Previous Studies in NJ

- Analysis of EHR data for 3,180 adolescents seen at a multi-site FQHC in Newark (2011)
- Focus group discussions with 44 ethnically diverse Black women (2011)
- Focus group discussions with 132 Latina mothers (2014)
- Analysis of NJIIS data (2010–2014)
Analysis of EHR data for 3,180 adolescents seen at a multi-site FQHC in Newark (2011)
27.4% received at least 1 dose
HPV–V initiation was higher:

<table>
<thead>
<tr>
<th>Factor</th>
<th>ALL</th>
<th>Female</th>
<th>Male</th>
<th>Black</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger adolescents</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Non–English speakers</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Insured adolescents</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Seen by pediatricians</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Seen at the Irvington or Orange sites</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Younger adolescents seen by pediatricians</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
Interaction of Age and HCP Specialty

<table>
<thead>
<tr>
<th>Group</th>
<th>HPV Vaccine Initiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>40% 37% 28%</td>
</tr>
<tr>
<td>Female</td>
<td>39% 36% 28%</td>
</tr>
<tr>
<td>Male</td>
<td>45% 34% 28%</td>
</tr>
<tr>
<td>Black</td>
<td>44% 39% 29%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>39% 36% 23%</td>
</tr>
</tbody>
</table>

- 16-20 yrs old in Pediatrics
- 10-15 yrs old in Pediatrics
- 10-15 yrs old in Non-Pediatrics
- 16-20 yrs old in Non-Pediatrics
HPV–V Completion – 2011

- 3-dose Series
- 7.8% of all adolescents
- 28.6% of adolescents who initiated
- HPV–V Completion was higher:

<table>
<thead>
<tr>
<th>Factor</th>
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<th>Black</th>
<th>Hispanic</th>
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<tr>
<td>Non–English speakers</td>
<td>•</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Insured adolescents</td>
<td>•</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Seen by pediatricians</td>
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<tr>
<td>Seen at the Newark – South or East Orange</td>
<td>•</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Durations between HPV-V Doses – 2011

- Duration between doses 1 and 2
  - **5.52** months (SD=4.63)

- Duration between doses 1 and 3
  - **10.02** months (SD=6.07)

<table>
<thead>
<tr>
<th>ALL</th>
<th>Female</th>
<th>Male</th>
<th>Black</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance</td>
<td>---</td>
<td>Insurance</td>
<td>---</td>
<td>Insurance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALL</th>
<th>Female</th>
<th>Male</th>
<th>Black</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-English Speakers at Newark – South or East Orange</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>at Newark – South or East Orange</td>
</tr>
<tr>
<td>Insurance</td>
<td>---</td>
<td>Insurance</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
Analysis of NJIIS data (2010–2014)

Preliminary Analysis
HPV Vaccination Rates (One Dose)

- **Gender**
  - Female: 29%
  - Male: 19%

- **Race/Ethnicity**
  - White, Non-Hispanic: 23%
  - Black, Non-Hispanic: 30%
  - Hispanic: 33%
  - Asian: 24%
  - South Asian: 22%

- **Health Insurance**
  - Charity Care: 35%
  - Commercial/Private: 30%
  - Medicaid-Fee For Service: 25%
  - NJ FamilyCare (Plan A): 41%
  - NJ FamilyCare (Plan B, C, D): 38%
  - None: 21%
HPV Vaccination Rates (Two Doses)

<table>
<thead>
<tr>
<th>GENDER</th>
<th>RACE/ETHNICITY</th>
<th>HEALTH INSURANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>White, Non-Hispanic</td>
<td>Charity Care</td>
</tr>
<tr>
<td>Male</td>
<td>Black, Non-Hispanic</td>
<td>Commercial/Private</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>Medicaid-Fee For Service</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>NJ FamilyCare (Plan A)</td>
</tr>
<tr>
<td></td>
<td>South Asian</td>
<td>NJ FamilyCare (Plan B,C,D)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>
HPV Vaccination Rates By County

HPV Vaccine Initiation
NJ Immunization Information Systems Data, 2010-2014
11-20 year old females and males

HPV Vaccine Initiation
NJ Immunization Information Systems Data, 2010-2014
11-13 year old females and males

Percent
25.0 - 26.9
23.7 - 25.0
21.6 - 23.7
17.8 - 21.6

Percent
17.2 - 24.3
13.8 - 17.2
11.1 - 13.6
9.2 - 11.1

CINJ - in Red
Other CINJ/RWJ Clinical Affiliate Sites - in Blue

CINJ - in Red
Other CINJ/RWJ Clinical Affiliate Sites - in Blue
HPV Vaccination Rates By Zip Code

HPV Vaccine Initiation
NJ Immunization Information Systems Data, 2010-2014
11-20 year old females and males

HPV Vaccine Initiation
NJ Immunization Information Systems Data, 2010-2014
11-13 year old females and males
Focus group discussions with 44 ethnically diverse Black women (2011)

