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National Cancer Institute

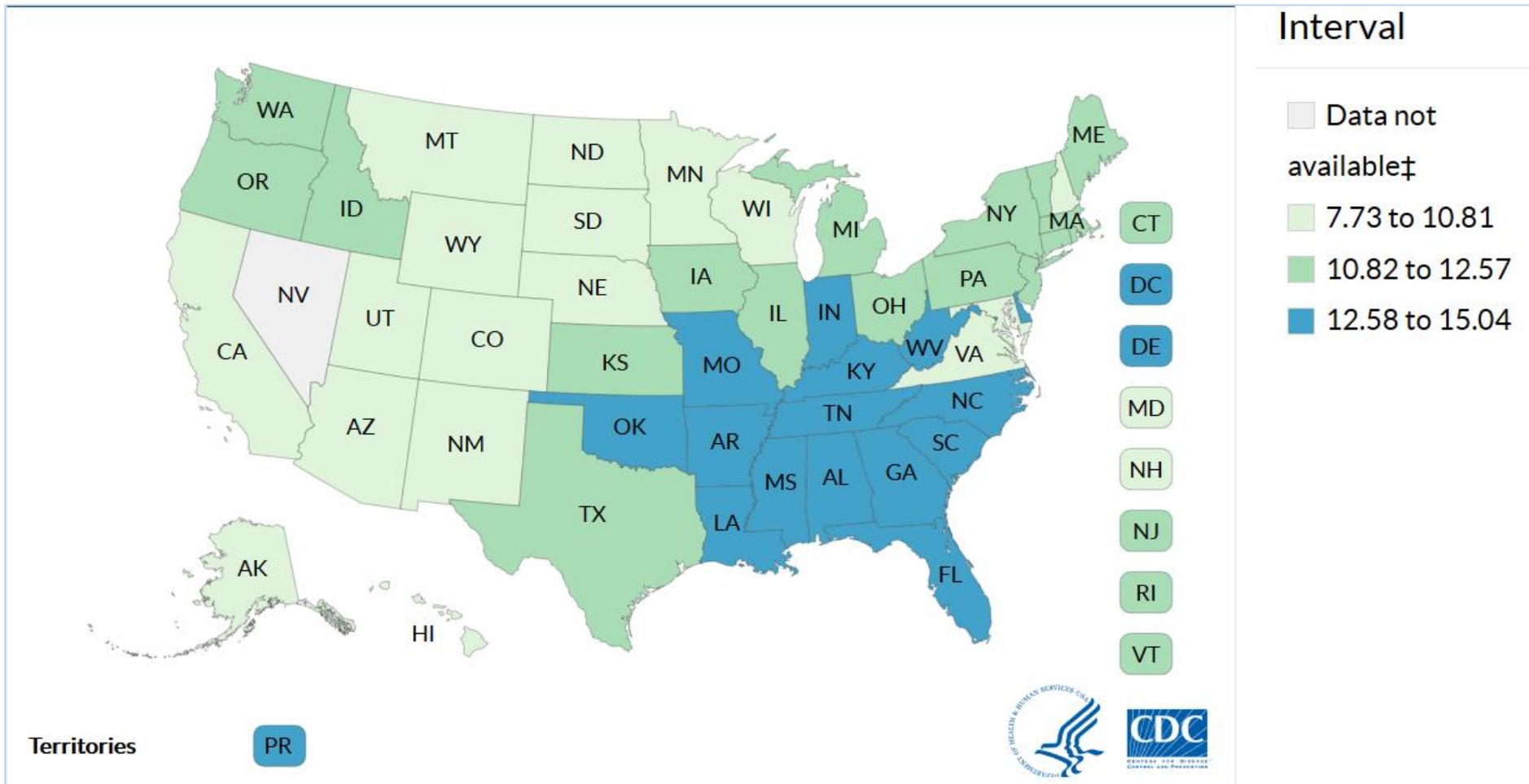
Challenges & Opportunities for HPV Vaccination in Rural Communities

Robin C. Vanderpool, DrPH
NCI Cancer Centers' HPV Vaccination Meeting
June 7, 2018

