

By Nina R. Blank, Arthur L. Caplan, and Catherine Constable

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Exempting Schoolchildren From Immunizations: States With Few Barriers Had Highest Rates Of Nonmedical Exemptions

Nina R. Blank (nina.blank@nyumc.org) is a researcher in the Division of Medical Ethics at the New York University Langone Medical Center, in New York City.

Arthur L. Caplan is a professor in and head of the Division of Medical Ethics at the New York University Langone Medical Center.

Catherine Constable is a medical resident in the Department of Medicine at the New York University Langone Medical Center.

ABSTRACT Rates of nonmedical exemptions from school immunizations are increasing and have been associated with resurfacing clusters of vaccine-preventable diseases, such as measles. Historically, state-level school immunization policies successfully suppressed such diseases. We examined state immunization exemption regulations across the United States. We assessed procedures for exempting schoolchildren and whether exemption rates were associated with the complexity of the procedures. We also analyzed legal definitions of *religious objections* and state legislatures' recent modifications to exemption policies. We found that states with simpler immunization exemption procedures had nonmedical exemption rates that were more than twice as high as those in states with more-complex procedures. We also found that the stringency of legal definitions of *religious exemptions* was not associated with exemption procedure complexity. Finally, we found that although there were more attempts by state legislatures to broaden exemptions than to tighten them in 2011–13, only bills tightening exemptions passed. Policy makers seeking to control exemption rates to achieve public health goals should consider tightening nonmedical exemption procedures and should add vaccine education components to the procedures by either mandating or encouraging yearly educational sessions in schools for parents reluctant to have their children vaccinated.

Nonmedical exemptions from school immunization requirements in the United States grew at an accelerated rate during the past decade, from a state mean of slightly more than 1 percent in 2006 to more than 2 percent in 2011.¹ Small geographic pockets of nonvaccinated children push some state exemption rates to more than 5 percent and are probably helping drive the national increase in exemptions.² There has been a concurrent rise in rates of vaccine-preventable diseases—notably measles in 2011.³

The well-documented association between clusters of nonvaccinated children and in-

dividual and community risks of vaccine-preventable diseases poses a challenge for public health policy makers.^{2,4–7} Given the success of state-mandated school vaccination regulations in suppressing vaccine-preventable diseases in the latter half of the twentieth century,^{8,9} the reemergence of such diseases warrants an examination of current trends in state exemption statutes and their proposed modifications.

All fifty states and the District of Columbia grant medical exemptions to immunization requirements. Examples of medically contraindicated children are those with histories of severe allergic reactions after prior doses of vaccine and children who are severely immunocompromised

and should not be inoculated with live attenuated viruses such as those in the measles, mumps, and rubella vaccine.¹⁰

We limited our study to nonmedical exemptions, which are more prevalent than medical exemptions: About 80 percent of all exemptions in the 2011–12 school year were nonmedical.² In addition, it is nonmedical exemptions that have a history of inciting social debate. Furthermore, there are important policy implications of limiting—in the interest of public health—parents' ability to make decisions based on religious or cultural reasons. All states but Mississippi and West Virginia permit religious exemptions, and a smaller group of states allow “philosophical” or “conscientious” exemptions for people who strongly object to immunization for reasons not associated with their religious beliefs.

In this article we review the procedures that states require parents to follow to obtain nonmedical exemptions for school-age children. We offer scores of the relative difficulty across states of receiving nonmedical exemptions and examine how the difficulty in obtaining such exemptions is associated with exemption rates. We analyze how state laws define *religious exemptions* and whether the characterization of *religious objection* affects the strictness of the accompanying policy. Finally, we analyze state legislatures' attempts to alter exemption laws in the period 2011–13, to determine in which direction policy is moving.

Study Data And Methods

We compiled data from standardized interviews with immunization program officials and information from state health department websites, the Centers for Disease Control and Prevention (CDC), the National Conference of State Legislatures, and individual state legislature databases to analyze various facets of nonmedical exemptions.

In the jurisdictions that grant nonmedical exemptions—forty-eight states and the District of Columbia—we conducted discussions with one or two immunization program officials after asking them a standardized set of questions via telephone or, when necessary, e-mail. The discussions were intended to verify and clarify information from state health department websites detailing the steps that parents needed to take to acquire nonmedical exemptions for school-age children. We also asked the officials about requirements for exemption renewals, whether exemption requests could be denied, and about pending changes to exemption policy.

