the United States Reach 20-Year High*, CTRS. FOR DISEASE CONTROL & PREVENTION, (May 29, 2014), *available at* http://www.cdc.gov/media/releases/2014/p0529-measles.html.

189. *Id.*

190. *See id.*

191. For discussions of herd immunity, see Fine et al., *supra* note 159. *See generally* Oxford Vaccine Group, Univ. of Oxford, *Herd Immunity*, VACCINE KNOWLEDGE PROJECT, http://www.ovg.ox.ac.uk/herd-immunity (last visited Jan. 20, 2015).

192. *See, e.g.*, Glanz et al., *Parental Refusal of Pertussis Vaccination*, *supra* note 9, at 1446, 1449-50; Jason M. Glanz et al., *Parental Refusal of Varicella Vaccination and the Associated Risk of Varicella Infection in Children*, 164 ARCH. PEDIATRICS & ADOLESCENT MED. 66, 68 (2010); Omer et al., *Nonmedical Exemptions*, *supra* note 8, at 1389, 1394-95; Saad B. Omer et al., *Vaccine Refusal, Mandatory Immunization, and the Risks of Vaccine-Preventable Diseases*, 360 NEW ENG. J. MED. 1981, 1981, 1983-84 (2009); Amy Parker Fiebelkorn et al., *Measles in the United States during the Postelimination Era*, 202 J. INFECTIOUS DISEASES 1520, 1524, 1527 (2010); Amy A. Parker et al., *Implications of a 2005 Measles Outbreak in Indiana for Sustained Elimination of Measles in the United*

rates and patterns of nonvaccination are related to legal policies governing exemptions from mandatory vaccination requirements.[193] The availability and use of personal belief exemptions in slightly more than one-third of states is a significant factor in increasing the nonvaccination rate in some jurisdictions. And, the *language defining* both personal belief and religious exemptions, and *the ease with which parents can access these exemptions* also affects the rates of nonvaccination.[194] Higher nonvaccination rates predispose our communities to greater risk of outbreaks of vaccine-preventable disease. And, unfortunately, today the risk has become reality. Epidemiological surveys and media headlines reveal that rates of infection with previously-controlled or eradicated diseases have increased.

This rise in the incidence of vaccine-preventable disease is alarming and deserves the attention of policymakers. One response to recent trends in nonvaccination is tightening or eliminating exemptions to vaccine laws, consistent with the constitutional parameters discussed in Part II above. This response and other possible policy responses are considered in Part V, below.

States, 355 NEW. ENG. J. MED. 447, 452 (2006); David E. Sugerman et al., *Measles Outbreak in a Highly Vaccinated Population, San Diego, 2008: Role of the Intentionally Undervaccinated*, 125 PEDIATRICS 747, 747, 753-54 (2010).

193. *See, e.g.*, Blank et al., *supra* note 8, at 1289; Daniel R. Feikin et al., *Individual and Community Risks of Measles and Pertussis Associated with Personal Exemptions to Immunizations*, 284 JAMA 3145, 3145 (2000); Imdad et al., *supra* note 9, at 42; Omer, et al., *Nonmedical Exemptions*, *supra* note 8, at 1763; Omer et al., *Vaccination Policies*, *supra* note 8, at 1171; Jennifer L. Richards et al., *Nonmedical Exemptions to Immunization Requirements in California: A 16-Year Longitudinal Analysis of Trends and Associated Community Factors*, 31 VACCINE 3009, 3012 (2013); Daniel A. Salmon et al., *Factors Associated With Refusal of Childhood Vaccines Among Parents of School-aged Children*, 159 ARCH. PEDIATR. ADOLESC. MED. 470, 470 (2005); Salmon et al., *supra* note 9, at 51; Stadlin et al., *supra* note 138, at 989; Joseph W. Thompson et al., *Impact of Addition of Philosophical Exemptions on Childhood Immunization Rates*, 32 AM. J. PREVENTIVE MED. 194, 200 (2007); Y. Tony Yang & Vicky Debold, *A Longitudinal Analysis of the Effect of Nonmedical Exemption Law and Vaccine Uptake on Vaccine-Targeted Disease Rates*, 104 AM. J. PUB. HEALTH 371, 375-76 (2014).

194. *See supra* note 8; *infra* notes 312-13 and accompanying text.

IV. ANTI-VACCINATION: NUMBERS AND REASONS

This Part of the Article describes the extent of the phenomenon of nonvaccination, the types of parents who do not vaccinate, and the themes that characterize the factors influencing decisions not to vaccinate. The focus here is on parents who *choose* not to vaccinate because of concerns about or opposition to vaccinations. Thus, we do not focus on those children whose health status or particularized reaction to vaccines presents medically-recognized contraindications to some or all vaccines.[195] In addition, we do not address circumstances in which parents who do not oppose vaccination fail to fully vaccinate their children because of practical obstacles (such as income or difficulty accessing health care professionals or settings). Fortunately, there now exist multiple mechanisms to help families pay for vaccinations.[196] We recognize that for some families, practical barriers remain, although the evidence indicates that low-income children are not usually *un*vaccinated.[197] Rather, because of access problems, they may be *under*vaccinated, that is, lacking some doses in a series.[198]

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195. The CDC publishes a list of medical contraindications to vaccination. *Chart of Contraindications and Precautions to Commonly Used Vaccines*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccines/recs/vac-admin/contraindications-vacc.htm (last visited Apr. 15, 2015), as well as a discussion of common mistakes about contraindications: *Conditions Commonly Misperceived as Contraindications to Vaccination*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccines/recs/vac-admin/contraindications-misconceptions.htm (last visited Apr. 15, 2015).

196. See *infra* notes 359-60 and accompanying text (discussing various programs providing for the cost of vaccinations under a range of public and private insurance programs).

197. Philip J. Smith et al., *Children Who Have Received No Vaccines: Who Are they and Where Do they Live?*, 114 PEDIATRICS 187 (2004).

198. *Id.*

A. *Parents Who Do Not Vaccinate: Numbers and Levels of Opposition*

According to the CDC's data, fewer than 1% of children received no vaccines at all in 2013.[199] That percentage is confirmed by other sources,[200] but presents an incomplete picture of the vaccination landscape because it does not incorporate "*undervaccination"* data. Some parents only give *some* vaccines, either motivated by concerns about specific vaccines (including a belief that their child was harmed by a previous vaccine) or a perception that additional vaccines are unnecessary. A recent cohort study by the Institute for Health Research at Kaiser Permanente estimated the percentage of "undervaccinated" children to be 48.7,[201] given the number of days that vaccines were delayed past the recommended schedule. According to the study, some of those children's vaccines were delayed for reasons other than parental opposition to vaccines. A closer examination of medical records of a stratified random sample led to an estimate of 13.0% of children undervaccinated because of affirmative parental decision not to vaccinate. This percentage includes unvaccinated children, partly-vaccinated children, and children on a delayed schedule.[202] The CDC's information also indicates that most vaccines are covered at 80-95%, with the newer rotavirus lower at 68.6%.[203] By contrast, coverage for the flu for the same 2011-

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199. To view the latest data available, see *Morbidity and Mortality Weekly Report, National, State, and Local Area Vaccination Coverage Among Children Aged 19-35 Months—United States, 2011*, tbl.1, CDC, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6135a1.htm (last visited Apr. 15, 2015).

200. Allison Kennedy et al., *Vaccine Attitudes, Concerns, and Information Sources Reported by Parents of Young Children: Results From the 2009 HealthStyles Survey*, 127 PEDIATRICS S92, S95 (2011).

201. Jason M. Glanz et al., *A Population-Based Cohort Study of Undervaccination in 8 Managed Care Organizations Across the United States*, 167 JAMA PEDIATRICS 274, 277 (2013).

202. *Id.*

203. Ctrs. for Disease Control & Prevention, *National, State, and Local Area Vaccination Coverage Among Children Aged 19–35 Months—United States, 2011*, 61 MORBIDITY & MORTALITY WKLY. REP. 689, 689 (2012), *available at* http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6135a1.htm.

2012 period was 74.6% for the equivalent 6-23 months age group.[204] This study reconfirms that those who refuse or delay vaccines because of affirmative opposition to vaccines constitute a small minority of parents—fewer than 10%.

Although we discuss nonvaccinating parents and the anti-vaccination movement as one group for a large part of this Article, there are discrete subgroups within these categories. Depending on a range of factors, including parental motivations and reasons for their positions on vaccination, parents' legal options to exempt their children from vaccination may vary. Furthermore, the permissibility and efficacy of the legal tools available to increase vaccination rates may also vary across subcategories of nonvaccinators.

In a recent article, Hagood and Herlihy[205] remind the reader that non-vaccinating parents differ in the bases and degrees of the commitment they manifest in their opposition

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204. *Flu Vaccination Coverage, United States, 2011-12 Influenza Season*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/flu/professionals/vaccination/coverage_1112estimates.htm (last visited Apr. 15, 2015). Please note that we do not address the more recent HPV vaccine in this article in light of our focus on vaccination prior to school entry. The CDC recommends administering the HPV vaccine at ages 11 and 12. *See HPV Vaccine—Questions and Answers*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccines/vpd-vac/hpv/vac-faqs.htm (last visited June 29, 2014). The rates of coverage for that vaccine are much lower than is reported for other vaccines: most recently at 32% for 13-17 year olds. *See* Lauri E. Markowitz et al., *Reduction in Human Papillomavirus (HPV) Prevalence Among Young Women Following HPV Vaccine Introduction in the United States, National Health and Nutrition Examination Surveys, 2003–2010*, 208 J. INFECTIOUS DISEASES 385, 385 (2013). Although medical evidence supports the safety (*see, e.g.*, Nicola P. Klein et al., *Safety of Quadrivalent Human Papillomavirus Vaccine Administered Routinely to Females*, 166 ARCH. PEDIATRICS & ADOLESCENT MED. 1140, 1140 (2012)), and efficacy of the HPV vaccine, *see, e.g.*, Hammad Ali et al., *Genital Warts in Young Australians Five Years into National Human Papillomavirus Vaccination Programme: National Surveillance Data*, BMJ (Apr. 18, 2013), http://www.bmj.com/content/346/bmj.f2032.full.pdf+html, some of the controversies raise additional issues beyond the scope of the current Article.

205. E. Allison Hagood & Stacy Mintzer Herlihy, *Addressing Heterogeneous Parental Concerns About Vaccination with a Multiple-Source Model: A Parent and Educator Perspective*, 9 HUMAN VACCINES & IMMUNOTHERAPEUTICS 1790, 1790 (2013).

to vaccines.[206] The authors suggest a classification that they employ in discussing education-based interventions. Their classification also fits nicely with our discussion of the effectiveness of the various legal strategies addressed in Part V. Hagood and Herlihy distinguish among Vaccine Rejector parents, Vaccine Resistant parents, and Vaccine Hesitant parents.

"Vaccine Rejectors" are the parents who are entrenched in their opposition to vaccines, unwilling to consider information in opposition to their beliefs. They strongly believe that vaccines cause more harm than good, or that vaccines are part of "a conspiracy involving governments, health organizations and pharmaceutical companies."[207] These parents typically distrust traditional medicine and are more likely to use alternative practices to respond to their children's health problems. Many of them also believe in other conspiracy theories.[208] Vaccine Rejectors are the parents we typically associate with antivaccination, and are the focus of most articles addressing the movement.[209] Yet, despite commonalities among this group of committed anti-

206. *Id.*

207. *Id.* at 1791.

208. *See, e.g.*, *Chemtrail Conspiracy Theory*, WIKIPEDIA, http://en.wikipedia.org/wiki/Chemtrail_conspiracy_theory (last visited June 14, 2015) ("According to the chemtrail conspiracy theory, long-lasting trails left in the sky by high-flying aircraft are chemical or biological agents deliberately sprayed for sinister purposes undisclosed to the general public.").

209. *See* P. Davies et al., *Antivaccination Activists on the World Wide Web*, 87 ARCHIVES DISEASE IN CHILDHOOD 22, 22 (2002); Robert M. Jacobson et al., *A Taxonomy of Reasoning Flaws in the Anti-Vaccine Movement*, 25 VACCINE 3146, 3146 (2007); Anna Kata, *A Postmodern Pandora's Box: Anti-vaccination Misinformation on the Internet*, 28 VACCINE 1709, 1709 (2010) [hereinafter Kata, *Pandora's Box*]; Anna Kata, *Anti-Vaccine Activists, Web 2.0, and the Postmodern Paradigm—An Overview of Tactics and Tropes Used Online by the Anti-Vaccination Movement*, 30 VACCINE 3778, 3778 (2012) [hereinafter Kata, *Anti-vaccine Activists*]; Gregory A. Poland & Robert M. Jacobson, *Understanding Those Who Do Not Understand: A Brief Review of the Anti-Vaccine Movement*, 19 VACCINE 2440, 2440 (2001); Robert M. Wolfe & Lisa K. Sharp, *Vaccination or Immunization? The Impact of Search Terms on the Internet*, 10 J. HEALTH COMM. 537, 538 (2005); Robert M. Wolfe et al., *Content and Design Attributes of Antivaccination Web Sites*, 287 JAMA 3245, 3245 (2002); Richard K. Zimmerman, et al., *Vaccine Criticism on the World Wide Web*, 7 J. MED. INTERNET RES. e17 (2005).

vaccination activists, there is substantial within-group variation, with many having their own detailed stories and beliefs.[210]

The second group is comprised of "Vaccine Resistant" parents. These parents are willing to consider information about the safety and efficacy of vaccines, though they still do not give their children all vaccines.[211] These parents "may be concerned that there are too many vaccines in the current schedule, or that vaccinations are given too soon, or that vaccines are commonly associated with adverse events such as autism. . . . [They] may also hold a belief that vaccines are causing widespread damage or vaccine injuries."[212] Parents in this group are more open to persuasion than are Vaccine Rejector parents.