Geography-Based HPV-Related Cancer Disparities

- **Nearly 20% of U.S. residents live in rural areas. Those residing in rural areas:**
 - **Have an increased risk of HPV-related genital and oropharyngeal cancers as well as increased rates of HPV-related cancers.**
 - **Experienced a statistically significant increase in HPV-related cancers between 1995-2013.**
 - **Have higher rates of HPV-associated cancers diagnosed at both the local and distant stages.**
 - **Experience higher cervical cancer mortality rates compared to their metropolitan counterparts.**

HPV-Associated Cancer Rates by State, 2009-2013

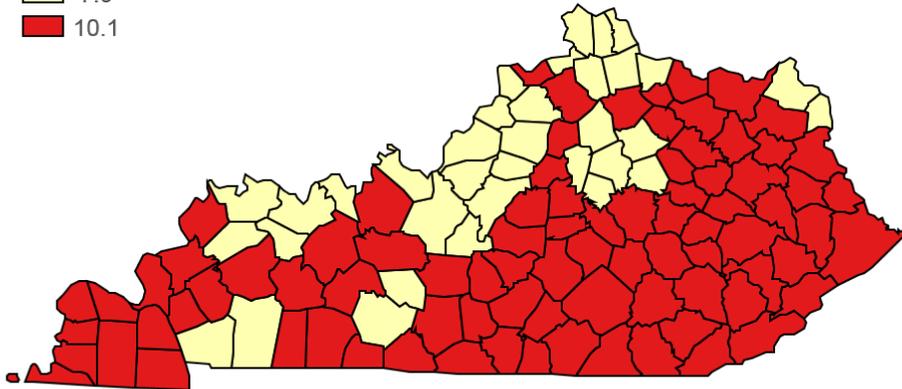


Rates are per 100,000 and age-adjusted to the 2000 U.S. Standard Population

Cervical Cancer in Rural Kentucky

Age-Adjusted Invasive Cancer Incidence Rates in Kentucky
Cervix Uteri, 2011 - 2015
By Urban/Rural
Age-Adjusted to the 2000 U.S. Standard Million Population

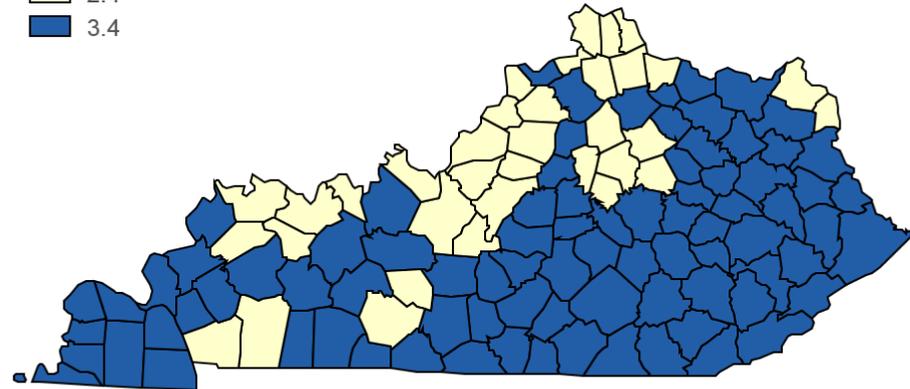
Kentucky Rate: 8.8 / per 100,000



All rates per 100,000.
Data accessed May 11, 2018. Based on data released Nov 2017.
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Age-Adjusted Cancer Mortality Rates in Kentucky
Cervix Uteri, 2011 - 2015
By Urban/Rural
Age-Adjusted to the 2000 U.S. Standard Million Population

Kentucky Rate: 2.8 / per 100,000



Data for 2009-2015 is preliminary.

