Strategies for Improving Rural Health Equity: Leveraging Strengths and Assets

March 25, 2019

Alana Knudson, PhD
About the Walsh Center for Rural Health Analysis

• Established in 1996 in honor of William B. Walsh, M.D., founder or Project HOPE.

• Brought to NORC in 2003, with the mission of conducting research and analysis to improve rural health and well being in America.

• Studies on behalf of the Federal Office of Rural Health Policy, the Robert Wood Johnson Foundation, the CDC, USDA, the Appalachian Regional Commission, and many others.
A Shift of Focus

Challenges and Deficits → Assets and Capacities → Opportunities for Action
Project Purpose:

• Conduct formative research to identify strengths and assets, as well as opportunities, that will accelerate and improve health and well-being in rural communities.

• Identify factors (and partners) that can influence health and equity within rural communities.

• Identify opportunities for action and a set of recommendations for diverse rural stakeholders and funders to support rural communities.

• Create a new, more positive narrative to describe rural community health and well-being.
# Methodology

<table>
<thead>
<tr>
<th>Data Collection</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature Synthesis</td>
<td>• Boolean search strategy, over 320 articles</td>
</tr>
<tr>
<td>National Discussion Forum</td>
<td>• n=27</td>
</tr>
<tr>
<td>Key Informant Interviews</td>
<td>• n=24</td>
</tr>
<tr>
<td>Regional Community Forums</td>
<td>• U.S. Mexico Border: n=34</td>
</tr>
<tr>
<td></td>
<td>• Delta: n=48</td>
</tr>
<tr>
<td></td>
<td>• Northeast: n=58</td>
</tr>
<tr>
<td></td>
<td>• Upper Midwest: n=43</td>
</tr>
<tr>
<td>Vetting Sessions</td>
<td>• All State Offices of Rural Health and partners</td>
</tr>
<tr>
<td></td>
<td>• Appalachia regional vetting session: n=80+</td>
</tr>
<tr>
<td>Formal Non-Health Sector</td>
<td>• NACO Rural Action Caucus convening: n=40+</td>
</tr>
<tr>
<td>Engagement</td>
<td>• NADO Focus group: n=6</td>
</tr>
<tr>
<td>National Conferences</td>
<td>• Feedback sessions at 9 conferences</td>
</tr>
<tr>
<td>Number of Sectors Represented</td>
<td>36</td>
</tr>
<tr>
<td>Total Participants &amp; Reviewers</td>
<td>n=400+*</td>
</tr>
</tbody>
</table>

*does not include all participants at national conference feedback sessions
Rural communities’ “greatest assets are their people.”

Frequently cited individual assets include:

• Civic and community engagement
• Entrepreneurship
• Resilience and adaptive capacities, including a strong “connectivity across sectors and actors”
• Specific population groups, including older adults, veterans, and youth
Organizational/Associational Assets

- Educational institutions
- Faith-based organizations
- Small businesses
- Farmers markets and other local food systems
- Community-based organizations/non-profit organizations
- Financial institutions
- Local media
- Social networks
Community Assets

- Natural resources
- Food system
- Land-grant institutions and cooperative extension
- Broadband infrastructure
- Larger employers
- System-owned hospitals
- Retail department stores
Cultural Assets

• Core values, including:
  • Close-knit sense of community
  • Support systems and neighborly social ties
  • Religious affiliation and faith
  • Pride in self, family, and place
  • Self-reliance and independence
  • Strong work ethic

• Social cohesion
  • “Culture of collaboration”
  • Collective efficacy
  • “Community spirit”

• Shared history

• Innovation and creativity

“Culture and history is the connective tissue in rural communities that is more important than anything else and that will ultimately drive the change to improve health status.”