"Vaccine Hesitant" parents comprise the final group. They have general anxiety about vaccines and have "heard things" that concern them about vaccines, but they may or may not be able to articulate a specific concern. If their fears are not addressed, their concerns may evolve into firmer opposition to vaccines.[213]

In addition to these three different groups of parents who may not vaccinate on schedule, the anti-vaccination movement includes some doctors or scientists who oppose vaccines.[214] Some of these practitioners or researchers

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210. *See, e.g.*, JAMES COLGROVE, STATE OF IMMUNITY: THE POLITICS OF VACCINATION IN TWENTIETH-CENTURY AMERICA 51-64 (2006); PAUL A. OFFIT, DEADLY CHOICES: HOW THE ANTI-VACCINE MOVEMENT THREATENS US ALL 8-15 (2010).

211. Hagood & Herlihy, *supra* note 205, at 1791.

212. *Id.*

213. *Id.*

214. *See, e.g.*, Sherri Tenpenny, *What Opened my Eyes to the Problems Vaccine Cause?*, DR. TENPENNY, http://drtenpenny.com/why-i-investigated-vaccines/# (last visited Apr. 15, 2015). Dr. Mark Geier wrote a number of problematic articles about vaccines and treated allegedly "vaccine damaged" autistic children with chelation and chemical castration. *See* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 134-47; *see also* Seth Mnookin, *Mark Geier, Witness for Hire*, *in* THE PANIC VIRUS: A TRUE STORY OF MEDICINE, SCIENCE, AND FEAR 170, 170-77 (2011). Dr. Geier has recently had his license revoked in all states in which he practiced. *See* Todd W., *Mark Geier: Not a Leg to Stand On*, HARPOCRATES SPEAKS (May 23,

support parents who choose to delay or skip vaccinations.[215] In addition, some alternative medicine practitioners also oppose vaccines, not on the basis of data, but as a matter of belief.[216]

B. *Reasons for Not Vaccinating*

Why don't parents vaccinate? Research focusing on the nonvaccinating parent[217] and postings provided by anti-vaccination websites[218] identify the following reasons: safety concerns (including concerns about vaccine injuries, vaccine ingredients, and long term vaccine harms underestimates of the risks of diseases); underestimates of vaccines' efficacy;[219] distrust of government and doctors (in some cases rising to the level of belief in conspiracy theories);[220] preference for alternative medicine linked to a professed belief in "natural" interventions or nonintervention; and a concern that vaccination policies violate their civil rights.[221] These concerns are examined in detail below.

1. *Safety Concerns.* It is natural for parents to worry when taking a child to be vaccinated. Aside from potential distress in watching a needle inserted into their infant or child (something that isn't likely to make the child in question happy, either), many parents are painfully aware

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2013, 12:00 AM), http://www.harpocratesspeaks.com/2013/05/mark-geier-not-leg-to-stand-on.html.

215. For a critique of the most famous of these approaches, Dr. Boh Sears' alternative schedule, see Paul A. Offit & Charlotte A. Moser, *The Problem With Dr. Bob's Alternative Vaccine Schedule*, 123 PEDIATRICS e164, e164 (2009).

216. Davies et al., *supra* note 209, at 22-23.

217. Katrina F. Brown et al., *Factors Underlying Parental Decisions About Combination Childhood Vaccinations Including MMR: A Systematic Review*, 28 VACCINE 4235, 4236 (2010).

218. *See* Davies et al., *supra* note 209, at 22; Zimmerman, et al., *supra* note 209.

219. *See* Brown et al., *supra* note 217, at 4243.

220. Hagood & Herlihy, *supra* note 205, at 1790-91; Kata, *Pandora's Box*, *supra* note 209, at 1712-13.

221. *See generally* INST. OF MED., THE CHILDHOOD IMMUNIZATION SCHEDULE AND SAFETY: STAKEHOLDER CONCERNS, SCIENTIFIC EVIDENCE, AND FUTURE STUDIES (2013); Kata, *Pandora's Box*, *supra* note 209, at 1712.

that any medical intervention can have side effects. Nothing is 100% safe, including vaccines, but, as noted above, serious adverse events from vaccines are extremely rare today,[222] and those risks are substantially smaller than the risks from vaccine-preventable diseases.[223] However, anti-vaccine activists claim there are far more adverse events than are substantiated by scientific studies, and reject evidence to the contrary.[224] They often draw on two sources to make these claims: parental stories of vaccine injuries (even when those stories directly contradict scientific studies or are problematic on their face), and claims that pharmaceutical

222. *See* INST. OF MED., *supra* note 221, at 9; Offit & Moser, *supra* note 215, at e166 .

223. Calandrillo, *supra* note 7, at 389-93; *see also Comparison of Effects of Diseases and Vaccines*, PUB. HEALTH AGENCY CAN., http://www.phac-aspc.gc.ca/publicat/cig-gci/cedv-cemv-tab-eng.php (last updated July 17, 2012); *Facts for Parents: Diseases & the Vaccines that Prevent Them,* CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccines/vpd-vac/fact-sheet-parents.html (last updated Oct. 31, 2014); *Safety of Immunization*, AUSTL. GOV'T DEP'T HEALTH & AGING, http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/immune-safety.htm (last updated Nov. 28, 2013).

224. Anti-vaccine activists often claim that adverse events are underreported. *See The Under Reporting of Vaccine Side Effects: Vaccine Safety*, VACCINE SIDE EFFECTS, http://www.vaccine-side-effects.com/under-reporting-side-effects, (last visited Apr. 16, 2015); *Vaccination: An Informed Choice*, LIFEFORCE WELLNESS CTR., http://andreabrisson.com/articles/vaccinations.html (last visited Apr. 16, 2015). *See generally* David A. Kessler et al., *Introducing MEDWatch: A New Approach to Reporting Medication and Device Adverse Effects and Product Problems*, 269 JAMA 2765 (1993) (addressing drug side effects). For a discussion of underreporting by the FDA, see *United States Parent Consumer Activist Group Cites Institute of Medicine (IOM) Report on Vaccine Risks*, WHALE, http://www.whale.to/vaccine/nvic4.html (last visited Apr. 16, 2015). There is some support to the claim if our measure of adverse events is the Vaccine Adverse Events Reporting System, VAERS, alone. The program website itself mentions underreporting as an issue, with varying degrees of underreporting by adverse event; but there is also overreporting, including interpreting a reaction as more severe than it actually was or reporting of wrong diagnosis. Since it is hard to assess how often these two phenomena happen generally, the program site explains that drawing conclusions from VAERS data alone about trends and numbers is problematic; instead, other sources are also used. *See* M. Miles Braun, *Vaccine Adverse Event Reporting System ("VAERS"): Usefulness and Limitations*, INST. FOR VACCINE SAFETY, http://www.vaccinesafety.edu/VAERS.htm (last updated Feb. 12, 2014) (citing generally Steven Rosenthal & Robert Chen, *The Reporting Sensitivities of Two Passive Surveillance Systems for Vaccine Adverse Events*, 85 AM. J. PUB. HEALTH 1706 (1995)).

companies, governments, and doctors hide and manipulate the data.[225] The latter claim will be analyzed in the next section.

Parents who believe that their children were injured by vaccines are among the most passionate and most powerful of anti-vaccination advocates. Barbara Loe Fisher, one of the original founders of the anti-vaccination organization, the National Vaccine Information Center ("NVIC") claimed that her son's medical problems stem from the DPT vaccine he received as an infant.[226]

A parent can infer a causal connection between vaccines and health events that occur shortly after vaccination administration, especially when assertions on websites encourage such beliefs. Unfortunately, illnesses or medical conditions of uncertain etiology unrelated to vaccines will certainly be experienced by some subset of children within the first two years of life. It is problematic to assume an event is caused by a vaccine based on a temporal connection alone (and sometimes even without such a connection).[227] Although the findings of large-scale studies provide data as to the relationship between vaccines and various health conditions, distressed parents are reluctant to accept empirical findings refuting such alleged causal connections. As noted above, one commonly-cited example of this pattern is the belief that vaccines cause autism. Some parents tell a story of a child developing normally and then regressing into autism. For example, one parent writes:

> 3 days after my son's MMR he developed a fever, was hospitalised, developed chronic diahorea (sp) lost all his words and regressed. My daughter developed diahorrea after two DPT's, then lost all her

225. *See infra* Part IV.B.2.

226. *See generally* OFFIT, DEADLY CHOICES, *supra* note 210.

227. This assumption is the so-called *post hoc ergo proper hoc* fallacy (that is, "after therefore before"), and refers to an assumption that anything following a vaccine is caused by it. Wolfe et al., *supra* note 209, at 3247-48. It is a very powerful cognitive bias. *See generally* John Woods & Douglas Walton, *Post Hoc, Ergo Propter Hoc*, 30 REV. METAPHYSICS 569 (1977).

> words after the other DPT's (she was made to receive 5 DPT's as the third was late due to her illness).[228]

Another parent writes:

> "On December 5 1989 Robert had the jab. After that, it seemed the lights just went out. He was in a world of his own." Robert, then 14-months-old, had just started to speak. He stopped talking and began bumping into things. He became so unhappy he would repeatedly bang his head.
>
> When he was four he was diagnosed with autism and a type of bowel disease. Dad-of-three Richard, 46, from Hammersmith, West London, said: "Before his vaccine, Robert was perfectly healthy and very alert."[229]

Parents telling these stories appear to firmly believe that the MMR caused their child's autism. But as discussed above, the research clearly reveals the fallacies underlying their conclusions: children who have and have not received the MMR do not differ in the rates with which they are diagnosed with autism.[230] In other words, parental claims regarding the suspected relationship of the MMR and autism have been taken seriously, investigated—and have not been empirically supported.

Similarly, although posts on anti-vaccination sites have claimed that vaccines cause Sudden Infant Death Syndrome ("SIDS"),[231] peer-reviewed research does not find a causal

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228. Athene Burdge, Posting to *Parents Voice: Children's Adverse Outcomes Following Vaccination*, FOLLOWING VACCINATIONS, http://www.following vaccinations.com (last visited Apr. 17, 2015).

229. *Our Son Had MMR Shot . . . Then the Lights Went Out*, VACCINATION NEWS, http://www.vaccinationnews.com/DailyNews/February2002/SonMMrLIghtsOut.htm (last visited Apr. 17, 2015).

230. *See* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 42-45; H. Honda, et al., *No Effect of MMR Withdrawal on the Incidence of Autism: A Total Population Study*, 46 J. CHILD PSYCHOL. & PSYCHIATRY 572 (2005).

231. *See Vaccines And Sudden Infant Death Syndrome*, VACCINE AWARENESS NETWORK, http://www.vaccineriskawareness.com/Vaccines-And-Sudden-Infant-Death-Syndrome (last visited Apr. 17, 2015); *Mattresses, Sheepskins And SIDS: What Parents Need To Know*, MOMMYPOTAMUS, http://www.mommypotamus.com/do-sheepskins-cause-sids (last visited Apr. 17, 2015); Heidi Stevenson, *Proof that Big Pharma Doesn't Care About Vaccine Harm*, GAIA HEALTH, http://gaia-

link.[232] There is a strong potential for temporal connection in that SIDS rates peak at the age of 2-6 months,[233] and have been peaking at that age for a long time.[234] The current CDC recommended vaccine schedule includes doses at the ages of 2, 4, and 6 months.[235] With millions of babies vaccinated, some will die shortly after the vaccine administration by chance alone. In fact, an Australian study demonstrated just that.[236] The investigators calculated how often (given the rate of SIDS in Australia and the number of children vaccinated) SIDS occurs in close proximity in time to a vaccine. They concluded that by chance alone, 1.7 cases of SIDS will occur within twenty-four hours of a vaccine, and 3.5 within forty-eight hours.[237] Parents whose children die suddenly and without explanation will naturally ask themselves if the

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health.com/conventional-medicine/pharmaceuticals/proof-big-pharma-doesnt-care-vaccine-harm (last visited Apr. 17, 2015).

232. *See* M.M.T. Vennemann et al., *Sudden Infant Death Syndrome: No Increased Risk After Immunisation*, 25 VACCINE 336, 339 (2007). It should also be noted that, while the number of available vaccines has increased since the 1940s, infant mortality has decreased. Jiaquan Xu et al., *Deaths: Final Data for 2007*, 58 NAT'L VITAL STAT. REP., no. 19, May 20, 2010, at 13 fig.7, *available at* http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf.

