






COMMENTARY



How health care providers should address vaccine hesitancy in the clinical setting: Evidence for presumptive language in making a strong recommendation

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ABSTRACT

Vaccine hesitancy occurs throughout the world and can result in poor vaccine uptake and vaccine-preventable disease-outbreaks. Vaccine hesitancy dates back to the days of Edward Jenner and the smallpox vaccine. It persists despite the preponderance of evidence supporting vaccine safety and effectiveness. Studies show even among parents of well-vaccinated children that 15–35% of those parents are vaccine-hesitant. Studies have failed to show the efficacy of educational interventions, and, indeed, a number of studies of educational interventions show a contrarian effect leaving the vaccine-hesitant more entrenched in their views. Still dozens of studies support health care provider recommendation as a major factor in achieving high rates of vaccine uptake. Furthermore, studies find those recommendations perceived as stronger are more effective than those perceived as weaker. What makes for a stronger recommendation? Several observational studies indicate that presumptive, announcement language as contrasted with participatory, conversational language makes for a stronger more effective recommendation. Several trials now demonstrate that health care providers and practices can implement this language and obtain higher vaccination uptake. The authors recommend the practice be adopted as a routine practice in the clinical setting for all vaccinations

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Vaccine hesitancy

The World Health Organization's Strategic Advisory Group of Experts on Immunization (SAGE) Working Group defined vaccine hesitancy as the "delay in acceptance or refusal of vaccination despite availability of vaccination services," stating that "Vaccine hesitancy is complex and context specific, varying across time, place and vaccines" and that "(i)t is influenced by factors such as complacency, convenience and confidence."¹ One might think a large, sustained outbreak of vaccine-preventable disease would resolve any lingering vaccine hesitancy. Despite such outbreaks, vaccine hesitancy persists. The US still suffers with vaccine hesitancy in the face of the 1,282 measles cases confirmed in 2019 – the largest number since 1992 in the US.² The majority of cases were unvaccinated against measles or had an unknown measles vaccination status. Most of these cases occurred in under-immunized, close-knit communities, including two outbreaks in Orthodox Jewish communities in New York State. Because of the ongoing transmission for nearly a year, these outbreaks threatened the status of measles elimination in the US and despite the enormity of the outbreaks, the parents involved continued to express hesitancy toward their children's vaccination.

Vaccine hesitancy in the US

Uptake for recommended infant vaccines in the United States is 90% or greater for each of the following recommended vaccine series – diphtheria-tetanus-acellular pertussis, inactivated poliovirus, pneumococcal conjugate, hepatitis b, and

Haemophilus influenzae type b – as well as one dose each for measles-mumps-rubella and varicella.³ However, 1.3% of children across the US have received none of those vaccines by 24 months of age. This is an increase from 0.3% in 2001.

Furthermore, studies show vaccine hesitancy is rampant, even among parents who vaccinate their children and do not seek exemptions from school or day-care mandates. A survey of such parents across the state of Wisconsin showed that 23.4% of parents believe children get more vaccines than are good for them, 33.7% feared too many vaccines can overwhelm the immune system, and 34.2% supported laws that would allow unvaccinated children to go to school.⁴ A survey of parents of children 17 years old and younger across the U.S. showed 54% of participating parents expressed concerns about vaccine safety despite less than 12% having ever refused a vaccine.⁵

Vaccine hesitancy around the world

Vaccine hesitancy is not just a problem in the United States, it is a worldwide problem. The World Health Organization has identified vaccine hesitancy as one of the top ten threats to global health in 2019.⁶ A survey assessing vaccine hesitancy in parents of at least one child ages one to four years old across 18 European countries found that 20% had delayed and 12% had refused vaccinations for their children.⁷ Among the 5736 respondents, 24% described themselves as somewhat hesitant and 4% self-described as very hesitant about vaccines. While vaccination worldwide currently prevents 2–3 million deaths a year, another

