

Childhood Immunization Refusal: Provider and Parent Perceptions

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Background and Objectives: *Parental concerns may contribute to immunization refusals and low infant immunization rates. Little knowledge is available about how often and why parents refuse immunizations for their children. This study was conducted to estimate, based on reports from health care providers and parents, the frequency of and reasons for immunization refusal.* **Methods:** *In 1998, we conducted 32 focus groups of parents and providers in six cities. We then mailed a survey to a random sample of private practice family physicians and pediatricians and public health nurses who immunize children. The overall survey response rate was 77%, and the final sample size was 544.* **Results:** *Focus group findings indicated that parents rarely refused vaccines but occasionally resisted specific vaccines. Parents who were unsure about vaccinating were open to discussions about vaccines with a trusted provider. Most of these parents agreed to immunize after discussing concerns with their provider. In a subsequent survey of providers, respondents estimated that they immunized a mean of 3,536 (median 1,560) children annually. The reported mean number of refusals per 1,000 children age <18 years immunized was 7.2 (median 0.4), with varicella vaccine being the most commonly refused. Means did not vary by region or specialty. Providers indicated that fear of side effects heard about from media/word of mouth was the most commonly expressed reason for parents to refuse vaccines (52%). Religious (28%) or philosophical (26%) reasons or belief that the disease was not harmful (26%) were less common reasons. Providers reported that few parents refused because of anti-government sentiment (8%).* **Conclusions:** *Providers indicate low vaccine refusal rates within offices of traditional primary care providers and in public health clinics. Strategies for efficient provider-patient communication are needed to address parental concerns about vaccines.*

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Approximately 73% of children in the United States are immunized, and most parents permit their children to receive immunizations.¹ However, a sizable minority of parents have concerns about immunizations, and a few refuse some or all vaccines.¹⁻⁴ The national childhood immunization refusal rate is not precisely known. A 1999 national telephone survey indicated that almost one fourth of parents felt uncertain about the increasing number of childhood vaccines.³ Parents with alternative medical orientations had more concerns and were

more likely to have misconceptions about vaccines than parents with a conventional medical orientation.³ As once-common childhood diseases become rare, disease awareness decreases, and parents' perspectives about vaccine risks and benefits change.⁵⁻⁷

Both accurate and inaccurate immunization information is available to parents through a variety of sources, including the Internet.⁸⁻¹¹ A recent search found 22 anti-vaccination Web sites that expressed a range of concerns about vaccine safety and a general distrust of medicine.¹¹ Family physicians, pediatricians, and nurses need to be more fully prepared to have productive discussions with parents who resist or refuse immunization. Providers and policymakers need to be aware of national refusal rates and the reasons for them, as well as parents' perspectives on information that might influence refusal decisions.

Every state allows medical exemption to vaccines. Forty-eight states allow religious exemptions, and 18

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allow philosophical exemptions.¹² Several reasons are cited in the literature for parent refusal of child vaccinations, including erroneous beliefs about contraindications, not wanting to expose children to perceived dangers of vaccines, and not wanting to deliberately expose healthy children to diseases.^{6,13-16} In addition, studies focusing on vaccine decision making have found that parents may prefer to make errors of omission (bad outcomes due to lack of action; here, to not vaccinating a child) rather than errors of commission (bad outcomes due to action; here, vaccinating a child) and that they may find it easier to accept “natural” risks rather than “man-made” risks.^{5,16} Parents’ cognitive processes—specifically their perceived ability to control their child’s susceptibility to the disease and the outcome of the disease, as well as doubts about the reliability of vaccine information—have also been noted as reasons some parents forgo some childhood vaccines.¹⁶ Other studies note some parents disagree with the practices of conventional medicine.^{17,18} Of this group, some believe in “natural healing” and think it is better for children to be exposed to the diseases and get over them naturally.¹⁹ Others refuse based on religious convictions.¹³ Some parents and groups view compulsory vaccination as an unnecessary infringement on individual rights.²⁰ Providers need to be aware of these concerns and develop strategies to effectively respond to each group of parents.

