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Perceptions of personal belief vaccine exemption policy: A survey of Arizona vaccine providers

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ABSTRACT

Background: As exemptions to school-entry requirements rise, vaccination rates in Arizona school children are approaching levels that may threaten public health. Understanding the interactions physicians have with vaccine-hesitant parents, as well as the opinions physicians hold regarding vaccination, exemption, and exemption policies, are critical to our understanding of, and ability to affect, vaccination exemption rates among children.
Methods: Survey responses were elicited from practitioners listed in The Arizona Partnership for Immunization and the Arizona Medical Association databases using a multi-pronged recruitment approach. Respondents provided data regarding their practice, comfort with parental refusal of individual vaccines, opinions about the beliefs held by parents that seek exemptions, parent education strategies, issues regarding providing care to unvaccinated children, and potential changes to Arizona policy.
Results: A total of 152 practitioners providing care to a wide geographic and economic population of Arizona responded to the survey. Respondents were generally strong advocates of all immunizations but were more accepting of parents' desires to refuse hepatitis B and rotavirus vaccines. Almost all providers indicated that they see patients whose parents request to refuse or delay from vaccinations at least occasionally (88% and 97%, respectively). Only 37% of respondents indicated that they would be supportive of a policy requiring them to sign off on a parent's decision to refuse vaccination.
Conclusions: Vaccination providers in Arizona are generally very supportive of childhood immunizations but have varying comfort with exemption from individual vaccines. Responding providers tended to not support a requirement for a physician's signature for vaccine exemptions due to varying concerns regarding the implementation of such a practice.

1. Introduction

Clinicians who routinely administer childhood immunizations are facing increasing vaccine hesitancy and refusal from parents [1–3]. A survey of the fellows of the American Academy of Pediatrics revealed that 70% of pediatricians had a parent refuse an immunization for their child in the previous 12 months [4]. A recent national survey found that, in a typical month, 8% of family practitioners and pediatricians reported that ≥10% of parents refused a vaccine and 20% reported that ≥10% of parents requested a delayed or alternative vaccination schedule [2]. It is important to also note that some vaccines are more likely to be refused than others. Various studies have shown measles-mumps-rubella (MMR) vaccine, varicella and hepatitis B to have higher refusal rates [4–8].

Clinician response to the increase in vaccine refusal has been variable. In a nationally representative survey, some pediatricians and family medicine practitioners (53% and 31%, respectively) reported their practice required parents to sign a form if they refused vaccination [2]. Some take more extreme action. For example, nationally, 15% of physicians responded that they dismiss patients from their practice for vaccine refusal [2] and in Connecticut, as many as 30% of pediatricians excluded vaccine-refusing patients [3]. In contrast, there are clinicians who accept or promote vaccine refusal. One study indicated that nationally

Abbreviations: MMR, measles mumps and rubella vaccine; CI, confidence interval.

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64% of all physicians would agree to delay administration of the primary series of vaccinations at least sometimes [2]. Evidence of promotion of vaccine refusal was noted in 14% of family practitioners stating they do not recommend parents receive all available vaccines [9]. This trend is exacerbated by high-profile clinicians who publicly promote alternative vaccination schedules [10].

All 50 states in the U.S. have requirements for childhood immunization prior to entry into school. However, all states allow exceptions when medically necessary and 48 allow for exemptions from these school-entry requirements due to religious or personal beliefs. As one of the most trusted sources for vaccine-related information, clinicians play an important role in parental decisions about school-entry immunization exemptions [11]. Furthermore, the ease of exemption protocols has been positively correlated with exemption rates [12–14]. To reduce the ease by which exemptions are obtained, physicians have been included in the exemption process. This approach has demonstrated modest success. In Washington state, for example, vaccination exemption rates fell from 6% for the school year beginning in 2010 to 4.5% in 2011 after the enactment of a policy requiring physician signature on all exemptions [15].

In Arizona, on the other hand, exemption from school-entry vaccine requirements has risen from 2.4% in 2008 [16] to 4.2% in 2012 [17]. In 2010, as many as 8% of schools reported vaccination exemption rates exceeding 10% for kindergarten-entry requirements [18]. We conducted a survey of clinicians who provide childhood immunizations in Arizona in an effort to determine: (1) their perceptions regarding vaccine refusal among patients, (2) their comfort levels with parental refusal of individual vaccine types, (3) how their interactions with families who have refused to vaccinate against one or more vaccine-preventable diseases may change, and (4) their support for a hypothetical change in current philosophical/personal belief vaccination exemption procedures.