233. *See* Nina Øyen et al., *Combined Effects of Sleeping Position and Prenatal Risk Factors in Sudden Infant Death Syndrome: The Nordic Epidemiological SIDS Study*, 100 PEDIATRICS 613, 613 (1997); *Sudden Infant Death Syndrome (SIDS) and Vaccines*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccinesafety/Concerns/sids_faq.html (last modified Jan. 15, 2010).

234. *See* Todd L. Savitt, *The Social and Medical History of Crib Death*, 66 J. FLA. MED. ASS'N 853, 854 (1979) ("The quantitative data is also convincing . . . Dr. Arnold Paltauf of Vienna presented tables, in an 1889 article on sudden unexplained infant deaths, showing that 59% of these children died between the ages of two and four months. A Surgeon of Police in Dundee, Scotland, reported in 1892 that of 258 instances of 'overlaying' investigated between 1882 and 1891, 60% (154) were children two to four months old, and 62% (159) occurred between October and March, the cold months of the year. Two years later, the editors of the *British Medical Journal* complained about the high number of overlaying deaths during the winter.").

235. *See* Ctrs. for Disease Control & Prevention, *supra* note 203.

236. *See generally* Julia M.L. Brotherton et al., *Probability of Coincident Vaccination in the 24 or 48 Hours Preceding Sudden Infant Death Syndrome Death in Australia*, 115 PEDIATRICS e643 (2005).

237. *Id.* at e643.

vaccine caused SIDS. If they have internet access and search with the query "do vaccines cause SIDS," they will find official sites indicating "no" and anti-vaccination sites saying "yes."[238]

Figure 2

Especially in their grief, some parents will believe—contrary to the evidence—that vaccines caused their child's death. These parents may then become advocates for the

238. Google search run on July 3, 2013, by author.

anti-vaccination movement. Once such a belief is accepted, it is very hard for the parent to reconsider and retreat from it.

Indeed, some parents attribute adverse medical outcomes to vaccines, without even the benefit of a temporal connection between vaccine administration and the development of a medical condition or symptom. For example, Mr. Markus Heinze asserts that the type I diabetes with which his daughter was diagnosed at the age of 3-1/2 years can be traced to the Hepatitis B vaccine she received when she was born,[239] despite research suggesting no connection between vaccines and diabetes.[240] The long time period, and the contrary research make his views implausible; nonetheless, he holds firmly to them and is a passionate advocate against vaccines.

There are numerous conditions that posts on anti-vaccination sites suggest are caused by vaccines. The infamous conspiracy site Whale.to[241] lists a variety of other conditions and diseases, indicating that these conditions are linked to vaccines, despite the lack of evidence for these

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239. *See generally* MARKUS HEINZE, VACCEPTABLE INJURIES: INCREASING CHILDHOOD DISEASES & DEVELOPMENTAL DISORDERS (2012).

240. *See* Ctrs. for Disease Control, *A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults*, 55 MORBIDITY & MORTALITY WKLY. REP., Dec. 8, 2006, at 12 ("In rare instances, chronic illnesses have been reported after hepatitis B vaccination, including chronic fatigue syndrome (192), neurologic disorders (e.g., leukoencephalitis, optic neuritis, and transverse myelitis) (193-195), rheumatoid arthritis (196, 197), type 1 diabetes (198), and autoimmune disease (199). However, no evidence of a causal association between these conditions or other chronic illnesses and hepatitis B vaccine has been demonstrated (183, 190, 200-203)."). *See generally* Cesare Belloni et al., *No Evidence of Autoimmunity in 6-Year-Old Children Immunized at Birth With Recombinant Hepatitis B Vaccine*, 110 PEDIATRICS e4 (2002); Paul A. Offit & Charles J. Hackett, *Addressing Parents' Concerns: Do Vaccines Cause Allergic or Autoimmune Diseases?*, 111 PEDIATRICS 653 (2003); Thierry Vial & Jacque Descotes, *Autoimmune Diseases and Vaccinations*, 14 EUR. J. DERMATOLOGY 86 (2004).

241. *Whale.to*, RATIONALWIKI, http://rationalwiki.org/wiki/Whale.to (last updated Apr. 11, 2015).

alleged connections.[242] The listed conditions include, among others, hair loss, Leprosy, Foot and Mouth Disease, and genetic disorders, for example, Down Syndrome.[243] Also listed on the site are conditions that vaccine opponents more commonly claim are associated with vaccine administration, such as eczema, epilepsy, and seizures.[244] For a parent mistrustful of authority and willing to accept these claims, vaccines can appear to be very scary indeed.

Two other common claims that fall under the heading of safety concerns deserve mention. One is the so-called "toxins gambit"[245]—the argument that vaccines contain dangerous toxins and harmful ingredients. The pervasiveness of this assertion motivated a well-known vaccine expert and a colleague to write an article, refuting this claim.[246] The toxins-gambit argument proceeds by listing vaccine ingredients (sometimes adding ingredients that are not actually in vaccines, like anti-freeze or peanut oil),[247] often directing the reader to the vaccine inserts, where the ingredients are also listed, and posing the rhetorical question as to whether a parent wants these injected into her infant.[248] This approach can be very effective in a world where people worry about toxins and man-made chemicals, especially since quite a few of the vaccine ingredients can be problematic in large amounts. Anti-vaccination activists reject scientific explanations regarding these ingredients in vaccines. They disagree that "the dose makes the poison" and that the

242. *Vaccine Disease*, WHALE.TO, http://www.whale.to/vaccines/diseases.html (last visited Apr. 17, 2015).

243. *Id.*

244. *See id.*

245. Kata, *Anti-Vaccine Activists*, *supra* note 209, at 3781 tbl. 2.

246. *See generally* Paul A. Offit & Rita K. Jew, *Addressing Parents' Concerns: Do Vaccines Contain Harmful Preservatives, Adjuvants, Additives, or Residuals?*, 112 PEDIATRICS 1394 (2003).

247. *In the Name of 'Protection,'* THINKING MOMS' REVOLUTION (May 20, 2013), http://thinkingmomsrevolution.com/in-the-name-of-protection; *Vaccines . . . Are They Safe???*, LEADING EDGE HEALTH (Oct. 27, 2012), http://leadingedgehealth.org/2012/10/27/206; *VIC (Vaccine Information Coalition)*, VACCINE INFO. COALITION, http://vacinfo.org/ingredients.htm (last visited Apr. 17, 2015).

248. *See VIC (Vaccine Information Coalition)*, *supra* note 247.

ingredients are not harmful in the minute amounts present in vaccines.[249] The activists ignore the fact that most vaccine ingredients are all around us or already in our bodies. For example, aluminum is abundant in many food products, in the earth and in other sources. Formaldehyde is in many fruits in much larger amounts than in vaccines, and is also produced by our bodies as part of our metabolic process.[250] And vaccine opponents reject or disbelieve studies examining the safety of specific ingredients.[251]

Parents who oppose vaccinations and those who do not may share a last concern: that today's children receive too many vaccines too soon.[252] Consistent with the CDC schedule, children receive multiple shots at the same vaccine administration visit. And, the number of diseases against which children are vaccinated has increased. These trends have led to concern among many parents. Experts explain, in response, that this concern is unfounded for two reasons. First, while the number of available vaccines increased over the last thirty years, the number of antigens in those vaccines[253] has actually decreased.[254] Second, experts point out that, beginning at birth, infants are constantly surrounded by immune challenges from bacteria and viruses

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249. Kata, *Anti-vaccine Activists*, *supra* note 209, at 3783; Offit & Moser, *supra* note 215, at e168.

250. *See generally* Offit & Jew, *supra* note 246.

251. For studies that address aluminum, see generally L.S. Keith et al., *Aluminum Toxicokinetics Regarding Infant Diet and Vaccinations*, 20 VACCINE S13 (2002); Robert J. Mitkus et al., *Updated Aluminum Pharmacokinetics Following Infant Exposures Through Diet and Vaccination*, 29 VACCINE 9538 (2011).

252. *See generally* Paul A. Offit et al., *Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System?*, 109 PEDIATRICS 124 (2002) [hereinafter Offit et al., *Addressing Parents' Concerns*].

253. "[A]n antigen is the substance that binds specifically to the respective antibody. . . . Each antibody from the diverse repertoire binds a specific antigenic structure by means of its variable region interaction (CDR loops), [in] analogy [to] the fit between a lock and a key." *Antigen*, WORLD HERITAGE ENCYCLOPEDIA, http://www.worldheritage.org/article/WHEBN0000001915/Antigen (last visited Apr. 17, 2015).

254. *See* Gerber & Offit, *supra* note 46, at 459; Offit et al., *Addressing Parents' Concerns*, *supra* note 252, at 127.

that can pose risks to them. Compared to the challenges children face from the natural world, the challenges they face from vaccines are extremely small.[255]

2. *Mistrust and Conspiracy Theories.* Mistrust of government, and more generally, of those viewed as powerful, including medical practitioners, has been a facet of the American political culture since the 1960s, and has become more pronounced over time.[256] Scandals have created mistrust in pharmaceutical companies following revelations about drugs initially claimed to be safe that were ultimately demonstrated to cause serious harm to users, such as Diethylstilbestrol **(**DES)[257] and the anti-inflammatory drug Vioxx.[258] Skepticism about the intentions of large corporations and government has at times been warranted.[259] But anti-vaccination activists view the whole apparatus supporting vaccines as the product of a conspiracy. Some of their claims include: that the science supporting vaccines is paid for and controlled by "big pharma;" that the pharmaceutical industry also controls the vaccine safety research conducted by university researchers and centers

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255. *See* Offit et al., *Addressing Parents' Concerns*, *supra* note 252, at 126 ("Studies on the diversity of antigen receptors indicate that the immune system has the capacity to respond to extremely large numbers of antigens. Current data suggest that the theoretical capacity determined by diversity of antibody variable gene regions would allow for as many as 10^9 to 10^{11} different antibody specificities."). And in fact, Offit et al. point out that the current immunological challenge is substantially less than the one children faced in the 1980s. The number of diseases we vaccinate against increased. Yet, improvements in technology have reduced the number of antigens (i.e., proteins that trigger an immune response). *See id.* at 126-27.

256. *See* HERBERT J. GANS, DEMOCRACY AND THE NEWS 16-17 (2003); EVERETT CARLL LADD & KARLYN H. BOWMAN, WHAT'S WRONG: A SURVEY OF AMERICAN SATISFACTION AND COMPLAINT 82-87, 97-104 (1998).

257. DES is a drug prescribed during pregnancy which caused serious injuries in a proportion of the fetuses whose mothers took it. *See* Sze Julie, *Boundaries and Border Wars: DES, Technology, and Environmental Justice*, 58 AM. Q. 791 (2006). For a discussion of the DES story, see Julie Sze, *Boundaries and Border Wars: DES, Technology, and Environmental Justice*, 58 AM. Q. 791-93 (2006).

258. For a discussion of the Vioxx scandal, see TOM NESI, POISON PILLS: THE UNTOLD STORY OF THE VIOXX DRUG SCANDAL 156-59 (2008).

259. *See* BEN GOLDACRE, BAD SCIENCE: QUACKS, HACKS, AND BIG PHARMA FLACKS 126-27 (2010).

throughout the globe; that government is in the pocket of the pharmaceuticals industry; that doctors are motivated by financial gain alone; and that doctors make that money from promoting vaccines.[260] In addition, vaccine opponents believe that anyone speaking up for vaccines is being paid to do so or has a profit motive. As Kata said: "[c]olloquially called the 'pharma shill gambit,' this [claim] alleges those who defend vaccines do so because they are hired to promote pharmaceutical products for devious purposes or profit."[261]

In reality, however, vaccine safety and effectiveness research is conducted in many countries around the world, by large groups of researchers drawing on different sources of funding. Vaccines are accepted as a life-saving, health-promoting intervention by governments in countries that have national health insurance, where the financial incentive is to minimize health costs. Thus, for example, focusing on the English-speaking countries, vaccines are just as important and beneficial in the view of the Australian government,[262] the Canadian government,[263] and the British government,[264] as they are in the United States. According to the World Health Organization:

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260. Kata, *Pandora's Box*, *supra* note 209, at 1710.

261. Kata, *Anti-vaccine Activists*, *supra* note 209, at 3784.

262. *See, e.g.*, *About the Program*, AUSTL. GOV'T DEP'T HEALTH, http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/about-the-program (last visited Apr. 11, 2015) ("Immunisation is a simple, safe and effective way of protecting people against harmful diseases before they come into contact with them in the community. Immunisation not only protects individuals, but also others in the community, by reducing the spread of disease.").

263. *See, e.g.*, *Immunizing Your Child*, TSAWOUT FIRST NATION (Sept. 7, 2011), http://tsawout.com/past-news-items/684-immunizing-your-child ("One of the most important things you can do as a parent is to make sure your child is immunized against 13 serious vaccine-preventable diseases. Vaccines have saved the lives of more babies and children than any other medical intervention in the past 50 years.").