This study was conducted from 1997 to 1998 as part of a needs assessment phase of an immunization risk/benefit communication enhancement program sponsored by the Health Resources and Services Administration.^{2,12} In this two-phase study, we began with focus groups to help inform the development of a quantitative survey and to expand our understanding of parental concerns, especially those of parents who had refused a vaccine. The purpose of the provider survey was to estimate, based on provider report, childhood immunization refusal rates and the prevalence of reasons parents gave for refusing vaccines. The general results of the survey and focus group findings concerning vaccine communication have been reported elsewhere,^{2,4,21} and detailed results about refusal rates and reasons for refusal are reported in this paper.

Methods

The study and instruments were approved by the Louisiana State University Health Sciences Center-Shreveport’s Institutional Review Board for the Protection of the Rights of Human Research Subjects.

Focus Groups

We conducted 32 focus groups (five groups of family physicians, five of pediatricians, six of family medicine and pediatric clinic nurses who immunize children, three of public health immunization clinic nurses,

11 of parents, and two of parents who had refused vaccines) in six cities (Albuquerque; Cleveland; Shreveport, La; Rochester, NY; Santa Fe, NM; and Wichita, Kan). These cities were chosen for their geographic representation, ethnic and socioeconomic diversity, and the presence of academic collaborators. Each focus group contained between five and 10 participants.

Recruitment and Participants. (1) Provider focus groups—Separate focus groups were conducted for family physicians and pediatricians, nurses in the same offices, and public health nurses. The academic collaborators arranged for access to local academic centers, private practices, and (in Kansas and Louisiana only) public health clinics. Providers were recruited primarily by posted signs describing the purpose of the focus groups, the target audience (ie, the specific provider type), and the \$100 incentive for physicians/\$50 incentive for nurses. The sign instructed providers who were interested in participating to notify the local academic collaborator. Potential participants then received a reminder phone call or e-mail the day of the group.

(2) Parent focus groups—Local academic collaborators, with the help of an appointed staff member (clerk or nurse), coordinated parent focus groups. These collaborators and staff organizers received a \$100 honorarium. At the local academic centers and public health clinics described above, signs were posted to recruit parents of young children of immunization age, including the incentive of \$25. Additionally, academic collaborators or staff organizers arranged for access to parent groups such as church and neighborhood mothers-day-out meetings. In Santa Fe, academic collaborators posted notices recruiting vaccine refusers in community centers, a co-op market, the Christian Science Church, an organization promoting childbirth at home, and an alternative community newsletter. Potential participants were instructed to call the local organizer and were subsequently given a reminder call.

Most parent focus group participants were mothers; however, in almost every focus group, fathers accompanied some mothers. Other than the refuser groups, focus groups included representatives from a wide variety of ethnic and socioeconomic strata. All participants in the refuser groups were white with variable income levels.

Focus Group Content. In provider focus groups, scripted questions elicited providers’ experience with parents who were hesitant to vaccinate or refused some or all vaccines. When appropriate, we probed the providers for specific concerns expressed by the parents, subsequent provider responses, and immunization outcomes (ie, did the child eventually get immunized and if so, at that visit or a later one). To get more informa-

tion on this communication process, we asked providers to demonstrate what they would say, how they would say it, and what parents might say to them.

In parent focus groups, the scripted questions asked for sources of information about immunizations; we probed for all sources of information and for the most trusted sources. We also asked what information parents wanted or needed to know, how they wanted it delivered, and whether they had refused any immunization and for what reason. If parents had concerns about any vaccine, these concerns were probed. We also elicited parents' beliefs about vaccines and the diseases they prevented. In the two focus groups among parents who had refused immunization, we followed up on beliefs they expressed about not giving their children medicine or vaccines, the protective value of nursing their children until age 4–6 months, and the efficacy of alternative medicine. All questions to parents were asked in a curious, nonjudgmental tone. The focus group leaders did not have an agenda of convincing the parents that they needed to immunize.

Focus Group Moderators. All focus groups were moderated by a team of two authors. In each case, the team was comprised of Dr Davis (a PhD psychologist trained in group dynamics) and one physician. Each group also had a note taker from the research team and was audiotaped.