-- Interview participant
Change Agents Across Sectors

- Residents
- Schools and Post-Secondary Institutions
- Faith-Based Organizations
- Cooperative Extension
- Planning and Development
- Healthcare and Public Health
- Employers
- Community-Based Organizations
- Public Libraries
- Transportation
- Local Government and Public Safety
- Local Media
Contextual Factors: Political environment, policies, history
Sample Project Recommendations

**Foster Cross-Sector Collaboration**
Cross-sector collaboration is often an existing asset in rural communities, which can be supported and expanded.

**Adapt Funding Strategies to Support Rural Communities**
Adapt funding strategies and grant structures to address rural barriers to participation in grant programs.

**Build Relationships and Trust**
Cultural assets highlight the importance of rural residents feeling ownership over solutions to rural challenges, and building long-term, meaningful relationships with communities.
Sample Project Recommendations

Engage with Regional/Local Intermediaries
Regional and local organizations have a better understanding of local culture, past experience, and assets.

Consider Rural Communities as Program Sites
Rural communities are well suited to pilot efforts to improve health and equity – programs can be tested on a smaller scale with fewer confounding factors.

Develop Rural-Specific Communications and Messaging
It is critical to consider the specific audience, choose an appropriate messenger, and tie messages to important cultural assets.
Recommendations for Philanthropies and Government Agencies to Improve Health and Equity in Rural Communities

Rural communities have remarkable strengths, assets, and change agents across sectors that are often overlooked when developing strategies to improve rural health and equity in the U.S. Rural health inequities are well-documented, and it is important to address the root causes of these inequities. Addressing poverty and ensuring fair health employment are primary priorities and challenges in rural areas because they are critical for strong, thriving, and healthy communities. Further, rural communities experience challenges ensuring access to high-quality health care, infrastructure, and built environment that supports healthy living conditions.

Supporting Change Agents across Sectors to Improve Health and Equity in Rural Communities

Background
Rural communities have remarkable strengths, assets, and change agents across sectors that are often overlooked when developing strategies to improve rural health and equity in the U.S. Rural health inequities are well-documented, and it is important to address the root causes of these inequities. Addressing poverty and ensuring fair health employment are primary priorities and challenges in rural areas because they are critical for strong, thriving, and healthy communities. Further, rural communities experience challenges ensuring access to high-quality health care, infrastructure, and built environment that supports healthy living conditions.

Leveraging Culture and History to Improve Health and Equity in Rural Communities

Background
A central cross-cutting theme was the importance of culture and history in improving rural health and equity. Culture can be defined as learned systems of human behaviors and thought, including knowledge, beliefs, values, and customs. Literature identifies culture as important in strengthening better health outcomes. Culture itself is an asset, described by a project participant as the “connective tissue” that binds rural communities together, and the one that ultimately drives the change to improve health status.
RHI hub
Rural Health Information Hub

Your **First STOP** for **Rural Health INFORMATION**

Finding Information And Resources on Rural Health Issues
How many have you heard of RH{\textit{I}}hub?

Federally funded clearing house for rural health information.

Today, I am going to show you how to find information about rural transportation.
Your First Stop for Rural Health Information

Get Rural Updates & Alerts
Sign-up to receive our weekly newsletter:
Daily and weekly custom alerts also available

Find Rural Data
The Rural Data Explorer and Chart Gallery provide access to a wide range of data on rural health issues. Learn how to locate and use data in the Finding Statistics and Data Related to Rural Health topic guide.

Am I Rural?

Evidence-based Toolkits
- Economic Impact Analysis Tool
- Community Health Gateway
- Sustainability Planning Tools
- Testing New Approaches
- Rural Health IT Curriculum Resources
- Care Management Reimbursement

Enhance Patient Recovery
Post-acute care (PAC) services available locally can make fully recovering from a serious illness or injury faster and easier, setting the patient and provider up for the best possible outcome. This article looks at how a tertiary facility’s communication with skilled nursing facilities, a Critical Access Hospital’s swing bed program, and a home health agency are improving patient transitions from acute care to PAC.