264. *See How Vaccination Saves Lives*, NHS CHOICES, http://www.nhs.uk/Conditions/vaccinations/Pages/vaccination-saves-lives.aspx (last visited Apr. 11, 2015) ("Due to vaccinations, we no longer see smallpox, and polio has almost been eradicated. No wonder vaccination is considered a modern miracle. Vaccination is one of the greatest breakthroughs in modern medicine. No other medical intervention has done more to save lives and improve quality of life.").

> [i]mmunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered effectively through outreach activities; and vaccination does not require any major lifestyle change.[265]

The assertion that pharmaceutical company control of government, researchers, and the World Health Organization leads to world-wide support for vaccines is unsubstantiated. To the contrary, vaccine production has not been historically a particularly lucrative component of the pharmaceutical industry's activities. Indeed, governmental involvement has been necessary to ensure continued production, for example, when manufacturers were leaving the market in response to lawsuits filed in the 1980s.[266]

3. *Alternative Medicine.* A recent survey organized by an anti-vaccination group used anti-vaccination sites to solicit respondents for a survey comparing the health of vaccinated and unvaccinated children.[267] The study's methodology is seriously flawed, introducing multiple sources of bias that undercut the scientific validity of the findings. Such sources of bias include solicitation of participants through anti-vaccination sites and exclusive reliance upon parental recollections, without verification from medical records.[268] Thus, little weight can be given to "findings" that unvaccinated children are healthier than vaccinated children. By contrast, a German study that examined medical records of vaccinated and unvaccinated children found no significant differences in health outcomes between these groups, except that unvaccinated children had higher

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265. *Immunization*, WORLD HEALTH ORG., http://www.who.int/topics/immunization/en (last visited Apr. 11, 2015).

266. *See* OFFIT, DEADLY CHOICES, *supra* note 210, at 20-23; Geoffrey Evans et al., *Legal Issues*, *in* VACCINES 1483, (Stanley A. Plotkin et al. eds., 2013).

267. *See State of Health of Unvaccinated Children*, VACCINE INJURY, http://www.vaccineinjury.info/results-unvaccinated/results-general.html (last visited June 16, 2015).

268. *See id.*

rates of vaccine preventable diseases.[269] But the aforementioned survey did ask the non-vaccinating parents what type of treatment for illnesses they prefer. It reports: "The parents stated that their preferred treatment was naturopathic and homeopathic. Less than 10% said they preferred conventional medicine. Treatment in the 'other' column was mainly chiropractic and supplemental."[270]

Some alternative practitioners—though certainly not all—also reject vaccination and warn patients not to be vaccinated. Some chiropractors subscribe to this view,[271] as do other groups of alternative healers.[272]

Alternative practitioners may have a financial motive to direct people away from modern medicine and into alternative treatments (though they may well—primarily or in addition—truly believe in their claims). Provision of alternative treatments is a lucrative business, as detailed by Dr. Paul Offit, an expert on vaccines,[273] in a recent book on

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269. *See* Roma Schmitz et al., *Vaccination Status and Health in Children and Adolescents: Findings of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS)*, 108 DEUTSCHES ARZTEBLATE INT'L 99, 99 (2011).

270. *See supra* note 267.

271. OFFIT, DEADLY CHOICES, *supra* note 210, at 118.

272. *See, e.g.*, PAUL A. OFFIT, DO YOU BELIEVE IN MAGIC? THE SENSE AND NONSENSE OF ALTERNATIVE MEDICINE 215-17, 243 (2013) [hereinafter OFFIT, DO YOU BELIEVE IN MAGIC?].

273. "Dr. Offit is a professor of pediatrics in the Division of Infectious Diseases at The Children's Hospital of Philadelphia and the Maurice R. Hilleman Professor of Vaccinology and Professor of Vaccinology at the Perelman School of Medicine at the University of Pennsylvania." *Vaccine Education Center*, THE CHILDREN'S HOSP. PHILA., http://www.chop.edu/service/vaccine-education-center/about-the-vaccine-education-center.html (last visited Apr. 11, 2015). He published widely on vaccines—both academic articles and articles aimed to educate parents—and wrote several books on the topic. *Id.* He is a co-inventor of a vaccine to prevent rotavirus, a disease that hospitalized tens of thousands of children in the United States and harmed and killed several, *see Rotavirus*, *in* EPIDEMIOLOGY AND PREVENTION OF VACCINE-PREVENTABLE DISEASES: THE PINK BOOK 263 (William Atkinson et al. eds., 12th ed. 2012), *available at* http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/rota.pdf, and killed, until recently, nearly half a million children a year world-wide. *Immunization, Vaccines and Biologicals: Rotavirus*, WORLD HEALTH ORG., http://www.who.int/nuvi/rotavirus/en (last visited Apr. 11, 2015). For speaking up in favor of vaccination, he is reviled and threatened by anti-vaccination activists. *See* Claudia Kalb, *Dr. Paul*

the topic.[274] Practitioners promoting the belief that vaccines cause autism have made profits from alternative treatments.[275] By contrast, as Kata explains, many parents find appealing "the idea of moving 'back to nature' (on 88% of sites), where natural methods of disease prevention were preferable—this included breastfeeding, eating whole foods, and allowing children to experience illnesses naturally."[276]

Allowing children to experience these diseases naturally, however, leads to substantial costs in life, disability, and suffering. Before the advent of vaccines, many children died, and even more suffered, whether or not the children were breastfed or on alternative diets.[277] There are no scientifically-documented alternatives to vaccines for prevention of these diseases. In light of the limited treatment options once these diseases are contracted, vaccines constitute the only method we have to protect against the dangers these diseases present.

4. *Civil Rights.* Anti-vaccination activists often frame vaccination as coerced medical procedures and emphasize their desire to be free from state interference.[278] Barbara Loe Fisher, a known anti-vaccine advocate,[279] in a webpost on the (misleadingly named) National Vaccine Information Center ("NVIC"), an anti-vaccination organization, critiques statutes requiring vaccination before attending public schools:

Offit: Debunking the Vaccine-Autism Link, NEWSWEEK (Oct. 24, 2008), http://www.newsweek.com/dr-paul-offit-debunking-vaccine-autism-link-91933; Donald G. McNeil, *Book Is Rallying Resistance to the Anti-vaccine Crusade*, N.Y. TIMES (Jan. 12, 2009), http://www.nytimes.com/2009/01/13/health/13auti.html?_r=0.

274. *See* OFFIT, DO YOU BELIEVE IN MAGIC?, *supra* note 272, at 145-47.

275. *See* OFFIT, AUTISM'S FALSE PROPHETS, *supra* note 30, at 120-25; OFFIT, DO YOU BELIEVE IN MAGIC?, *supra* note 272, at 137-38.

276. *See* Kata, *Pandora's Box*, *supra* note 209, at 1712.

277. *See* Roush et al., *supra* note 3, at 2160.

278. *See* Kata, *Pandora's Box*, *supra* note 209, at 1710; Kata, *Anti-vaccine Activists*, *supra* note 209, at 3779.

279. *See* OFFIT, DEADLY CHOICES, *supra* note 210, at 7-9.

> [W]e are standing publicly for the legal right to follow our conscience when making educated vaccine decisions for our families. . . . No American should be legally forced to play vaccine roulette with a child's life. . . . If we cannot be free to make informed, voluntary decisions about which pharmaceutical products we are willing to risk our lives for, then we are not free in any sense of the word. Because if the State can tag, track down and force individuals against their will to be injected with biological products of unknown toxicity today, then there will be no limit on which individual freedoms the State can take away in the name of the greater good tomorrow.[280]

Statutes imposing any limitations on availability of vaccine exemptions are portrayed by anti-vaccination activists as coercive and in violation of their rights. Recently, Oregon adopted a law requiring parents seeking a non-medical exemption to document that they had been informed about the risks and benefits of immunization by a health care provider or that they watched an online "interactive video" providing such information.[281] Language on anti-vaccination sites often claim that parents are not given sufficient information to make an informed decision about vaccinating.[282] This assertion is made although federal law requires doctors to provide the Vaccine Information Sheet created by the Department of Health and Human Services to the parents before vaccination.[283] The NVIC opposed the Oregon bill. Posted on NVIC was the following message:

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280. Barbara Loe Fisher, *Vaccine Freedom of Choice: Presented at the Rally for Conscientious Exemption to Vaccination*, NAT'L VACCINE INFO. CTR. (Oct. 16, 2008), http://www.nvic.org/informed-consent/freedomofchoice.aspx.

281. OR. REV. STAT. § 433.267 (2013); John A. Kitzhaber, *New Process for Claiming Non-Medical Exemptions to School Immunization Requirements Begins March 1, 2014*, OR. HEALTH AUTH. (July 1, 2013), http://public.health.oregon.gov/PreventionWellness/VaccinesImmunization/GettingImmunized/Documents/SchNon-medExmptMemo.pdf.

282. *See, e.g.*, Norma Erickson, *Vaccines: Why are Informed Consent Laws Being Ignored?*, HEALTH IMPACT NEWS (July 8, 2013), http://healthimpactnews.com/2013/vaccines-why-are-informed-consent-laws-being-ignored.

283. 42 U.S.C. § 300aa-26 (2012). For an explanation why this fulfills the requirements of informed consent, see Dorit Reiss, *Informed Consent*, MOMS WHO VAX (Jan. 20, 2014), http://momswhovax.blogspot.com/2014/01/informed-consent-and-vaccines.html.

> SB 132 forces the parent to submit themselves to a lecture by a doctor or state approved health care practitioner about vaccination and obtain their signature on the government form OR to complete a state government defined vaccine education module and obtain and show certification of completion for the exemption to be valid.[284]

A Facebook page called Educate4theInjured describes the bill as "destroying the rights of families to remain drug free."[285]

V. RESPONDING TO THE NONVACCINATION CRISIS: POSSIBLE AVENUES OF POLICY REFORM

The foregoing Parts demonstrate that rates and patterns of nonvaccination create problems for the health of our population. Much of the increase in nonvaccination rates can be attributed to resistance from anti-vaccine activists whose assertions about vaccines are not empirically supported. As Part II highlights, states have considerable constitutional leeway to impose requirements for childhood vaccines. This Part examines how the law can respond to the challenges presented by the nonvaccination trends. In particular, we analyze considerations related to the proposed tightening or elimination of school-entry vaccine requirement exemptions. We consider as well other potential policy changes that may restrict options or create disincentives for, or impose penalties on failure to comply with, school-entry immunization mandates. We also explore options that offer incentives for compliance.

A. *Choosing the Legal Tools to Promote Vaccination Compliance*

States have substantial leeway to impose legal requirements aimed at increasing rates of childhood immunization. In choosing the legal mechanisms to respond to nonvaccination trends, several considerations are relevant: effectiveness; compatibility with constitutional

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284. Dawn Richardson, *State Legislative Updates: The Final Days and What You Can Do to Help*, NAT'L VACCINE INFO. CTR. (May 23, 2013), http://www.nvic.org/nvic-vaccine-news/may-2013/state-legislative-updates-the-final-days.aspx.

285. *Educate4theInjured.org*, FACEBOOK (June 30, 2013), https://www.facebook.com/Educate4theInjured/posts/528749553844966.

limitations on state power; social values; bioethical principles; political feasibility; cost; and efficiency.

If our society was one in which the government had unfettered authority to accomplish whatever aims it sought, policymakers could choose the most effective and efficient methods that are the most likely to achieve their goals, without constitutional and other limitations. Of course, state power is not absolute in our democracy, and all policies are subject to a myriad of legal restrictions. Part II above, therefore, lays out the legal landscape within which childhood vaccination policies are formulated and enforced, identifying the permissible boundaries of state action. Policy reform must operate within those parameters which we concluded[286] are broader and more flexible than is reflected by current state immunization laws. Thus, for example, personal belief exemptions are not required constitutionally or on any other basis that restricts state authority. It also appears that religious exemptions to school-entry vaccination requirements are not constitutionally mandated. Yet, many states retain such exemptions because doing so serves certain other policy goals.

Our society and its guiding principles respect individual autonomy in health care decisionmaking,[287] and where children are concerned, our society values parental discretion in health care decisionmaking.[288] Beyond *constitutional* protection of parents' authority to make decisions about their children's welfare, we also guard such free choice as cherished principle at the core of American traditions. Thus, even where it is constitutionally permissible to limit choices, states may prefer to seek compliance with vaccination

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286. *See supra* Part II.C.

287. TOM L. BEAUCHAMP & JAMES F. CHILDRESS, PRINCIPLES OF BIOMEDICAL ETHICS 99-148 (6th ed. 2009); GERALD DWORKIN, THE THEORY AND PRACTICE OF AUTONOMY (1988); BARRY R. FURROW ET AL., HEALTH LAW: CASES MATERIALS, AND PROBLEMS 1555-76 (7th ed. 2013) (discussing autonomy interests in health care decisionmaking by competent adults); WILLARD GAYLIN & BRUCE JENNINGS, THE PERVERSION OF AUTONOMY: COERCION AND CONSTRAINTS IN A LIBERAL SOCIETY (2003); Bruce Jennings, *Autonomy*, *in* THE OXFORD HANDBOOK OF BIOETHICS 72 (Bonnie Steinbock, ed., 2007).

