Improving Human Papillomavirus Vaccination Rates in Adolescents:
A Quality Improvement Project

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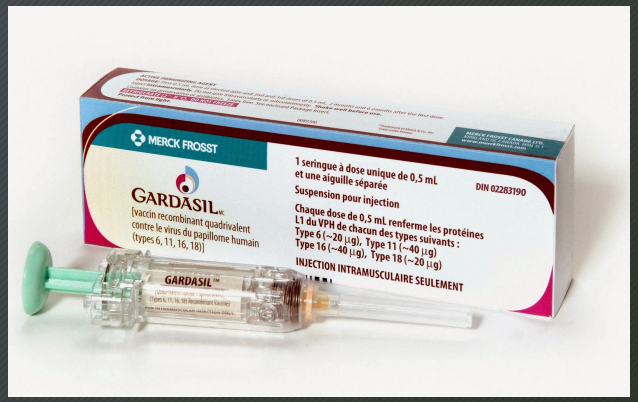
Overview of Problem

- Human Papillomavirus (HPV) is the most common sexually transmitted infection in the United States.
- Gardasil® 9 is the only vaccine available for use in the United States
  - Given in a series of two or three shots
  - Recommended for males and females aged 9 to 45 years
- Number of adolescents receiving the initial vaccine are increasing, but problems persist with completion of the vaccine series



(Centers for Disease Control and Prevention [CDC], 2018b; CDC, 2019; National Cancer Institution, 2019)

Clinical Significance

- 80 million Americans are infected with HPV
- Approximately 14 million become newly infected every year
- 340,000 to 360,000 people were affected by HPV prior to the HPV vaccine
- Fourth most common cause of cancer in women
- Leads to various types of cancer
  - 90% anal and cervical cancer
  - 70% vaginal and vulvar cancer
  - 60% penile cancer

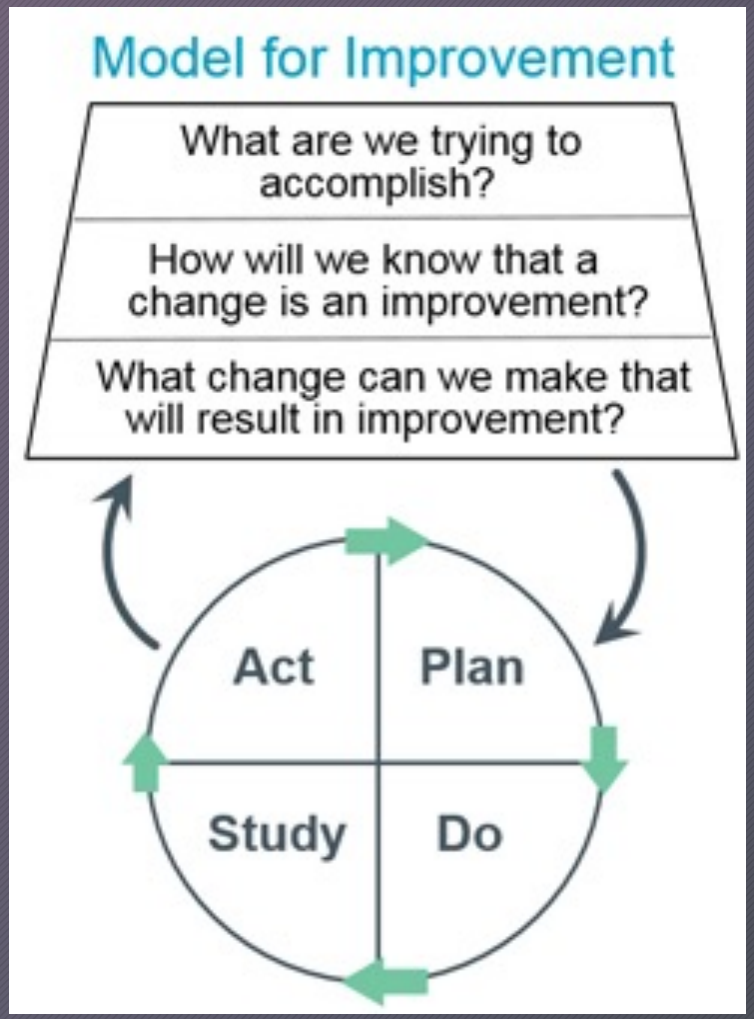
(CDC, 2019a; CDC, 2019c; World Health Organization [WHO], 2019)

Project Purpose and Goal

- Implement an evidence-based intervention to improve HPV vaccine series completion rates among adolescents between 11 and 12 years of age.

