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**Title**

*Influences on rural HPV vaccine hesitancy: A multi-level mixed methods study*

**Priority 1 (Research Category)**

Cancer research (not screening)

**Presenters**

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**Abstract**

Context. Human Papillomavirus (HPV) is the most common sexually transmitted infection and the leading cause of cervical and oropharyngeal cancers. Vaccination can prevent over 90% of HPV-attributed cancers among those aged 9-26. Rural populations are less likely to receive the complete HPV protocol than urban. Objective. The aim of this mixed methods study is to evaluate multilevel (youths, parents, primary care physician (PCP)/team, clinic, community, and policy) influences on HPV vaccine hesitancy. Study Design and Analysis. A mixed methods analysis was conducted to integrate quantitative (cross-sectional PCP survey, multiple linear regression analysis) and qualitative data (youth, parent focus groups, inductive descriptive analysis) in a joint display table. Setting. Midwestern state rural communities. Population Studied. Rural youths, parents, PCPs. Instrument. PCP online survey, focus group protocols. Outcome Measures. HPV vaccine uptake, HPV vaccine continuous stages of change. Results. Through the joint display, the qualitative and quantitative data reveal two different perspectives on the role of the PCP in educating about vaccination, and on involvement of youth in decision-making about the vaccine; although the primary barriers to vaccination were consonant. Youths and parents reported limited unbiased HPV vaccine information; yet, 40% of physicians reported educating their patients about the HPV vaccine. Inductive descriptive analyses revealed that youth wanted a greater role in decision-making about the HPV vaccine, while parents were the PCPs primary focus. Integrative analyses of both the qualitative and quantitative data identified parental out-of-pocket cost as a significant predictor of lower HPV vaccine uptake ( $t=-3.35$ ,  $p=0.0048$ ), and a primary qualitative theme. Similarly, structural supports in the clinics (up-to-date HPV vaccination rates for patients;  $t=-2.17$ ,  $p=0.0475$ ), and established office workflows to identify the unvaccinated ( $t=2.31$ ;  $p=0.0366$ ) were significantly associated with higher HPV vaccine uptake. Conclusions. Adapting dissemination approaches to rural primary care physicians, through Academic Detailing or practice facilitation, could decrease HPV vaccine hesitancy by sharing evidence-based counseling approaches and clinic structural modifications. Youths could be engaged as champions of the HPV vaccine, further disseminating unbiased information to peers. Linking primary care practices and public health dissemination strategies are key.