Social Determinants of Health: Transforming the Buzz Phrase to a Rural Action Item
Two healthcare organizations demonstrate how the social determinants of health and social risk assessment can be used as a framework for transforming a rural “health delivery system to a true health system.”

News Headlines
Am I Rural? tool, Evidence-Based Toolkits (put together by NORC Walsh), and several other tools for rural programs.

Click on the Evidence Based toolkits
1. Identify evidence-based and promising community health programs in rural communities

2. Study experiences of these programs including facilitators of their success

3. Disseminate lessons learned through Evidence-Based Toolkits

Rural Health Information Hub: https://www.ruralhealthinfo.org/
A key focus of our work has been on establishing a rural evidence base which includes developing evidence-based toolkits based on the experiences of grantees and other rural communities.

Evidence-based toolkits are an important step in disseminating successful programs.

Our toolkits have three aims.

1. Identify evidence-based and promising programs
2. Study the experiences of these programs to figure out what’s working in rural communities and why.
3. Disseminate best practices from their experiences through evidence-based toolkits, so future grantees and other rural communities can learn from these experiences and replicate them.
Welcome to the Rural Community Health Toolkit. This toolkit provides rural communities with the information, resources, and materials they need to develop a community health program in a rural community.

Each of the toolkit’s six modules contains information that communities can apply to develop a rural health program, regardless of the specific health topic the program addresses. The toolkit also links to issue-specific toolkits for more in-depth information.
Module 2: Developing a Rural Community Health Program

It is important to review the evidence base when developing a rural community health program. It may be possible to implement or adapt an existing evidence-based or promising program model that has been shown to be effective in other rural communities. Because no two rural communities are the same, it is important to identify how an existing model will address the needs of your community and how it may be adapted based on local contextual factors and resources.

This module focuses on reviewing the evidence base for the program, matching a program to the community’s needs, identifying existing evidence-based and promising models, and thinking about considerations for adapting programs.

In this model:

- Review the Evidence Base for the Program
- Match the Program to the Community’s Needs
- Identify Evidence-based and Promising Program Models
- Considerations when Adapting a Program
Thank You!

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Assessing Disparities in Pneumococcal Vaccine Service Delivery in the Rural Fee-for-Service Medicare Population

National Vaccine Advisory Committee
March 25, 2019

Jeffery Talbert, PhD
Patricia R. Freeman, PhD
Pharmacy Practice and Science
University of Kentucky
College of Pharmacy
Mortality from invasive pneumococcal disease ranges from 20% at 65 years of age to 40% at 85 years of age.
Pneumococcal Vaccination

• 2-dose vaccination series recommended for persons age $\geq 65$
  – 1 dose PCV13 at age 65 and 1 dose PPSV23 at least 1 year later

• Vaccination rates remain low
  – 50% for either vaccine individually
  – <20% for 2-dose series

Disparities in Pneumococcal Vaccination

Racial and geographic disparities noted in previous research

Cause of disparities

- Socioeconomic barriers?
- Reduced access to clinic-based health care providers?

Pharmacies as Alternate Sites

- Use of alternate sites for vaccine delivery has been recommended to improve vaccine coverage.
- 93% of Americans live within 5 miles of a community pharmacy.
- All 50 states and D.C. authorize pharmacists to provide pneumococcal vaccines.
- May play a significant role in vaccine access, especially in rural communities.

