

Vaccine Exemption of Children in New Mexico

Vaccine exemption is the governmentally regulated process for formally declining vaccinations required for school or daycare entry. The process varies between states, but typically involves a parent or guardian completing an exemption form on behalf of a child which is then submitted to the relevant health authority for approval or disapproval. All states have laws that allow for vaccine exemption, but the reasons for which exemptions are granted, and how the laws are written and interpreted, are not uniform across states.

Vaccine exemption has been increasing in areas of the United States in recent years, including in New Mexico. A study conducted in 2012 documented that vaccine exemptions granted by the New Mexico Department of Health increased from 1,148 in 1999 to 3,372 in 2011, an increase of 194%.¹ The trend is concerning because it represents an overall decrease in herd immunity among the population.

New Mexico law permits vaccine exemption for medical or religious reasons. Specific reasons why parents in New Mexico are selecting vaccine exemption more frequently have not been systematically studied. Consequently, the New Mexico Department of Health, in cooperation with the New Mexico Immunization Coalition, conducted a survey of vaccine excluders in order to understand the factors and beliefs that influence the decision to forego required vaccinations in New Mexico.

Methods

A literature review was performed to guide development of a questionnaire and to identify validated questions to include in the survey. The finalized questionnaire included demographics of parent/guardian and child, questions about the process of obtaining vaccine exemptions, primary reason for and specifics about wanting vaccine exemption for the student, beliefs and understanding of disease and vaccines, sources of vaccine information, and plans for the future related to

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vaccine exemption. The survey sample was drawn from all 3,489 religious vaccine exemption certificates approved by the New Mexico Department of Health in 2011. Siblings were grouped into 2,208 families and parents/guardians were interviewed about the youngest child in the household with an approved vaccine exemption. Exclusion criteria included: a) Navajo Nation members living on Navajo Nation lands; b) exemption forms with missing phone numbers; and c) individuals contacted by phone who stated that they did not receive a vaccine exemption in 2011. Professional interviewers from the New Mexico Department of Health Epidemiology and Response Division Survey Unit conducted telephone interviews using the standardized questionnaire in English or Spanish, per respondents' choice, between May and July 2013.

Results

Response Rate and Respondent Demographics

Thirty-two households were determined to be ineligible for the survey based on the exclusion criteria. Of the 2,176 eligible households, 1,121 were able to be reached. A total of 729 people (33.5% of the eligible population and 65.0% of the population that could be reached by phone) agreed to be interviewed and completed the survey. The geographic locations of the survey respondents were not significantly different ($p \geq 0.05$) from those of the total population of vaccine exemptor households in New Mexico in 2011 (Table 1).

Survey respondents were most often the mother of the child who had a vaccine exemption (82.3%); White, non-Hispanic (74.2%); and college graduates or higher (66.7%) (Table 2). Also statistically significant differ-

ences ($p < 0.05$) in race/ethnicity; age; education level; and annual family income $< \$25,000$, $\$50,000$ – $74,999$, and $\$75,000$ – $99,999$ were found between survey respondents and the total New Mexico population. The median age of respondents was 40 years.

Vaccination Beliefs, Experiences, and Behaviors

The top reason for seeking an exemption was for philosophical or personal reasons ($n=400$, 54.9%), followed by religious ($n=158$, 21.7%) and medical reasons ($n=116$, 15.9%) (Figure). Seventeen people (2.3%) stated that they sought a vaccine exemption because their child was unable to get all required vaccines before the start of the school year and 11 (1.5%) stated that their child was vaccinated, but that they sought and received exemption because they could not obtain the required proof of vaccination.

After identifying the single reason for seeking a vaccine exemption, respondents were asked a series of questions regarding knowledge, attitudes, and beliefs that influenced their decisions. Responses were not mutually exclusive; thus, response percentages exceed 100% for all questions. Among the exemptors with a philosophical reason, the most frequently cited factors that led to the decision to not vaccinate the child was that the vaccines might cause harm (79.0%), the respondent was opposed to the contents of the vaccines (70.3%), and that the vaccines might overwhelm the child's immune system (61.5%). Among exemptors with a religious reason, 20.3% said that their religious denomination prohibits vaccines, and 63.3% said that it was their personal religious beliefs that prohibit vaccines.