Focus Group Data Analysis. Data retrieved from the focus group discussions were analyzed qualitatively. Audiotapes were transcribed verbatim into a computerized database of text documents that could be searched for specific content information. Qualitative analysis based on grounded theory was accomplished through the examination of transcripts as well as through notes taken by the facilitators in each group. Themes defined in the questions/scripts and unanticipated emergent themes derived from focus group discussions were analyzed and recorded. Participant comments were extracted and referenced within the generated themes, then reviewed again to confirm the validity of the themes.

National Survey

Survey Questionnaire. The survey questionnaire was endorsed by a steering committee composed of representatives from 15 federal and private agencies (Appendix 1). Questions were formatted and drafted by the project team based on focus group results. The survey was iteratively pilot tested in four cities among potential respondents and revised. More than 20 revisions of content and format honed the instrument's user friendliness to minimize respondent burden and maximize response rate. The final five-page, 27-question survey took less than 10 minutes to complete. Questions asked providers to estimate the number of children under age

18 immunized per week, number of child immunization refusals per year, reasons for refusal, and specific immunizations refused (Appendix 2). The survey tool is available from the corresponding author.

Survey Participants. We surveyed three groups of providers who immunize children: (1) family physicians in the private sector, (2) pediatricians in the private sector, and (3) public health nurses at local health departments. We obtained randomly generated lists of family physicians from the American Academy of Family Physicians and pediatricians from the American Academy of Pediatrics, for Groups 1 and 2. For Group 3, we obtained randomly generated lists of 100 local health departments (two from each state) who were members of the National Association of County and City Health Officials. The survey was conducted from March through September of 1998. Three mailings were used to maximize response rates.

Data Entry, Management, and Analysis. Data were entered into Microsoft Excel. Re-coding and analysis were completed using Statistical Analysis Software SAS 8.01 (SAS Institute, Cary, NC, 1999). Providers were stratified by provider type (family physician, pediatrician, public health nurse). Practice locations were grouped into four regions (Southeast, Northeast, Midwest, and West). Office volumes were grouped into four strata based on number of children immunized per week (0–20, 21–74, 75–199, and 200+).

Annual immunization count estimates were calculated by multiplying the weekly immunization counts by 52. Refusal rate estimates were calculated by dividing the number of annual refusals by the annual immunization count and converted to annual refusal rates per 1,000 children immunized. Refusal rate estimates were stratified by provider type, region, and immunization clinic volume. Means were compared in bivariate fashion across strata using ANOVA, Duncan's test, and Scheffe multiple comparisons procedures. Categorical variables were compared across strata using chi-square.

Results

Focus Group Findings

Consensus opinions of parents and providers are shown in Table 1. Four themes pertinent to refusal emerged within the context of focus groups: (1) concerns and refusals, (2) sources of information that might influence refusal, (3) trusted sources of information, and (4) doctor-patient refusal communication. The range of opinions expressed is detailed as follows:

(1) Concerns and Refusals. Providers in focus groups reported that parents rarely refused all vaccines but occasionally resisted specific vaccines. Providers thought resistance was based on parents' lack of un-

Table 1

Focus Group Consensus Findings of Parents
and Providers About Vaccine Refusal

1. Refusal is rare, though some parents have concerns.
2. Refusals were most commonly aimed at certain vaccines, not all vaccines.
3. Reasons for concern/resistance vary.
4. Parents trusted vaccine information given orally by physicians and public health nurses.
5. Parents with concerns commonly responded to providers giving personalized risk/benefit information or reporting they immunized their own children.
6. Parents saw their children as the most important thing to them.
7. Parents did not want the provider to lecture or argue with them.

derstanding of the vaccine's importance for their child. Some providers identified cultural differences as a cause for resistance, particularly with recent immigrants. Both public health nurses and physicians reported, "Most parents with concerns ended up vaccinating after patient education."

