Quality Improvement: Influenza Vaccinations Increased with Patient-Centered Teaching

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Abstract

To improve influenza vaccinations, 6 independent rural primary care practices joined together in a quality improvement project to better understand why parents may elect not to vaccinate their children. A purposeful sample of Spanish and English speakers (N=61) identified facilitator, barrier, and self-care themes. Thirty-three percent refused vaccinations because their beliefs were that influenza vaccine caused the illness, they had influenza immunity, or they desired to avoid side effects. Spanish and English patient educational brochures were designed to address qualitative themes. Overall, tailoring educational materials and provider-patient conversations to address parental concerns increased annual pediatric influenza vaccinations by 8.8%.

INTRODUCTION

The Centers for Disease Control (CDC) recommends universal influenza vaccination and has recently included FluMist® (Live Attenuated Influenza Vaccine [LAIV]) nasal spray as a preferred vaccine for healthy children aged 2-8 years.1 Despite CDC recommendations, many parents choose to forgo the influenza vaccine each year, which led to rate variances at 6 primary care practices in Central Texas. To improve vaccination among pediatric patients, a quality improvement (QI) process was undertaken to develop tailored patient educational materials that incorporated patient preferences, knowledge, and beliefs. The aim of this educational intervention was two-fold: first, to determine how parents decide on participation of influenza vaccination, and secondly, to use parental themes to tailor an influenza vaccine patient education brochure for use by team members at the point of care.

METHODS

After attaining facility and provider permissions at the urban primary care practice sites, participants were interviewed about their decisions whether or not to obtain annual influenza vaccination for their children as part of the child's clinic visit. Due to the large Spanish-speaking population in Texas, a purposive sample of 30 Spanish or bilingual Spanish-English speakers and 31 English speakers were interviewed. The interview guide (Parents Influenza Vaccination Questionnaire), consisting of 4 demographic and 5 semi-structured open-ended items (see Table 1), was used. The query explored influenza vaccination patterns and parental rationale for the pattern; asked about concerns the parents have about their child contracting influenza, getting the influenza vaccination, and the parents' practices and action plans for caring for their child if the child contracts influenza. Interviewers were Registered Nurses enrolled in a Family Nurse Practitioner program who were trained in the quality improvement protocol, collected demographic information, conducted interviews, and made field notes, checking each other's findings for consistency. Interviews were voluntary and participant's responses were noted using the participant's own words. Interviewers and supervising nurse practitioners/physicians were available to answer participant questions. Data were transcribed, and thematic analysis revealed themes that were further organized as facilitators, barriers, and self-care strategies. Categorical demographic data, such as number, age, and ethnicity of children/parent/guardian were analyzed.

RESULTS

Most parents had more than one child (median 2; mean 2). Children's ages ranged from 2 weeks to 17 years. Ninety-percent (n=55) of the time, mothers were responsible for bringing the children to the healthcare provider and making the decisions about their children's influenza vaccination. Other informants were fathers (n=2) and grandparents (n=4). Most of the parents were Hispanic (n=32), followed by Caucasian (n=24) and African Americans (n=5). The majority of parents (67%; n=41) participated in annual influenza vaccination for their children. The main facilitator themes for vaccinating were prevention of illness, healthcare provider advice, and vaccination recommendations by age groups. Parents stated, " *want to do everything I can to protect my child from illness" and "[The influenza vaccine] was recommended by the doctor". The primary reason to vaccinate was to protect the child, prevent illness and discomfort, and to not miss school. Some parents verbalized the desire to use medication that did not contain mercury and hoped that the vaccine mix would cover this year's most prominent strains of viruses.*

Thirty-three percent (n=20) of parents refused the influenza vaccination for their children. The barrier themes identified for vaccine refusal were that the influenza vaccine caused the illness, influenza immunity, and avoidance of side effects. Parents stated, "[We] never get flu shots and never get sick so don't need it [influenza vaccine]". The antithesis statement was that, "[The vaccine] makes me sick for a week, so why get it?" Parents believed myths about vaccine causing influenza and had no alternative theories about different strains of influenza or knowledge of some cross-strain protection from the vaccine. Additionally, mercury was mentioned as a vaccine ingredient that they avoided by refusing vaccination. When considering concerns parents had about their children receiving the influenza vaccine, the primary focus was about the vaccine's side effects, which included the child getting sick with the influenza. Secondarily, parents did not want their children to suffer the pain of the injection. FluMist® was positively perceived for decreasing the trauma of injections but negatively perceived because the virus "is live" and that the product was less well investigated as it was a "new" option.

Participants were asked what strategies they implemented for their children when they did contract influenza. The self-care themes were related to seeking care, providing supportive care, and decreasing the spread of infection. Salient phrases often reported were, "hydrate", "provide comfort and bed rest", "limit contact to others" and [use] "good hygiene". Comfort traditions included soup and crackers, and were coupled with over-the-counter symptom management—primarily medications to reduce fever, ache and pains. Health professionals (physicians, nurses, pharmacists, and nurse practitioners) were sought to provide care suggestions and prescriptions for anti-viral medications (e.g., Tamiflu®; oseltamivir).

PATIENT EDUCATION

The QI team developed an evidence-based patient influenza vaccine brochure that was offered in English and Spanish. Participant facilitator, barrier, and self-care themes directed the brochure messages so as to enhance patient-centered counseling. Content validity index was established by a panel of nurse educators (CVI = 0.97), and an expert Spanish language arts educator completed a back translation of the Spanish influenza brochure to assure accuracy.

