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Completed HPV vaccination rates in two distinct populations of New Jersey

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Completed HPV vaccination rates in two distinct populations

Abstract

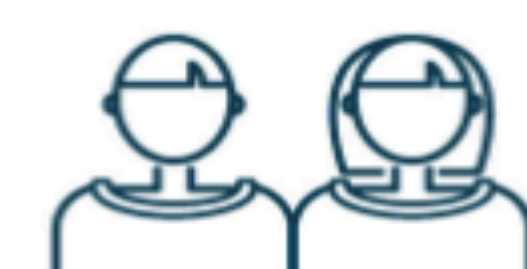
In accordance with updated CDC guidelines from 2018, the vaccination schedule for HPV varies according to the age of the patient, most critically by allowing for two injections instead of three if the process began prior to turning 15 years old. In a previous study, it was shown that suburban practice location was associated with higher completion rates of the HPV vaccine (Chou et. All 2011). By gathering data from Camden and Moorestown offices within Cooper Pediatrics, we could evaluate this assertion within southern New Jersey and further evaluate if there was a difference in completion rates by age groups. Using a retrospective chart review of 320 patients' data and using chi-square analysis, it was determined there was significant statistical difference in vaccine series completion between the two offices and by age group.

Purpose

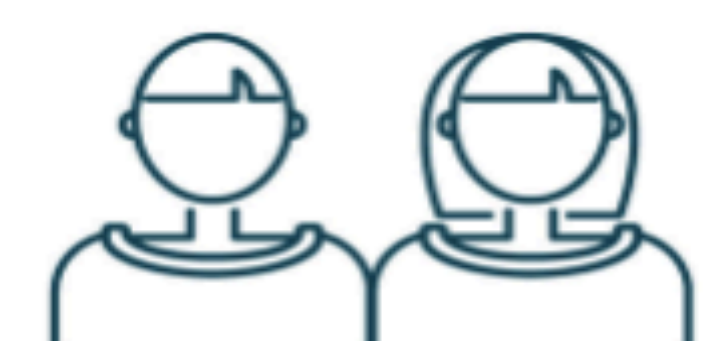
Inoculation with HPV vaccine provides a direct benefit to recipients by safely protecting against cancers that can result from persistent HPV infection. This preventive effect is most notable and best studied with cervical cancer in females, which is one of the most common female cancers worldwide. By conducting analysis of vaccination rates, we can monitor trends in completion with less required follow-ups if treatment begins at an earlier age. Additionally, with more information we can better educate our patients and their family members about the benefits of beginning this process earlier, as the the vaccine works best before any initial exposure to HPV (CDC 2019).

HPV Vaccine Schedule and Dosing

Start Talking Early
Ages 9-10
2 doses



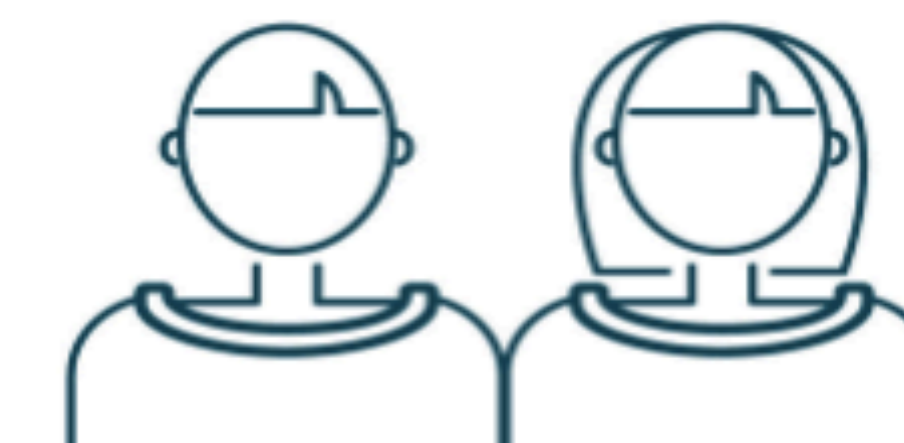
On Time
Ages 11-12
2 doses



Late
Ages 13-14
2 doses



Late
Ages 15-26
3 doses



Comparing 9-14 year completion rates in Moorestown & Camden

9-14 Year Old	Moorestown	Camden	Total
Incomplete	7	9	16 (.1)
Complete	73	71	144 (.9)
	80	80	160