In groups of immunizing parents, some reported having been concerned about immunizing a sick child, and a few had wondered about giving a healthy baby vaccines. However, these parents had been reassured of the decision to immunize by their providers. Some parents expressed concerns about a particular vaccine, most commonly hepatitis B or varicella. Hepatitis B was not viewed as necessary for an infant; the varicella vaccine was questioned by parents who did not view chicken pox as a serious problem.

All parents in the "refuser" groups had refused some or all vaccines. Most of these parents disagreed with immunizations on a philosophical basis; one participant disagreed on a religious basis. Some parents believed medical science/pharmacology should not interfere with nature, (ie, they believed it is normal and natural for a child to have fever and childhood diseases, and having these enables one to have a healthier immune system throughout life). They also believed that immunity acquired from having the disease was preferable to that acquired from vaccines.

Many of the parents who refused most vaccines believed that breast-feeding their babies into childhood and keeping them out of day care would protect their children from most vaccine-preventable diseases. These parents were also willing to keep their child home from school during outbreaks.

(2) Sources of Vaccine Information That Might Influence Refusal. Almost all parents had seen television reports of children diagnosed with autism or brain damage after immunization but were also aware that media reports may distort the problem. Refusing par-

ents felt that information on childhood immunization issued by either the Centers for Disease Control (CDC) or some anti-immunization Internet sites was likely to be biased. Parents who had refused vaccines said the CDC was promoting vaccination while the Internet sometimes gave inaccurate or alarming information when promoting refusal. Parents who had refused stated they wanted factual information delivered "without spin." Refusing parents seemed to trust information in *Mothering* magazine, which has published several articles in the last few years on the safety of specific vaccines. All parents preferred spoken information from providers.

(3) Sources of Trusted Information. Parents in all focus groups, including those who refused to immunize their children, trusted the information given to them by their physicians. Refusers saw this information as credible and honest even if they did not follow through with the immunization. Parents reported that when they initiated discussions and asked specific questions, they perceived physicians as helpful and informative: "The doctor seems willing to tell you anything you want to know about the shot, but you must ask." Many parents were eager to know whether physicians immunize their own children. This point was supported by providers who indicated parents often wanted to know if providers gave "the shots" to their children and seemed reassured to hear that providers did. "That's the bottom line for a lot of my parents."

(4) Doctor-Patient Communication. Parents in all groups wanted physicians to recognize that "my child is the most important thing to me." Parents wanted a personal relationship with the doctor. They wanted continuity of immunization education as well as continuity of immunizations and well-child care. Parents preferred a positive approach by providers rather than admonishment. The stories of the parents in the refusal groups indicated that refusal often occurred on a continuum rather than as all or nothing. All parents in our focus groups were open to discussion with providers but wanted a concerned listener approach from their provider. Parents who were concerned about one or all vaccines wanted their physicians to listen nonjudgmentally to their concerns and wanted their physicians to give them tailored information regarding each shot in question. Many parents lacked knowledge about the benefits of the shots for their child. Parents in the refusal group who had received such nonjudgmental listening and tailored education from their provider reported they were then more open to the possibility of immunizations. One such parent with a previous refusal commented, "Our family doctor explained that it was important our little boy get a tetanus shot since we live on a farm. That made sense to us."

Survey Results

Response Rates and Respondent Demographics. The response rate for the national survey was 70.4% for physicians and 92.5% for public health nurses. The overall response rate was 77%. There was no statistically significant difference in response rates by region of the country. Demographic characteristics of the immunizing respondents are shown in Table 2. In general, respondents were mid-career providers. Public health nurses were more often female and performed the most immunizations per week, while family physicians performed the fewest.

Report of Refusals

On average, providers reported that refusals were rare. Of the mean 3,536 (median 1,560) children immunized annually by each provider, there were estimated by report 4.4 (median 1) annual refusals, or 7.2 (median 0.4) refusals per 1,000 children under age 18 years immunized. The estimated refusal rates (number of refusals per 1,000 children immunized) did not vary significantly by region, specialty, or clinic volume. Rates and statistical comparisons between provider types are shown in Table 2.