All rates per 100,000.
Data accessed May 11, 2018. Based on data released Apr 2017.
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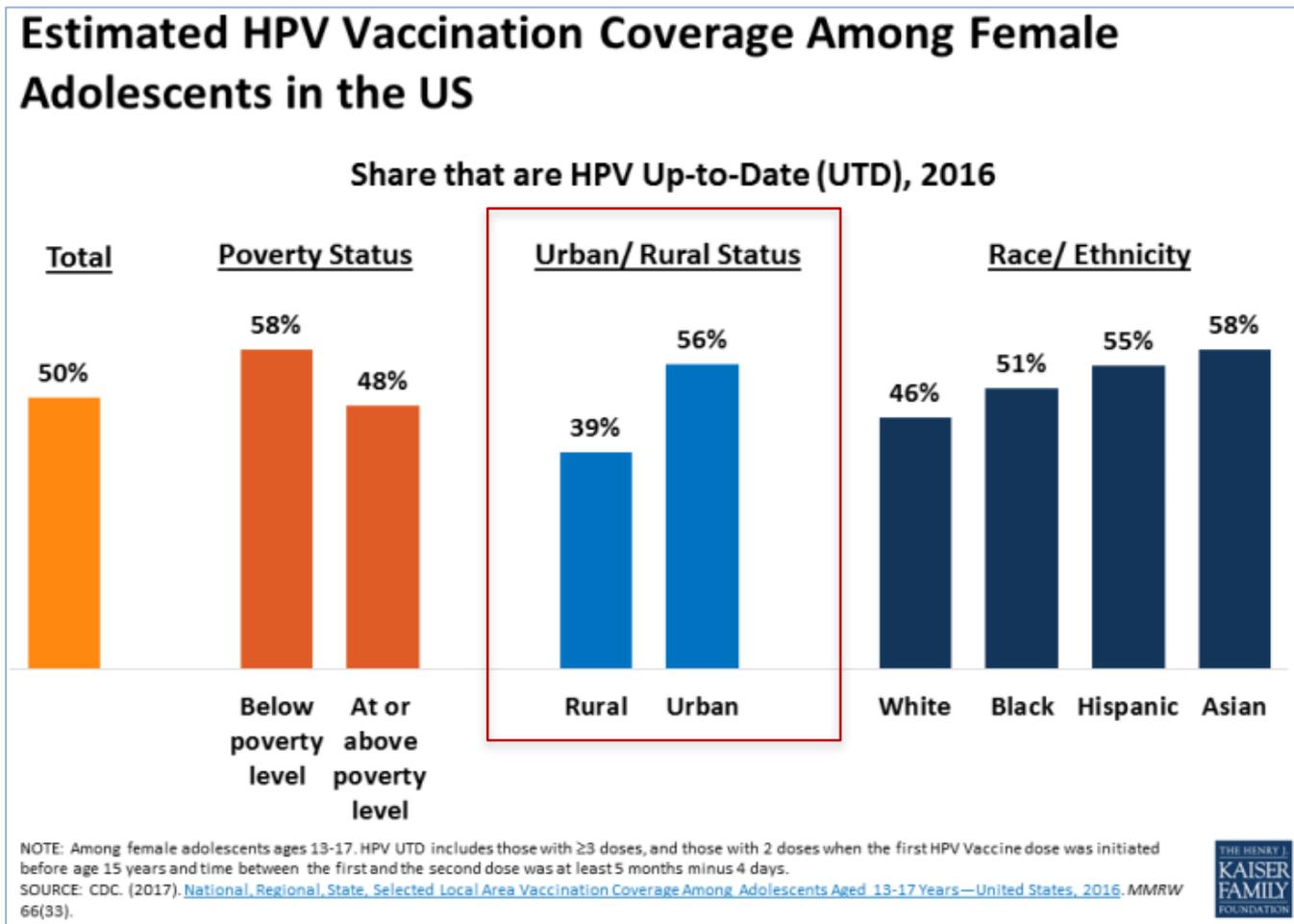
Rural HPV Vaccination Disparities

Mohammed et al. (2018) found that rural residents were **less likely** to have heard of HPV and the HPV vaccine compared to urban residents.

	Rural	Urban
	Prevalence & 95% CI	
Heard of HPV	55.8 (53.1-59.2)	67.2 (67.0-69.2)
Heard of HPV Vaccine	58.6 (56.3-61.5)	65.8 (64.2-67.1)
HPV can cause cervical cancer	64.4 (59.8-67.7)	75.4 (72.5-77.3)

Rural HPV Vaccination Disparities

In 2016, HPV vaccination rates (≥ 1 dose) among teens aged 13-17 were found to be lowest in non-metro areas (50.4%).



Challenges Documented in the Literature

- **Lack of and/or varying provider recommendations (e.g., rural parents were least likely to report collaborative communications with their provider about HPV vaccination).**
- **High monetary cost, lack of transportation, limited parental/peer/healthcare provider support, cultural views, lack of knowledge regarding HPV and its link to cancer, fatalistic beliefs.**

Challenges from a Real World Perspective

- Providers do not enough time (e.g., rural areas are served by family medicine providers who already have too much to keep up with, not enough time during visits.
- Clinics have different (less) resources in rural areas
- Not stocking the vaccine due to perceived costs; religious regions.
- The vaccine isn't mandated and/or viewed like other vaccines in communities.