APPLICATION FOR PRACTICE

Clinic staff were educated on project findings and the brochure's content through a short visual presentation and discussion session. Important speaking points included: 1) offering the influenza vaccine to every patient and 2) allowing time for families to discuss questions/concerns they had about the vaccination. Project results were reviewed with clinic providers, nurses, and medical assistants. The staff development session included discussion on how to respond to parent's questions and how to dispel common myths about influenza vaccinations. Additionally, educational brochures were placed in the 6 clinic waiting rooms from October through December of 2014.

Vaccine usage log (number of doses given) was identified as the proxy indicator for vaccination rates. Subsequently, following the staff development sessions and distribution of the brochures, the number of influenza vaccine doses (M=977.17; range 76-3850) given from October through December 2014 for the 6 clinics were obtained from administrative records. Post intervention influenza vaccine counts (M=898.00; range 13- 3590) were compared to the number of doses administered in 2013 for the same time period. Five out of the 6 clinics (83%) had an increase in influenza vaccinations from 2013 to 2014. Overall, there was an 8.8% increase in pediatric influenza vaccinations for the influenza season following the tailored, patient centered educational initiative (Table 2).

DISCUSSION

The development and tailoring of the patient-centered educational brochure and staff development session addressed the relationship between a person's beliefs and behavior. Many parents chose not to vaccinate their children (birth through 17 years) due to common misconceptions about vaccination, including "it will cause my child to get sick." These interview findings aligned with a recent study that highlighted the importance of parent's health literacy, where approximately 46% of parents believed that the influenza vaccine could give their child the "flu".2 Misconceptions were often the direct consequence of inadequately communicated vaccine education. A major rationale for obtaining influenza vaccinations was abiding by the advice of the healthcare provider to obtain a vaccination. In a web-based survey by Flood and colleagues, 89% of parents who chose to vaccinate their children against influenza did so because a provider recommended it.2

Project findings support the importance of the Advanced Practice Registered Nurse' s (APRN) communication with parents about their concerns. Parents expressed trepidations about vaccine side effects, including muscle soreness and pain inflicted on their child. However, many parents were unaware of the intranasal mist as an option, which directly addressed the distress of inflicting pain. Discussing expected side effects, including low-grade fever, body aches and headaches, aided in dispelling myths that the vaccine actually causes illness and allowed the team to address the CDC's standard of care guidelines with the families. The educational development session allowed the health care team to collectively reinforce the same preventive messages. The discussion allowed parents to reflect on their own beliefs, understand the issues, and make an informed decision.

The standard of care guideline recommends that 100% of children be vaccinated annually and, by addressing parental concerns and implementing an educational initiative, there has been a positive trend in vaccinations. Overall, the number of children vaccinated in 2014 at these 6 clinics increased by 475 over the previous year. Tailoring an educational initiative afforded all members of the healthcare team a clearer understanding of parents' common fears and misconceptions. English and Spanish brochures reinforced vaccination rationale in a culturally appropriate manner. There were many strengths of this project. Common themes were apparent across a large geographical area, which suggests the findings may be more generalizable. The collaboration of multiple clinics captured a larger representation of central Texas' rural population. Limitations include the underrepresentation of minority populations and description of parental educational levels. Several clinics in this project offered the federally funded program that provides vaccines at no cost to children that are uninsured/underinsured. However, cost as a barrier was not addressed specifically in the project. National data suggest that 70% of parents would be willing to utilize school-based immunization programs if they were available.3,4 Vaccination reminder systems that use internet or email notifications to let patients know that the vaccine is available may also increase vaccination rates.5 APRNs should calculate their practice's influenza and other pediatric vaccination percentages and take measures to meet national guidelines and Medicare and Medicaid Program's proposed clinical quality measures.6

CONCLUSION

Based on this project, the first aim, which was to determine how parents decide on participation of influenza vaccination, was met as it is apparent that even small conversations between providers and families can clear up many questions and misunderstandings about the influenza vaccine and have a positive response, leading to increased vaccination rates. The second aim, which was to use parental themes to tailor an influenza vaccine patient education brochure for use by team members at the point of care, was also met. Tailored patient educational materials when applied to all types of vaccines have the potential for improved pediatric vaccination rates. APRNs are key providers to lead QI projects in their group or individual practices to positively impact outcomes.

Table 1

Examples of Communication Questions to Understand Parents Concerns about Vaccinations

1- "Does your child (or all your children) get the flu vaccine each year? Why"
2- "What else concerns you about your child getting the flu?"
3- "What things do you or your family members do to help someone who has the flu?"
4- "Are there any concerns you have about your child getting the flu vaccination?"
5- "What things do you or your family members do to address those concerns?"

Table 2

Number of Pediatric Influenza Vaccinations for the 2013 and 2014 Season in Six Rural Primary Care Clinics

	October 2013 to December 2013 Influenza Season	October 2014 to December 2014 Influenza Season
Clinic 1	394	435
Clinic 2	3590	3850
Clinic 3	550	619
Clinic 4	757	655
Clinic 5	13	76
Clinic 6	84	228
Totals	**5,388**	**5,863**

HIGHLIGHTS

- Parents often elect not to vaccinate their children because of influenza vaccine misconceptions.
- Patient-centered staff and patient education that addresses parental vaccine concerns can increase the number of pediatric vaccinations given.
- APRNs should determine their practice vaccination percentages and implement strategies to improve vaccination rates and attain national recommendations.

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