COMPLEXITY LEVELS We adapted exemption

process complexity levels from those created by Jennifer Rota and colleagues in 2001¹¹ that correlate with the overall time and effort required to obtain exemptions. Other studies have yielded slightly different complexity cohorts than our review, probably because of the evolution of state exemption procedures over time or the inclusion of child-care exemption laws.^{1,11} The justifications for our assignments to states of easy, medium, or difficult complexity levels follow.

We categorized as *easy* those states in which parents were required only to complete a standardized form, available on the state health department's website or at the child's school. Most of these forms required parents only to sign them. Some had prompts and short sections in which parents had to present their objections to immunization.

We categorized as *medium* those states in which parents had to obtain a standardized form from the local health department, attend a vaccine education session with a school nurse, or compose an original statement of their objections to immunization on religious or philosophical grounds. Writing such a statement requires effort, research, or both by the parent to determine which information to provide—for example, specific religious beliefs or justifications for objections to specific immunizations.

We categorized as *difficult* those states in which, at a minimum, parents had to complete a standardized form (obtained from the child's school, the local health department, or the state health department's website) or write a letter explaining their opposition to immunization, as well as having the form or letter notarized by a notary public—a task deemed the most difficult of those listed by Rota and colleagues.¹¹ Although Kentucky and New Mexico provide options that parents could use instead of notarization, we designated these states as *difficult* given the number of steps their policies require. For example, parents might have to prepare a written statement and visit the local health department, then submit their request for an exemption to the school.

Following Rota and colleagues,¹¹ we did not include a requirement for annual exemption renewal in our criteria for evaluating procedure complexity. For estimated percentages of nonmedical exemptions across states, we used kindergarten data compiled by the CDC for the 2011–12 school year.² The means reported here are arithmetic averages, with each state weighted equally.

RELIGIOUS EXEMPTIONS To locate state legislation on religious exemptions, we used a National Conference of State Legislatures data-

base.¹² Our analysis revealed five distinct types of language used to describe religious objections, and we organized the types by relative stringency, from broad to specific.

We excluded from our analysis states that granted philosophical exemptions because the availability of a comprehensive philosophical category—which parents might use if they were not sure whether their opposition to immunization truly constituted a religious belief—made the rigidity of the religious exemption irrelevant. In the rest of the article, when we refer to states granting religious exemptions only, we mean that they do not grant philosophical exemptions; they do grant medical exemptions.

CHANGES TO EXEMPTION POLICIES We obtained information about changes to immunization legislation in the period 2011–13 through online and library searches of state exemption bills and statutes.

LIMITATIONS There are limitations to our work that should serve to direct future research. Our classification scheme of exemption procedure complexity rests on conclusions—such as the relative difficulty of having a document notarized—drawn by other researchers. Our goal was only to understand the broad extremes of

exemption requirements across the country. As a result, the difference in complexity or time required between “easy” and “medium” policies, for example, might not be equal to the difference between “medium” and “difficult” policies. More-sensitive instruments of analysis, such as surveys of parents who received exemptions, might provide a more nuanced view of the perceived difficulty of exemption procedures.

Our data were limited to public and private schools affected by state policy. Our research did not capture information about the growing population of home-schooled children, who are historically overlooked in vaccine and exemption research¹³ but found in preliminary studies to be greatly undervaccinated.¹⁴

Finally, through our conversations with state immunization officials, we were able to capture some changes to exemption procedures that occurred without state legislation directing them. However, our findings may not be exhaustive.

Study Results

NONMEDICAL EXEMPTIONS The distribution of states into levels of exemption complexity, illustrated in online Appendix Exhibit A-1,¹⁵ was fairly evenly divided between easy (fourteen states), medium (fifteen jurisdictions—fourteen states and the District of Columbia), and difficult (fifteen states). Five states, whose complexity levels we listed as *indeterminate*, could not be categorized: Four of them delegated the enforcement of certain exemption requirements to individual school districts or localities, and one of them divided people requesting exemptions into multiple categories and applied vastly different requirements to the various categories.

