Effect of Decision Support on Missed Opportunities for Human Papillomavirus Vaccination

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BACKGROUND: Missed opportunities for human papilloma virus (HPV) vaccination are common, presenting a barrier to achieving widespread vaccine coverage and preventing infection.

PURPOSE: To compare the impact of clinician- versus family-focused decision support, none, or both on captured opportunities for HPV vaccination.

DESIGN: Twelve-month cluster randomized controlled trial conducted in 2010–2011.

SETTING/PARTICIPANTS: Adolescent girls aged 11–17 years due for HPV Dose 1, 2, or 3 receiving care at primary care practices.

INTERVENTION: Twenty-two primary care practices were cluster randomized to receive a three-part clinician-focused intervention (educational sessions, electronic health record–based alerts, and performance feedback) or none. Within each practice, girls were randomized at the patient level to receive family-focused, automated, educational phone calls or none. Randomization resulted in four groups: clinician-focused, family-focused, combined, or no intervention.

MAIN OUTCOME MEASURES: Standardized proportions of captured opportunities (due vaccine received at clinician visit) were calculated among girls in each study arm. Analyses were conducted in 2013.

RESULTS: Among 17,016 adolescent girls and their 32,472 visits (14,247 preventive, 18,225 acute), more HPV opportunities were captured at preventive than acute visits (36% vs 4%, $p<0.001$). At preventive visits, the clinician intervention increased captured opportunities by 9 percentage points for HPV-1 and 6 percentage points for HPV-3 ($p?0.01$), but not HPV-2. At acute visits, the clinician and combined interventions significantly improved captured opportunities for all three doses ($p?0.01$). The family intervention was similar to none. Results differed by practice setting; at preventive visits, the clinician intervention was more effective for HPV-1 in suburban than urban settings, whereas at acute visits, the clinician intervention was more effective for all doses at urban practices.

CONCLUSIONS: Clinician-focused decision support is a more effective strategy than family-focused to prevent missed HPV vaccination opportunities. Given the persistence of missed opportunities even in intervention groups, complementary strategies are needed. This study is registered at clinicaltrials.gov NCT01159093.

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