288. See *supra* notes 120-22.

policies through methods that restrict parental decisions as minimally as possible.

Along similar lines, health care interactions between individuals and practitioners are typically guided by the doctrine of informed consent, which strives to ensure that health care decisions are the product of competent, voluntary, and informed choices.[289] In the context of parents' decisionmaking regarding children's health, parental freedom from state intervention in their choices is not directly analogous to the notion of individual autonomy because parents are deciding on behalf of their children. Yet, parents are treated in law and ethics as surrogates representing children's interests, and are vested with the authority to consent or dissent in the child's place. As such, those values inherent in the doctrine of informed consent and respect for the role of parents in children's lives must be the starting place when considering reforms in public policy.[290]

Furthermore, our nation was founded on principles that value and respect diversity and pluralism, including in personal secular and religious beliefs.[291] As such, even where

289. BEAUCHAMP & CHILDRESS, supra note 287 at 117-21. For further analysis and discussion of the doctrine, see, for example, *id.* at 101-49; FURROW ET AL., *supra* note 287, at 209-53; Rita Barnett-Rose, *Informed Consent, Psychotropic Medications, and a Prescribing Physician's Duty to Disclose Safer Alternative Treatments*, 16 DEPAUL J. HEALTH CARE L. 67, 71-77 (2014); Jaime Staples King & Benjamin Moulton, *Rethinking Informed Consent: The Case for Shared Medical Decision-Making*, 32 AM. J.L. & MED. 429 (2006).

290. Because the focus of vaccine laws are population-based, and the benefits to individuals rely substantially on achieving population-wide success, Wendy Parmet suggests modifying the requirements of informed consent disclosure in the context of public health interventions such as vaccines to include information about the *social* benefits and *social* consequences of vaccination decisions together with the standard discussions of risks and benefits to individuals. *See* WENDY L. PARMET, POPULATIONS, PUBLIC HEALTH, AND THE LAW 201-02 (2009).

291. *See, e.g.*, WILLIAM R. HUTCHISON, RELIGIOUS PLURALISM IN AMERICA: THE CONTENTIOUS HISTORY OF A FOUNDING IDEAL 1 (2003); Darryn Cathryn Beckstorm, *Balancing Civic Values and Parents' Free Exercise Rights*, 45 GONZ. L. REV. 149, 162 (2010) ("American society was created on a notion of pluralism, and when parents are able to raise their children with values specific to their religious tradition, society is able to recognize the benefits of pluralism through this accommodationist approach."); Rebecca L. Brown, *Common Good and Common Ground: The Inevitability of Fundamental Disagreement*, 81 U. CHI. L. REV. 397 (2014).

the First Amendment or related state constitutional provisions do not limit state action as infringements on protected rights, policymakers may choose to promote, respect, or tolerate diversity and pluralism of secular and religious beliefs.[292]

The normative questions about policy options have pragmatic aspects as well. Public health policy success typically depends on a substantial degree of voluntary cooperation.[293] While cooperation can be compelled through a variety of means, some of which will be noted below, enforcement can be difficult, and costly, and individuals and institutions may find ways around legal policies that are not consistent with social norms. Thus, vaccination policies, to be most effective, should resonate with predominant social attitudes and values. To the extent that public education about the safety and benefits of vaccination policies can help shape those attitudes and values, such population-wide efforts are an essential component of policy responses, even

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292. Of course, we must ask the question of whose religious beliefs one must respect or tolerate when minors' welfare is involved. Typically, free exercise cases involving children focus on protection of parental religious preferences. Whether children share those beliefs or would seek those exemptions if legally capable of exercising religious freedom is often ignored by the courts. *See, e.g.*, Jennifer E. Chen, *Family Conflicts: The Role of Religion in Refusing Medical Treatment for Minors*, 58 HASTINGS L.J. 643 (2007); James G. Dwyer, *Parents' Religion and Children's Welfare: Debunking the Doctrine of Parents' Rights*, 82 CAL. L. REV. 1371 (1994); *see also* Wisconsin v. Yoder, 406 U.S. 205, 241 (1972) (Douglas, J., dissenting) (arguing that the adolescent children in *Yoder* have independent interests from their parents which should have been recognized by the Court in its analysis); Emily Buss, *What Does Frieda Yoder Believe?*, 2 U. PA. J. CONST. L. 53 (1999) (agreeing with Justice Douglas regarding the premise that children's free exercise rights should at times be considered by courts independent from that of their parents, but disagreeing as to mechanisms for ascertaining the nature of those interests).

In addition to the values cited in text above, the bioethical principle of justice requires fairness and equity in the facial requirements and implementation of policies, with corollary obligations not to discriminate among similarly-situated population subgroups grounded on statutory and constitutional law. *See, e.g.*, BEAUCHAMP & CHILDRESS, *supra* note 287, at 249-301.

293. *See* Lawrence O. Gostin, Scott Burris & Zita Lazzarini, *The Law and the Public's Health: A Study of Infectious Disease Law in the United States*, 99 COLUM. L. REV. 59, 120 (1999).

where more coercive interventions are necessary to secure the compliance of those who cannot be persuaded.

Furthermore, laws will not be enacted if they cannot successfully maneuver through the political process, and not everything that's normatively desirable is politically feasible. In the vaccination context, many laws proposed—either those proposed by the pro-vaccine side or by the anti-vaccine side—have not been adopted.[294] Given the unpredictability of political factors, such factors will not be the focus here, but are acknowledged as important considerations.[295] Finally, because enforcement is costly, and public resources are limited, efficiency matters and should be considered as well. For example, is individual tort litigation an efficient tool in this context? That would probably depend on the deterrent power of a tort decision imposing liability. Transparency may be an extremely cost effective tool when information is already available, such as where rates of exemption by school exist, and more costly if data must be collected pursuant to implementation. "Opt-out" systems are easier to enforce and more effective than "opt-in" systems. The value of efficiency may also favor extension, alteration, or application in a new context of an existing and familiar tool, rather than creation of a new tool from scratch. The additional cost may be justified, however, when the new tool is particularly effective. These considerations, while not exhaustive, inform policy choices among legal tools in response to nonvaccination trends.

In the context of childhood vaccination, a policy preference *for the least coercive approach that is feasible and effective helps strike the best balance among the public's health, the well-being of the children who would receive vaccinations, and the interests of parents to make decisions about their children's healthcare*. This approach is consistent with the societal and bioethical values respecting autonomy, parental discretion in childrearing, diversity, and the

294. *See* Lillvis et al., *supra* note 152.

295. Political feasibility is contingent on many factors and, for that reason, difficult to predict. For example, increasing outbreaks of vaccine preventable diseases may facilitate adoption of new policies not previously politically-feasible. Unrelated changes in the political makeup of a legislature or in the personnel in courts or executive agencies may affect feasibility.

practical benefits of striving to achieve voluntary cooperation. Furthermore, children will also benefit if conflict between their parents and the state over the boundaries of parental authority are minimized. It should be reemphasized, however, that the benefits of less coercive approaches must not sacrifice efficacy. The purpose of policy reform is the protection of children and others in society from the harms of vaccine-preventable diseases to the greatest extent possible. Therefore, the least coercive tools are preferred, with the caveat that they must be sufficiently effective to achieve goals such as maintaining or restoring herd immunity of vaccine-preventable diseases.

Our analysis tracks some of the key themes incorporated in a 2002 exploration of public health ethics. A team of distinguished scholars laid out certain key moral considerations central to debates in the field of public health, adapting and applying classic principles of biomedical ethics.[296] These considerations include: producing benefits, avoiding/preventing/removing harms, utility (i.e, producing the maximal balance of benefits over harms and other costs), respecting autonomous choices and actions, including liberty of action; distributing benefits and burdens fairly; and ensuring public participation.[297] Where there are conflicts among the moral concerns, the authors emphasize considering five "justificatory conditions: effectiveness, proportionality, necessity, least infringement, and public justification"[298] "to help determine whether promoting public

296. James F. Childress et al., *Public Health Ethics: Mapping the Terrain*, 30 J.L. MED. & ETHICS 170, 173 (2002).

297. *Id.* at 171-72. Also included in the list are: protecting privacy and confidentiality, keeping promises and commitments, disclosing information honestly and truthfully, and building and maintaining trust. *Id.* at 172.

298. *Id.* at 173. "Effectiveness" refers to the likelihood that the policy will achieve the public health benefits on which it is grounded. "Proportionality" requires that the probable public health benefits outweigh the infringed moral considerations, such as autonomy or privacy. "Necessity" goes to the essential nature and importance of the public health goals sought. "Least infringement," is most consistent with our notion of least coercive alternative, or depending upon the type of infringement, one may focus on "least restrictive alternative," or "least intrusive alternative." The shared policy goal among these notions is that the public health policy will seek to minimize conflict with other moral values or associated rights to the greatest extent possible, while balancing the other

health warrants overriding such values of individual liberty or justice in particular cases."[299]

Critical to determinations of effectiveness, however, is attention to the different reasons underlying parental decisions not to vaccinate. Thus, as detailed in Part IV, nonvaccinating behavior is motivated by a variety of factors, and in order to be effective, policymakers must be attuned to the question of whether a particular legal tool will appropriately target the objections and/or obstacles to vaccination compliance characterizing various subgroups within the nonvaccinating segments of the populace. For example, tightening procedural requirements for exemptions—especially by adding an educational component—may be effective with Vaccine Hesitant parents, by giving health care providers the opportunity to correct parental misconceptions. Financial and other incentives, together with education, may change the calculus for Vaccine Resistant parents. It is doubtful that anything short of mandates or direct coercion will change the behavior of Vaccine Rejector parents.

B. *A Continuum of Legal Tools*

There are multiple ways to sort and classify legal tools. Because the goal of these legal policy proposals is to increase childhood vaccination rates in the face of parental refusal, policy reform seeks to change parental behavior. Although there are a myriad of ways to conceptualize legal methods for promoting behavior change, we focus particularly on the degree to which various methods affect autonomy, for the reasons laid out in Subpart A above. Autonomy is a core value embedded in American constitutional, common, and statutory law governing health care and parental decisions, and in societal values and bioethical principles. Therefore, we must consider the impact of any proposed legal reforms in constraining free choice. Thus, we organize the options described and discussed below on a continuum, based on

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justifications and values identified. Finally, "public justification" focuses on informing the public about the infringement, its justifications, and so on, so as to educate the public, be accountable, and maintain public trust.

299. *Id.*

their potential or perceived *coerciveness*. The use of a graduated continuum of public health policy responses defined by degrees of limitation on personal choice is consistent with frameworks identified by many authors in the public health context. For example, Professors Gostin, Burris, and Lazzarini propose that "[w]here purely voluntary strategies fail" in the context of essential public health measures, the availability of a "graded series of less restrictive alternatives" to promote compliance and use of the least restrictive alternative "that will accomplish the public health goal," best strikes the balance between such goals and our legal and ethical values.[300] The Nuffield Council on Bioethics proposes an "intervention ladder."[301] "The range of options available to government and policy makers can be thought of as a ladder of interventions, with progressive steps from individual freedom and responsibility towards state intervention as one moves up the ladder. In considering which 'rung' is appropriate for a particular public health goal, the benefits to individuals and society should be weighed against the erosion of individual freedom."[302]

We use the term *coerciveness* to delineate the degree of restriction of free choice that the policy response introduces. The term is one that has been used in a variety of legal contexts, frequently without a commonly-shared definition across, or even within, legal contexts.[303] Our emphasis is on

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300. Gostin, Burris & Lazzarini, *supra* note 293, at 124. To the extent that Gostin and colleagues are using the term "restrictive" to emphasize restrictions in free choice, the concept is consistent with our use of the term "coercive" here.

301. *Public Health: Ethical Issues*, NUFFIELD COUNCIL ON BIOETHICS (2007), *available at* http://nuffieldbioethics.org/wp-content/uploads/2014/07/Public-health-ethical-issues.pdf [hereinafter NUFFIELD COUNCIL].

302. *Id.* at 42.

303. *See, e.g.*, Wendy E. Parmet, *Beyond Paternalism: Rethinking the Limits of Public Health Law*, 46 CONN. L. REV. 1771, 1784-86 (2014) (briefly contrasting several perspectives on coercion and legal policies); Alan Wertheimer & Franklin G. Miller, *Payment for Research Participation: A Coercive Offer?* 34 J. MED. ETHICS 398 (2008) (discussing concepts of coercion in the context of research participation). Concepts of coerciveness in lawmaking abound in a range of areas, such as those involving the constitutionality of Congress' exercise of its Spending Power. *See, e.g.*, Mitchell N. Berman, *Cocercion, Compulsion, and the Medicaid Expansion: A Study in the Doctrine of Unconstitutional Conditions*, 91 TEX. L. REV. 1283, 1289 (2013) (highlighting the lack of consistency in the U.S. Supreme

the use of force, threats thereof, and other forms of influence to gain compliance with a governmental policy, in this case, vaccination of children. We recognize the overlaps among the concepts of: coerciveness (or notions of lesser coercive policy alternatives); restrictiveness (or lesser restrictive alternatives) and intrusiveness (or lesser intrusive alternatives) used by Gostin and colleagues[304] and the Nuffield Council,[305] cited above; and infringement (or least infringement), cited by Childress and colleagues.[306] All of these concepts focus on the degree to which governmental policy limits, restricts, intrudes upon, or infringes on individuals' opportunities to resist, or not comply with, governmental directives. Depending on the nature of the governmental intervention and how imposition of state authority affects individuals subject to it, one term or the other may seem more appropriate.