Rural & Underserved Health Research Center
Study Objectives

To evaluate trends in pneumococcal vaccination service delivery for the years 2012 -2015

To determine the relative contribution of community pharmacies as an alternate site vaccine service provider
Methods

**Data Source:** Medicare Physician and Other Supplier Public Use File, years 2012 to 2015

**Pneumococcal vaccination services were identified by:**
- **HCPCS G0009** “any pneumococcal vaccine administered”
- **CPT 90670** “PCV13 administered”
- **CPT 90732** “PPSV23 administered”

**Providers** were classified as: primary care provider, pharmacy provider, or other
with 1-3 designated as urban, and 4-9 as rural; variables from the medicare geographic variation county public use file included average age; average Hierarchical Condition Category (HCC) score, a composite risk score reflective of chronic disease burden; and percent male, white non-Hispanic, eligible for Medicaid, and using inpatient or outpatient services;

Descriptive statistics on vaccine services by rural-urban designation, provider type, vaccine type, and year were calculated. A logistic regression model of the estimated rate of pneumococcal vaccination in 2015 was created using the parameters from the Medicare Geographic Variation table, rural-urban designation, the percent of vaccines provided by pharmacists, and the interaction of rural-urban designation with percent of vaccines provided by pharmacists.
Methods

**Urban status** was identified by provider NPI registration address linked to Rural-Urban Continuum Codes

**County level demographics** were incorporated from the Medicare Geographic Variation Sate/County Public Use File

**Descriptive statistics** were performed for vaccine services by rural-urban designation, provider, vaccine type, and year

**Logistic regression** was performed predicting likelihood of pneumococcal vaccination in 2015
with 1-3 designated as urban, and 4-9 as rural; variables from the medicare geographic variation county public use file included average age; average Hierarchical Condition Category (HCC) score, a composite risk score reflective of chronic disease burden; and percent male, white non-Hispanic, eligible for Medicaid, and using inpatient or outpatient services.

Descriptive statistics on vaccine services by rural-urban designation, provider type, vaccine type, and year were calculated. A logistic regression model of the estimated rate of pneumococcal vaccination in 2015 was created using the parameters from the Medicare Geographic Variation table, rural-urban designation, the percent of vaccines provided by pharmacists, and the interaction of rural-urban designation with percent of vaccines provided by pharmacists.
Findings
### Total Number of PPSV23 and PCV13 Vaccination Services, in Thousands, 2012-2015

<table>
<thead>
<tr>
<th>Year</th>
<th>PPSV23</th>
<th>PCV13</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,067 (97.7%)</td>
<td>25 (2.3%)</td>
</tr>
<tr>
<td>2013</td>
<td>1,077 (92.3%)</td>
<td>90 (7.7%)</td>
</tr>
<tr>
<td>2014</td>
<td>1,025 (66.9%)</td>
<td>507 (33.1%)</td>
</tr>
<tr>
<td>2015</td>
<td>445 (8.4%)</td>
<td>4,852 (91.6%)</td>
</tr>
</tbody>
</table>
This table depicts the number of pneumococcal vaccination services for the two types of vaccines, over the 4 years in the study period. 5.35 million beneficiaries (16% of eligible) received pneumo vaccine in 2015 and almost 4-fold increase in number of pneumococcal vaccines provided to FFS beneficiaries between 2012 and 2015 and as you can see is driven by the uptake of PCV13.
Rate of Pneumococcal Vaccine Service Delivery per Eligible Population, 2015

Estimated Vaccination Rate
7.7% 25.7%
Rates of vaccine service delivery varies significantly across the country. Form a low of 7.7% in Maine to a high of 25.7% in CO.

Significant rural urban disparities noted. - 10.7% rate in rural vs 17.4% in urban communities.
<table>
<thead>
<tr>
<th>Provider Type</th>
<th>Rural Vaccination Services</th>
<th>Urban Vaccination Services</th>
<th>Combined Vaccination Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy</td>
<td>247 (33.5%)</td>
<td>1,049 (22.7%)</td>
<td>1,296 (24.2%)</td>
</tr>
<tr>
<td>Primary Care</td>
<td>465 (63.1%)</td>
<td>3,398 (73.6%)</td>
<td>3,863 (72.2%)</td>
</tr>
<tr>
<td>Other</td>
<td>25 (3.4%)</td>
<td>168 (3.6%)</td>
<td>193 (3.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>737</td>
<td>4,615</td>
<td>5,353 (100%)</td>
</tr>
</tbody>
</table>
In 2015, primary care providers delivered the majority (72.2%) of pneumococcal vaccination services to FFS Medicare beneficiaries while pharmacy providers accounted for one-fourth. In rural communities, pharmacy providers delivered one-third of pneumococcal vaccine services, suggesting the important role of rural pharmacies in vaccine access.
Percent of Pneumococcal Vaccination Services Delivered by Provider Type and Rural-Urban Designation, 2012 to 2015