The discrepancies between mean and median rates originated among a small number of outliers comprising approximately 2% of each provider group. These

discrepancies were not related to the region of the country or clinic volume. A careful review of individual outlier survey responses could detect no apparent trend. We concluded that outliers most likely derived from small errors in respondent estimation of immunizations or refusals, magnified through use as numerator or denominator in rate calculation. After omission of outliers, rate estimate means approximated the medians.

The relative frequencies of vaccines given and refused in offices reported by family physicians, pediatricians, and public health nurses are shown in Figure 1. The most common vaccine refused in 1998 was varicella (71% of respondents reporting any refusals), followed by diphtheria-tetanus-pertussis (DTP/DTPaP) (63%) and hepatitis B (61%) vaccines. The least commonly refused were *Haemophilus influenzae* type b (Hib) (41%) and inactivated polio vaccine (IPV) (40%).

Reasons Given for Refusals

Providers gave several reasons for parent refusal. Negative messages from a third party—specifically TV, radio, and word of mouth—was the most common reason (55%). Belief that the disease was not harmful (33%), philosophical reasons (30%), and religious reasons (28%) were less common. Parent concerns about medical contraindications (19%) and anti-government sentiment (8%) were reported least frequently.

Table 2
Demographic Characteristics of Respondents

	Overall	Family Physicians (%)	Pediatricians (%)	Public Health Nurses (%)	Significance of Difference Between Provider Types
Female	61	33	39	98	***
White race	86	93	74	89	***
Hispanic ethnicity	5	4	7	4	NS
	Mean (Median)	Mean (Median)	Mean (Median)	Mean (Median)	
Years since professional school	18.2 (17)	16.5 (15.0)	20.0 (17.0)	18.2 (18.0)	*
Number of patients ages < 18 years immunized weekly	68.0 (30)	18.5 (10.0)	83.8 (40.0)	95.7 (50.0)	***
Number of parents refused child immunization in the past 12 months	4.4 (1)	2.2 (0)	5.5 (2.0)	5.4 (1.0)	**
Refusals/1,000 immunized/year	7.2(0.4)	9.2 (0.2)	10.5 (0.4)	3.0 (0.4)	NS

NS—not significant

* P<.05
** P<.01
*** P<.001

Discussion

Our national survey confirmed our focus group findings of relatively low refusal rates in both public health clinics and private family medicine and pediatric offices in the United States. Although the survey and focus groups indicated that total refusal was quite low, both found that some parents had concerns about specific vaccines. In our survey, providers reported that one third of refusing parents refused because of the belief that a particular disease was not harmful. Meszaros¹⁶ reported a similar finding from a survey of *Mothering* magazine subscribers about pertussis vaccination. The mothers who refused to give their child DTP (43% of respondents) were significantly less likely to view pertussis disease as harmful and significantly more likely to view DTP vaccine as harmful than immunizing mothers.¹⁶ In our focus groups, the mothers who were concerned about varicella did not consider chickenpox to be harmful.

Meszaros¹⁶ found that parent cognitive process was an important predictor of decision to refuse DTP. Non-vaccinating mothers believed strongly that they could prevent their children from catching whooping cough and could prevent complications if their children developed the disease.¹⁶ This type of thinking was apparent in our two focus groups of refusers. These parents believed that breast-feeding their babies into childhood and keeping them out of day care would protect their children from most vaccine-preventable diseases.

Previous research has identified several philosophical reasons for child immunization refusal. Some parents disagree with the practices of conventional medicine.^{6,18} In a 1995 parent survey, Simpson et al found that approximately 20% of parents who refused immu-