1.5 million deaths could be prevented if vaccines due were received.⁶ Of alarming note, the world had a 30% increase in measles cases in 2019 with resurgences in countries that were near elimination.⁶ Increasing global mobility and specifically international travel puts people at risk for vaccine-preventable disease despite their residing in regions where successful vaccination previously led to elimination of that disease; since the U.S. eliminated measles in 2000, every outbreak since has resulted from international travel.²

Concerns of the vaccine-hesitant

The specific concerns voiced by the vaccine-hesitant are myriad. Concerns include whether the vaccines might cause permanent injury, including autism; whether it is better to get natural disease; whether they or their loved ones are not at risk for the vaccine-preventable disease; whether the vaccine-preventable disease is even really dangerous; whether the vaccine will work; whether the vaccine poses religious or moral issues; and whether they can trust the government officials or the pharmaceutical industry. The concerns address the four bases of how the U.S. Advisory Committee on Immunization Practices (ACIP) determines which licensed vaccines should be routinely recommended – effectiveness, safety, necessity, and lack of acceptable alternatives.^{8,9} In other words, almost all of the concerns raised by the vaccine-hesitant fall in four categories: vaccination may not be effective, safe, or needed, or that reasonable alternatives to vaccination may be available. Some concerns arise from distrust or rejection of the authority such as the ACIP and similar official sources determining the vaccine recommendations. These concerns often invoke alternative sources, albeit dubious, of information and advice in their place.

The failure of education to overcome vaccine hesitancy

While it would seem then, by the nature of these claims, that we could address this vaccine hesitancy through education, systematic reviews continue decade after decade to show insufficient evidence to support recommendations for educational efforts to promote vaccination.^{10–12} These systematic reviews include experimental trials evaluating the effectiveness of educational interventions regarding vaccination directed toward the community, patients in clinic settings, and health care providers. Furthermore, several of these experimental trials have shown, at least with influenza and measles vaccination, educational interventions may backfire, increasing the resistance to vaccination.^{13–15}

What does work?

Interventions that target enhancing access to vaccination services, increasing community demand for vaccinations, and health care providers- or system-based interventions have been effective at increasing vaccination rates.¹⁶ Strong evidence from numerous randomized controlled trials and quasi-experimental studies supports recommendations for the following interventions:

- Home visits to increase vaccination rates
- Reducing patient out-of-pocket costs
- Vaccination programs in schools and organized child care centers
- Patient reminder and recall systems
- Vaccination requirements for child care, school and college attendance
- Immunization information systems
- Health care provider assessment and feedback
- Health care provider reminders
- Standing orders

While health care organizations, public health districts, and providers should adopt and support the above interventions, these interventions do not specifically address the concerns of vaccine-hesitant patients or parents.

If educational interventions do not work, how shall vaccine providers overcome vaccination hesitancy? Study after study has shown that health care provider recommendations for vaccination work to overcome hesitancy and improve vaccine uptake.^{17–27} Furthermore, studies show the strength of the recommendation matters. Specifically, recommendations that the health care provider makes that are perceived as stronger are more effective to overcome vaccine hesitancy and improve vaccine uptake than weaker recommendations.^{22,28} Analyses of health care providers' communications regarding vaccinations have demonstrated different language styles that health care providers use in recommending vaccines. Presumptive or announcement language uses phrases such as “The nurse will return with the vaccines due” or “We have to do some shots.” Conversational or participatory language uses phrases such as “What are you planning to do about the vaccines?” With parents of infants, more than 70% of health care providers use presumptive or announcement language to signal their recommendations.²⁹ However, parents of adolescents report hearing presumptive language less than 15% of the time.³⁰

Presumptive is better

Opel and colleagues video-recorded 111 preventive care encounters with parents of infants who were 19 months and younger.²⁹ Their analysis of the encounters showed that parents hearing presumptive language were 17.5 times more likely than parents hearing conversational language to accept the vaccines recommended! In the observational study of Opel et al., the health care provider initiated the discussion of the vaccinations due in 93 of 111 encounters. Among these encounters, the health care provider used presumptive language 69 times and used conversational language 24 times.²⁹ In the 69 times the health care provider used presumptive language the parent accepted the recommendation 51 times (74%). In the 24 times the health care provider used conversational language, the parent accepted the recommendation once (4%).²⁹