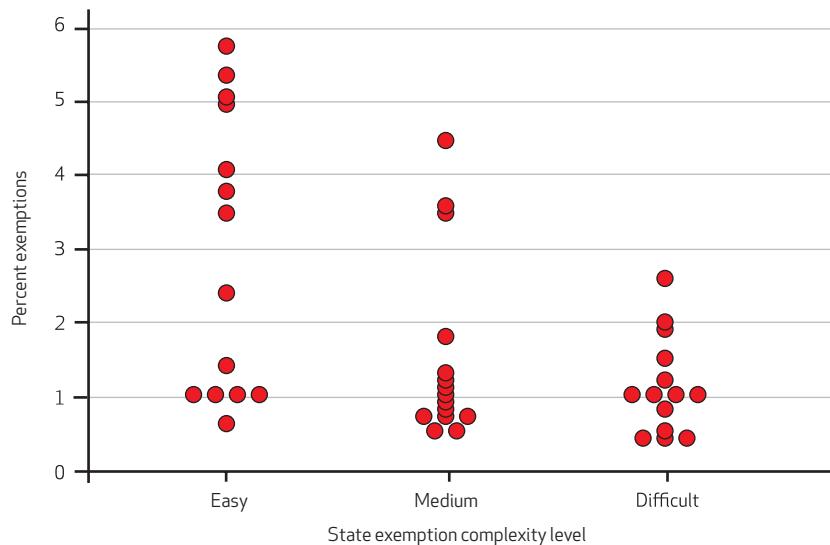
Nine of the fourteen easy states, three of the fifteen medium states, and three of the fifteen difficult states granted philosophical exemptions for school-age children. The mean exemption rate for all states that offered philosophical exemptions was 2.8 percent. In contrast, for states that granted only religious exemptions, the mean exemption rate was 1.5 percent.

One of the fourteen easy states, eight of the fifteen medium states, and six of fifteen difficult states mandated, encouraged, or allowed renewal or revisiting of exemptions. Many medium and difficult states required parents to request exemptions yearly, and some immunization programs—such as those in Massachusetts and Kansas—encouraged school nurses to revisit the exemption topic yearly with the parents of exempt children.

Exhibit 1 shows the percentages of kindergartners with nonmedical exemptions. The mean percentages for easy, medium, and diffi-

EXHIBIT 1

Percentage Of Kindergartners With Nonmedical Exemptions From Vaccination, By Complexity Level Of Exemption Procedure, 2011-12 School Year



SOURCE Authors' analysis of data from Centers for Disease Control and Prevention (CDC) (Note 2 in text). **NOTES** According to the CDC, all estimates were weighted according to the number of enrolled children. Complexity levels are defined in the text. Each data point represents a state or the District of Columbia. All states except North Dakota and Oklahoma included both private and public schools in their data. Nonmedical exemptions in Colorado (whose complexity level was “easy”) were not reported separately from medical exemptions. We estimated Colorado’s nonmedical exemption rate as 5.0 percent, which was its 5.6 percent total exemption rate minus 0.6 percent, because 0.6 percent was the highest percentage of medical exemptions that we found in any other state that also allowed philosophical and religious exemptions (the state with that percentage was Michigan).

cult states were 2.9 percent, 1.5 percent, and 1.1 percent, respectively.

When we limited our analysis to states that granted religious exemptions only and then to states that also granted philosophical exemptions, the inverse pattern between complexity level and exemption rate appeared to hold. States that granted philosophical exemptions had higher mean rates than states that granted only religious exemptions in each complexity category except difficult (Appendix Exhibit A-2).¹⁵

RELIGIOUS EXEMPTIONS As noted above, we found five types of language used in the exemption laws of the thirty-two states that granted only religious exemptions. Sixteen states granted exemptions if the request was broadly based on a “religious objection” to vaccination or if the procedure “conflicts with” or is “contrary to religious beliefs” (Exhibit 2).

Six states used more-restrictive language, adding a qualifier such as “bona fide” or “genuine” to the required “religious belief.” Five states required that immunization be contrary to the requester’s “religious tenets and practices,” not just his or her “religious belief.”

Four states required membership in a religious organization or religious denomination that is “opposed to immunization” before granting an exemption. One state further stipulated that the religious denomination in question be “recognized.”