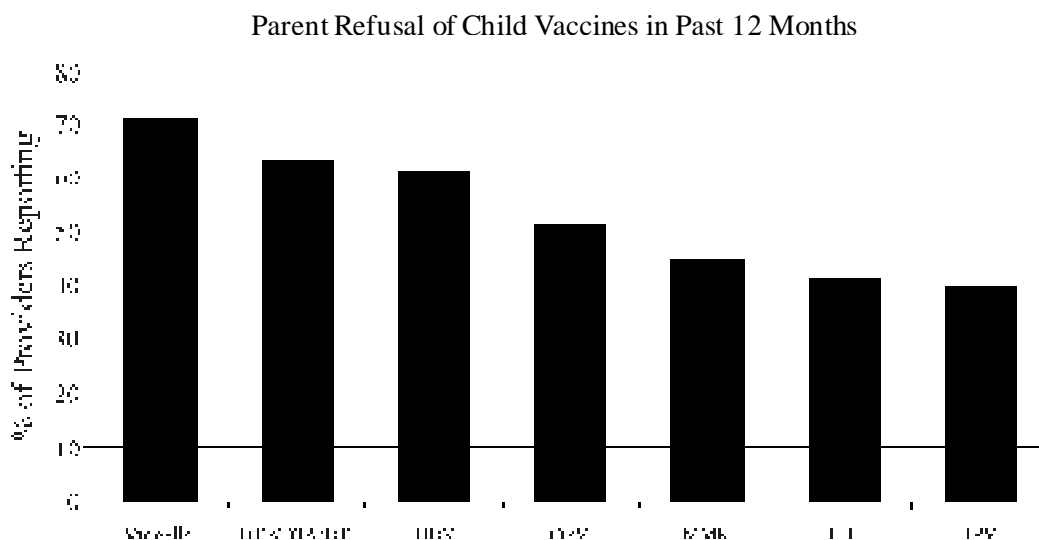
nizations did so because of a belief in homeopathy.¹⁸ These findings were reflected in our focus groups of refusers, particularly the belief that immunity acquired from a disease was preferable to that acquired from vaccines.

The research on vaccine decision making and risk communication has shown that some parents prefer to make errors of omission rather than commission when making vaccination decisions. This literature also points out that some non-immunizing parents are aware that their children may be at lower risk if most other children in the community are immunized.^{5,17} In our two focus groups with vaccine refusers, these views were not brought up by participants. However, it may be unlikely for focus group participants to portray themselves in these ways that could be considered selfish. Parents should be made aware that a high level of immunization in a community does not always protect an unvaccinated child.²²

Our focus group consensus findings indicated that most parents with concerns ended up immunizing after having discussions with their physician about why the vaccine was important for their child. These findings provide validation of the Red Book guidance, which states:

Effective, empathetic, vaccine risk communication is essential for responding to misinformation and concerns while recognizing that risk assessment and decision making for some parents may be difficult and confusing. Some vaccines may be acceptable to the resistant parent. Their concerns should be addressed in the context of this information . . .²³

Figure 1



Our vaccine communication focus group findings parallel data from a 2001 Commonwealth Fund study of parents' expectations of provider communication.²⁴ That study conducted focus groups nationally among mothers of children participating in Medicaid. These low-income mothers reported they wanted a trusted physician to initiate discussions about child development because they did not always know what to ask. Mothers did not want the doctor to simply tell them what to do without listening to their views. They wanted the physician to tell them "why" and to show respect for the mother's opinions.²² Our focus groups found similar views held by high- and low-income mothers who were concerned about certain vaccines.

In our focus groups, the preferred source of information about vaccines was the highest-level provider in the clinical setting. Both vaccinating and non-vaccinating parents in these groups reported that the trustworthiness of the media, the Internet, and word of mouth was small in comparison to a trusted provider. It is important to note that parents greatly preferred to see the same provider, someone who would "know" their child. Parents wanted continuity of health education, including vaccine information, as well as continuity of well-child care.

Limitations

It is possible that provider recall may exaggerate or downplay refusals, or that the explanations parents give providers does not reflect their true beliefs. Because we used provider reports as proxies for prevalence of parent refusal reasons, these results may omit parents who do not bring their children for care from private physicians or public health immunization clinics. While the number of these families is assumed to be very small, they most likely include a higher percentage of families who do not immunize their children.

From our focus groups and national survey data, we cannot determine if immunization refusals are more or less prevalent in rural areas. Further, although we conducted parent focus groups, we did not survey parents nor quantitatively assess reasons for refusal of specific vaccines.

It may be important to note that while this study was being conducted, thimerosal had not been removed from vaccines, and rotavirus had not yet been recalled. Also, some media attention was paid to the possible connection between MMR vaccine and autism. At this time, varicella vaccine was not a widespread school requirement. The full influence of these historical factors is not completely understood.