[Diagram showing the percent of pneumococcal vaccination services delivered by provider type and rural-urban designation from 2012 to 2015.]
When look at the trends over time separated by rural/urban can see the increasingly important role that pharmacy providers are playing in vaccine delivery
## Summary of Model Results

### Variables positively associated with vaccination
- Increasing age of beneficiaries
- Greater proportion of female beneficiaries
- Greater proportion of white non-Hispanic beneficiaries

### Variables negatively associated with vaccination
- Rurality
- Lower overall health status
- Greater use of outpatient services vs inpatient services

### Significant interaction
- Between rurality and percent of vaccines provided by pharmacists
The interaction between rurality and percent of vaccines provided by pharmacists was significant and when interpreted with the finding from Figure 1 that pharmacists provide a greater proportion of vaccines in rural versus urban areas, suggests that community pharmacies play an important role in access to pneumococcal vaccinations in rural areas.
Summary of Key Findings

Between 2014 and 2015, pneumococcal vaccine services delivered to FFS Medicare beneficiaries increased by 380%.

Continued disparities in delivery of pneumococcal vaccine services to FFS Medicare beneficiaries in rural and urban communities are noted, with a 63% higher vaccination rate observed in urban areas.
Summary of Key Findings

Primary care providers delivered the majority of pneumococcal vaccine services

Pharmacy providers, overall, deliver one-fourth of pneumococcal vaccine services

Pharmacy providers in rural communities play an increasing role in pneumococcal vaccine service delivery
Conclusion and Recommendations

Disparities in pneumococcal vaccination rates between rural and urban areas are noted.

Community pharmacies serve as important access points for pneumococcal vaccine services in rural communities.

Continued support of rural service providers is needed to ensure older adults have access to recommended vaccines.
Research Team

Joseph Vanghelof, PharmD, MS
Aric Schadler, MS
This project was supported by the Federal Office of Rural Health Policy (FORHP), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under cooperative agreement # U1CRH30041.

The information, conclusions and opinions expressed in this document are those of the authors and no endorsement by FORHP, HRSA, HHS, or the University of Kentucky is intended or should be inferred.
Disparities in HPV Vaccination Uptake in Appalachia: Unique Problems Require Unique Solutions

Electra D. Paskett, Ph.D.
March 25, 2019

A CANCER FREE WORLD STARTS HERE
Overview

- Overview of Appalachia
- Burden of HPV disease in Appalachia
- Uptake of HPV vaccine in Appalachia
- Reasons for low uptake
- Strategies for addressing low uptake: our efforts and future strategies
Appalachia consists of 420 counties in 13 states

- 5 regions: Northern, North Central, Central, South Central and Southern
- Appalachian Regional Commission defined in 1965 in response to region’s deficits
- 24.8 million residents (about 8% of total U.S. population)

(Appalachian Regional Commission, 2009)
Characteristics Of Appalachia

- Both urban and rural areas
- Less racial diversity
  - 12% minorities in Appalachia, 31% in U.S.
- Higher rates of poverty
  - Poverty rate: 16.6% in Appalachia, 12.3% in U.S.
  - 78 Appalachian counties are considered “distressed”
- Lower education
  - High school diploma: 77% in Appalachia, 81% in U.S.
  - Bachelor’s degree: 18% in Appalachia, 25% in U.S.

