**BACKGROUND**
- Despite introduction of the HPV vaccine over ten years ago, nationwide HPV vaccination rates remain well below the Healthy People 2020 goal of 80% completion.
- Two-dose vaccine schedule completion rates in Alabama were 50.4% for girls and 30.3% for boys in 2015.
- Provider recommendation is the most influential factor in parents’ decision to vaccinate their children.
- The National Cancer Institute has identified increasing HPV vaccination rates, as well as their strategies for improving HPV vaccine uptake.

**Objectives**
- To gain insight from pediatricians in our state as to the factors affecting HPV vaccination rates, as well as their strategies for improving HPV vaccine uptake.

**METHODS**
- A statewide survey was sent to members of Alabama AAP and AAFP chapters.
  - Survey asked questions about provider HPV vaccination recommendation and provision, barriers to HPV vaccination, and existing provider strategies for HPV vaccination provision.
  - Pediatricians were interviewed in counties with <20% HPV vaccination rates.
  - A standardized interview with open-ended questions was conducted by one investigator.
  - Two separate investigators evaluated the interviews for themes using an iterative sampling approach, these themes were combined and representative themes agreed upon.
  - Themes that occurred in 5 or more interviews were considered to be major themes.
  - Qualitative data was organized using NVivo software.
  - This study was performed prior to the 2016 CDC recommendation for a two-dose HPV vaccination schedule for children <15 years of age.

**RESULTS**

**Quantitative Survey**
- 49 respondents
  - 57.1% pediatricians, 40.8% family medicine
  - 96% recommend HPV vaccination
  - 87.2% often/always recommend the vaccine with Tdap/meningitis vaccines for girls, 76.5% for boys.
  - Common messages included the provider’s own personal belief in the importance of HPV vaccination (74%) and the link between the vaccine and cervical cancer prevention for girls (80%).

**System barriers**
- Recommended by >40% of providers inclusion of HPV vaccination in the HPV vaccine schedule is not required for school attendance and “difficulty ensuring that all patients will complete the 3-dose series”.
- There were very few provider barriers identified.
- Patient barriers identified:
  - Lack of parental understanding about HPV vaccination
  - Parental belief that their child is not at risk for HPV vaccination
  - Concern that the vaccine is not safe
  - Reluctance to discuss sexuality and/or STIs
  - Concern that the vaccinated child will practice riskier sexual behaviors.

**Suggested strategies**
- Included reminder systems for 2nd/3rd doses and guidance for making recommendations for parents in an easy-to-read format.

**Qualitative Interviews**
- 9 pediatricians interviewed.
  - 4 males and 5 females; age range (41-74).
  - All had been in practice at least 10 years.
  - Provider populations served by this group include large proportions of racial/ethnic minorities and patient with a variety of insurance providers.
  - All providers recommend the vaccine to both boys and girls, and all used “opportunistic” approaches to providing the vaccine.
  - Major themes identified from the qualitative interviews were divided into categories.

**CONCLUSIONS**
- The most common system barriers identified included infrequency of routine adolescent visits, lack of HPV vaccination requirement for school attendance, and difficulty ensuring patients complete subsequent doses.
- Common perceived patient-level barriers included parental belief in a link between sexual activity and the vaccine and concerns about vaccine safety.
- The most frequently reported messaging strategy was a focus on cancer prevention.
- Supported strategies for increasing vaccination rates included provider and clinic staff education, and reminder systems for the 2nd/3rd doses.
- This data will be utilized to develop a multi-level intervention to increase HPV vaccination rates in counties and clinics in Alabama with low vaccination rates.
- As pediatrician recommendation is the most influential factor in parental decision to vaccinate, this insight into their practices and attitudes will be a cornerstone of intervention development.

**Word Cloud**

- **Patient barriers**
- **Provider/barriers**
- **System barriers**
- **Suggested strategies**
- **Qualitative interviews**
- **Survey**

**Theme**
- Patient barriers
  - Lack of parental understanding
  - Personal belief child is not at risk
  - Concern vaccine is not safe
  - Reluctance discuss sexuality/STIs
  - Concern vaccinated child will practice riskier behaviors

- Provider/barriers
  - Time
  - System barriers
  - Difficulty getting adolescents into clinic
  - Insurance (lack of coverage, low reimbursement)

- Suggested strategies
  - Reminder systems for doses
  - Guidance for making recommendations

- Qualitative interviews
  - 9 pediatricians interviewed
  - 4 males and 5 females; age range (41-74)
  - All in practice at least 10 years
  - Provider populations served include large proportions of racial/ethnic minorities and patient with a variety of insurance providers

- **Messaging**
  - Unlikely vaccine with sexual behavior
  - No gender difference in risk
  - Personal or family experience with vaccine

- **Strategies**
  - Community outreach
  - Education materials
  - Provider outreach
  - Text messaging
  - Walk-ins
  - Nurse visits
  - Partner with schools/education of clinic staff

- **Word Cloud**
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