Among all respondents, 73.0% believed that many vaccine-preventable diseases can be severe. However, most believed that it is better for their child to develop immunity naturally by getting the illness rather than by getting a vaccine (59.1%) and that they could protect their child's health without vaccines (69.0%). Only 32.6% said that it is important to vaccinate their children to prevent the spread of disease in the community. Most respondents did not believe that vaccines are safe (72.0%), with 59.3% believing that some vaccines may cause autism in children and 69.8% stating that they knew a child who had experienced a harmful reaction to or effect from a vaccine. In general, parents believed that it would be better for their children to get fewer vaccines at the same time (83.8%). Respondents said

that they are most likely to use pediatricians (39.9%) or family practice doctors (27.2%) for their child's care. Healthcare providers are also their primary source of information about vaccines (76.8%), followed by the Internet (64.7%), friends (55.7%), alternative/complementary providers (52.3%), and family members (49.1%). The majority (88.2%) said that they could openly discuss their concerns about vaccines with their child's healthcare provider, but 42.7% said that they generally do not follow the provider's recommendations on childhood vaccines.

Respondents were also asked what circumstances would lead them to have their child vaccinated with one or more of the vaccines for which they had them exempted. The top circumstances included being able to receive vaccines that do not have harmful additives (53.6%), traveling internationally (36.2%), and being able to have their children receive vaccines on a schedule that differs from the one recommended by the Advisory Committee on Immunization Practices and the New Mexico Department of Health (33.6%). Only 6.3% said that having a healthcare provider explain the importance of childhood vaccines would influence them to vaccinate, while 16.7% said that no circumstances would lead them to vaccinate their child.

Discussion

There were limitations to this study. Not all eligible persons who were granted vaccine exemptions in 2011 were able to be contacted, agreed to be interviewed, and completed the survey. While the geographic distribution of the respondents was not different from the entire eligible population, there should be further analysis of potential differences that may exist between respondents and the eligible population. The survey included only those individuals with religious vaccine exemptions approved and recorded by the New Mexico Department of Health. Children who did not receive some or all required vaccines and who did not obtain legal vaccine exemptions were not included in the survey. Also children with medical or religious official vaccine exemptions were not included.

Some of the New Mexico survey findings are consistent with findings in published literature. Respondents of the New Mexico survey were predominantly White, non-Hispanic (74.2%). In 2011, population estimates by New Mexico's Indicator-Based Information System

Table 1. Geographic location of survey respondents and total exemptor household population, New Mexico, 2011

County	Survey Respondents (N=729)		2011 Exemptor Households (N=2208)	
	n	%	n	%
Bernalillo	227	31.1	658	29.8
Santa Fe	177	24.3	524	23.7
Sandoval	66	9.1	183	8.3
Taos	46	6.3	154	7
Dona Ana	37	5.1	126	5.7
Los Alamos	26	3.6	57	2.6
Other	150	20.6	506	22.9

(<http://ibis.health.state.nm.us/>) reveal that of New Mexicans 21–79 years, 45.3% were White, non-Hispanic. Other studies have found that White parents had the highest vaccine refusal rates for their children of any racial/ethnic group² and Hispanic persons the lowest rates.³ The US Census Bureau 2011 American Community Survey states that 25.6% of New Mexicans age 25 years and older completed higher education degrees, in contrast to 66.7% of respondents to this survey who attained that education level. Similar higher education findings among vaccination exemption families have been reported previously.⁴

While New Mexico law permits vaccine exemption for medical or religious reasons, only 21.7% of respondents reported seeking a religious vaccine exemption for religious reasons. The number one reason for obtaining this type of exemption was for philosophical personal reasons (54.9%). Among survey respondents, more than half of the religious vaccine exemptions granted in 2011 were for reasons other than what is permitted by law.

Recommendations

- Develop multi-component interventions, including education, to decrease vaccine exemption rates among children.
- Enforce and strengthen New Mexico vaccine exemption laws.
- Utilize best practices that have evidence of effectiveness (e.g., requiring that parents receive educa-

tion and written approval from a healthcare provider before an exemption is granted).

- Conduct further retrospective and prospective analyses of vaccine exemption trends.

