Initiation of HPV Vaccination for Females: Does an Electronic Reminder System Influence Vaccination Coverage

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Background

- Human papillomavirus (HPV)
  - 5% of cancers worldwide
  - Most common STI in the US
- Two HPV vaccines available
  - Gardasil® (HPV4) and Cervarix® (HPV2)
  - Indicated for females ages 9-26 years
  - Prevention of cervical and anal cancer and pre-cancers

Objectives

- Evaluate whether posting a reminder in the electronic health record will increase rate of initiating the HPV vaccine series
- Identify factors related to vaccination

Methods

- Sample
  - Female patients 9-25 years of age without HPV vaccination
- Electronic reminder posted in patient's record
  - Stating patient eligible for vaccination
  - Three month study period
- Proportion of subjects starting the series was compared to population estimate

Table 1. HPV Vaccination Coverage by Certain Characteristics

Characteristic	No. in sample	%	HPV Coverage (%)	HPV Coverage (95% CI)	p-value
Total	61	100.0	**8.2**	2.7 - 18.1	0.25*
Age Group (yrs)					
<18	22	36.1	**13.6**	2.9 - 34.9	0.34**
>18	39	63.9	**5.1**	0.6 – 17.3	
Provider Type					
Faculty	6	9.8	**33.3**	4.3 – 77.7	0.07**
Resident	55	90.2	**5.5**	1.1 – 15.1	
Visit Type					
Acute	48	78.7	**2.1**	0.05 – 11.1	0.006**
Wellness	13	21.3	**30.8**	9.1 – 61.4	
Vacc. Status Addressed					
Yes	9	14.8	**33.3**	7.5 – 70.1	0.01**
No	52	85.2	**3.9**	0.47 – 13.2	

*Compared to baseline population estimate of 14%
** p-value from Fischer's exact test

Results

- Electronic reminder of HPV vaccine eligibility did not significantly affect vaccination rate in this population (8.2% vs. 14% population estimate)
- HPV vaccine was more likely to be initiated at wellness visits vs. acute visits (30.8% vs. 2.1%)
- HPV vaccine initiation was significantly higher when status was addressed (33.3% vs. 3.9%)
- Patient age and provider type were not significantly associated with HPV vaccine initiation

Conclusions

- Addressing vaccination status with patients improves vaccination rates
- Vaccinations are more likely to be given at wellness visits than acute visits
- One strategy to improve HPV vaccination rates would be to address status and vaccinate at all visits rather than just wellness visits

Discussion

- Electronic reminders may still be effective tools to improve vaccination rates
  - Variations in the design of decision support tools needs further study
- Study limitations
  - The period of our study (Oct – Dec) did not correlate with timing of the highest volume of pediatric visits, thereby limiting our sample size
  - Demographics of our clinic population make vaccination cost prohibitive for some

References

- Dunne, E.F., S.D. Datta, and E.M. L, A review of prophylactic human papillomavirus vaccines: recommendations and monitoring in the US. Cancer, 2008. 113(10 Suppl): p. 2995-3003.

- FDA licensure of bivalent human papillomavirus vaccine (HPV2, Cervarix) for use in females and updated HPV vaccination recommendations from the Advisory Committee on Immunization Practices (ACIP). MMWR Morb Mortal Wkly Rep. 59(20): p. 626-9.

- Moscicki, A.B., HPV Vaccines: today and in the Future. J Adolesc Health, 2008. 43(4 Suppl): p. S26-40.