We acknowledge that even where actors retain the opportunity *not* to comply with legal directives, the consequences imposed on noncompliance and compliance can have coercive effects. Various forms of coercion can include *the use of force or threat thereof, the imposition of negative consequences (e.g., penalties, restrictions, costs, or withdrawal of benefits following noncompliance)* or *positive consequences (e.g., availability of rewards following compliance) to control or influence the behavior of others*, or in this context specifically, to improve childhood vaccination rates.

Court's use of terminology such as coercion and compulsion: "in loose fashion, sometimes treating them as synonyms, sometimes not, and never carefully defining either"); Andrew B. Coan, *Commandeering, Coercion, and the Deep Structure of American Federalism*, 95 B.U. L. REV. 1 (2015); Kathleen Sullivan, *Unconstitutional Conditions*, 102 HARV. L. REV. 1413 (1989). In Establishment Clause jurisprudence, see, for example, Rex Ahdar, *Regulating Religious Coercion*, 8 STAN. J. C.R. & C.L. 215 (2012), and regarding contracting and negotiation strategies, see, for example, Paul F. Kirgis, *Bargaining with Consequences: Leverage and Coercion in Negotiation*, 19 HARV. NEGOT. L. REV. 69 (2014).

304. *See supra* notes 293, 300 and accompanying text.

305. *See supra* notes 301-02 and accompanying text.

306. *See supra* notes 296-99 and accompanying text.

Labeling various types of legal policies in the vaccination context on a continuum of coerciveness necessarily requires some oversimplification. Despite that limitation, we have characterized the different forms of legal influence that constitute steps on the continuum as: *use of force*, *mandates (via criminal penalties or conditioned access to benefits), cost-internalization, mandated transparency, procedural tightening, positive incentives,*[307] *and persuasion through education,* while recognizing the inherent interactions among these categories.

The *use of force* to vaccinate a child is arguably the most coercive form of intervention in that it bypasses the exercise of free choice by a parent fully and eliminates the opportunity to oppose or prevent the vaccination. Thus, with forcible vaccination, choice is not just burdened, it is eliminated.[308] Thus, forcibly vaccinating a child is substantially more coercive than conditioning school entry upon compliance with vaccination requirements.

A *mandate*, as discussed here, burdens choice fairly heavily, while not eliminating it completely. It requires that persons engage in affirmative conduct—in this case, vaccination of children—accompanied by a threat of deleterious consequences for noncompliance. Thus, for our purposes, it refers to *the imposition of formal legal consequences, such as penalties, or the conditioning of receipt*

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307. In contrast to their placement on our continuum, one could argue that positive incentives are actually *more* coercive than are procedural changes that impose additional burdens on parents who seek exemptions. Incentives attempt to influence behavior directly, while the role of tightened procedures in this context is promotion of accuracy, with deterrent effects as byproducts. While acknowledging this viewpoint, we characterize procedural changes that create additional burdens as more coercive. In so doing, we are influenced by an extensive administrative law literature that highlights the role of procedural mechanisms and institutional design in controlling and managing behavior. *See, e.g.*, M.D. McCubbins et al., *Administrative Procedures as Instruments of Political Control*, 3 J.L. ECON. & ORG. 243 (1987); William F. West, *Formal Procedures, Informal Processes, Accountability, and Responsiveness in Bureaucratic Policy Making: An Institutional Policy Analysis*, 64 PUB. ADMIN. REV. 66, 67-68 (2004). Especially in this context, we recognize the potentially-powerful behavior-altering goals of procedural mechanisms.

308. "Use of force" is therefore analogous to the Nuffield Council's first step on its ladder defined as "eliminate choice. Regulate in such a way as to entirely eliminate choice." NUFFIELD COUNCIL, *supra* note 301, at 42.

of otherwise ordinarily-available benefits, opportunities, or privileges, on compliance with the mandate, in order to achieve the target result (that is, the vaccination of children). This category alone encompasses a broad spectrum in the level of coerciveness. Across this diverse category, the government seeks to obtain compliance either by using force to overcome resistance or by imposing certain consequences on noncompliance to achieve the same result, justified in part by the likelihood of motivating cooperation. We place school-entry vaccination requirements in this category, recognizing the centrality of elementary and secondary school attendance as a cherished opportunity in American society. Removal of that opportunity introduces an exceptional and perhaps unequalled deprivation into the lives of those prevented from attending.

Although we subdivide this category into mandates involving criminalization of nonvaccination and mandates involving conditioned access to certain benefits, we recognize that, depending upon the specific penalties and benefits, either subcategory may be more coercive than the other. A penalty of incarceration for noncompliance differs dramatically from a penalty of a modest fine. And, many would view imposition of a modest fine as far less coercive than loss of the opportunity to send a child to school.[309]

Cost-internalization creates a legal regime in which one who engages in behavior that places others at risk of harm—such as parental refusal to vaccinate children—must bear the financial costs of any harm ultimately caused by that conduct.[310] Of course, the goals of such policies are multifaceted. The goal of promoting social responsible behavior through the contingent penalization of dangerous conduct when harm results is but one of the justifications for

309. The category of mandates may correspond loosely to the Nuffield Council's second category, defined as "Restrict choice. Regulate in such a way as to restrict the options available to people." *See* NUFFIELD COUNCIL, *supra* note 301, at 42.

310. *See, e.g.*, Arthur L. Caplan et al., *Free to Choose but Liable for the Consequences: Should Non-Vaccinators be Penalized for the Harm They Do?*, 40 J.L. MED. & ETHICS 606, 608-10 (2012); Dorit Rubinstein Reiss, *Compensating the Victims of Failure to Vaccinate: What are the Options?*, 23 CORNELL J.L. & PUB. POL'Y 595, 605 (2014).

use of such legal tools. The appropriate location of cost internalization on a continuum of coerciveness may vary with a number of factors, including the financial resources of the actor. Yet, we view this legal tool to be somewhat less coercive than are mandates.[311]

Mandated transparency, as discussed below, focuses on publicizing information regarding nonvaccination, identifying children who are unvaccinated, and perhaps also publishing rates of vaccination of individual schools or other facilities, and localities. This legal tool exists primarily to empower those who are at risk of harm because of the nonvaccinating behavior, allowing them to avail themselves of some measure of self-protection. In that respect, it functions like sex-offender registries in enabling those potentially at risk to engage in various forms of self-protection in response to dissemination of information about offenders. However, the stigmatizing impact of such publication and the social pressure for compliance that might result is likely to exert influence on the conduct of some who might otherwise avoid vaccination. Therefore, we view tool as having coercive features. The level of coerciveness, like cost-internalization, is likely less than that of mandates, but will vary across actors. While some potential nonvaccinators may respond to social pressure with compliance, others may still be resistant, and some may even seek publicity for their decisions.

The term *incentive* used here refers to *the offering of positive benefits or privileges as a reinforcement or reward* for parental compliance with the vaccine recommendations. For the purposes of our discussion, incentives are positive consequences of compliance that go *beyond* the benefits, opportunities, or privileges ordinarily and presently available to individuals in our society.[312] Conditioning certain

311. This category corresponds somewhat to the third step on the Nuffield Council's intervention ladder: "Guide choice through disincentives. Fiscal and other disincentives can be put in place to influence people not to pursue certain activities . . . ." *See* NUFFIELD COUNCIL, *supra* note 301, at 42.

312. One could construe the opportunity to attend school in a congregate setting as a privilege or benefit bestowed only upon those who are vaccinated, and therefore as an incentive to vaccination. Yet, our focus on incentives emphasizes benefits and privileges beyond those ordinarily and presently available. Because

incentives on compliance can be coercive to the extent that individual choice is influenced by the positive consequences that follow the desired behavior.[313] We recognize that certain methods of incentivizing behavior may conceptually overlap with some types of mandates. Furthermore, depending upon the individuals' needs and the nature of the rewards, certain incentives may be difficult to resist. Despite these obvious complexities, and at the risk of some overgeneralization, we characterize mandates as generally more coercive than incentives.[314]

Research demonstrates that states with less automatic and more procedurally complex mechanisms required for obtaining medical, religious, or personal belief vaccination exemptions have lower rates of exemptions.[315] *Procedural tightening* of the mechanisms available for obtaining exemptions applies this research, and can involve any of a range of procedural changes. Arguably, adding procedural complexity is not necessarily coercive, especially if that complexity leads to a more accurate result in determining the appropriateness of an exemption under the state's substantive standards. We advocate only those procedural steps that achieve enhanced accuracy. We do not support procedural obstacles directed solely at discouraging petitions by otherwise-qualified families. However, we have positioned this type of intervention at a particular location on the

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the opportunity to attend school in a congregate setting is ordinarily available in society, we construe the conditioning of children's school attendance on parental compliance with vaccination requirements as a mandate, in that failure to comply leads to withdrawal of this opportunity.

313. *See* Emily Largent et al., *Money, Coercion, and Undue Inducement: Attitudes about Payments to Research Participants*, 34 IRB: ETHICS & HUM. RES. 1, 1-8 (2012). *See generally* Wertheimer & Miller, *supra* note 303.

314. This category may correlate with the Nuffield Council's fourth step on its "intervention ladder[:]" "Guide choices through incentives. Regulations can be offered that guide choices by fiscal and other incentives, for example offering tax breaks . . . ." *See* NUFFIELD COUNCIL, *supra* note 301, at 42.

315. *See, e.g.*, Alina Sadaf et al., *A Systematic Review of Interventions for Reducing Parental Vaccine Refusal and Vaccine Hesitancy*, 31 VACCINES 4293, 4295 (2013); Y. Tony Yang & Ross D. Silverman, *Legislative Prescriptions for Controlling Nonmedical Vaccine Exemptions*, 313 JAMA 247 (2015). *See generally* Blank et al., *supra* note 8; Omer et al., *Nonmedical Exemptions, supra* note 8; Omer et al., *Vaccination Policies*, *supra* note 8.

continuum with the recognition that the existence of added procedural steps creates burdens that may reduce parental perception of choice. In our view, if this intervention reduces the perception of choice among parents who are unlikely to qualify for an exemption if their petitions are carefully scrutinized, then this intervention has achieved a preferred policy result.[316] We recognize that where it operates to discourage petitions, it does affect choice.

Finally, the term *persuasion*, as used here, focuses on *interventions that strive to change attitudes and minds*—in this context convincing parents that vaccinating their children is indeed, the right decision, on its own merits.[317] Arguably, such policies are not designed to be coercive, in that in the vaccine context, they strive to use information, logic, and reason to empower an individual to make his or her own wise choices. Yet, depending on the power, authority, or status of the sources of persuasion, and on the circumstances, background, and perspectives of the recipients, even primarily persuasive interventions may have certain intentionally- or unintentionally-coercive effects.[318] That

316. This category bears some resemblance to the Nuffield Council's fifth step on the "intervention ladder[:]" "Guide choices through changing the default policy. For example, [in a policy schema to reduce obesity] in a restaurant, instead of providing chips as a standard side dish (with healthier options available), menus could be changed to provide more healthy option as standard (with chips as an option available)." Similarly, the addition of procedural complexity to obtain exemptions from vaccination policies does not limit the options available to the parents, but it requires them to work harder and take additional steps to procure the exemption. As noted above, if those steps are not onerous and are directly related to securing a more accurate result, the procedural requirements do not infringe rights or interfere with choice. They may, however, lead some—for whom the exemption is less important or appropriate under that jurisdiction's legal standards—not to pursue the exemption. *See* NUFFIELD COUNCIL, *supra* note 301, at 42.

317. *See generally* BEAUCHAMP & CHILDRESS, *supra* note 287.

318. For example, persuasive messages conveyed by religious leaders to the adherents of a particular religion may be unusually persuasive to the recipients. For others, communications and recommendations provided by physicians may have added persuasive power. In both contexts, depending upon what other factors are associated with the person engaging in persuasion, recipients may comply or internalize the communicated logic because of deference to the source's knowledge, expertise, authority, or power. *See, e.g.*, Edmund D. Pellegrino, *Patient and Physician Autonomy: Conflicting Rights and Obligations in the*

said, we characterize legal interventions that rely primarily on persuasive approaches as the least coercive of the tools discussed, in that they seek to empower an individual to make autonomic choices.[319]

The continuum below that ranks legal policy responses from most coercive to the least coercive focuses on but one dimension on which to compare these proposals, consistent with emphasis on autonomy discussed above. Furthermore, we recognize that *mandatory* vaccination policies, by their very nature, restrict freedom (although—as asserted in Part II—justifiably). And it is the compulsory or coercive nature of the existing policies that is a source of opponents' objections. Hence, we focus on that variable as we lay out proposals for reform.

