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Where do children get vaccinated in the U.S.? Parental experiences, attitudes, and beliefs about place of vaccination with a focus on pharmacies and schools

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Keywords

pediatric vaccination; place of vaccination; parental vaccination attitudes; attitudes about pharmacy vaccination; attitudes about school vaccination

Introduction

Most children in the U.S. are vaccinated in a doctor's office[1]. However, after COVID-19 vaccines were licensed and recommended for adolescents and children, alternative venues for COVID-19 vaccination, including pharmacies and schools, became widely available in the U.S.[2]. Pharmacies became optional places for pediatric COVID-19 vaccination in part due to the Public Readiness and Emergency Preparedness (PREP) Act that allowed pharmacists, pharmacy technicians, and pharmacy interns to administer COVID-19 vaccines and other routine childhood vaccines to children aged 3 years and older[3]. Among children aged 5–11 years who received at least one dose of COVID-19 vaccine as of June 2022, 37% were vaccinated at a pharmacy and 8% were vaccinated at a school. However, a smaller proportion of children under 5 years of age was vaccinated at pharmacies[4,5]. Post-pandemic, and as of April 2023, pharmacists can administer COVID-19 vaccines to children of varying ages under state authority in 49 U.S. states; pharmacists in 16 states can administer the vaccine to children of any age without a patient-specific prescription[6].

Alternative vaccination settings for influenza (flu) vaccination among adolescents and children became more commonplace during and after the COVID-19 pandemic. The percentage of children 6 months through 17 years receiving their flu vaccination at a pharmacy increased approximately 10 percentage points from the 2018–2019 to the 2022–23 flu season; however, use of pharmacy for flu vaccination remained low among young children, with only 1.2% of children aged 6–23 months compared to 27.7% of 13–17-year-olds getting flu vaccination at a pharmacy[7]. Pharmacists can administer flu vaccines to children of varying ages in all 50 states and the District of Columbia; pharmacists in

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19 states can administer flu vaccines to children of any age without a patient-specific prescription[6].

Expanding the types of vaccine providers to include alternative places of vaccination, where practical, may help ensure pediatric vaccination is accessible and convenient. Expanding vaccine provider networks may also help primary care providers when they are very busy treating patients, such as the respiratory virus season or a public health emergency. Pharmacies have good potential as an alternative pediatric vaccination location. Pharmacists can administer all routine, non-flu, non-COVID-19 vaccines to children 7–18 years old in 35 states and to children from birth to 6 years old in 27 states; however, in some of these states, a prescription is needed for certain vaccines, ages, or under specific circumstances[6]. Although school-located vaccination (SLV) is not as common in the U.S. nationally, some states or local areas have successfully implemented SLV programs that have resulted in a higher local proportion of children being vaccinated in this setting[8,9,10,11].

Parents, especially of school-aged children, may have gained familiarity and, in some cases, experience with vaccination received at locations other than the doctor's office during the COVID-19 pandemic. This exposure may have affected parental attitudes about pediatric vaccination in these alternative vaccination settings. In order to inform strategies for increasing uptake of pediatric vaccination by expanding access to different types of providers in the U.S., we analyzed a survey of parents' experiences, comfort with, and general acceptability related to places of pediatric vaccination, with a focus on pharmacies and schools.

Methods

Porter Novelli Public Services conducted a survey via Big Village during August 17–25, 2023, among a sample of 2,005 U.S. adults ages 18 and older who are parents/guardians to at least one child 17 years of age or younger living at home[12]. The survey uses opt-in panel members from Lucid platform and quota sampling based on gender, region, income, and race/ethnicity to collect a nationwide sample of respondents and is offered in a unit of approximately 2,000 responses. Questions included: 1) places children had ever been vaccinated in the child's lifetime; 2) places parents would feel comfortable taking their child for vaccination; and 3) parental attitudes, beliefs, and experiences related to vaccination of their child at a pharmacy or school. If the parent had more than one child, the survey randomly selected a reference child, on which parents were asked to base their answers. Overall results and results stratified by child's age, urban/suburban/rural residence, and child's health insurance type are reported. Using SAS (version 9.4; SAS institute), statistical comparisons were made using chi-squared tests; a p-value of <0.05 was considered statistically significant. When testing for differences of attitude-related questions that used a Likert scale, "strongly agree" and "somewhat agree" were combined to "agree" and "neither agree nor disagree", "somewhat disagree", and "strongly disagree" were combined to "not agree". The project was determined by CDC to be public health surveillance. The activity was reviewed by CDC and conducted consistent with applicable federal law and CDC policy (45 C.F.R. part 46.102(l)(2); 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq).

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Results

Characteristics of participating parents and their child

Table 1 summarizes characteristics of survey participating parents and their child. About 40% of the responding parents were aged 30–39 years, and 17.6% were aged 29 years or younger. About half (47.2%) lived in suburban areas, 31.2% in urban, and 21.6% in rural areas. About a third of parents had bachelor's degree or a higher degree and about two-thirds worked full time. About 30% reported household income of less than $40,000. About 40% of the children had private health insurance that was provided through an employer or union, and 51.7% had Medicaid/CHIP coverage (from here on referred to as public health insurance). The vast majority (97.2%) of responding parents' children had a primary healthcare provider (HCP) who provided regular check-ups or preventive care.