"Patient Expected Counts"

9-14 Year Old	Moorestown	Camden	Total
Incomplete	8 (160*.5*.1)	8 (160*.5*.1)	16 (.1)
Complete	72 (160*.5*.9)	72 (160*.5*.9)	144 (.9)
	80 (.5)	80 (.5)	160

Comparing 15+ year old completion rates in Moorestown & Camden

15 Year Old +	Moorestown	Camden	Total
Incomplete	21	48	69 (.43125)
Complete	59	32	91 (.56875)
	80	80	160

"Patient Expected Counts"

15 Year Old +	Moorestown	Camden	Total
Incomplete	34.5 (160*.5*.43125)	34.5 (160*.5*.43125)	69 (.43125)
Complete	45.5 (160*.5*.56875)	45.5 (160*.5*.56875)	91 (.56875)
	80 (.5)	80 (.5)	160

Comparing completion rates in Moorestown & Camden (regardless of age)

	Moorestown	Camden	Total
Incomplete	28	57	85 (.2656)
Complete	132	103	235 (.7344)
	160	160	320

"Patient Expected Counts"

	Moorestown	Camden	Total
Incomplete	42.5 (320*.5*.2656)	42.5 (320*.5*.2656)	85 (.2656)
Complete	117.5 (320*.5*.7344)	117.5 (320*.5*.7344)	235 (.7344)
	160 (.5)	160 (.5)	320

Comparing completion rates in 9-14 vs. 15+ year old populations (regardless of location)

	9-14 year old	15+ year old	Total
Incomplete	16	69	85 (.2656)
Complete	144	91	235 (.7344)
	160	160	320

"Patient Expected Counts"

	Moorestown	Camden	Total
Incomplete	42.5 (320*.5*.2656)	42.5 (320*.5*.2656)	85 (.2656)
Complete	117.5 (320*.5*.7344)	117.5 (320*.5*.7344)	235 (.7344)
	160 (.5)	160 (.5)	320

Methods & Results

This study gathered data from 160 patients from Moorestown and 160 from Camden (80 9-14-year-old and 80 15+ year old from each location.) This is based on historical data of 40% completion in Caucasian populations and 25% in minority populations with a power of 80% and alpha of 0.05. Using a chi-square analysis, the compiled data was analyzed (shown in four charts in center of poster). Significant difference in the groups was based on $p < .05$. The degrees of freedom was 1.

Comparing 9-14-year-old patients from each location, no significant difference was discovered (P-value is 0.59816). It was found that the Moorestown location had a significantly higher amount of vaccination series completions compared to Camden when the series began after 15 years old (P-value is 0.000016). When comparing all patients in Moorestown and Camden, Moorestown patients completed vaccination series at a significantly higher rate (P-value is 0.000242). Additionally, the completion rate was significantly higher when the inoculation began prior to 15 years of age (P-value is < 0.00001).

Conclusion

Compared to trends seen in other studies, the data analyzed here shows a significantly higher completion of vaccine series in a suburban (Moorestown) population compared to inner-city (Camden). While the data compiled did not include a patient's race, historical data has shown lower rates of completion in minority populations and could be a data point for comparison in the future (Kester et. All 2013). A potential for further insight would be a questionnaire to gather thoughts pertaining to vaccines overall and the HPV vaccine specifically due to a potential perceived connection with sexual activity. The differences in vaccination rates of males and females could be another data point. South New Jersey has access to rural populations as well, which could provide additional access and insight to large groups of people that often have sub-standard level of access to healthcare (Mead 2019).

References:

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