States at all levels of procedure complexity used broader or stricter language. We detected no association between language strictness and percentages of children exempted from immunization for religious reasons.

Nine of the thirty-two states that granted religious exemptions only allowed school or public health officials to deny requests for exemption. Six of these nine states were in the group with the most lenient legal language.

CHANGES TO EXEMPTION POLICIES In the period 2011–12 at least twenty-one bills were introduced in fifteen states to modify laws governing nonmedical exemptions. In four states, bills were introduced that endeavored to create more-restrictive policies that would limit non-medical exemptions. In ten states, bills were introduced to broaden exemption criteria or simplify procedures (Appendix A-3).¹⁵ In New Jersey, separate bills were proposed to tighten and loosen exemption policy.

Three states passed legislation that tightened the criteria for nonmedical exemptions. Beginning in the fall of 2011, Washington mandated that parents requesting religious or philosophical exemptions be educated on vaccination risks and benefits by a licensed health care provider,

EXHIBIT 2

Complexity Level Of Procedure For Obtaining Nonmedical Exemptions From Vaccination In States Not Granting Philosophical Exemptions, By Language Used To Define Religious Exemption

State	Complexity level	Denial of exemption permitted?
“RELIGIOUS OBJECTION,” “CONFLICTS WITH/CONTRARY TO RELIGIOUS BELIEFS”		
Connecticut	Easy	Yes
Delaware	Difficult	Yes
District of Columbia	Medium	No
Georgia	Difficult	No
Illinois	Medium	Yes
Indiana	Medium	No
Kentucky	Difficult	Yes
Missouri	Medium	No
Nevada	— ^b	— ^b
New Hampshire	Difficult	No
New Jersey	Medium	Yes ^c
New Mexico	Difficult	Yes
Pennsylvania ^d	Easy	No
Rhode Island	Medium	No
South Carolina	Difficult	No
Wyoming	Difficult	No
“CONFLICTS WITH/CONTRARY TO BONA FIDE/GENUINE/SINCERELY HELD RELIGIOUS BELIEFS”		
Hawaii	Easy	No
Maryland	Easy	No
Massachusetts	Medium	No
Nebraska	Difficult	No
New York	Difficult	Yes
North Carolina	Medium	No
“CONFLICTS WITH/CONTRARY TO RELIGIOUS TENETS AND PRACTICES”		
Alabama	Medium	No
Florida	Medium	No
Montana	Difficult	No
Tennessee	Medium	No
Virginia	Difficult	Yes
“ADHERENT TO A RELIGION/RELIGIOUS DOCTRINE/DENOMINATION” OR “MEMBER OF CHURCH OR DENOMINATION” “OPPOSED TO IMMUNIZATION”		
Alaska	— ^b	No
Kansas	Medium	No
Oregon	Easy	No
South Dakota	Easy	Yes
“CONFLICTS WITH...A RECOGNIZED RELIGIOUS DENOMINATION OF WHICH THE APPLICANT IS AN ADHERENT OR MEMBER”		
Iowa	Difficult	No

SOURCE Authors' analysis of state religious exemption laws and data from the National Conference of State Legislatures (Note 12 in text). **NOTES** Complexity levels are defined in the text. Language used is arranged from broadest (“Religious objection”) to strictest (“Conflicts with a recognized religious denomination of which the applicant is an adherent or member”). ^aResponses in this column refer to whether, according to immunization program officials, school or public health officials reviewing requests for an exemption can refuse to grant an exemption to a parent who has correctly followed the steps required to obtain an exemption. A response of “yes,” however, does not necessarily mean that exemptions are ever denied in practice. For example, exemption forms in Connecticut require only the parent's signature, leaving little ground for denying a requested exemption. In Illinois school boards have agreed that exemptions cannot be denied as long as parents' written requests contain words pertaining to religion such as deity or prayer. In some states, such as North Carolina, private religious schools whose religions do not oppose vaccination may deny requests. ^bNot applicable. Alaska and Nevada fall within the “indeterminate complexity” category (see the text). Nevada leaves permission of exemption denial up to individual localities. ^cA written request that uses the word religion or religious cannot be denied. ^dAlthough the law only defines a religious exemption from immunization, there is an additional phrase in the statute that allows for objection to vaccination on the “basis of a strong moral or ethical conviction similar to a religious belief.” This has been interpreted by other researchers (see Notes 4 and 12 in text) to be a de facto philosophical exemption.

with exceptions only for parents who furnished the name of a religious organization to which they belonged and whose tenets were opposed to medical treatment from a health care practitioner.