(**All figures from Census 2000 data**)
Health In Appalachia

- Appalachia is a traditionally underserved area in terms of the health care system
- Excess mortality exists in Appalachia with cancer and heart disease being leading causes of death
- Cancer is the leading cause of death
- Factors contributing to health disparities in region:
  - Lower SES
  - Lack of medical care facilities and health care providers
  - Poor health behaviors
  - Poor communication with health care providers
HPV Disease and Vaccination Uptake
Cancer Mortality Rates by State Economic Area (Age-adjusted 1970 US Population)
Cervix Uteri: White Females, 1970-94

(National Cancer Institute, 2001)
HPV-Associated Cancers by State

HPV-associated cancer rates by state

Centers for Disease Control & Prevention, 2009-2013
HPV-Associated HNC (Men)
HPV Prevalence By Type in Ohio Appalachia

- **Any Type**: OH Appalachia 43%, US (NH White) 39%
- **High-Risk**: OH Appalachia 34%, US (NH White) 27%
- **Low-Risk**: OH Appalachia 23%, US (NH White) 26%
- **Types 6, 11, 16, 18**: OH Appalachia 13%, US (NH White) 9%

(Ruffin et al., unpublished data)
HPV Vaccine Uptake in the US

Percentage of adolescents who are up to date on HPV vaccination

National coverage is 49%

Coverage by state:
- 39% and under
- 40-49%
- 50-59%
- 60% or greater

Source: MMWR August 24, 2013

www.cdc.gov/hpv
Reasons for Low Uptake
In Appalachia,

“We don’t talk about cancer.”
Cervical Cancer

Abnormal Pap test rates
Smoking prevalence
HPV rates
Poverty
Risky sex behaviors
Depression

Healthcare access
Healthcare provider trust

Appalachian Culture

The James
Data from Center for Population Health and Health Disparities

- Reasons for low uptake are many:
  - lack of physician recommendation
  - lack of awareness of need to be vaccinated
  - confusion about guidelines
  - cost
  - negative attitudes and beliefs about:
    - HPV vaccination
    - HPV-related cancer
    - vaccines in general (parent and provider)
Efforts to Improve Uptake in Appalachia: The OSU Experience
Primary Aims

- To develop and evaluate a multi-level HPV vaccine intervention to increase HPV vaccination rates among young girls and adolescent females (9-17) living in Ohio Appalachia

- Levels:
  - Parents of female adolescents who live in Ohio Appalachia (Level 1)
  - Health care providers who practice at health departments and provider offices (Level 2)
  - Health departments and provider offices in Ohio Appalachia (Level 3)

- Intervention tested in 6 Ohio Appalachia counties (intervention) vs 6 usual care Ohio Appalachia counties (control)
  - Control counties receive education on the flu and the flu vaccine
HPV Multi-Level Intervention

- Basic tenants:
  - Multi-level
  - Culturally relevant
  - Address salient issues

- Developed with input from the community:
  - Focus groups
  - Clinical review
  - Community Advisory Board

Note: Only approved for girls when study began
Multi-Level Intervention Components

- **System-level:**
  - Waiting room and examination room posters and brochures
  - Tabletop tent cards for the waiting rooms
  - Quarterly newsletter
  - Vaccine tracking system
  - ‘Invitation to be vaccinated’ letter to parents from their provider

- **Provider-level:**
  - Fact sheet
  - Resource list
  - Article on Cervical Cancer in Ohio Appalachia
  - CME Session

- **Patient-level:**
  - Culturally tailored HPV and cervical cancer educational DVD
  - Culturally tailored educational brochures
  - Question & Answer (Q & A) fact sheet
  - Resource list
  - Magnetic appointment reminder card for the 2\textsuperscript{nd} and 3\textsuperscript{rd} shot
# HPV Vaccine Uptake: Group Randomized Trial