Places children have ever been vaccinated and places parents would feel comfortable taking their child for vaccination

The most frequently reported place of pediatric vaccination in a child's lifetime was a doctor's office (75.8%), clinic/health center (23.1%), or hospital (19.1%) (Table 2). About 16% and 6.6% of parents reported they have gotten their child vaccinated at a pharmacy and school, respectively. The most frequently reported place where parents would feel comfortable taking their child for vaccination was doctor's office (80.5%), clinic/health center (38.0%), or hospital (35.2%) (Table 3). About a quarter reported they would feel comfortable taking their child to a pharmacy while a much smaller proportion (5.5%) reported comfort with school vaccination.

More parents of older compared to younger children reported experience and feeling comfortable with pharmacy and school vaccination for their child. A higher proportion of parents of 12–17-year-olds vs. 0–4-year-olds reported their child had ever been vaccinated at a pharmacy (p-value<0.0001); a higher proportion of parents of 12–17-year-olds vs. 0–4-year-olds reported feeling comfortable taking their child to a pharmacy (p-value<0.0001). A higher proportion of parents of 12–17-year-olds vs. 0–4-year-olds have gotten their child vaccinated at school (p-value=0.0002).

Parents living in rural compared to urban areas reported less experience and comfort with pharmacy and school vaccination for their child. A higher proportion of parents living in rural vs. urban areas (p-value=0.0145) and those living in suburban vs. urban areas (p-value=0.0001) said their child had been vaccinated at a doctor's office. A higher proportion of parents living in rural vs. urban areas (p-value=0.0019) and suburban vs. urban areas (p-value<0.0001) reported feeling comfortable taking their child to a doctor's office for vaccination. A smaller proportion of parents living in rural vs. urban areas have had their child vaccinated at a pharmacy (p-value=0.0182); a smaller proportion of parents living in rural areas vs. urban areas reported feeling comfortable vaccinating their child at a pharmacy (p-value=0.0053).

Similarly, parents of children with public compared to private health insurance reported less experience and comfort with pharmacy vaccination. A smaller proportion of parents of children with public vs. private health insurance reported that their child had been vaccinated

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at a doctor's office (p-value<0.0001); a smaller proportion of those with children with public vs. private health insurance reported feeling comfortable taking their child to a doctor's office (p-value<0.0001). A smaller proportion of parents of children with public vs. private health insurance have had their child vaccinated at a pharmacy (p-value<0.0001) and also reported feeling comfortable vaccinating their child at a pharmacy (p-value<0.0001).

Parent satisfaction with pharmacy and school vaccination

Among parents who reported that they have ever taken their child to pharmacy for vaccination in the past (n=318), 92.2% rated their overall satisfaction level 'very good' or 'good' (Figure 1). Those parents who have experience having their child vaccinated at a school (n=124), 83.9% reported their overall satisfaction level to be 'very good' or 'good.' Parents rated both pharmacies and schools as highly accessible.

Parental attitudes and beliefs about pharmacy and school vaccination

All parents participating in the survey were asked about their attitudes and beliefs about pharmacy and school vaccination. Figure 2 shows that approximately 68% of all parents strongly or somewhat agreed that pharmacies can serve as an importance place for vaccination of school-aged children during a public health emergency or pandemic. The proportion who agreed that pharmacies can serve as an important place for vaccination during a public health emergency or pandemic was higher for parents of older children, those who lived in urban areas, and those of children with private health insurance. A higher proportion of parents of 12–17-year-olds vs. 0–4-year-olds strongly or somewhat agreed that pharmacies can be an important place during a public health emergency/ pandemic (p-value<0.0001). A smaller proportion of parents living in rural vs. urban areas (p-value=0.0012) and parents with children with public vs. private health insurance agreed (p-value<0.0001). A slightly smaller proportion of parents, 64.1%, strongly or somewhat agreed that pharmacies can serve as an important place for vaccination of school-aged children routinely, or on a regular basis. The proportion who agreed that pharmacies can serve as an important place on a regular basis was also higher for parents of older children, those who lived in urban areas, and those of children with private health insurance. A higher proportion of parents of 12–17-year-olds vs. 0–4-year-olds strongly or somewhat agreed that pharmacies can be an important place on a regular basis (p-value=0.0043). A smaller proportion of parents living in rural vs. urban areas (p-value=0.0006) and parents of children with public vs. private health insurance agreed (p-value<0.0001).

Approximately half of parents strongly or somewhat agreed that schools can serve as an important place for vaccination of school-aged children during a public health emergency or pandemic and also routinely, or on a regular basis (Figure 3). A higher proportion of parents of a 12–17-year-olds vs. 0–4-year-olds strongly or somewhat agreed that schools can serve as an important place for vaccination during a public health emergency/ pandemic (p-value=0.0027). A smaller proportion of parents living in rural vs. urban areas (p-value<0.0001) and parents with children with public vs. private health insurance (p-value=0.0023) agreed that schools were an important place for vaccination during a pandemic. A higher proportion of parents of 12–17-year-olds vs. 0–4-year-olds strongly or somewhat agreed that schools can serve as an important place for vaccination routinely, or

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on a regular basis (p-value=0.0018); a higher proportion of parents living in urban vs. rural areas agreed (p-value<0.0001).

