Parental Education on Human Papillomavirus Vaccine: Does it Positively Affect the Decision to Vaccinate Their Adolescent?

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INTRODUCTION

Human papillomavirus (HPV) is a sexually transmitted infection that affects nearly all sexually active people in their lifetime. Nearly 79 million Americans are infected, with half of the new cases occurring in people 15-24 years of age.

Certain subtypes of HPV can be linked to genital warts, oropharyngeal and anogenital cancers; with medical costs related to HPV associated illness estimated to be in the billions of dollars per year in the United States.

Gardasil 9 is a vaccine that protects against 9 of the most common subtypes of HPV and is recommended for both males and females starting between the ages of 11 and 12.

BACKGROUND

Despite clinical guidelines, only about 63% of girls and 50% of boys in the US have received at least 1 dose of the HPV vaccine series

28.1% of girls and 6.9% of boys complete the full series

There is a 70% immunization rate for the same group for Tdap and MCV4- other routine immunizations (HEDIS measure now includes Tdap, MCV4 & HPV)

Parents cite lack of both knowledge and provider recommendation among reasons for refusal of HPV vaccine

PICO QUESTION

In parents of adolescents age 11-12, does the addition of written educational materials about HPV vaccination, along with provider recommendation, positively affect the decision to begin the HPV vaccine series at the recommended age?

CRITICAL APPRAISALS

Randomized Controlled Trials

- Clinician-based intervention has a significant impact on initial vaccination; while family-based intervention was favorable for completing the series (Fiks et al., 2013).
- There was an increase in HPV vaccine initiation using "4 Pillars" approach, which includes convenient immunization services; communications with patients about the importance of vaccinations; enhanced office systems; and an "immunization champion" (Zimmerman et al., 2016).

Systematic Review

- Included 41 studies in U.S. and United Kingdom
- Interventions aimed at the adolescent alone have little effect on HPV vaccination uptake
- Parents and healthcare providers play an important role in decision making
  (Ferrer, Trotter, Hickman & Audrey, 2014)

Clinical Guideline

- Advisory Committee on Immunization Practices (ACIP) recommends that all adolescents should receive 2 doses of HPV vaccine starting between age 11 and 12; and 3 doses if started after age 15

PROJECT DESIGN and METHODS

Quality Improvement project

IRB approval and all permissions obtained

Parents of male and female patients between the ages of 11-12 who had a well-child exam scheduled were sent educational mailings in the 2 week period prior to the appointment

Mailing included provider letter recommending the Tdap, Meningococcal and HPV vaccines along with pre-printed vaccine information tear sheets

At the appointment, parents who chose to begin HPV vaccination were given a survey to determine if the mailing influenced their decision to vaccinate

Chart review was completed to compare HPV vaccination rates of intervention group with same age group in previous year

DATA ANALYSIS

Table 2.	2016	2017
Adolescents Age 11-12 who Started HPV Vaccine Series	8	15
Adolescents Age 11-12 who Did Not Start the HPV Vaccine Series	22	17
Total	30	32

Table 2. Comparison of HPV vaccine uptake in eligible adolescents.

Table 5.	Sample 1 (2016)	Sample 2 (2017)
Sample proportion	0.26	0.47
95% CI	0.1283 - 0.3917	0.3249 - 0.6151
z-value	1.7	
P-value	0.0433	
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal	
n by pi	n * pi >5, test ok	

Table 5. One-tailed, 2 sample Z- test for proportions

STRENGTHS AND LIMITATIONS

Strengths

- Low cost
- Minimal time investment
- Adaptable to multiple settings and delivery formats
- Effective for increasing uptake of HPV vaccination

Limitations

- Small sample size
- Short duration of EBPP
- Some participants did not receive/ read mailing or complete survey
- No data analysis of number of males to females

THEORETICAL FRAMEWORK

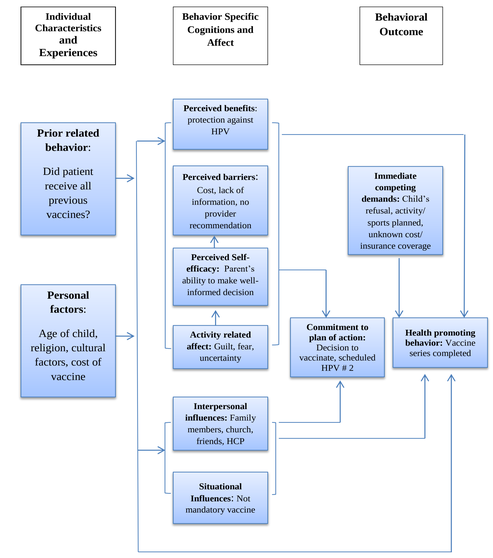

Figure 1. Concepts of HPV vaccination intervention following Pender's Health Promotion Model

APPLICABILITY FOR CHANGE IN PRACTICE

Cost-effective intervention~ $1 per mailing

Easily implemented without impacting schedule

Adaptable to EMR, text or SMS, or auto recorded messaging formats

Improve HEDIS scores

Healthy People 2020 goal for adolescent HPV vaccination

REFERENCES

Centers for Disease Control and Prevention. (2017). HPV vaccination coverage data. Retrieved from https://www.cdc.gov/hpv/hcp/vacc-coverage.html

Ferrer, H. B., Trotter, C., Hickman, M., & Audrey, S. (2014). Barriers and facilitators to HPV vaccination of young women in high-income countries: A qualitative systematic review and evidence synthesis. BMC Public Health, 14. Retrieved from http://www.biomedcentral.com/1471-2458/14/700

Fiks, A. G., Grundmeier, R. W., Mayne, S., Song, L., Feemster, K., Karavite, D., ... Localio, A. R. (2013, June). Effectiveness of decision support for families, clinicians, or both on HPV vaccine receipt. *Pediatrics*, *131*(6), 1114-1124. http://dx.doi.org/10.1542/peds.2012-3122

Healthy People 2020 website. (2017). https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives

Hirsch, L. (2012, January 10). Why parents choose (or refuse) HPV vaccination. *Pediatrics Consultant*. Retrieved from http://www.pediatricsconsultant360.com/content/why-parents-choose-or-refuse-hpv-vaccination

Zimmerman, R. K., Moehling, K. K., Lin, C. J., Zhang, S., Raviotta, J. M., Reis, E. C., ... Nowalk, M. P. (2016). Improving adolescent HPV vaccination in a randomized controlled cluster trial using the 4 Pillars Practice Transformation Program. *Vaccine*, *35*, 109-117. http://dx.doi.org/10.1016/j.vaccine.2016.11.018

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