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Table 2. Demographics of survey respondents and total population, New Mexico, 2011

Characteristic	Respondents		NM Population*	
	n	%	n	%
Relationship to exemptor				
Mother	598	82.3	–	–
Father	124	17	–	–
Race/Ethnicity				
White, Non-Hispanic	528	74.2	637069	45.3
Hispanic	130	18.3	606948	43.2
Other	52	7.5	161144	11.5
Age (years)				
21 – 29	65	9.1	253562	18.0
30 – 39	264	36.9	253482	18.0
40 – 49	277	38.7	266605	19.0
=50	109	15.2	631515	44.9
Education				
High school or less	64	8.9	587353	43.4
Some college/technical school	176	24.4	420838	31.1
College graduate or higher	480	66.7	345995	25.6
Annual household income				
<\$25,000	90	13.7	117930	23.5
\$25,000 – \$49,999	162	24.6	125764	25.0
\$50,000 – \$74,999	157	23.9	93500	18.6
\$75,000 – \$99,999	108	16.4	63549	12.6
≥\$100,000	141	21.4	101755	20.2

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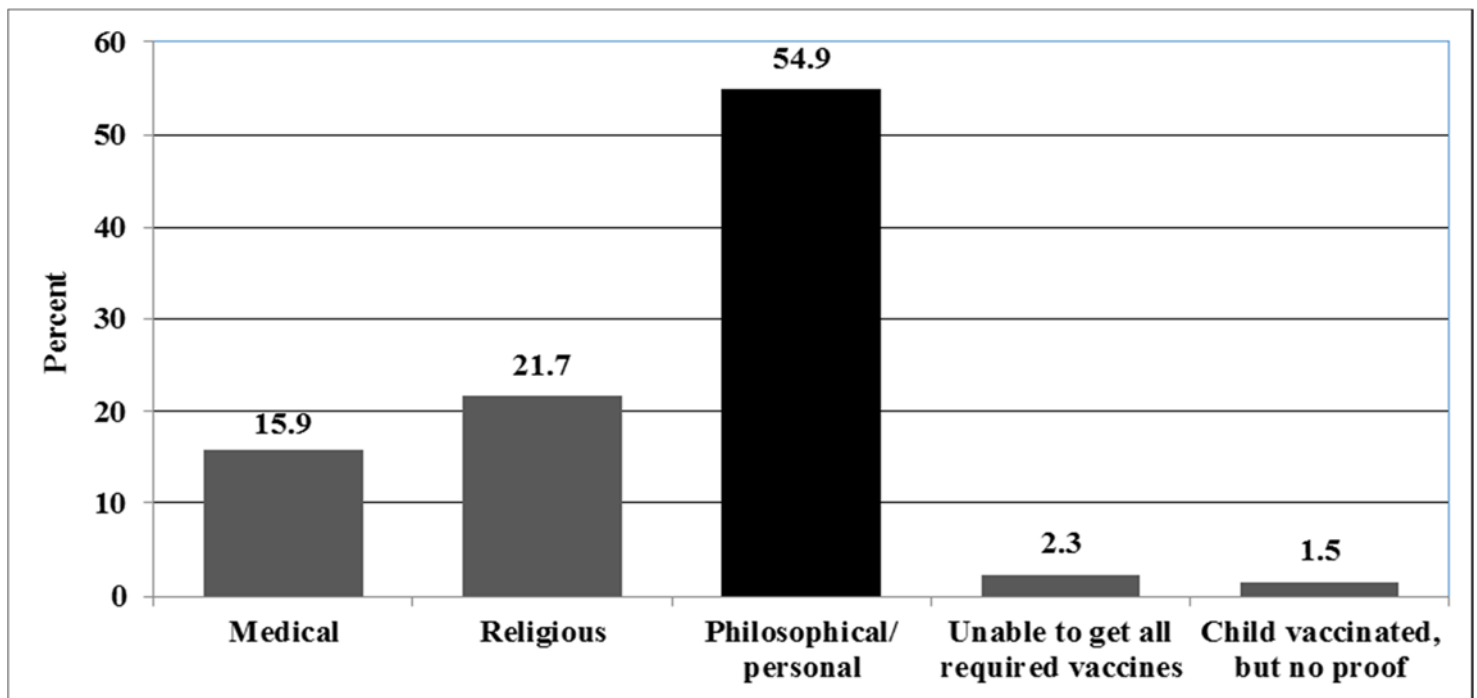
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Figure. Respondents' primary reason for obtaining a vaccine exemption, New Mexico, 2011



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