Discussion

The survey results showed that, while most children are vaccinated in a doctor's office, many parents have experience with and are willing to consider pediatric vaccination in alternative settings specifically pharmacies and schools. This was especially true among parents of older children and adolescents. The high levels of satisfaction reported by parents with pharmacy vaccination experience suggest that pharmacy vaccination may be an acceptable and convenient option for parents especially for annual flu and COVID-19 vaccines as they do not rely as heavily on assessment of vaccination history as other childhood vaccines.

However, a notable difference was observed in experience and acceptability around pharmacy vaccination between parents living in rural and urban areas. Although alternative health care providers, including vaccine providers, have been proposed in rural areas due to health care provider shortages in these areas, survey results showed that more parents living in rural areas feel comfortable with doctor's office as a place of vaccination for their child and do not feel as comfortable with pharmacy and school vaccination compared to parents living in urban areas. The same was true of parents of children with public health insurance; a smaller proportion of these parents felt comfortable with pharmacy vaccination compared to parents of privately insured child. This may be related to less familiarity with pharmacy and school vaccination in these areas because there are fewer pharmacies and school-located vaccination (SLV) events in these areas and that their primary care provider may play a more important or trusted role. It is also possible that some may be unaware of vaccine availability in alternative settings and public health insurance coverage. Parental comfort and preference should be considered in informing vaccination promotion and planning activities.

Primary care providers, such as pediatricians, remain critical to assessing physical, emotional, and social development and ensuring appropriate care, as needed[13]. For these reasons, well-child visits and annual check-ups are important for all children and adolescents and cannot be replaced. However, for families who stay current with well-child visits or annual check-ups, pharmacy vaccination can offer another place and experience. If children are not able to be vaccinated during a well-child visit or annual check-up, or if a well-child visit or annual check-up does not align with flu and COVID-19 vaccination season, pharmacy vaccination can be a convenient option.

Barriers and challenges with pharmacy vaccination exist, including state laws and corporate policies around the minimum age eligible for vaccination. In addition, the increased burden on pharmacists to take vaccination appointments or walk-ins needs to be considered[14]. Pharmacist, physician, and parental attitudes toward pediatric vaccination in pharmacies have been explored[15,16,17] and continued monitoring is needed to identify and address barriers as they arise. In addition, few pharmacies participate in the Vaccines for Children (VFC) program, which provides all vaccines recommended by the Advisory Committee on Immunization Practices to children who meet eligibility criteria (Medicaid-eligible,

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uninsured, underinsured, American Indian or Alaska Native)[18]. Therefore, VFC vaccine availability for eligible children are limited at pharmacies[19]. It is possible that parents of children with public health insurance are less experienced and feel less comfortable with pharmacy vaccination because of low VFC program participation among pharmacies; further investigation is needed to understand association between a child's insurance type and experience with and attitudes about pharmacy vaccination. In recent years, state and local immunization programs have attempted to enroll pharmacies in the VFC program; however, there are several challenges in pharmacies enrolling in Medicaid and/or the VFC program, including jurisdiction law/policy or pharmacy/corporate policy that does not allow pharmacies to enroll in one or both programs, reimbursement challenges including low Medicaid reimbursement for vaccine administration.

SLV provides unique opportunities for getting children vaccinated because children are already present in schools. SLV can be convenient for parents/guardians, can be used to administer vaccines rapidly and efficiently to eligible students and possibly their family members, teachers, school staff, and others in the community. Some states have had great success in implementing SLV programs; however, SLV has not been widely offered partially due to challenges with reimbursement and logistics (e.g., obtaining parental consent)[8,9,10,11]. These challenges may in part explain lower than expected COVID-19 vaccine doses administered in schools, despite SLV programs being promoted by the U.S. government during COVID-19 pandemic[2,4,5]. Although the parents who reported in the survey that they have participated in SLV reported high satisfaction with school vaccination, parent comfort with SLV in general may be low because they may not be present while their child receives vaccination at school[20].

Limitations

This survey was an opt-in internet panel surveys in which participants agree to complete a certain number of surveys and, therefore, may be more interested in surveys and different from the public in some ways. Response rate typically reported in surveys is not available. In assessing place of vaccination, we did not specify the type of vaccine; there may be some differences in place of vaccination depending on the type of vaccine. In addition, we ascertained places parents have taken their child for vaccination in the child's lifetime; parents of older children may have had more opportunity to go to an alternative vaccination setting than those of younger children. Lastly, bivariate analysis of association between child's age, urbanicity, and health insurance type and the outcome variables of places parents have gotten their child vaccinated and places parents feel comfortable taking their child for vaccination are reported in this paper. Although we understand the value of multivariate analysis in explaining places of pediatric vaccination, bivariate analysis results were included for ease of interpretation as well as the fact that the results of bivariate and multivariate analyses using logistic regression did not differ significantly.