- Increase HPV vaccine completion rates by 10% over a 3-month period

Guiding Framework



THINKING part

1. Set the aim
2. Select measures
3. Develop ideas for change

DOING part

Four steps for TESTING the ideas for change that's developed

Plan it, try it, observe the results, and act on what is learned

(Langley, et al, 2009)

PICOT Question

P: Population

I: Intervention

C: Comparison

O: Outcome

T: Time

"In adolescents in a school-based health clinic, how does the implementation of an evidenced-based appointment reminder intervention compared to current practice affect completion of the recommended doses of the HPV vaccine within three months?"

(Melnyk & Fineout-Overholt, 2019)

Evidence

- Search for evidence
- Melnyk & Fineout-Overholt's Rapid Critical Appraisal
- JHNEBP Evidence Level & Quality Guide
- JHNEBP Synthesis Process and Recommendations
- Consistency & Strength of Recommendations

(Dang & Dearholt, 2018; Melnyk & Fineout-Overholt, 2019).

STATEMENT 1:

- Strong and consistent evidence to recommend implementing text message reminders for parents/guardians and patients for upcoming appointments for HPV vaccine.

References in Support:

- Bar-Shain et al. (2015), Kharbanda et al. (2011), and Rand el al. (2016).

STATEMENT 2:

- Strong and consistent evidence to recommend implementing phone call reminders for parents/guardians and patients to schedule appointment to complete HPV vaccine.

References in Support:

- Cassidy et al. (2014), Fu et al. (2014), and Rand et al. (2016).

Project Setting

- Vine School Health Clinic
  - Serves a large population within Knox County from birth to 21 years of age
  - Staff: 1 MD, 4 NPs, 1 RN, 2 LCSW, office manger and office assistant
  - UT College of Nursing students
  - Social work students

Project Stakeholders

- Project Lead - DNP Student
- Project Chair
- Community Member
- Providers
- Nursing Staff
- Statistician
- Patients & Parents/Guardians

Ethical Consideration

Approval from Institutional Review Board (IRB) before project implementation

No patient identifiers, patient identification numbers given

Data collection stored on Excel – saved on OneDrive business account, password protected

Population

Educational Intervention Population:

- Adolescent male and females between 11- and 12-years-old in the Knox Co. School district who have received their first dose of the HPV vaccine series

Intervention Implementation

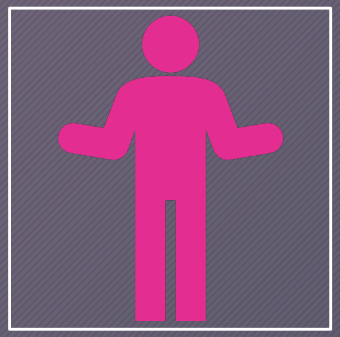
- Chart reviews
- Phone calls
- Make appointments
- Text message reminders

Outcomes

RECHPV2		Pre-intervention June 2019 – June 2020	Post-intervention June 2020 – June 2021	Total
Yes	Count	4	23	27
	%	19.0%	31.5%	28.7%
No	Count	17	50	67
	%	81.0%	68.5%	71.3%
Total	Count	21	73	94

(p=.266) no statistical significantly difference, one sample Chi-square (p=0.006)

Limitations



Small sample size

Ceased data collection

Global pandemic

Conclusions

- Evident that practice changes need to be made
- Continuation of implemented project could benefit this clinical practice.
- The total number of adolescents receiving the HPV vaccines are increasing.

Dissemination

Project presentation to stakeholders & project site

Submit to the Journal of Nurse Practitioners

Questions?

References

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