2. Methods

2.1. Study design and data collection

A cross-sectional study design was used targeting clinicians in Arizona that administer childhood immunizations. An online survey was developed to determine providers' experience with, and perception of, parental refusal of childhood immunization. Questions about provider demographics (gender, time since attainment of degree, degree type), practice characteristics (practice size and type, patient demographics) and the providers' role in childhood immunizations (frequency of providing vaccinations for children) were included in the questionnaire. The questionnaire was adapted from previous vaccination-related physician surveys [2,9].

The survey was disseminated to the target population in two ways: (1) the survey link was distributed through The Arizona Partnership for Immunization listserv, which includes all providers listed in the Arizona State Immunization Information System database, and e-mail reminders were sent two and four weeks after the initial recruitment email; (2) participants were also recruited via a monthly newsletter distributed by the Arizona Medical Association where potential participants were either provided a link or could fax in a paper survey. Participants were directed not to respond to the survey more than once and no incentive was provided.

A series of screening questions were used to target only participants that treat or provide vaccinations to children. Questions pertaining to vaccinations included the frequency with which parents refuse or request a delay for immunizations and what changes in care, if any, follow such a request. For each vaccine, participants rated their comfort level with parental refusal of a particular vaccine using a five-point Likert scale, with responses ranging from "very uncomfortable" to "very comfortable".

Though the primary scope of our survey was to assess providers' opinions about vaccination, we also assessed opinions toward a hypothetical policy change requiring their signature prior to exemption from vaccination requirements for school-entry. Participants indicated their level of support with the proposed change, how they felt it would impact their practice, and if they thought it would impact the exemption rates. Finally, an open comment field was provided for respondents to express additional opinions about immunizations or exemptions.

The survey was anonymous and no identifiable information was collected. This study was reviewed and approved by the institutional review board of The University of Arizona.

2.2. Statistical analysis

Frequencies and percentages were calculated for all categorical responses. Respondents who did not choose that they would monitor health of patients differently or refuse to provide care were coded that they would not make any change in care. Likert scale questions regarding comfort levels were dichotomized to comfortable (responses of "somewhat comfortable" or "very comfortable") or uncomfortable (all other responses), as responses were heavily skewed toward discomfort. McNemar's test was used to compare comfort levels of different vaccine types using polio vaccine as the reference group with confidence intervals (CIs) [19]. Polio vaccine was chosen as the reference group based upon its high utilization and low refusal rate [3,20]. The presence of a trend between comfort by vaccine type and year of vaccine introduction was explored using the Mantel-Haenszel chi-square test. Supporters of the proposed change in the exemption protocol were compared to non-supporters using chi-square tests or Fisher's exact test, as appropriate. Open-ended responses regarding vaccine exemptions were categorized according to common themes (with similar exemption and vaccine refusal themes being combined), totaled, and a representative quote for each theme was selected.

3. Results

Of approximately 1200 participants invited to participate, 152 responses were collected (for a response rate of approximately 13%). Participants were directed to not complete the remaining questions about vaccination perceptions if they did not offer immunizations or only cared for adults; 36 individuals (24%) did not complete the entire survey. Only the remaining 116 individuals are included in the analyses presented here. Characteristics of these participants are presented (Table 1). Participants were largely female (73%) and almost all (98%) received their training in the United States. Physicians represented 63% of the participants but a diverse group of other vaccine providers responded, including nurses, nurse practitioners, physician assistants, and medical assistants. The majority (58%) of respondents indicated they had been practicing for at least 15 years and 12% had completed their degree within the previous five years. Most participants were from pediatric (60%) or family practices (29%), and 55% of practices represented were small (three or fewer physicians), though 28% of respondents were from large practices with eight or more physicians. Participants indicated that they provided care to a wide range of patient demographics of varying geographic locations, incomes, and ages. Nearly all (97%) of the participants indicated that they routinely provide immunizations; 2% responded that they never provide immunizations but continued to respond to the vaccine-opinion related portion of the survey.

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