Conclusions

While most children are vaccinated in a doctor's office, many parents have experience with and support pediatric vaccination in alternative settings. Alternative places of vaccination,

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such as pharmacies and schools, may be promoted and utilized, especially during times when traditional pediatric providers may be overwhelmed, such as during back-to-school season, respiratory virus season, public health emergencies, and pandemics, and especially for COVID-19 and flu vaccination for school-aged children and adolescents. However, challenges exist with both places.

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References

1. Institute of Medicine (US) Committee on the Evaluation of Vaccine Purchase Financing in the United States. Financing Vaccines in the 21st Century: Assuring Access and Availability. Washington (DC): National Academies Press (US); 2003.
2. Chatham-Stephens Kevin, Carter Rosalind J., Duggar Chris, Woodworth Kate R., Carnes Catherine Amanda, Bhatt Achal, Ottis Christina, Voegeli Chris, Stokley Shannon, Vogt Tara, An overview of the COVID-19 pediatric vaccine program – The U.S. experience vaccinating children ages 6 months through 17 years, Vaccine, 2024, 10.1016/j.vaccine.2024.02.019.
3. Guidance for PREP Act Coverage for Qualified Pharmacy Technicians and State-Authorized Pharmacy Interns for Childhood Vaccines, COVID-19 Vaccines, and COVID-19 Testing. U.S. Department of Health & Human Services Office of the Assistant Secretary. https://www.hhs.gov/sites/default/files/prep-act-guidance.pdf. Published October 20, 2020. Accessed June 13, 2022.
4. Santibanez TA, Black CL, Vogt TM, et al. Where are children ages 5–17 years receiving their COVID-19 vaccinations? Variations over time and by sociodemographic characteristics, United States. Vaccine. 2022;40(48):6917–6923. doi:10.1016/j.vaccine.2022.10.025 [PubMed: 36280560]
5. Santibanez TA, Zhou T, Black CL, et al. Sociodemographic Variation in Early Uptake of COVID-19 Vaccine and Parental Intent and Attitudes Toward Vaccination of Children Aged 6 Months–4 Years — United States, July 1–29, 2022. MMWR Morb Mortal Wkly Rep 2022;71:1479–1484. DOI: 10.15585/mmwr.mm7146a3 [PubMed: 36395039]
6. Pharmacist Administered Vaccines (Updated April 2023) Based on NASPA Analysis of State Pharmacy Practice Laws. https://naspa.us/wp-content/uploads/2021/01/Pharmacist-Immunization-Authority-April-2023.pdf
7. Centers for Disease Control and Prevention. Flu Vaccination Coverage, United States, 2022–23 Influenza Season. https://www.cdc.gov/flu/fluvaxview/coverage-2223estimates.htm#Additional. Last reviewed October 10, 2023. Last accessed April 26, 2024.
8. The Landscape of State and Local School-Located Vaccination Clinics: Practices, Policies, and Lessons Learned for Providing COVID-19 and Routine Vaccinations. NASN Sch Nurse. 2022;37(1_suppl):3S–14S. doi:10.1177/1942602X211064750 [PubMed: 34974775]
9. Fairlie T, Chu B, Thomas ES, et al. School-Based Interventions to Increase Student COVID-19 Vaccination Coverage in Public School Populations with Low Coverage - Seattle, Washington, December 2021-June 2022. MMWR Morb Mortal Wkly Rep. 2023;72(11):283–287. Published 2023 Mar 17. doi:10.15585/mmwr.mm7211a3 [PubMed: 36928607]
10. Gargano LM, Weiss P, Underwood NL, et al. School-Located Vaccination Clinics for Adolescents: Correlates of Acceptance Among Parents. J Community Health. 2015;40(4):660–669. doi:10.1007/s10900-014-9982-z [PubMed: 25528325]
11. McCormick EV, Durfee J, Vogt TM, Daley MF, Hambidge SJ, Shlay J. Physician attitudes regarding school-located vaccinations. Pediatrics. 2012;130(5):887–896. doi:10.1542/peds.2011-2962 [PubMed: 23027169]
12. CARAVAN Survey. Big Village. https://big-village.com/insights/caravan-surveys/. Accessed September 13, 2024.

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13. Turner K Well-Child Visits for Infants and Young Children. Am Fam Physician. 2018;98(6):347–353. [PubMed: 30215922]

14. Pharmacy staff from CVS, Walgreens stores in US start three-day walkout. October 30, 2023. https://www.reuters.com/business/healthcare-pharmaceuticals/pharmacy-staff-cvs-walgreens-stores-us-plan-3-day-walkout-2023-10-30/

15. Ezeala OM, McCormick NP, Meininger CL, Durham SH, Hastings TJ, Westrick SC. Factors Associated with the Implementation of Pediatric Immunization Services: A Survey of Community Pharmacies. Vaccines (Basel). 2024 Jan 18;12(1):93. doi: 10.3390/vaccines12010093. [PubMed: 38250906]

16. Varisco TJ, Downs CG, Sansgiry SS, Al Saadi R, Hastings T, Thornton JD. Parents' intention to have their child vaccinated at a community pharmacy: A national cross-sectional survey. J Am Pharm Assoc (2003). 2023;63(2):511–517.e8. doi:10.1016/j.japh.2022.10.008 [PubMed: 36376213]

17. Omecene NE, Patterson JA, Bucheit JD, Anderson AN, Rogers D, Goode JV, Caldas LM. Implementation of pharmacist-administered pediatric vaccines in the United States: major barriers and potential solutions for the outpatient setting. Pharm Pract (Granada). 2019 Apr-Jun;17(2):1581. doi: 10.18549/PharmPract.2019.2.1581. Epub 2019 Jun 18. [PubMed: 31275506]

18. Vaccines for Children Program (VFC). Centers for Disease Control and Prevention. https://www.cdc.gov/vaccines/programs/vfc/index.html. Last reviewed October 24, 2022. Accessed May 1, 2024.