Funded by the UMDNJ Foundation
Focus Groups with Ethnically Diverse Black Mothers

- Included Haitian, African, English-speaking Caribbean, and African American women

- Lack of knowledge about:
  - HPV infection and risk factors
  - HPV vaccination guidelines

- Haitian & African mothers were least knowledgeable
Distrust in vaccines in general
Open and receptive to vaccination for girls
Unclear about need to vaccinate boys
Concerns about safety and side effects
Lack of HCPs’ recommendation
  ◦ In some cases HCPs were dismissive of women’s questions (seeking information)
Focus group discussions with 132 Latina mothers (2014)

Funded by the American Nurses Foundation (ANF)
Focus Groups with Latina Mothers

- Lower rates among:
  - Spanish speakers (49%) than English speakers (90%)
  - Those with income ≤$14,000 (49%) than those with higher income (83%)
  - The uninsured (47%) than the insured (64%)
Lower initiation rates among:

- Spanish speakers (24%) than English speakers (45%)
- The uninsured (16.2%) than the insured (39%)
- Those who never heard of the vaccine (3%) than those who ever heard of the vaccine (47%)
Knowledge and Attitudes towards the HPV-V

- Lack of knowledge about HPV infection, vaccination, recommended age of vaccination, number of doses, side effects, cost, etc.

- Receptive and believed that the vaccine should be given to both males and females

- Mothers are the primary decision makers about the vaccine
Barriers/Facilitators for HPV–V

Barriers:
- Lack of HCP recommendation
- Concern about side effects
- Avoidance of talking about sex with children

Facilitators:
- HCP recommendation was the strongest facilitator for HPV–V initiation and completion
- Perceived seriousness of HPV (motivating factor)
Useful Strategies to Improve HPV Vaccination

- **HCP recommendation and communication** about the HPV–V
  - Strong recommendation
  - Addressing side effects and safety concerns

- School–based approach in educating mothers about the vaccine

- Use of texting smart phone technology to educate mothers and promote completion

- Making appointments for 2\textsuperscript{nd} and 3\textsuperscript{rd} doses

- Use of reminder calls for 2\textsuperscript{nd} and 3\textsuperscript{rd} doses
Current Project – Statewide Online Survey of 500 HCPs

Funded by Rutgers Cancer Institute of New Jersey
Current Project

- Statewide online survey of 500 HCPs
  - Includes MDs & APNs in Peds, OB/GYN, and family medicine
    - HCP recommendation of the HPV–V
    - Knowledge and beliefs about the vaccine
    - Barriers and facilitators for recommending and discussing the HPV–V with parents
- Email announcements and word of mouth
So Far... We have 268 survey completed

<table>
<thead>
<tr>
<th>Sample characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>28%</td>
</tr>
<tr>
<td>Female</td>
<td>78%</td>
</tr>
<tr>
<td><strong>Specialty</strong></td>
<td></td>
</tr>
<tr>
<td>Pediatrics</td>
<td>63%</td>
</tr>
<tr>
<td>Women’s Health or OB/GYN</td>
<td>15%</td>
</tr>
<tr>
<td>Family Medicine/Family Health</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Healthcare Profession</strong></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>78%</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Practice Type</strong></td>
<td></td>
</tr>
<tr>
<td>Private Practice</td>
<td>59%</td>
</tr>
<tr>
<td>Public Clinic</td>
<td>16%</td>
</tr>
<tr>
<td>FQHC</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Years of Experience M (SD)</strong></td>
<td>17 (11)</td>
</tr>
<tr>
<td><strong>Years in current practice M (SD)</strong></td>
<td>12 (11)</td>
</tr>
</tbody>
</table>
HCPs *Always* recommending the HPV vaccine >75% of the time

* Recommending the HPV vaccine >75% of the time
HCP’s Knowledge about the HPV–V

- In general: 89%
- Indications: 92%
- Side effects: 75%
- Recommendations regarding age: 89%
- Recommendations regarding gender: 89%
- Recommendations regarding dosing intervals (i.e., duration between doses): 86%
- Recommendations regarding catchup doses (i.e., when doses are not administered on time): 68%
HCP’s Beliefs about the HPV–V

**HPV-V is effective in preventing several cancers** 73%

**HPV-V is effective in preventing genital warts.** 64%

**HPV-V saves lives.** 65%

**Concern about HPV-V safety.**

- Worry that HPV-V may cause health problems for kids in the future. 5%
- Concern that HPV-V is being pushed by drug companies to make money. 5%
- Giving HPV-V is like performing an experiment on my patients. 2%
- Worry that HPV-V may discourage routine gynecologic examinations and Pap tests. 2%
- Concern that HPV-V will increase sexual promiscuity. 3%
- Concern that HPV-V will decrease condom use. 3%
## Parent–Related Barriers for HCP’s Recommendation of the HPV–V