California passed a similar law in September 2012, to become effective January 1, 2014. This law does not exempt religious objectors from visiting a health care practitioner, but Gov. Edmund G. Brown Jr. (D) called for such an exemption in his signing message.¹⁶

In Vermont a bill originally intended to eliminate philosophical exemptions became a law that will, when it becomes effective in fall 2013, require parents applying for an exemption to read online educational materials about vaccination. The new law also adds a requirement that any exemption be renewed annually. In fall 2012, however, pressure largely from the Vermont Coalition for Vaccine Choice prompted the state's health department to soften the language in the exemption application by removing as a requirement an acknowledgment of agreement with the health department's evaluation of vaccine benefits and risks.¹⁷

None of the fourteen bills introduced in 2011–12 to loosen nonmedical exemption policy became law. Twelve of these bills sought to add philosophical or religious exemptions, and two endeavored to streamline exemption procedures by removing notarization requirements.

As of February 2013 three bills had been introduced this year in two states to tighten exemptions. Five bills had been introduced in four states to broaden or simplify exemptions. In 2013 states seeking to restrict exemptions appear to have adopted different strategies than those used in 2011 and 2012.

The Oregon Pediatric Society spearheaded the introduction of a bill that would add an education component to the exemption process and remove language referring to exemptions as “religious” to reflect instead “the varied reasons parents claim an exemption to immunization.” Meant primarily to stem exemptions based on misinformation about vaccination, the bill effectively broadens Oregon’s exemption to encompass all philosophical objections.¹⁸

In Vermont two bills aim to tighten exemptions beyond the scope of the state’s 2012 exemption bill. One of the new bills would eliminate nonmedical exemptions for a single vaccine (pertussis); the other would eliminate nonmedical exemptions in a specific situation—within a single public school, if that school failed to reach a 90 percent immunization threshold.

The four states that have introduced bills to broaden exemptions in 2013 all attempted and failed to add exemptions in 2011–12. Mississippi

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and Kansas have introduced bills in 2013 nearly identical to those that did not become law in 2011–12. In contrast, the bills in New York and South Dakota pursue less lofty goals than their legislative predecessors. New York’s new bill would prohibit school administrators or public health officials from questioning the validity of religious objections. South Dakota’s would broaden the definition of *religious objection*.

Overall, four of the six states that aimed to restrict exemptions in the period 2011–13 have “easy” exemption policies. Conversely, ten of the eleven states with bills to loosen exemptions have “medium” or “difficult” policies or do not offer nonmedical exemptions at all.

Anecdotal evidence of the tightening of exemption policy below the level of state legislatures in New Mexico, South Carolina, and Rhode Island emerged during our conversations with immunization program officials. That evidence is described in the online Appendix,¹⁵ and some of it is discussed below.

Discussion

Vaccine exemption policies vary markedly nationwide. States can be grouped into three broad categories of exemption procedure difficulty, which our data revealed to be inversely related to rates of nonmedical exemption from immunization for schoolchildren. In short, states with simpler exemption procedures have nonmedical exemption rates that are more than twice as high as rates in states with more-complex exemption procedures. This result suggests that in many states in 2012, parents’ decisions about whether or not to have their children immunized continue to be unduly influenced by matters of convenience—a phenomenon described by Rota and colleagues in 2001.¹¹

A set of dynamic and interrelated forces con-

Few states are comfortable testing or even questioning the validity or sincerity of individuals' religious beliefs.

tributes to differences in exemption rates for immunization and exemption policy. Prior studies have implied that more-complex exemption procedures lead to lower exemption rates.^{11,19} However, the causal direction may be the reverse: Legislators in states with large populations of vocal parents who refuse vaccines for their children may be more likely to enact lenient exemption policies.

The multifactorial nature of vaccine exemption is demonstrated by the overlapping exemption rates between complexity categories. Philosophical exemptions were historically associated with higher exemption rates,^{1,11,19} which may help explain why Maine and Utah have exemption rates higher than 3.0 percent despite exemption procedures of medium complexity. Similarly, Connecticut, Maryland, and South Dakota have rates lower than 1.0 percent despite their less complex procedures, perhaps because they do not grant exemptions for philosophical reasons. This possible explanation, however, does not account for all of the outlier states in Exhibit 1.