Challenges Related to Communication

- **Parental/Patient:** Perceive the vaccine causes disease and/or other problems (e.g., unknown side effects); promotes sexual activity (i.e., “promiscuity”); confusion between HPV and HIV; overall knowledge human anatomy and HPV; messages not individualized enough.
- **Provider:** They aren’t educating and/or recommending HPV vaccination; how it is discussed (i.e., suggesting it with other school required vaccines or as something that is needed before sexual debut); providers, including dentists and pharmacists, do not feel comfortable having the conversation with parents/patients; EMR system not used for reminders

Opportunities Documented in the Literature

- **Patient:** Use a multi-layered approach to educating parents/patients in consideration of their cultural values, geographic location, and economic status.
- **Provider:** Interventions for providers aimed at decreasing missed opportunities (i.e., clinic visit in which at least one other adolescent vaccine was given, but not HPV).
 - In the Intermountain West, a study found that completion of the HPV vaccine was related to receipt of other adolescent vaccines.
 - A review of the Utah Statewide Immunization Information System found that rurality was significantly associated with missed opportunities for HPV vaccination.
- **Clinic:** Starting/joining coalitions with other organizations (e.g., health depts, religious organizations, community groups) that aim to remove HPV vaccination barriers.
 - Developing prompts for HPV vax with the EMR system.

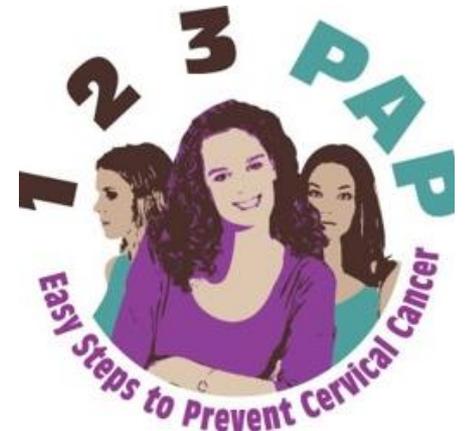
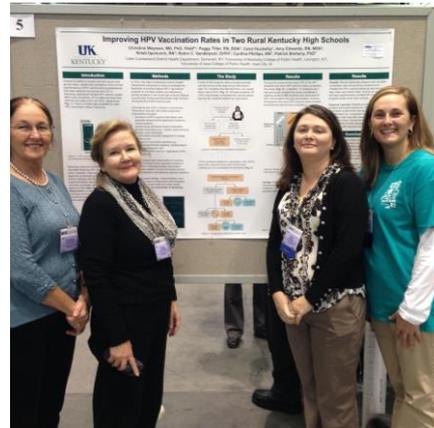
Opportunities from a Real-World Perspective

- Reframing messages
 - Focus on cancer prevention
 - Discuss all affected anatomical sites (not just cervix)
 - Increased community education and/or national campaigns
- Further provider training is needed
 - Using motivated providers and community health advocates to train providers on how to talk to parents about HPV vaccination as a cancer prevention strategy
 - Providing CME for HPV vaccination training
- Mandate the vaccine like others
- Decrease missed opportunities (i.e., recommend as same time as other vaccines)
- Promote community-clinical linkages (CCLs)
- Comprehensive, innovative approaches as described by our panel

Call to Action:

Rural HPV Vaccination Intervention Narrative Review

- Interventional HPV vaccination study designs, such as RCTs, quasi-experimental studies, and pragmatic trials, focused on *changing* HPV vaccination-related outcomes are less common in rural communities.
- Purpose: examine HPV vaccination intervention studies in rural settings over the past 10 years
 - Systematic search criteria: **11 of 54 reviewed intervention studies** focused on HPV vaccination in rural settings
- A focus on the unique characteristics of rural settings was **unaccounted for** in most of the articles.
- Commonalities and differences among the identified studies, scientific gaps, and recommendations to increase HPV vaccination interventional research in rural communities are identified to inform future research.
 - PAR: Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R03, R21, R01)



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Questions?