<table>
<thead>
<tr>
<th>Perception / Concern</th>
<th>Sometimes</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents have negative perceptions of the HPV vaccine.</td>
<td>94%</td>
<td>5%</td>
</tr>
<tr>
<td>Parents in my practice are opposed to the HPV vaccine.</td>
<td>94%</td>
<td>2%</td>
</tr>
<tr>
<td>Parents express concern about their children’s sexual behavior because of the HPV vaccine.</td>
<td>62%</td>
<td>6%</td>
</tr>
<tr>
<td>I am concerned about the financial burden of the HPV vaccine on parents.</td>
<td>33%</td>
<td>5%</td>
</tr>
<tr>
<td>I am uncomfortable discussing the sexual nature of the HPV vaccine with parents.</td>
<td>11%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Barriers for Completion of the Multi-Dose HPV-V

- Difficulty scheduling follow-up appointments: 67% sometimes, 5% always
- Lack of a system to remind parents of follow-up appointments: 55% sometimes, 13% always
- Lack of a system to notify healthcare providers in the electronic health record about follow-up vaccine doses: 39% sometimes, 25% always
- Lack of endorsement from school nurses: 48% sometimes, 7% always
- Parents being charged a fee/copayment for visits to receive follow-up doses: 41% always
System–Related Barriers for HCP’s Recommendation of the HPV–V

- Difficulty ordering enough stock of the HPV vaccine: 31%
- Lack of space to store the HPV vaccine: 4%
- Difficulty in tracking the vaccine supply: 11%
- Inadequate support staff to administer the HPV vaccine: 16%
- Reimbursement issues for the vaccine or administration of the vaccine: 34%
Facilitators for HCP’s Recommendation of the HPV-V

- My colleagues endorsement of the HPV vaccine: 37% (Some Impact), 20% (Strong Impact)
- Participating in coalitions and/or advocacy groups for immunization/vaccination: 30% (Some Impact), 19% (Strong Impact)
- Having regular staff meetings to present and discuss performance data on vaccination and other quality indicators: 42% (Some Impact), 19% (Strong Impact)
Facilitators for HCP’s Recommendation of the HPV-V

- I am aware of the CDC's ACIP recommendations regarding HPV-V: 60%
- It is important for me to adhere to the CDCs National HPV-V recommendations: 56%
- I am aware of my professional organizations recommendation for HPV-V: 60%
- It is important for me to adhere to my professional organizations recommendation for HPV-V: 56%
Continuing Recruitment...

- Healthcare providers in New Jersey
- Physician (MD or DO) or advanced practice nurse (APN or NP)
- Working in pediatrics, OB/GYN or women’s health, or family medicine

- Online survey
- < 20 minutes
- [http://j.mp/2muDce8](http://j.mp/2muDce8)
Email Announcement for Phase 2
Invitation to Take Part in a Study about HPV Vaccination

Subject: HPV vaccination project

Dear Colleagues,

We are pleased to inform you that a team of researchers from Rutgers University is conducting an online survey on healthcare providers’ recommendation of the HPV vaccination. This project will explore the challenges that healthcare providers face in recommending and communicating with parents about the HPV vaccine. See the information below about the project. We strongly encourage you to participate in this survey to help us identify ways to improve HPV vaccination in New Jersey. Also, please share this email with other healthcare providers and colleagues who might be interested.

Research project title: Engaging healthcare providers to reduce disparities in HPV vaccination among low-income adolescents in the Greater Newark area

Principal Investigator: Rula Broush, PhD, RN; Rutgers School of Nursing

Purpose of the project: The purpose of this study is to learn more about healthcare providers’ recommendation of the HPV vaccine and the barriers for recommending and discussing the HPV vaccine with parents.

Eligibility: You are eligible to take part in the study if you are:

- A healthcare provider working in New Jersey
- Physician (MD or DO) or an advanced practice nurse (APN or NP)
- Working in pediatrics, obstetrics/gynecology or women’s health, or family medicine

Procedures: You are asked to complete a 20-minute survey online using the link below. The survey questions are about how often you recommend the HPV vaccine in your practice, your knowledge and beliefs about the vaccine, and the barriers you face in recommending and discussing the HPV vaccine with parents. The survey will not ask your name or any identifying information. At the end of the survey, you will receive a $20 gift card.

Survey link: http://j.mp/2mUDceS

You may also contact the Dr. Rula Broush at Rula.Broush@Rutgers.edu or at 973-353-5650

Version # 3 6/9/16
Acknowledgement of Collaborators:

- Diane Brown, PhD; Rutgers School of Public Health
- Dennis Carmody, PhD; Rutgers School of Nursing
- Shawna Hudson, PhD; Rutgers – Robert Wood Johnson Medical School (RWJMS)
- Lindsey Toller, MPH; Rutgers School of Public Health
- Jennifer Tsui, PhD, Rutgers Cancer Institute of New Jersey (CINJ)
- DOH – VPD and VFC programs

For more information, contact Dr. Rula Btoush, PhD, RN at 973–353–5650 or Rula.Btoush@Rutgers.edu