We found that "medium" and "difficult" states imposed multiple restrictive measures on exemptions more often than "easy" states did. The states with more-restrictive policies were less likely to permit philosophical objections than states with easy procedures and more frequently mandated that parents renew or revisit exemptions yearly. The renewal requirement could have a downstream deterring effect on parents with multiple children or with children in older age groups by making them less likely to repeat the process yearly.

Higher rates of exemption in states that accept philosophical objections than in states that accept only religious reasons for nonmedical exemptions might signify that parents in the latter states simply refrain from seeking exemptions when their objections are not religious. However, other researchers have shown that

even in states allowing religious exemptions only, an increasing number of parents who refuse to have their children vaccinated have secular reasons for their refusal, such as safety concerns about vaccines.^{20,21}

Our data showed that among states that did not grant exemptions for philosophical reasons, states with procedures that were "easy" had the highest exemption rates.¹⁵ Complex procedures for applying for an exemption may discourage less steadfast religious objectors from acquiring exemptions in "medium" and "difficult" states. Another possibility is that secular objectors may obtain religious exemptions more readily in "easy" states. That possibility suggests that it would be useful to examine in detail how *religious objections* are defined in state immunization laws.

Forty-eight states and the District of Columbia have chosen to grant nonmedical exemptions from immunization. However, far fewer states are comfortable testing or even questioning the validity or sincerity of individuals' religious beliefs. States that do not grant exemptions for philosophical reasons face an added layer of complexity: People actually requesting exemptions for nonreligious reasons must be identified and denied exemptions, often without a litmus test in place for religious sincerity. A majority of states have no definition for the religious exemption, leaving open to interpretation what does and does not constitute a "religious belief."

Furthermore, how strictly a state's legal language defines religious objections does not appear to determine how strictly the same state applies its exemption policy. Strict and broad language can be found in states with easy, medium, and difficult procedures. Moreover, a majority of states across the language categories accept religious exemptions with no questions asked, enabling parents to exempt their children from immunization regardless of the justifications they provide. The disconnect between religious objections to immunization in the law and in practice renders legal language irrelevant in determining who can and cannot successfully exempt their children from vaccination.

The religious exemption's malleability has not prevented several states from introducing legislation in 2011–13 that calls for the addition of a philosophical exemption. Altogether, about twice as many states have attempted to broaden their exemption legislation as have sought to tighten it. This may be as much a hallmark of broad antivaccine sentiment as it is a manifestation of sheer numbers: There are twice as many states that have medium and difficult policies (and thus room to loosen exemptions) as there

are states with easy policies (and thus opportunities to tighten exemptions). Nevertheless, states in the latter, smaller category have passed more bills, notably with vaccine education components. Washington, California, and Vermont each successfully added vaccine education measures to their exemption procedures.

Some inventive legislation introduced in 2013 merits discussion. Bills to broaden exemptions in New York and South Dakota have abandoned the previously ineffective blunt strategy of tacking on new nonmedical exemptions in favor of subtler approaches: prohibiting the denial of religious exemptions and broadening their scope, respectively.

Both states aiming to restrict nonmedical exemptions in 2013—Oregon and Vermont—experienced unusually high rates of pertussis in 2012.^{22,23} Although increased risk of the disease has been associated with decreased efficacy of pertussis vaccines over time,²⁴ we believe the timing of these new bills indicates their supporters' continued belief that restricting exemptions will help curb rising rates of pertussis.

