

Vaccination options for Medicaid parents uncomfortable with
office visits during COVID pandemic

Short title: Vaccination options during COVID pandemic

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Abstract

Objective: Rates of child vaccinations declined during the COVID pandemic, which increases the risk of outbreaks of preventable diseases among children.

Methods: We conducted an online survey of parents of Medicaid beneficiaries age 0-5 years old in Florida USA during January 2021 to assess barriers and strategies to increase adherence to childhood vaccinations.

Results: We surveyed 1,951 parents. Most (91%) respondents reported their child was up-to-date with childhood vaccinations, but fewer (36%) children had received a flu shot. Some (31%) parents had wanted to take their child to see a doctor but decided not to, and 22% were not comfortable with in-office visits. Not taking their child to a doctor despite wanting to was associated with lower odds of that child being up-to-date and greater odds of being uncomfortable with in-office visits. Predictors of vaccine adherence included beliefs in their safety, efficacy and being easy to get. Promising strategies for getting parents to vaccinate their children during the pandemic include advertising COVID-compliant cleaning and masking policies, reinforcing parents' perceived importance and ease of vaccination, and reserving vaccination appointment times for healthy children.

Conclusions: Results inform future messaging and structural interventions to encourage parents to vaccinate their children, which also may be useful for encouraging vaccinations recommended for older adolescents including COVID-19 vaccinations. This study demonstrates the importance of vaccination surveillance and identifying which interventions may appeal to parents in order to maintain high adherence rates and avoid outbreaks of preventable diseases in children.

Introduction

Health organizations encourage parents to obtain vaccines for their children against multiple diseases.¹ Although childhood vaccination rates are generally high across the U.S. in part due to requirements for children starting school, variability exists and outbreaks of these preventable diseases occur.^{2,3} In response to a resurgence in measles in the U.S. and disparities in the race and socioeconomic status of affected children, the Vaccines for Children program was created in 1994 to eliminate financial barriers to vaccination.⁴ The COVID-19 pandemic has presented new barriers to childhood vaccination uptake through shut downs and individual concerns about contagion. Decreases in vaccine administration during the early months of the pandemic prompted media campaigns to promote vaccination.^{5,6} Noting similar decreases in vaccination in Florida, our team developed a survey to assess barriers and strategies that might increase adherence to recommended vaccinations despite COVID-related restrictions. Specifically, we describe 1) child vaccination adherence, 2) parent's comfort with in-office visits during the pandemic, and 3) strategies that may make parents more or less likely to get their child vaccinated. Further, we examined correlates of vaccination adherence and comfort with in-office visits and examined differences in parents' ratings of strategies by their comfort with in-office visits. Parents who are uncomfortable with in-office visits and delay child vaccinations may need alternative strategies for vaccination uptake. Such alternatives have pros and cons that influence their likelihood of adoption and impact from the provider and public health perspective, but assessing parent opinion is a necessary first step for planning efforts.⁷

Method

Study Sample

We sent email invitations with links to our online Qualtrics survey to 32,761 parents/guardians of Florida Sunshine Health Medicaid beneficiaries ages 0-5 years old. A total

of 1,951 people participated in the cross-sectional survey between January 13-31, 2021. Of those, 99 people selected the Spanish version of the survey. Participants were offered a \$9.99 Walmart e-gift card. Washington University's IRB approved this study as exempt.

Measures

Participants who reported having more than one child 0-5 years were asked to respond about their youngest child. Survey measures assessed parent characteristics (age, sex, race/ethnicity, education, self-rated health), if their child had a regular doctor (yes, no) and all the needed vaccines for their age for diseases such as hepatitis, mumps, measles, rubella and chickenpox (not including flu vaccine) (dichotomized: yes vs. no, some but not all or not sure), and the extent they agreed that vaccines were useful, easy to get, expensive, and important (4 items; responses dichotomized: strongly/agree vs. strongly/disagree). Participants were asked to indicate their plan to get a flu vaccine for their child; categorized as: already got it, highly or somewhat likely to get it, somewhat or highly unlikely to get it, not sure. We asked, "How comfortable would you be if you took your child to a doctor's in-office visit right now?" (dichotomized: very/somewhat comfortable vs. very/somewhat uncomfortable) and "Since COVID-19 began to spread in mid-March, was there a time when you wanted to take your child to a doctor but decided not to?" (yes, no). Participants also rated the degree to which fifteen strategies would make them more or less likely to get their child vaccinated (dichotomized: much more/somewhat more likely vs. no effect or somewhat/much less likely).

Analyses

Descriptive statistics and bivariate logistic regression analyses were conducted.