19. Alden J, Crane K, Robinson R, et al. Expansion of community pharmacies' role in public vaccine delivery to children: Opportunities and need. J Am Pharm Assoc (2003). 2022;62(5):1514–1517. doi:10.1016/j.japh.2022.05.002 [PubMed: 35691859]

20. Kempe A, Daley MF, Pyrzanowski J, et al. School-located influenza vaccination with third-party billing: what do parents think?. Acad Pediatr. 2014;14(3):241–248. doi:10.1016/j.acap.2014.01.006 [PubMed: 24767777]

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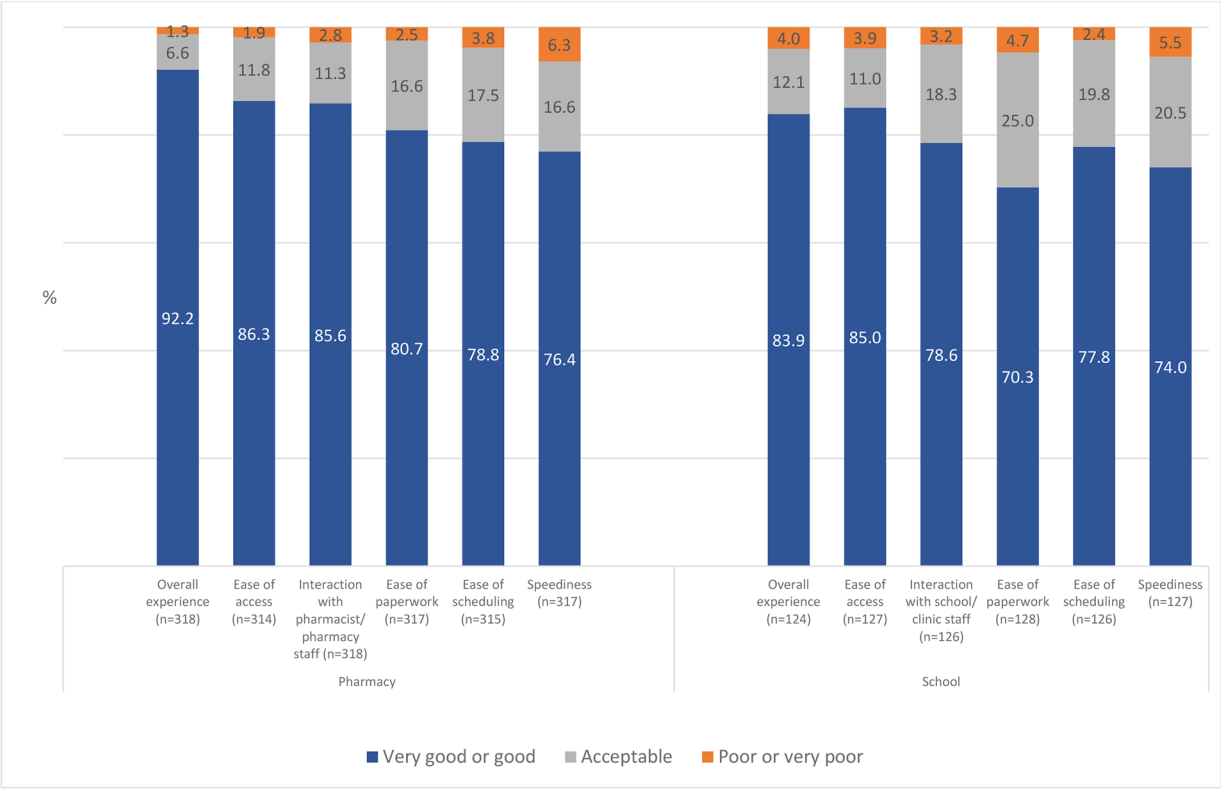


Figure 1.

Parent experience getting a vaccination for their child at a pharmacy (n=319) and at school (n=133)*, Porter Novelli View Parent survey, August 2023

* 'Not applicable' or 'I don't recall' response options were available for respondents but were excluded from Figure 1; sample size (n) for each experience variable is different for this reason.

