BACKGROUND

• As part of an NCI supplement, we examined barriers to, and facilitators of, HPV vaccination in our catchment area (the entire state of Indiana).
BACKGROUND

• 51.1% of 13-17 year olds are up-to-date
  • 53.7% of girls
  • 48.7% of boys

Indiana (2018)
• 48.9% of 13-17 year olds are up-to-date

(Walker TY, MMWR, 2019)
RURAL/URBAN DISPARITIES IN UPTAKE

(Walker TY, MMWR, 2019)
RURAL/URBAN DISPARITIES IN INDIANA

- Missed opportunities for HPV vaccination in Indiana by county
- 2017 CHIRP data ages 11-18
  - Green: ≤ 53%
  - Yellow: 54% - 65%
  - Red: ≥ 66%

Used with permission from: Gregory D. Zimet
PURPOSE

• We examined rural-urban differences in vaccine coordinators’ reports of frequency of HPV vaccine recommendation, how the vaccine is presented, and parental refusal.
METHODS

• We conducted online and telephone surveys of 94 clinic vaccine coordinators from 64 of Indiana’s 92 counties

• We examined:
  • Frequency of HPV vaccination recommendations (never [1] to always [5])
  • Frequency of parental refusal of the vaccine (never [1] to always [5])
  • How they present the vaccine to their patients (due vs. optional)

• Participants were compared by the reported clinic geographic location comparing rural (n=45) to urban/suburban (n=45)
# RESULTS - DESCRIPTIVE STATISTICS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Urban/Suburban</th>
<th>Rural</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean[SD])</td>
<td>48.0 (12.2)</td>
<td>47.2 (12.1)</td>
<td>48.8 (12.4)</td>
<td>0.542</td>
</tr>
<tr>
<td>Sex (female) (n(%))</td>
<td>90 (100.0)</td>
<td>45 (100.0)</td>
<td>45 (100.0)</td>
<td>n/a</td>
</tr>
<tr>
<td>Race/Ethnicity (non-Hispanic White) (n(%))</td>
<td>74 (82.2)</td>
<td>33 (73.3)</td>
<td>41 (91.1)</td>
<td>0.019</td>
</tr>
<tr>
<td>Role in clinic (RN) (n(%))</td>
<td>52 (57.8)</td>
<td>23 (51.1)</td>
<td>29 (64.4)</td>
<td>0.200</td>
</tr>
</tbody>
</table>
RESULTS-RECOMMENDATION FREQUENCY

**Urban/Suburban**

- 9-10 year old girls: \( p = 0.183 \)
- 9-10 year old boys: \( p = 0.154 \)
- 11-12 year old girls: \( p = 0.582 \)
- 11-12 year old boys: \( p = 0.962 \)
- 13-17 year old girls: \( p = 0.781 \)
- 13-17 year old boys: \( p = 0.864 \)

**Rural**

- 9-10 year old girls: \( p = 0.183 \)
- 9-10 year old boys: \( p = 0.154 \)
- 11-12 year old girls: \( p = 0.582 \)
- 11-12 year old boys: \( p = 0.962 \)
- 13-17 year old girls: \( p = 0.781 \)
- 13-17 year old boys: \( p = 0.864 \)
RESULTS- PARENTAL REFUSAL

- 9-10 year old girls: p=0.242
- 9-10 year old boys: p=0.058
- 11-12 year old girls: p=0.186
- 11-12 year old boys: p=0.061
- 13-17 year old girls: p=0.018
- 13-17 year old boys: p=0.009

Never 1
Always 5

Urban/Suburban
Rural
RESULTS - VACCINE PRESENTATION

- Prevents Cancer
- Prevents an STI
- Part of adolescent platform

Urban/Suburban
- Optional: p=0.949
- Due: p=0.038
- Prevents Cancer: p=0.171
- Prevents an STI: p=0.839
- Part of adolescent platform: p=0.066

Rural
- Optional: 27.3 26.7
- Due: 70.5 48.9
- Prevents Cancer: 79.5 66.7
- Prevents an STI: 20.5 22.2
- Part of adolescent platform: 88.6 73.3
CONCLUSIONS

• While there were no differences between rural and urban/suburban geographic locations on HPV vaccine recommendation frequency, there were differences in vaccine presentation and parental refusal.

• This could account, at least in part, for rural/urban disparities in HPV vaccine uptake.

• Future research should focus on improving presumptive/announcement recommendations (i.e. stating the vaccine is due) particularly in rural populations.
THANK YOU!

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BACKGROUND

Rate of New HPV-associated Cancers by State

All HPV-associated Cancers, Male and Female, United States, 2016
Rate per 100,000 people

Rate per 100,000 people

8.8 - 11.2  11.3 - 11.9  12.1 - 13.4  13.5 - 16.6