Results

Most respondents (91%) reported their child was up-to-date with childhood vaccinations; however, fewer (35.8%) reported their child got a flu vaccine. Concerning hesitancy during the COVID-19 pandemic, 31% had wanted to take their child to see a doctor but decided not to, and 22% were not comfortable with in-office visits. Parents who were not comfortable with in-office visits were less likely to report their child was up-to-date with vaccines (OR=0.58, 95% CI: 0.41-0.82). Table 1 reports participant characteristics and covariates of child vaccination status and comfort with in-office visits.

Older children (2-5 years) were more up-to-date than younger (0-23 months) children and parents of older children were less comfortable with in-office visits. Although most children had a regular doctor, having one was positively associated with being up-to-date. Not having a flu shot was associated with lower odds of being up to date and feeling comfortable about in-office visits. Not taking their child to a doctor despite wanting to was associated with lower odds of that child being up-to-date and lower odds of being comfortable with in-office visits. Children also had worse odds of being up-to-date when parents disagreed that vaccines were useful, important, and easy to do. Parents who thought getting vaccinations were easy to do were more likely to feel comfortable with in-office visits.

Table 2 reports the overall frequencies and the unadjusted odds of each strategy making respondents who were uncomfortable (vs. comfortable) with in-office doctor's visits likely (vs. unlikely) to get their child vaccinated. The most frequently endorsed activities that would encourage in-office visits included limiting COVID exposure through cleaning, masking, and avoiding crowded waiting rooms. Offering separate appointment times for healthy children to receive vaccinations were also endorsed by over 70% of the sample. These activities may appeal to all respondents, but were especially influential for those who reported feeling uncomfortable

with in-office visits. Additionally, offering vaccinations at other settings including drive-through services, home visits or outdoors at community locations were associated with greater likelihood of getting their child vaccinated among those uncomfortable (vs. comfortable) with in-office visits.

Discussion

Survey respondents were positive about childhood vaccinations; most reported their child was up-to-date. However, flu vaccination rates were much lower. Differences observed in this study warrant replication with a larger, nationally representative sample, but also suggest several applications for outreach. For example, to increase vaccination rates among children with Medicaid insurance, messages should reinforce parents' perceived importance and ease of vaccination. Structural interventions should identify children without a regular doctor and offer strategies for delivering vaccinations that might appeal to parents who are uncomfortable with in-office visits right now. Advertising clinics' enhanced or COVID-compliant cleaning and masking practices may also make parents more likely to bring their child in for vaccinations. Additionally, having separate appointment days or times for healthy children to receive vaccinations were also rated positively. Such alternatives may encourage parents to prioritize quick preventive visits, which are less frequent and get skipped compared with acute visits. For parents who report greater discomfort with in-office visits, having drive-through or home-visit vaccination programs may be an appealing alternative. Such approaches also may be influential in encouraging parents to adhere to vaccinations recommended for older adolescents including HPV, meningococcal disease, and COVID-19. Health fairs or "catch up" vaccination events hosted by provider's offices may be able to attract hard-to-reach families or those with barriers to making and keeping appointments during regular business hours.

Other recommendations in the literature include reminders to parents when children are overdue for immunizations and stressing the importance of keeping children up to date. Additionally, providers need to consistently encourage and normalize childhood vaccinations.⁸ The use of standing orders and review of vaccine adherence at every visit as well as a presumptive approach also may result in greater adherence.⁹ This study demonstrates the importance of ongoing vaccination surveillance and identifying individual- and structural-level interventions that maintain high adherence rates and avoid outbreaks of preventable diseases in children. Although childhood vaccination rates are high nationally, greater delays or refusals within a specific geographic region has been associated with outbreaks of preventable disease; thus, continued surveillance and intervention are needed. Additionally, alternative settings such as drive-through vaccination events or outdoor community locations may be attractive to parents when COVID-19 vaccinations are recommended for children. Although primary care providers will remain the preferred source for child vaccinations, alternative approaches and settings tailored to particular audiences are also needed to increase total population reach and vaccine adherence and reduce health inequalities.⁷

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Table 1. Respondent characteristics and correlates of child vaccination status and parents' comfort with in-office visits