Conclusions

Parent and provider focus groups indicated that refusals were rare, yet some parents have concerns about specific vaccines. Our national survey also suggested

that childhood vaccine refusal is uncommon—at least among families who are seen in allopathic primary care offices—and tends to be specific to certain vaccines. Though rare, all types of providers in all regions of the country reported vaccine refusals. Because parental reasons for resistance and concerns vary, providers need to understand why a parent might be concerned. Providers need the knowledge, skills, and motivation to discuss parents' concerns and aid in informed decision making. Most parents do decide to vaccinate.

The most recent national immunization rates (in 2002 for the 4:3:1:3:3:1 series, coverage was 65.5%²⁵ [comprises \geq four doses of diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine (DTP/DT/DTaP); \geq three doses of poliovirus vaccine; \geq one dose of measles-containing vaccine; \geq three doses of *Haemophilus influenzae* type b vaccine (Hib); \geq three doses of hepatitis B vaccine; and \geq one dose of varicella vaccine]) are not explained by the physician-reported frequency of parental refusal in our study. Other factors that contribute to this low immunization rate are not clear. Parents may not come in for well-child visits and may lack knowledge of the benefits of vaccines. This highlights the importance of implementing proven public health approaches to increasing immunization rates,^{26,27} as well as the importance of physicians and public health nurses stressing well-baby visits and the benefits of immunizations. Previous research by these authors found that benefits are not stressed in private or public health clinics.^{28,29}

It should also be noted that some parents were skeptical of both pro- and anti-immunization messages. Most parents, however, trusted advice from their own primary care provider. Although a few parents may refuse one or more vaccinations for their children at one time, continued provider discussion about vaccines in subsequent visits can lead parents to accept one or more of the vaccines at a later point. More research is needed to identify the best practices of addressing parents' concerns.

When communicating vaccine risk/benefit information with resistant parents, the manner in which the physician delivers the information may be as important as the content provided. Previous research indicates that parents want providers to listen nonjudgmentally, not be argumentative, and respect the parents' need to protect their child.^{4,30} We recommend that providers use clear language, give most important information first, and check for understanding. Both the literature and our study highlight the value of a trusted provider initiating vaccine communication and tailoring discussion to the needs of the specific parents. We conclude that patient-centered immunization communication that follows Red Book guidelines²² will facilitate discussion with a resistant parent.

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Appendix 1

Organizations Represented on Project Steering Committee

- American Academy of Pediatrics
 - Ambulatory Pediatric Association
 - American Academy of Family Physicians
 - Society of Teachers of Family Medicine
 - American College of Obstetricians and Gynecologists
 - American Nurses Association
 - National Association of Pediatric Nurses and Practitioners
 - Association of Faculties of Pediatric Nurse Practitioner/
Associate Programs
 - National Association of Community Health Centers Inc.
 - Association of Teachers of Preventive Medicine
 - Health Resources and Services Administration
 - Centers for Disease Control and Prevention
 - Federal Drug Administration
 - McKesson Bioservice Corporation
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Appendix 2

Survey Questions

Here are some questions on how childhood immunizations are administered at your facility.

Estimate how many of your patients under age 18 are immunized each week in your setting. _____ (#) patients

In the last 12 months in your setting:

a. How many patients' parents absolutely refused childhood immunizations?
_____ (#) parents

b. Which immunizations did parents refuse? (check [x] all that apply)

- DTP/DTaP/DT
- MMR
- OPV
- IPV
- Haemophilus Influenzae*
- Hepatitis B
- Varicella

c. What reasons did parents give for refusing immunizations? (check [x] all that apply)

- Religious reasons
 - Medical contraindications (eg, anaphylaxis)
 - Concurrent illness
 - Lack of immunization record
 - Advised by other physician not to immunize
 - Child has little risk of catching disease
 - Personal experience with side effects
 - Fear of side effects heard from third party source (TV, radio, word of mouth)
 - Anti-government sentiment
 - Other philosophical reasons
 - The disease is not harmful
 - Other _____
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