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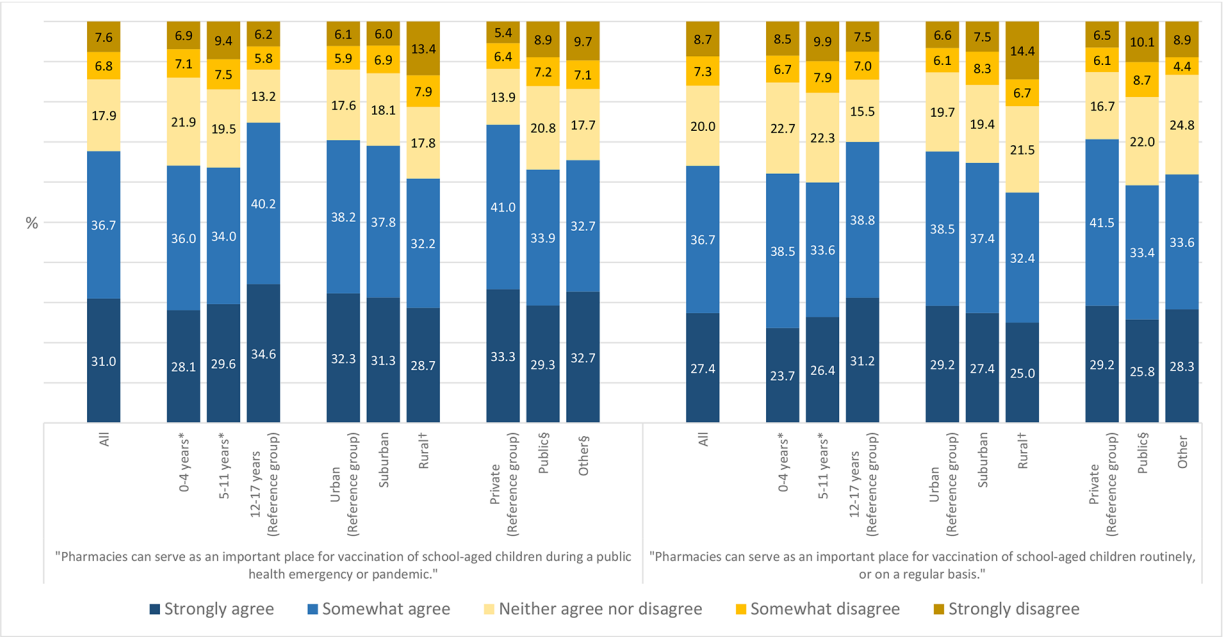


Figure 2.

Parental attitudes and beliefs about pharmacy vaccination of school-aged children[a], Porter Novelli View Parent survey, August 2023

[a] Excluded responses from 24 parents who reported their child is not covered by health insurance.

* Proportion of parents agreeing (strongly and somewhat agree) to the statement statistically significantly different from 12–17 years age group at $p<0.05$.

† Proportion of parents agreeing (strongly and somewhat agree) to the statement statistically significantly different from urban group at $p<0.05$.

§ Proportion of parents agreeing (strongly and somewhat agree) to the statement statistically significantly different from private health insurance group at $p<0.05$.

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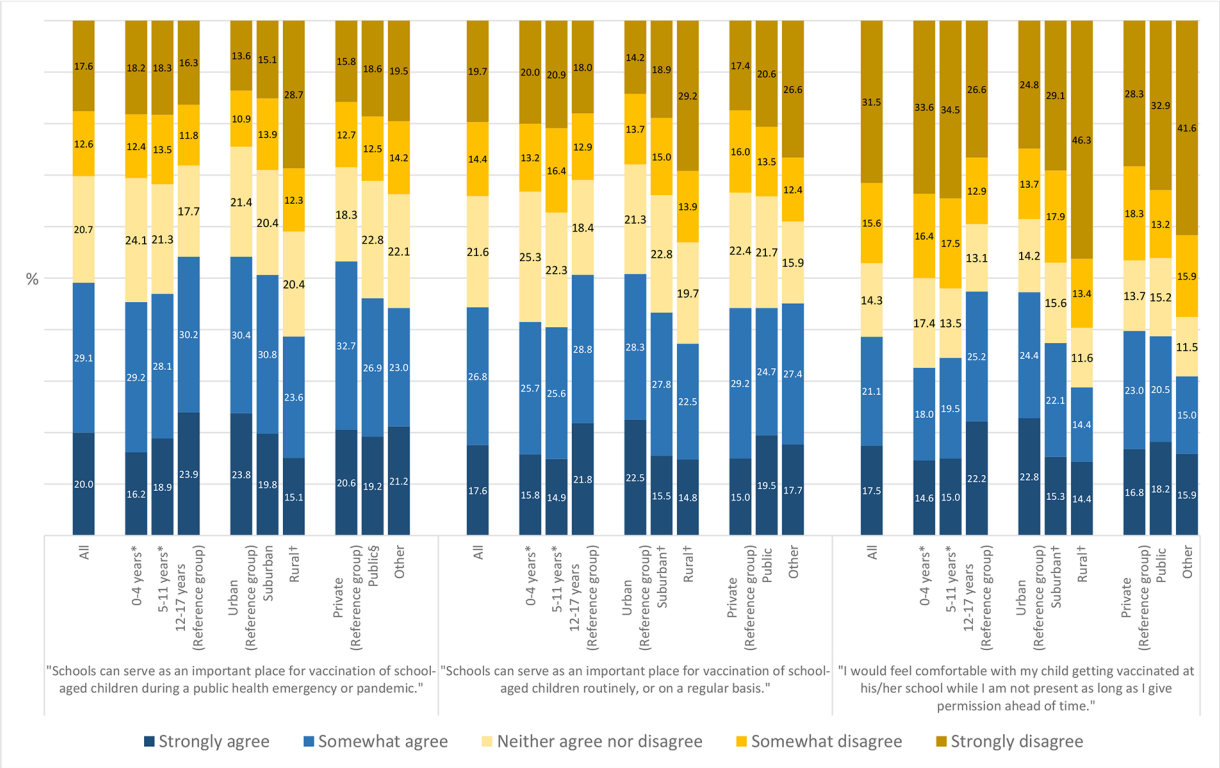


Figure 3.