Variables	Descriptive N=1,951 ^a		Analysis N=1,890	Up-to-date N=1,717; 91%		Comfortable N=1,462; 78%	
	Mean	SD		1.01	0.99-1.04	0.98	0.97-1.00
	N	%	N	OR	CI	OR	CI
Respondent Age (Range 18-71 years)	31.9	6.9					
Number of children age 0-5 years							
1	1,204	61.7	1,163	referent		referent	
2+	747	38.3	727	0.74	0.54-1.01	1.33	1.06-1.67
Child age							
0-23 months	884	45.3	859	referent		referent	
2-5 years	1,067	54.7	1,031	1.52	1.11-2.08	0.73	0.59-0.91
Respondent sex							
Male	64	3.6	64	referent		referent	
Female	1,709	96.4	1,691	0.87	0.34-2.20	1.23	0.69-2.19
Respondent race/ethnicity							
Non-Hispanic White	535	27.4	524	referent		referent	
Non-Hispanic Black	494	25.3	493	0.82	0.54-1.24	0.96	0.71-1.29
Hispanic (any race)	569	29.2	564	1.37	0.87-2.15	1.03	0.77-1.37
Another race or mixed race	116	5.9	115	0.69	0.37-1.31	0.91	0.56-1.47
Respondent education							
≤ high school	516	26.4	509	referent		referent	
Some training or college	667	34.2	657	1.05	0.71-1.55	0.88	0.66-1.17
College degree or higher	550	28.2	547	1.41	0.92-2.18	0.88	0.67-1.19
Child has regular doctor							
no	58	3.0	58	referent		referent	
yes	1,846	97.0	1,823	2.15	1.07-4.33	1.13	0.60-2.13
Plans to get flu vaccine for my child							
Already got it	699	35.8	687	referent		referent	
Highly or somewhat likely to get it	293	15.0	290	0.32	0.19-0.54	0.95	0.67-1.35
Highly or somewhat unlikely to get it	628	32.2	613	0.24	0.16-0.38	0.71	0.55-0.93
Not sure	229	11.7	221	0.44	0.24-0.80	0.63	0.44-0.89
Didn't take child to doctor but wanted to							
no	1,289	68.9	1,271	referent		referent	
yes	582	31.1	577	0.63	0.45-0.87	0.24	0.19-0.30
Vaccines are important							
Agree	1,690	93.3	1,687	referent		referent	
Disagree	121	6.7	110	0.11	0.07-0.17	0.80	0.52-1.24
Vaccines are useful							
Agree	1,669	92.9	1,668	referent		referent	
Disagree	128	7.1	117	0.09	0.06-0.14	0.71	0.47-1.07
Vaccines are easy to do							
Agree	1,691	91.8	1,679	referent		referent	
Disagree	152	8.2	146	0.37	0.24-0.59	0.34	0.24-0.48

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Vaccines are expensive								
Agree	374	22.1	369	referent		referent		
Disagree	1,316	77.9	1,305	1.32	0.90-1.92	1.24	0.94-1.63	

^a Variable totals less than 1,951 reflect missing survey responses.

Boldface indicates statistical significance $p < .05$

Table 2. Strategies for increasing the likelihood of child vaccinations and differences by comfort with in-office visits.

Strategies for improving vaccination rates	Total Sample Descriptives		Bivariate Logistic Analyses ^a	
	N	% of N “Likely”	OR	95% CI
<i>Limiting COVID exposure at doctor's office</i>				
Have staff clean the exam room right before your appointment	1812	85.4	1.11	0.81-1.54
Require adults to wear a mask in the doctor’s office	1821	83.1	1.39	1.01-1.90
Take everyone’s temperature before they are allowed in the doctor’s office	1820	81.0	1.41	1.04-1.91
Close inside waiting rooms. Have people wait in their cars until they receive a text message or call that the doctor is ready to see them	1793	69.8	1.58	1.22-2.05
Have a separate waiting room for vaccination visits	1770	60.4	1.39	1.10-1.76
<i>Offering vaccination at other settings</i>				
Give vaccinations as a drive-through service outside doctor's offices or other health organizations	1767	49.3	1.51	1.20-1.90
Have doctor’s office staff come to your home to vaccinate your child	1759	39.9	1.52	1.21-1.91
Give vaccinations at a pharmacy like Walgreens or CVS or in grocery store pharmacies	1759	39.8	0.98	0.77-1.23
Give vaccinations <u>outdoors</u> in parks, on playgrounds, or at other places in your community	1761	28.6	1.68	1.33-2.14
Give vaccinations <u>inside</u> libraries, grocery stores and other buildings in your community	1753	21.9	1.06	0.81-1.39
<i>Special appointment days and times</i>				
Reserve certain days or times for healthy children to receive vaccinations	1782	70.6	1.51	1.16-1.96
Make vaccination appointments available on nights and weekends	1778	58.4	1.24	0.99-1.57
Have drop-in hours for vaccinations when no appointment is needed	1772	49.1	1.06	0.85-1.33
<i>Resources to make getting to appointments easier</i>				
Get a ride to the doctor	1755	28.6	0.82	0.64-1.07
Provide childcare for your other children while you take your youngest child to get vaccinated ^b	664	48.6	1.36	0.92-2.01

^a Predictor: Respondent’s comfort level with in-office doctor’s visits (uncomfortable vs. comfortable). Outcome: strategy rated as unlikely vs. likely to make respondents get their child vaccinated

^b Only asked of those who had more than one child

Bolded text identify significant differences $p < .05$ between respondents who are comfortable vs. uncomfortable with in-office visits right now

N = respondents with valid responses to each item; % of N = the percent of valid responses rating each item as making parents likely or very likely to get their child vaccinated; OR = odds ratio;

CI=confidence interval