## First Shot within Three Months

<table>
<thead>
<tr>
<th>Received Shot</th>
<th>Control Arm</th>
<th>HPV Arm</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4 (3%)</td>
<td>10 (8%)</td>
<td>0.045</td>
</tr>
<tr>
<td>No</td>
<td>120 (97%)</td>
<td>120 (92%)</td>
<td></td>
</tr>
</tbody>
</table>

## First Shot within Six Months (Ever)

<table>
<thead>
<tr>
<th>Received Shot</th>
<th>Control Arm</th>
<th>HPV Arm</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8 (7%)</td>
<td>17 (13%)</td>
<td>0.003</td>
</tr>
<tr>
<td>No</td>
<td>116 (94%)</td>
<td>113 (87%)</td>
<td></td>
</tr>
</tbody>
</table>

Paskett E, et al., CEBP 2016
Why Didn’t Parents Get Their Daughter Vaccinated?

- “Doctor didn’t tell me”
- Too young
- Didn’t start their period
- Can wait
- Not needed now

Impact of Doctor Recommendation:
- OR=3.43 (95% CI 1.19-9.87) discuss with doctor vs did not
“I Vaccinate” Intervention Levels

- **Level 1**: Health clinic (Hopewell Health Center and Meigs County Health Department in Pomeroy, OH)
- **Level 2**: Providers at participating clinics (physicians, nurses, office staff)
- **Level 3**: Patients (girls and boys age 11 – 17 years and their legal guardians)
“I Vaccinate” Activities

- Developed personalized HPV education materials (posters, brochures, table tents, billboards) featuring a local provider (clinic champion) and her family
  - Based on materials from previous study with input from clinic staff
- Delivered HPV education training to clinic staff, with a booster session offered 6 months post-baseline
  - Assessed provider HPV knowledge at pre- and post-education session
- Obtained HPV vaccination rates at baseline and 12 months post-baseline
  - Utilizing EHR at clinics
Outcomes

- Distributed and/or displayed:
  - more than 700 brochures
  - 75 table tents
  - 30 posters
  - in clinic waiting areas, exam rooms, school districts and community areas

- Educated:
  - 23 providers
  - across two clinics
  - between October 2016 and September 2017
HPV vaccination rates in one clinic increased in 13-year old females from 44% at baseline to 58% at 12 months

- Among 18-year old females: HPV vaccination rates increased from 0% at baseline to 54% at 12 months

Changes to EHR system in 2nd clinic prevented collection of follow-up data

- Efforts to bridge that gap are ongoing

This clinic, however, engaged in community outreach strategies
Recommendations for Addressing Low Uptake
The first section will focus on HPV infection and disease prevalence.
Strategies Tailored to the Region

- Use pharmacists
- Start at age 9
- Change community norms
- Work with schools and school-based clinics
- Teach providers and clinics to recommend vaccine
- Multi-level approach using implementation science and a family-based approach

Every year in the U.S., 27,000 people get cancer caused by HPV.

That’s 1 person every 20 minutes of every day, all year long.
Dissemination and Implementation: The Next Frontier

PO1: Improving Uptake of Cervical Cancer Prevention Services in Appalachia

Electra D. Paskett, Ohio State University
Roger Anderson, University of Virginia
Mark Dignan, University of Kentucky
Stephenie Kennedy, West Virginia University
Overall Program Goals and Objectives

- Major questions to be addressed:
  - Will Appalachian clinics adopt an integrated prevention program focused on reducing cervical cancer risk in families?
  - Can Appalachian clinics sustain such a program?
  - What are the implementation and service outcomes of the program within each clinic, irrespective of the health outcomes from each project?

- Expected outcomes:
  - Immediate: Smoking prevalence reduction, **HPV vaccination rate increase**, and increased uptake of Pap testing – risk reduction
  - Long-term: Institutionalization of the prevention program and reduced HPV-related disease

- If successful, this program could:
  - Be implemented in other health care settings with underserved populations
  - Introduce other interventions bundled at the clinic level
Questions?