Parental attitudes and beliefs about school vaccination of school-aged children[a], Porter Novelli View Parent survey, August 2023

[a] Excluded responses from 24 parents who reported their child is not covered by health insurance.

* Proportion of parents agreeing (strongly and somewhat agree) to the statement statistically significantly different from 12–17 years age group at $p<0.05$.

† Proportion of parents agreeing (strongly and somewhat agree) to the statement statistically significantly different from urban group at $p<0.05$.

§ Proportion of parents agreeing (strongly and somewhat agree) to the statement statistically significantly different from private health insurance group at $p<0.05$.

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Table 1.

Characteristics of survey respondents (parents) and their reference* child, Porter Novelli View Parent survey, August 2023

	n (%)
Total	2,005 (100.0%)
Parent's age	
≤29	353 (17.6%)
30–39	771 (38.5%)
40–49	606 (30.2%)
50 and older	275 (13.7%)
Urbanicity	
Urban	626 (31.2%)
Suburban	947 (47.2%)
Rural	432 (21.6%)
Parent's highest level of formal education completed	
High school graduate or the equivalent (i.e., GED) or some schooling, but not high school diploma	591 (29.5%)
Associate degree/Technical school or some college credit, but no degree	696 (34.7%)
Bachelor's degree	453 (22.6%)
Master's degree or Professional/Doctorate degree	265 (13.2%)
Parent's current employment status	
Work full-time	1,242 (62.0%)
Homemaker	177 (8.8%)
Work part-time	166 (8.3%)
Self-employed	158 (7.9%)
Unemployed and seeking work	111 (5.5%)
Unable to work because of a disability	60 (3.0%)
Retired	51 (2.5%)
Other	40 (2.0%)
Total 2022 household income before taxes	
Less than $40,000	590 (29.4%)
$40,000–$74,999	556 (27.7%)

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	n (%)
$75,000–$124,999	470 (23.4%)
$125,000 or more	389 (19.4%)
Number of children 17 years of age and under living at home	
1	921 (45.9%)
2	713 (35.6%)
3	255 (12.7%)
4 or more	116 (5.8%)
Parent's COVID-19 vaccination status	
Received updated (bivalent) vaccine dose	853 (42.5%)
Received at least one dose, but not updated (bivalent) vaccine dose	491 (24.5%)
Not vaccinated	621 (31.0%)
Not sure	40 (2.0%)
Reference * child's age	
0–4	494 (24.6%)
5–11	800 (39.9%)
12–17	711 (35.5%)
Reference * child's health insurance	
Private health insurance provided through an employer or union only	832 (41.5%)
Any Medicaid or Children's Health Insurance Program (CHIP)	1,036 (51.7%)
Other	113 (5.6%)
My child is not covered by any health insurance	24 (1.2%)
Reference * child has a primary HCP who provides regular check-ups/preventive care	
Yes	1,949 (97.2%)
No	56 (2.8%)
Reference * child's COVID-19 vaccination status	
Received at least one dose	951 (47.4%)
Not vaccinated	1,004 (50.1%)
Not sure	50 (2.5%)

* If the parent had more than one child, the survey randomly selected a reference child, on which parents were asked to base their answers.

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Table 2.

Places parents have gotten their child vaccinated, Porter Novelli View Parent survey, August 2023