Continuum of Legal Tools

Figure 3: Continuum of Legal Tools

1. Ordering Vaccination over Parental Objection

The most coercive way to increase childhood immunization rates is to force parents to vaccinate their children. Courts can order parents to do so, and have done so, on rare and unusual occasions. For example, in 1990, the city of Philadelphia faced a measles outbreak that centered on

Physician-Patient Relationship, 10 J. CONTEMP. HEALTH L. & POL'Y 47, 55-58 (1993) (discussing patients' vulnerability in relationship to physicians and physicians' capacity to manipulate patients' decisions in the informed consent process).

319. This category may subsume the last step on the Nuffield Council "intervention ladder[:]" "Provide information. Inform and educate the public." *See* NUFFIELD COUNCIL, *supra* note 301, at 42.

two churches whose members did not believe in vaccination (or modern medicine generally). Nine children died from measles during the outbreak, and ultimately a judge ordered vaccination of the children of the church members over parental objections.[320] In another case, the court found a father to be negligent for not vaccinating his young daughter during a measles outbreak and indicated that if the outbreak was still ongoing it would order the child vaccinated.[321]

In at least one case a court declared children neglected because they were not attending school due to parental refusal to vaccinate. In this case, the court placed the children in the state's custody, authorizing the state agency to vaccinate the children over parental objection.[322] Several states have ruled that children taken (even temporarily) from parental custody pursuant to abuse or neglect proceedings may be vaccinated against their parents' will.[323] Courts deciding custody disputes between parents have ratified the choice of a parent to vaccinate over the decision of a vaccine-objecting parent to forego vaccination.[324]

2. Criminalizing Nonvaccination

As in *Jacobson*, states can criminalize nonvaccination, attaching a criminal penalty. Criminal sanctions have been

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320. *See generally* PAUL A. OFFIT, BAD FAITH: WHEN RELIGIOUS BELIEF UNDERMINES MODERN MEDICINE (2015).

321. *In re* Christine M., 595 N.Y.S.2d 606, 618-19 (N.Y. Fam. Ct.1992).

322. *See generally* Cude v. State, 377 S.W.2d 816 (Ark. 1964).

323. *See In re* C.R., 570 S.E.2d 609, 609 (Ga. Ct. App. 2002); *In re* Stratton, 571 S.E.2d 234 (N.C. Ct. App. 2002). *See generally* Dep't of Human Servs. v. S.M., 323 P.3d 947 (Or. 2014). The one exception is *Diana H. v. Rubin*, 171 P.3d 200 (Ariz. Ct. App. 2007), where a court of appeals, in a two-to-one decision over a strong dissent, allowed a child to remain unvaccinated, finding no imminent risk to the child.

324. Welker v. Welker, 129 N.W.2d 134, 138 (Wis. 1964). *But see* Grzyb v. Grzyb, 79 Va. Cir. 93 (Va. Cir. Ct. 2009). This type of order is, however, qualitatively different than those affecting children in state custody. In the context of a private custody dispute between two parents, the court's role is that of private dispute settlement rather than child protection through overriding parental authority. In the parental custody-dispute context, the court is typically allocating the decisionmaking authority for the child's welfare between parents, rather than replacing parental childrearing autonomy with state authority.

applied in the United States in this context even after *Jacobson*, although not recently. For example, in a number of cases, parents were sanctioned criminally for violating mandatory school attendance laws when they didn't vaccinate their children, and their children were denied access to school.[325] Several other countries attach criminal sanctions to nonvaccination. For example, France requires children to be vaccinated against diphtheria, tetanus and polio—and attaches a criminal sanction (possibly two, under two different provisions).[326]

3. Conditioning Access to Services on Compliance with Vaccination Policies

Another mechanism for accomplishing a mandate is the conditioning of benefits, opportunities, or privileges, such as access to public or private services, on compliance with state requirements to vaccinate. As discussed in Part II, this approach is universally applied in the United States, across the fifty states and District of Columbia, through school

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325. *See, e.g.*, Anderson v. State, 65 S.E.2d 848, 852 (Ga. Ct. App. 1951); State v. Drew, 192 A. 629, 632 (N.H. 1937).

326. Both were recently used towards non-vaccinating parents, though the legal proceedings have not been concluded:

> [A] provision in the Code of Public Health (le code de la santé publique, art. L.3116-4) . . . imposes a fine [sic] of 3750 euros and up to six months in jail for those who do not receive, or allow those under their guardianship to receive, mandatory vaccinations, including parents ("Le refus de se soumettre ou de soumettre ceux sur lesquels on exerce l'autorité parentale ou dont on assure la tutelle aux obligations de vaccination prévues aux articles L. 3111-2, L. 3111-3 et L. 3112-1 ou la volonté d'en entraver l'exécution sont punis de six mois d'emprisonnement et de 3 750 Euros d'amende"). And a provision in the criminal code that criminalizes neglect of parental duties 'to the point of risking the health . . . of a minor child', with a fine of 30,000 euros and up to two years in prisons as penalty (article 227-17: "Le fait, par le père ou la mère, de se soustraire, sans motif légitime, à ses obligations légales au point de compromettre la santé, la sécurité, la moralité ou l'éducation de son enfant mineur est puni de deux ans d'emprisonnement et de 30,000 euros d'amende").

Dorit Rubinstein Reiss, *Freedom to Ignore French Vaccination Program – A Court* Case, SKEPTICAL RAPTOR, http://www.skepticalraptor.com/skepticalraptorblog.php/freedom-vaccinate-france-a-court-case (last updated Mar. 28, 2015).

immunization requirements. Children are required to receive certain vaccines before they can attend public, and in most jurisdictions also private, school.[327] Furthermore, all states offer exemptions from these requirements: all offer medical exemptions, and most offer some form of nonmedical exemption options, although the ease of obtaining exemptions varies as well.[328] Most states qualify the right to attend school for those students who are granted exemptions and are unvaccinated[329]: If there is an outbreak of a vaccine-preventable disease, exempted unvaccinated students are forced to stay home, not only until the end of the outbreak, but until the end of the period of infection risk.[330] We might characterize such laws as *limited* quarantine policies, in that they isolate the child, by exclusion, from one particular setting (i.e., school) for a specific period of time related to the risk of infection.[331] Such exclusion from school can, in some situations, become a lengthy denial of access that affects children's educational progress. It may also inconvenience parents who rely on school for childcare while working. This practice was recently examined and held constitutional in a Second Circuit case.[332] In addition, following a major outbreak of measles at Disneyland, a large number of unvaccinated Orange County high school children were required to stay at home when one student at the school was found to have measles.[333]

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327. *See generally* Calandrillo, *supra* note 7, at 356-58; Hodge & Gostin, *supra* note 52, at 833; Reiss, *Thou Shall Not Take the Name of the Lord Thy God in Vain*, *supra* note 143.

328. *See generally* Blank et al., *supra* note 8; Yang & Silverman, *supra* note 315.

329. *See* Yang & Silverman, *supra* note 315, at 247.

330. *See, e.g.*, CAL. HEALTH & SAFETY CODE § 120365(e); 10 N.Y.C.R.R. § 66-1.10.

331. *See* Edward A. Fallone, *Preserving the Public Health: A Proposal to Quarantine Recalcitrant AIDS Carriers*, 68 B.U. L. REV. 441, 461 (1988) (discussing the notion of a "modified quarantine which selectively restricts an individual from participation in certain activities, e.g., . . . school attendance").

332. *See generally* Phillips v. City of New York, 775 F.3d 538 (2d Cir. 2015).

333. Veronica Rocha, *O.C. Students May Have Been Exposed to Measles, Kept Out of School*, L.A. TIMES (Jan. 20, 2015, 6:35 AM), http://www.latimes.com/local/lanow/la-me-ln-students-exposed-to-measles-oc-20150120-story.html.

One obvious policy reform that would increase vaccination rates would be further reducing the availability of exemptions. As noted earlier, approximately twenty states permit philosophical or personal belief exemptions.[334] Elimination of these exemptions—increased use of which is responsible for most of the rise in unvaccinated children in recent years[335]—would likely improve vaccination rates. Such elimination would, of course, render mandatory vaccination policies far more coercive in that the most commonly-used "escape valve" would be eliminated. Senate Bill 277, recently passed by the California legislature and signed into law by Governor Brown, repealed the legislative language that permitted personal belief and religious exemptions.[336] In addition, if religious exemptions were eliminated in states in which they exist, the coerciveness of mandatory vaccination policies would be greater, and a rise in vaccination rates would likely be achieved. Vermont's legislature also considered a bill that would have eliminated both the personal belief and religious exemption.[337] An amended version of the bill passed, eliminating the personal belief exemption, but retaining the religious exemption.[338] Somewhat less coercive than complete elimination of either category of exemptions would be narrowing the substantive

334. *See supra* notes 152-57 and accompanying text.

335. *See supra* notes 192-94 and accompanying text.

336. For citation to the language of the final legislative language, see *supra* note 185. For a discussion of the lobbying efforts that accompanied legislative consideration, see, for example, Lauren Rosenhall, *California Parents Lobby Lawmakers from Both Sides of Vaccine Debate*, SACRAMENTO BEE (Feb. 25, 2015), http://www.sacbee.com/news/politics-government/capitol-alert/article11174378.html.

337. *See Bill Number: 212 Introduced*, H. COMM. ON HEALTH CARE (Vt. 2015), http://legislature.vermont.gov/bill/status/2016/H.212.

338. The enacted bill, H.98 (Act 37), 2015-2016 Gen. Assemb. (Vt. 2015), amends VT. STAT. ANN. tit. 18 § 1122 (a)(3)(A) and is effective July 1, 2016. For a discussion of these legislative developments, see, for example, Jerry A. Coyne, *Banning Philosophical Exemptions While Keeping Religious Ones Makes No Sense*, NEW REPUBLIC (June 1, 2015), http://www.newrepublic.com/article/121940/vermont-ends-philosophical-not-religious-exemptions-vaccination; Michael Spector, *Vermont Says No to the Anti-Vaccine Movement*, NEW YORKER (May 29, 2015), http://www.newyorker.com/news/news-desk/vermont-says-no-to-the-anti-vaccine-movement.

breadth of the categories.[339] Our analyses above suggest that neither personal belief nor religious exemptions are constitutionally required, although jurisdictions may still choose not to eliminate them for policy and political reasons. The same considerations would guide decisions to narrow the substantive scope of such exemptions, although policymakers should be cognizant of the ways in which modifications to the language of the substantive requirements for religious exemptions might introduce possibly unconstitutional preferences for one religious group over another.

The idea of limiting access to public benefits or services can be extended beyond the school context.[340] For example, government could condition access to a passport (which would allow the recipient to travel to areas where preventable diseases are still endemic) on vaccination status.[341] Other possibilities include conditioning access to public pools, malls, or public transit on vaccination status. In addition, licensing requirements for daycare centers, and schools[342] can be made contingent on immunization

339. For a summary of recent legislation proposed in the states, see NAT'L CONF. ST. LEGISLATORS, *supra* note 139; s*ee also* Gabrielle Canon, *Is Your State Trying to Outlaw Vaccine Exemptions?*, MOTHER JONES (Mar. 2. 2015), http://www.motherjones.com/politics/2015/02/vaccine-map-exemption-bills.

340. As mentioned in Part IV, several hospitals have adopted requirements that health care workers in their employ be vaccinated, and some hospitals have dismissed workers who would not vaccinate. *See* Lisa H. Randall et al., *Legal Considerations Surrounding Mandatory Influenza Vaccination for Healthcare Workers in the United States*, 31 VACCINE 1771, 1772 (2013); Rene F. Najera & Dorit R. Reiss, *First Do No Harm: Protecting Patients through Immunizing Health care Workers*, 26 HEALTH MATRIX (forthcoming 2016). The legal status of such employer policies and actions is not yet fully determined, as the issue is relatively new and the jurisprudence in the early stages of development. These policies could also be applied in the context of school employees to better protect children by making sure the staff is immunized.

341. Amanda Z. Naprawa, *Polio Doesn't Need a Passport- and Maybe Neither Do You*, VACCINE ADVOCATE (May 21, 2014, 2:56 PM), http://thevaccineadvocate.com/QWQPZ/2014/05/21/polio-doesnt-need-a-passport-and-maybe-neither-do-you. *But see* Zemel v. Rusk, 381 U.S. 1, 12-18 (1965) (casting doubt on whether sweeping restrictions, at least, would be constitutional).

342. Schools are already required to collect and monitor compliance with immunization requirements or exemption requirements, so already have a role here. Expanding it somewhat is not a radical change.

requirements or rates, creating a disincentive for such facilities and institutions to serve unvaccinated clients or patients. While conditioning access to ordinarily-available services or benefits is not as coercive as orders to vaccinate or criminalizing nonvaccination sanction, it can constitute a substantial restriction on personal choice.

4. Imposing Costs on Nonvaccinators

Arguably, the imposition of costs on those who choose not to vaccinate is less coercive than the prior three subcategories of interventions. In imposing such costs, government is, in essence, saying to nonvaccinators: "you are permitted to make your choice, but must pay the price." Such a legal policy does not *directly* constrain one's freedom to refuse, nor does it directly interfere with one's ability to take advantage of important services and benefits, such as access to school for school-age children. But, paying costs can influence choice, particularly when its consequences are powerfully and painfully felt.