Paradoxically, Oregon's 2013 bill to tighten nonmedical exemptions (through the addition of vaccine education with a health care practitioner) also adds a philosophical exemption option for parents, a factor known to be associated with higher exemption rates.^{1,11,19} Supporters of Oregon's vaccine education bill therefore must have particular confidence in vaccine education as a way of reducing exemption rates. Indeed, the Oregon Pediatric Society cited the passage of Washington State's vaccine education bill in 2011 and subsequent decrease in exemptions as a precedent for the Oregon bill.²⁵ Following implementation of Washington's vaccine education bill in July 2011, total exemptions in that state decreased from 6.0 percent in the 2010–11 school year to 4.5 percent in 2011–12.²⁶

It must be noted, however, that the widespread media attention to and public awareness of the pertussis outbreak that prompted Washington's vaccine education legislation probably played a role in discouraging requests for exemptions. Vaccination decisions and rates have historically been tied to the prevalence of vaccine-preventable diseases at the population level.^{27,28} This phenomenon would likely operate in favor of the proponents of Oregon's exemption bill, given the state's high pertussis rate, and should be considered in any evaluation of the multifactorial effects of Oregon's vaccine-related public health interventions.

The changes in Vermont's policies proposed in 2013 offer innovative exemption-tightening interventions. Since 2011 the state has been an immunization policy battleground, as stake-

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holders from government, the public health arena, and the general public attempt to drive policy changes at various levels of intervention.

Subtle alterations to exemption policy can occur without a change in law.¹⁵ For example, Vermont's health department bowed to pressure from a volunteer organization and loosened a facet of the exemption process. The health departments in New Mexico and South Carolina tightened exemptions, using their authority to change certain requirements without referring the alterations to the state legislatures. This ability to add modest exemption restrictions without going through the legislature may represent an efficient way to change policy.

Policy Implications

The fact that convenience may determine parents' decisions about their children's immunizations is troubling from the perspective of public health policy. We do not advocate adding complicated steps to exemption procedures as a means of increasing vaccination rates. Nonetheless, exempting a child from immunization should not prove simpler than fulfilling the public health imperative to vaccinate. Thus, future discussions of tightening access to exemptions must include measures that are at once ethical, effective, and implementable.

We believe that policy discourse should refrain from narrowing definitions of religious and other nonmedical objections to immunization. To question the validity of people's beliefs may prove ethically dubious and—as we have suggested—ineffective, given the disconnect between legal definitions and exemption policy, as well as the ability of parents with secular objections to obtain religious exemptions.

One powerful, noninvasive, and potentially effective tool of change is vaccine education, which promotes informed parental decision making. Vaccine education bills have met with

success in state legislatures, as illustrated in California, Vermont, and Washington. Also of note are Kansas, Rhode Island, and the District of Columbia, in which most or all school districts facilitate yearly discussions between parents who have exemptions and school nurses regarding vaccination risks and benefits, at the urging of state health departments.

State immunization programs might encourage parental education without legislation requiring it by distributing training materials or creating online modules that teach school nurses methods of discussing immunizations with parents. State programs might engage local health departments to work with school health practitioners or administrators. Using the school as the locus of vaccine education might eliminate the burden that opponents of the vaccine education bills in California and Washington say applicants for exemptions face, unfairly, in having to meet with prescribed health care providers.²⁹

Notably, Kansas, Rhode Island, and the District of Columbia all had exemption rates of less than 1.0 percent in the 2011–12 school year. Future research might examine how rates differ between school districts that do and do not provide vaccine education to parents seeking exemptions. Public health researchers must continue to devote resources to examining trends in exemption rates and, especially, in rates of vaccine-preventable diseases after a change in exemption policy.

Conclusion

Our analysis confirmed earlier studies that described an inverse relationship between non-medical exemption rates and the complexity of exemption application procedures and showed higher exemption rates in states permitting exemptions for philosophical, rather than solely religious, reasons.^{1,11,19} The past several decades have seen a shift in parental concerns from disease prevention to vaccination risks, largely and paradoxically because of the success of large-scale immunization.²⁷ Despite the increasing visibility of pockets of unvaccinated schoolchildren and associated outbreaks of vaccine-preventable diseases, attempts by state legislatures to allow more parents to opt out of mandatory school vaccinations continue. Without sweeping social and policy change, the current trajectory suggests continued growth in exemptions and perhaps in rates of vaccine-preventable diseases.

However, new laws in California, Vermont, and Washington point to requiring immunization education as a key legislative avenue through which to control rising exemption rates. Actions by state health departments to change policy without new legislation, through encouraging yearly educational sessions with school nurses for parents reluctant to have their children immunized, might also produce modest reductions in the rates of exemptions.

With the renewed presence of vaccine-preventable diseases comes an obligation for public health research to both seek and evaluate methods of controlling nonmedical exemptions. ■

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