Process Evaluation of a Catch-up HPV Vaccination Program Among College Students Attending Large Public University in the Southeastern United States

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Purpose

- To conduct a process evaluation of a quality improvement (QI) initiative to promote the use of Human papillomavirus (HPV) vaccine among college-aged catch-up population at a large public university in the Southeastern U.S., and to better understand the feasibility and challenges of such interventions.

Background

Annual rate and number of new HPV-associated cancer cases by sex and cancer type in the United States

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Females (14,331)</th>
<th>Males (18,280)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anal</td>
<td>4,333</td>
<td>1,269</td>
</tr>
<tr>
<td>Cervix</td>
<td>13,834</td>
<td>1,219</td>
</tr>
<tr>
<td>Vulva</td>
<td>3,934</td>
<td>7%</td>
</tr>
<tr>
<td>Vagina</td>
<td>846</td>
<td>16%</td>
</tr>
</tbody>
</table>

Sources: CDC (2018)

- HPV-associated cancer incidence rates ranged by state from 7.9 per 100,000 (Utah) persons to 15.3 (Kentucky). In Florida, 14,271/100,000 people develop HPV-associated cancer each year.
- Healthy People 2020 HPV vaccination rate goal of 80% for females and males by 13 to 15 years of age.
- HPV vaccines are proven to prevent genital warts and some types of HPV-associated cancers, yet they are considerably underutilized.
- Common barriers to low HPV vaccination completion include lack of knowledge, cost, and forgiveness about subsequent doses.
- Among females and males aged 19-26 years who had not received HPV vaccination prior to age 19 years, 8.6% and 2.7% reported receiving their 1st dose of HPV vaccine at age 19-26 years, respectively.
- In 2017, 59% of college-aged students reported receiving vaccination against HPV.

A Southeastern U.S. University has partnered with the local County Department of Public Health (DOH) to increase provision of HPV vaccines at Student Health Center.

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18-26 college-aged group is a significant catch-up vaccination population as this is a period for autonomous decision-making, high health care utilization, and other recommended prevention strategies.

Total economic burden of preventing and treating HPV-related disease is estimated to be about $8 billion annually.

Data analysis

- From August to October 2018, 175 state immunization identifiers (IDs) were reviewed utilizing the State Health Online Tracking System to assess immunization status and adherence to HPV vaccination guidelines.
- Descriptive statistics analyzed mean, frequency and percents of desired variables.

Mean age of participants was 22.3 years (range 18-26 years).

Participated primarily female (68.5%), and the majority self-identified as White (28.5%).

Reminder-Renactment

- From September to October 2018, 103/154 targeted students (67%) were enrolled in the reminders helped them to remember to get their subsequent vaccine dose.

- 96% reported to be very satisfied with the intervention and most reported that reminders helped them to remember to get their subsequent vaccine dose.

- 25% (n=44) of the full sample completed an HPV vaccine series.

- 80% (n=141) of the full sample received their 1st dose of HPV vaccine.

HPV vaccine initiation

- 85% (n=141) of the full sample received their 1st dose of the HPV vaccine at the First Free HPV vaccination event (March 28th, 2018).

- 7.4% (n=13) received their 2nd dose.

Second and/or Third Dose of Vaccine

- All 141 patients that received 1st dose were eligible for the 2nd dose.

- 19% (n=27) had completed the 2nd dose (17 females, 10 males).

- 15-46% of those who received 2nd dose of HPV had completed the 3rd dose.

HPV vaccine completion

- 15% (n=22) completed the 3-dose vaccine series within the recommended schedule.

- It is noteworthy that 7 students (7/22) completed series and two received 2nd dose after received phone reminder but before follow-up event.

- 85% (n=131) had not completed the vaccine series as of October 2018.

- 25% (n=44) of the full sample completed an HPV vaccine series.

Results

- 7 students received 4-dose of HPV which was considered extraneous and unnecessary for completion of the indicated antigen schedule.

Discussion

- Concluded it is feasible to establish a catch-up HPV vaccination program at the local University.

- Process evaluation demonstrated that there were a significant proportion of college students eligible and willing to participate in the catch-up HPV vaccination program.

- Strengths: Initial high response rate (n=176) and low-cost electronic reminder-recall intervention.

- Findings suggest that implementation of reminder-recall systems can produce measurable improvements in factors related to HPV vaccine completion and adherence among U.S college students.

- Identified two topics that likely require more explanation in vaccination program materials: vaccination cost and insurance coverage.

Limitations

- Absence of baseline catch-up HPV immunization rates and satisfaction data.

- In determining feasibility, it was noted that there is a lack of standardization in best practices to ensure vaccine series completion.

- In completing HPV vaccine series, there were difficulties with tracking and appointment scheduling.

- HPV vaccine funded by federal programs vs. private insurance.

Recommendations

- Schedule the 2nd dose at the time of 1st vaccination and assess feasibility of implementing standing orders for 2nd and 3rd doses.

- Develop a protocol for pre-screening patients prior to immunization for staff to undertake proper assessment of eligibility for HPV vaccination.

- Implement evidence-based practices that have been demonstrated to improve vaccination coverage.

- More intensive annual program evaluation and updates with greater emphasis on age, sex/gender, and race/ethnicity is advisable.

Implications for Practice

- This process evaluation provides insight on the utility of partnerships to enhance student health centers vaccination processes.

- Developing a partnership between local health departments and university school systems is crucial to success of university/school based-vaccination clinics.

- Potential for additional immunization (QI) projects specifically targeting males.

Acknowledgements

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