Costs can be imposed through tort liability. For example, parents who choose not to vaccinate can be sued if their choice harms another.[343] Alternatively, a child could sue her parents for damages—personally or through a guardian—if she is harmed by a preventable disease as a result of her parents' refusal to vaccinate her.[344] Or, the parents of a child who was harmed by nonvaccination could sue a doctor who advises against vaccinating.[345]

Tort liability is not the only way to impose costs. Costs can be imposed on those who do not vaccinate via a no-fault mechanism. This method levies a tax or fee aimed at recouping the costs that nonvaccination imposes on the

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343. *See generally* Caplan et al., *supra* note 310; Dorit R. Reiss, *Compensating the Victims of Failure to Vaccinate: What are the Options?*, 23 CORNELL J.L. & PUB. POL'Y 595 (2014).

344. Christine Vara, *The Rights of the Unvaccinated Child: Tort Liability*, SHOT OF PREVENTION (Feb. 18, 2014), http://shotofprevention.com/2014/02/18/the-rights-of-the-unvaccinated-child-tort-liability.

345. Amanda Z. Naprawa & Dorit R. Reiss, *Medical Advice and Vaccinating: What Liability?*, 26 U. FLA. J.L. & PUB. POL'Y (forthcoming Dec. 2015).

public purse.[346] Or, those who do not vaccinate can be charged higher health insurance premiums as a way of imposing a cost on their refusals. This type of consequence is sensible in that such individuals are more likely to be more costly to health insurance providers, due to their increased risk of contracting a preventable disease.[347] Or, perhaps the local health department could be permitted to bill unvaccinated persons if their choice leads to an outbreak that imposes costs on others or the government.[348]

5. Mandating Transparency

A different set of incentives would be through transparency: providing information to parents about vaccination rates and status. Transparency generally is a tool increasingly used in modern administrative states to achieve goals.[349] At one extreme, states could require publications of the names of all the unvaccinated children in a school or daycare, directly exposing the identities of those children and their parents, with potentially stigmatizing consequences, while also warning others of the risk of contact, and thereby allowing others some measure of self-protection. We are not aware of any jurisdiction that uses such a method to encourage compliance. A less stigmatizing method that is already in use in some states, such as California, allows publication of rates of immunization in particular schools, preschools, and daycares.[350] Colorado has recently passed a bill that would allow parents to ask and receive information about the rates of vaccination from a school or daycare.[351]

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346. Charlotte A. Moser, et al., *Funding the Costs of Disease Outbreaks Caused by Non Vaccination*, J.L. MED. & ETHICS (forthcoming Fall 2015).

347. *Id.* at 21.

348. *Id.* at 23.

349. *See generally* ARCHON FUNG ET AL., FULL DISCLOSURE: THE PERILS AND PROMISE OF TRANSPARENCY (2007).

350. *Child Care/School Lookup: How Well-Vaccinated is Your Child's Child Care Facility/School*, SHOTS FOR SCHOOL, http://www.shotsforschool.org/lookup (last visited Apr. 12, 2015).

351. *Resource Library*, COLO. CHILDREN'S IMMUNIZATION COAL., http://www.childrensimmunization.org/PBE (last visited June 16, 2015).

6. Procedural Tightening and Exemption Petitions

Research reveals that in jurisdictions where the procedures to obtain exemptions to vaccination policies are more "difficult," rigorous, tighter, or complex, exemption rates are lower, and vaccination rates are higher.[352] These adjectives all characterize the documentation and filing processes, and the practical steps that must be taken by the parents to complete and submit their exemption requests. States have experimented with a variety of ways to modify these procedural requirements.[353]

At one end of the continuum of "difficulty," the "easiest" procedures require parents only to check a box on, or to complete, a fairly simple form. Somewhat more difficult are procedures that require a parent to draft a letter explaining the basis for the exemption request. If the letter must follow a certain format or include specified information, the process demands even more of parents. For example, some states require parents claiming a religious exemption to detail and explain their religious reasons (and some subject the explanation to an evaluation of sincerity).[354] In some cases, the procedure is made more difficult by requiring parents to obtain the form at the health department rather than at the child's school. States have required notarization of exemption letters,[355] or annual renewal of exemptions.[356] Recently, adopting an idea originally proposed by Ross Silverman in 2003,[357] several states, including Washington and California, added an educational requirement to their personal belief

352. *See supra* note 307 and accompanying text; *see also* Walter A. Orenstein & Alan R. Hinman, *The Immunization System in the United States—The Role of School Immunization Laws*, 17 VACCINE s19 (1999).

353. *See, e.g.*, Omer et al., *Vaccination Policies*, *supra* note 8, at 1170-71; Yang & Silverman, *supra* note 315 at 247. *See generally* Blank et al., *supra* note 8.

354. *See supra* note 147.

355. Omer et al., *Vaccination Policies*, *supra* note 8, at 1171; Yang & Silverman, *supra* note 315, at 247.

356. *See supra* note 315.

357. *See* Ross D. Silverman, *No More Kidding Around: Restructuring Non-Medical Childhood Immunization Exemptions to Ensure Public Health Protection*, 12 ANNALS HEALTH L. 277, 285 (2003).

exemption—a parent must have a conversation with a doctor about the risks and benefits of immunization and the diseases before an exemption will be granted.[358] This latter procedural requirement dovetails directly with the educational interventions discussed immediately above in Part V.B.4.

None of these policies, already in effect in some jurisdictions, imposes insurmountable barriers for most parents. These additional burdens on parents built into the process of obtaining exemptions are not excessive, especially in light of the costs to the unvaccinated child and all of those whose risk of infection is higher because the child is unvaccinated. These steps serve several purposes. First, some of the steps enhance the accuracy of the process by requiring documentation and evidence that will assist state actors to determine whether or not the exemption request satisfies state substantive requirements. Second, some steps, such as those that require parents to obtain a level of information or education about vaccination risks and benefits, support informed decisionmaking. Finally, additional procedural steps, by requiring those who seek exemptions to affirmatively demonstrate their commitment, weed out parents who are less committed, or for whom seeking an exemption might be following a "path of least resistance" (e.g., where obtaining an exemption requires less effort than obtaining the vaccinations).

7. Providing Positive Incentives for Vaccination

Provision of subsidies for compliance with vaccination recommendations constitutes one of the least coercive categories of tools. Such tools are already in use to help reduce health costs associated with vaccinating. For example, § 2713 (2) of the Patient Protection and Affordable Care Act ("ACA") requires insurers to fully cover recommended vaccines, relieving patients of the expense of

358. *See* CAL. HEALTH & SAFETY CODE § 120325; OR. REV. STAT. § 433.267; WASH. REV. CODE ANN. § 28A.210.090. The California requirement will, of course, become moot when Senate Bill 277 goes into effect on July 1, 2016, eliminating personal belief exemptions. *See supra* note 185 for citation to text of approved bill.

vaccination.[359] The Vaccines for Children ("VFC") program, which began in 1994, covers vaccines for children who could not otherwise afford them (e.g., children on Medicaid, underinsured children, Native American or Alaskan children).[360]

Creation of additional incentives for vaccination may also encourage this preferred behavior. A jurisdiction could provide tax breaks for those who do vaccinate, consistent with policies currently in force in Australia.[361] Or, analogous to the benefit available under § 2705 (j) of the ACA (which offers individuals an insurance rebate for participation in a wellness program), insurers could offer a rebate for vaccination.

8. Persuading through Education

Finally, initiatives aimed at education comprise the least coercive set of tools. Substantial work is done to educate parents about vaccines in non-legal contexts, for example, by the Vaccine Education Center of the Children's Hospital of Philadelphia,[362] by the American Academy of Pediatrics,[363] or by organizations like the Immunization Action Coalition[364] or

359. 42 U.S.C. § 300gg-13 (2012) ("A group health plan and a health insurance issuer offering group or individual health insurance coverage shall, at a minimum provide coverage for and shall not impose any cost sharing requirements for . . . (2) immunizations that have in effect a recommendation from the Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention with respect to the individual involved.").

360. *About VFC*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/vaccines/programs/vfc/about/index.html (last visited Apr. 12, 2015).

361. *See generally Immunising Your* Children, AUSTL. GOV'T DEP'T HUMAN SERVS., http://www.humanservices.gov.au/customer/subjects/immunising-your-children#a4 (last visited Apr. 12, 2015).

362. *Vaccine Education Center*, CHILDREN'S HOSP. PHILA., http://vec.chop.edu/service/vaccine-education-center/home.html (last visited Apr. 12, 2015).

363. *Immunization*, AM. ACAD. PEDIATRICS, http://www2.aap.org/immunization (last visited Apr. 12, 2015).

364. *Handouts for Patients & Staff*, IMMUNIZATION ACTION COAL., http://www.immunize.org/handouts (last visited Apr. 12, 2015).

Voices for Vaccines,[365] to name just a few. But the law can promote vaccine education as well. For example, legislators can add a module about immunization to an appropriate class in elementary or high school, teaching children the basic information about vaccines. Another tool, noted above, has been increasingly adopted (as in Washington, Oregon, and California): the addition of an educational component prerequisite prior to the granting of personal belief exemptions.[366]

These tools are summarized below in Table 1:

Type of Policy/Tool	**Possible Options**	**Examples of Use**
Use of Force	Court orders to vaccinate a child despite parental opposition	1991 Philadelphia Outbreak
	Medical neglect findings to override parental vaccination refusal	
Mandates/Criminal Law	Criminal sanctions for truancy when child not vaccinated without exemption and therefore not present at school	Anderson v. State, 84 Ga. App. 259 (Ga.App. 1951)
	Direct criminal sanctions for non-vaccination	Article art. L.3116-4 of French code of public health, penalizing non-vaccination

365. *Voices for Vaccines: Parents Speaking Up for Immunization*, VOICES FOR VACCINES, http://www.voicesforvaccines.org/tools (last visited Apr. 12, 2015).

366. *See generally* Reiss, *Thou Shall Not Take the Name of the Lord Thy God in Vain supra* note 143; Yang & Silverman, *supra* note 315.

Mandates/Conditioned Access	Entry to school conditioned on immunization status	California's Health and Safety Code, § 120335
	Issuance of passports conditioned on immunization status	
	Access to public pools, malls, or public transit conditioned on immunization status	
	Access to public pools, malls, or public transit conditioned on immunization status	
	Employment conditioned on immunization status (healthcare workers, teachers)	Influenza immunization mandates for healthcare workers
	Licensing of daycare centers conditioned on immunization status	
Cost internalization	Tort liability for failure to vaccinate, misrepresentation causing bodily harm, and possibly other causes of action	Not used yet
	No-fault liability imposed through taxes, fees, variable insurance premiums, ex-post billing	
Mandated transparency	Publication of names of unvaccinated children	Several states publish school immunization rates
	Publication of school vaccination rates	

Procedural tightening	Requiring written explanation of reasons for exemption request Requiring notarization of exemption requests Requiring annual renewal of exemption requests Requiring education prior to submission of exemption requests	Several states require letter, notarization, annual renewal, or signature from healthcare provider.
Positive incentives	Providing subsidies covering costs of vaccines Providing tax breaks to those who vaccinate Offering insurance rebates to those who vaccinate	Vaccines for Children program
Persuasion through education	Requiring school modules on vaccines at K-12 level Requiring education before allowing personal belief exemptions	Oregon, California and Washington adopted educational requirement before allowing exemptions.

Table 1: Alternative Legal Policies to Increase Vaccination Rates

CONCLUSION

As rates of vaccine preventable diseases increase, people become more aware of the costs and risks nonvaccination imposes on society. Legal tools that increase immunization rates can help avoid those costs. So far, we have not discussed —or used—the full spectrum of options the law allows. This Article takes a first step in mapping out some of the possibilities. In the final analysis, the decisions among methods of policy reform can best be guided by analytic

frameworks such as those laid out by public health law scholars and ethicists. Some of these frameworks, as cited above,[367] can guide the balancing of the competing values, concerns, and interests relevant to governmental interference in personal choice in contexts where the public's health is endangered.[368]

Freedom of choice is a cherished American value. Just as important is promotion of the health of our population, particularly those who are young and vulnerable. When a child becomes ill with a vaccine-preventable disease because of nonmedical vaccine refusal, that child's freedom—and that of the child's family—is restricted by the limitations that illness imposes on that child's life. In the most tragic cases, loss of life may result. Furthermore, the rest of society, particularly those unable to be vaccinated or for whom vaccines are ineffective, is put at risk when an unvaccinated child becomes infected. Making use of the available legal tools to improve childhood immunization rates can help protect children's health, reduce social costs, and free people from the burden of preventable diseases.

367. *See supra* notes 296, 300-01 and accompanying text.

368. *See, e.g.*, NUFFIELD COUNCIL, *supra* note 301 and accompanying text; Childress et al., *supra* note 296 and accompanying text; Gostin, Burris & Lazzarini, *supra* note 293 and accompanying text.