	All parents (n=2,005)	Child's age					Urbanicity					Child's health insurance[a]				
		0–4 years (n=494)		5–11 years (n=800)		12–17 years (n=711, Reference group)	Urban (n=626, Reference group)	Suburban (n=947)		Rural (n=432)		Private (n=832, Reference group)	Public (n=1,036)		Other (n=113)	
	n (%)	n (%)	p-value	n (%)	p-value	n (%)	n (%)	n (%)	p-value	n (%)	p-value	n (%)	n (%)	p-value	n (%)	p-value
Doctor's office	1,519 (75.8)	357 (72.3)	0.1664	623 (77.9)	0.3416	539 (75.8)	440 (70.3)	746 (78.8)	0.0001	333 (77.1)	0.0145	697 (83.8)	736 (71.0)	<0.0001	77 (68.1)	<0.0001
Clinic or health center	463 (23.1)	93 (18.8)	0.0011	178 (22.3)	0.0321	192 (27.0)	172 (27.5)	192 (20.3)	0.0009	99 (22.9)	0.0952	161 (19.4)	265 (25.6)	0.0015	34 (30.1)	0.0088
Hospital	382 (19.1)	140 (28.3)	<0.0001	122 (15.3)	0.3894	120 (16.9)	153 (24.4)	163 (17.2)	0.0005	66 (15.3)	0.0003	130 (15.6)	224 (21.6)	0.0011	21 (18.6)	0.4214
Pharmacy or drug store (including retail pharmacy such as CVS, Walgreens and supermarket pharmacy)	319 (15.9)	28 (5.7)	<0.0001	128 (16.0)	0.0007	163 (22.9)	102 (16.3)	169 (17.9)	0.4251	48 (11.1)	0.0182	166 (20.0)	128 (12.4)	<0.0001	22 (19.5)	0.9040
Health department	196 (9.8)	40 (8.1)	0.0733	76 (9.5)	0.2644	80 (11.3)	75 (12.0)	65 (6.9)	0.0006	56 (13.0)	0.6336	58 (7.0)	124 (12.0)	0.0003	11 (9.7)	0.2918
Elementary/ middle/high school	133 (6.6)	16 (3.2)	0.0002	53 (6.6)	0.0856	64 (9.0)	48 (7.7)	62 (6.6)	0.3939	23 (5.3)	0.1365	54 (6.5)	68 (6.6)	0.9492	10 (8.9)	0.3511
My child has never received a vaccination	43 (2.1)	14 (2.8)	0.0873	19 (2.4)	0.1756	10 (1.4)	21 (3.4)	12 (1.3)	0.0065	10 (2.3)	0.3269	6 (0.7)	25 (2.4)	0.0074	6 (5.3)	0.0005
Don't know or can't recall	21 (1.1)	7 (1.4)	0.6539	6 (0.8)	0.4505	8 (1.1)	4 (0.6)	9 (1.0)	0.5071	8 (1.9)	0.0803	6 (0.7)	12 (1.2)	0.3409	3 (2.7)	0.0640

[a] Excluded responses from 24 parents who reported their child is not covered by health insurance.

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Table 3.

Places parents would feel comfortable taking their child for vaccination, Porter Novelli View Parent survey, August 2023

	All parents (n=2,005)	Child's age					Urbanicity					Child's health insurance[a]				
		0–4 years (n=494)		5–11 years (n=800)		12–17 years (n=711, Reference group)	Urban (n=626, Reference group)	Suburban (n=947)		Rural (n=432)		Private (n=832, Reference group)	Public (n=1,036)		Other (n=113)	
	n (%)	n (%)	p-value	n (%)	p-value	n (%)	n (%)	n (%)	p-value	n (%)	p-value	n (%)	n (%)	p-value	n (%)	p-value
Doctor's office	1,614 (80.5)	395 (80.0)	0.4828	639 (79.9)	0.4036	580 (81.6)	465 (74.3)	793 (83.7)	<0.0001	356 (82.4)	0.0019	732 (88.0)	781 (75.4)	<0.0001	89 (78.8)	0.0073
Clinic or health center	762 (38.0)	163 (33.0)	0.0108	313 (39.1)	0.6626	286 (40.2)	263 (42.0)	357 (37.7)	0.0866	142 (32.9)	0.0027	316 (38.0)	388 (37.5)	0.8146	52 (46.0)	0.1012
Hospital	705 (35.2)	210 (42.5)	0.0020	255 (31.9)	0.4370	240 (33.8)	249 (39.8)	339 (35.8)	0.1105	117 (27.1)	<0.0001	301 (36.2)	354 (34.2)	0.3661	44 (38.9)	0.5676
Pharmacy or drug store (including retail pharmacy such as CVS, Walgreens and supermarket pharmacy)	487 (24.3)	72 (14.6)	<0.0001	190 (23.8)	0.0006	225 (31.7)	144 (23.0)	274 (28.9)	0.0093	69 (16.0)	0.0053	267 (32.1)	190 (18.3) [§]	<0.0001	29 (25.7)	0.1682
Health department	310 (15.5)	74 (15.0)	0.5317	120 (15.0)	0.4823	116 (16.3)	106 (16.9)	121 (12.8)	0.0221	83 (19.2)	0.3410	104 (12.5)	183 (17.7)	0.0022	15 (13.3)	0.8162
Elementary/ middle/high school	110 (5.5)	20 (4.1)	0.0314	40 (5.0)	0.0972	50 (7.0)	36 (5.8)	58 (6.1)	0.7595	16 (3.7)	0.1330	50 (6.0)	55 (5.3)	0.5137	4 (3.5)	0.2944
Do not plan for my child to receive a vaccination in the future	70 (3.5)	20 (4.1)	0.3044	29 (3.6)	0.4674	21 (3.0)	25 (4.0)	26 (2.8)	0.1737	19 (4.4)	0.7461	14 (1.7)	44 (4.3)	0.0022	7 (6.2)	0.0044
Don't know or have no opinion	21 (1.1)	6 (1.2)	0.7042	8 (1.0)	0.9758	7 (1.0)	11 (1.8)	5 (0.5)	0.0250	5 (1.2)	0.4353	6 (0.7)	12 (1.2)	0.3409	2 (1.8)	0.2694

[a] Excluded responses from 24 parents who reported their child is not covered by health insurance.