Replication of the evidence

The findings that the use of presumptive language rather than conversational language overcomes vaccine hesitancy and

improves vaccine uptake have been replicated in additional observational studies.^{31,32}

Hofstetter and colleagues analyzed communication behavior observed in 50 video-recorded preventive care visits.³¹ The parents were all 18 years and older. The patients were six months to 19 months of age and due for the influenza vaccine. The video-recordings were conducted as part of a larger study with the stated goal of improving health care provider-parent communication. Twenty-three health care providers participated from 16 primary care pediatric practices in Seattle, Washington. The health care providers used presumptive language in 42% of the visits to initiate the influenza vaccine discussion and used conversational language in 38% of the visits. In 4% of the visits, the patient already received the vaccine as part of the visit before the health care providers arrived. In 16% of visits, the parent initiated the discussion. In 72% of the visits, where the health care providers used presumptive language, the parent accepted the recommendation for the influenza vaccination as compared to 17% where the health care providers used conversational language.

Opel and colleagues created a longitudinal cohort to examine the impact over time of use of presumptive language as opposed to conversational language.³² All of the children in this cohort had vaccine hesitant parents as shown by standardized testing. All belonged to an integrated group health organization serving Washington and Idaho and were discharged from a Seattle newborn nursery. Eligibility also required commitment to attend the three preventive care visits at 2, 4, and 6 months of life. The investigators measured receipt of all vaccines due by 8 months of age using the Washington State immunization registry. Children of parents exposed to one or more visits where the parents reported conversational language had higher rates of underimmunization. The data revealed a dose-dependent impact. Adjusting for factors including the parent age, parent race, child birth order, and first-time vaccine discussion revealed that on average each visit in which parents reported conversational language resulted in 10.1% more days underimmunized.

Two intervention trials have similarly shown presumptive language as the basis for vaccine recommendations as effective.^{33–36} Brewer and colleagues randomized 30 family medicine and pediatric practices in North Carolina to receive one of two interventions or to serve as a control.³³ The first intervention trained health care providers to use presumptive language when making a vaccine recommendation. The second trained them to use conversational language. Ten practices participated in each arm. Training involved a single hour of onsite didactics on making a vaccine recommendation. The outcome measured was the initiation of the human papillomavirus vaccination series due in the 17,173 eligible children 11 to 12 years of age attending one of these practices in the six months following the training. Among eligible children, 5.4% more initiated the vaccine in practices trained in presumptive language than in the other practices. The investigators found no difference between conversation language and controls.

Malo and colleagues evaluated the processes in training these health care providers.³⁴ In that study, they found the one-hour training did change behavior for both interventions. For both intervention groups, providers' recommendations

for human papillomavirus vaccine were timelier, stronger, more urgent, and more routine. However, providers trained in announcement training reported spending less time discussing vaccination in the encounter and reported the perception that the approach saved time.

Dempsey and colleagues also conducted a trial randomizing sixteen practices to receive either a five-component intervention to improve health care provider communication including training with presumptive language or no intervention expecting the practices to continue usual care.³⁵ Initiation of the human papillomavirus vaccine series among eligible adolescents 11 to 17 years of age served as the primary outcome. Among the 42,132 eligible adolescents, practices that received the intervention had rates of initiation that were on average 9.5 percentage points higher over the 12-month study period. They found that parents who reported the use of presumptive language reported less hesitancy toward vaccine receipt, less concern about vaccine safety, and more likelihood of vaccinating.³⁶ Neither the intervention nor the control parents reported more negative attitudes regarding the encounter.

Conclusion

Vaccine hesitancy persists despite worldwide tragedies resulting from undervaccination. Parental concerns are myriad, but educational efforts fail to successfully address these concerns. Parents and patients do report the value of a provider recommendation, and stronger recommendations using presumptive language are effective at improving vaccine rates. Presumptive language signals that the patient and parent are seeking the health care provider's advice and are ready to follow that advice.

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