

Cervical Cancer in Arkansas Update

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AR Cervical Cancer Task Force Meeting

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Purpose



The purpose of this presentation is to disseminate and communicate the latest available surveillance data for cervical cancer in the state of Arkansas.

Objectives:

- Describe screening recommendations and risk factors for cervical cancer
- Analyze state-specific rates and trends for cervical cancer
- Describe HPV-cervical cancer progression and HPV vaccination rates in Arkansas

United States Preventive Services Task Force (USPSTF) Screening Recommendations



Screenings for females 21 to 29 years of age	Perform screenings every 3 years with cytology (pap test) alone
Screenings for females 30 to 65 years of age	Perform screenings every 3 years with cytology (pap test) alone Or, Perform screenings every 5 years with hrHPV testing alone Or, Perform co-testing (pap test and hrHPV) every 5 years
Female less 21 years of age & females older than 65 years of age with adequate prior screening, and women who have had a hysterectomy	Do not screen for cervical cancer
Risk Assessment	All women aged 21 to 65 years are at risk for cervical cancer because of potential exposure to high-risk HPV types (hrHPV) through sexual intercourse and should be screened. Certain risk factors further increased risk for cervical cancer, including HIV infection, a compromised immune system, in utero exposure to diethylstilbestrol, and previous treatment of a high-grade precancerous lesion or cervical cancer. <u>Women with these risk factors should receive individualized follow-up.</u>



Cervical Cancer Risk Factors

Cannot be modified:

1. **“DES Daughters”** (40x more likely to develop a rare cancer called clear cell adenocarcinoma of the vagina and cervix)
2. **Family history of cervical cancer** (mother and/or sister)

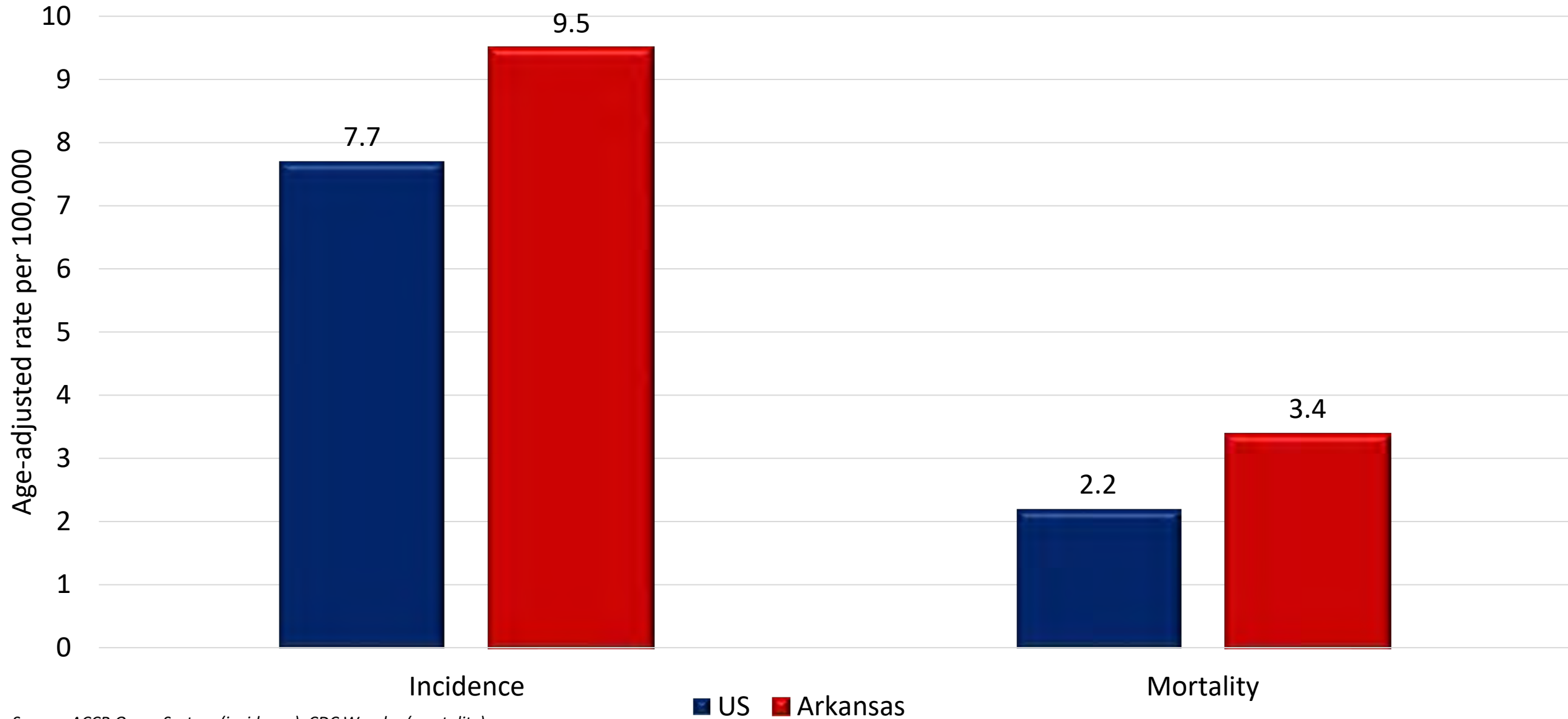
Can be modified:

1. **Long-term use of oral contraceptives (OCs)** (ceasing use can decrease risk)
2. **Young age at 1st full-term pregnancy** (<20 years old)
3. **Smoking** (damages DNA of cervix cells)
4. **Chlamydia** (current or past infection)
5. **Multiple full-term pregnancies** (Females who have had 3 or more)
6. **Weakened immune system** (HIV, or drugs to treat autoimmune disease/organ transplant recipients)
7. **Economic status:** Limited access to healthcare to cervical cancer screenings and cervical pre-cancer treatments
8. **Poor diet and nutrition** (low intake of fruits and vegetables *may* increase risk for cervical cancer)

NOTE: Several risk factors can increase the chance of developing cervical cancer

9. Human papillomavirus (HPV)
Major cause of cervical cancer

Overall incidence and mortality rate of cervical cancer among females in US and Arkansas, 2015-2019

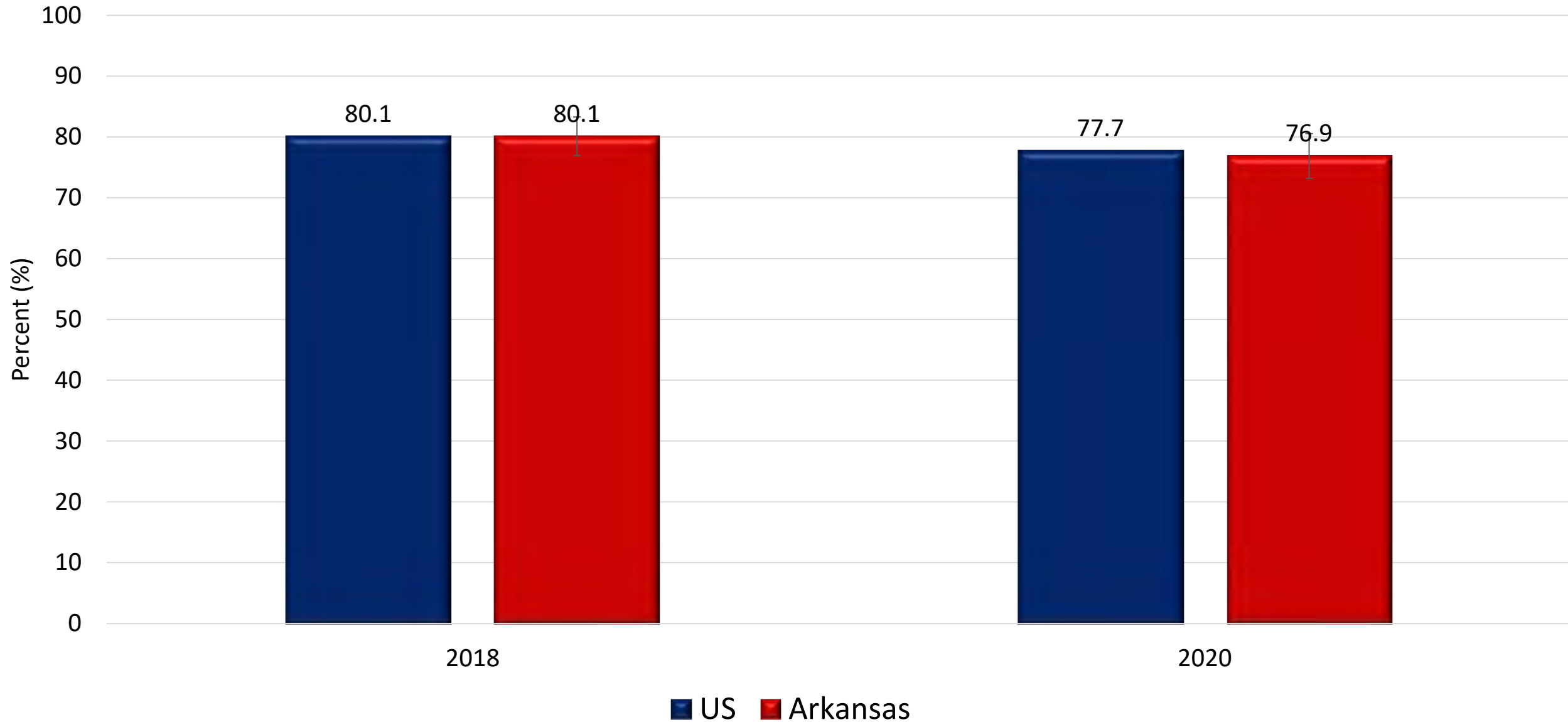


Source: ACCR Query System (incidence), CDC Wonder (mortality)

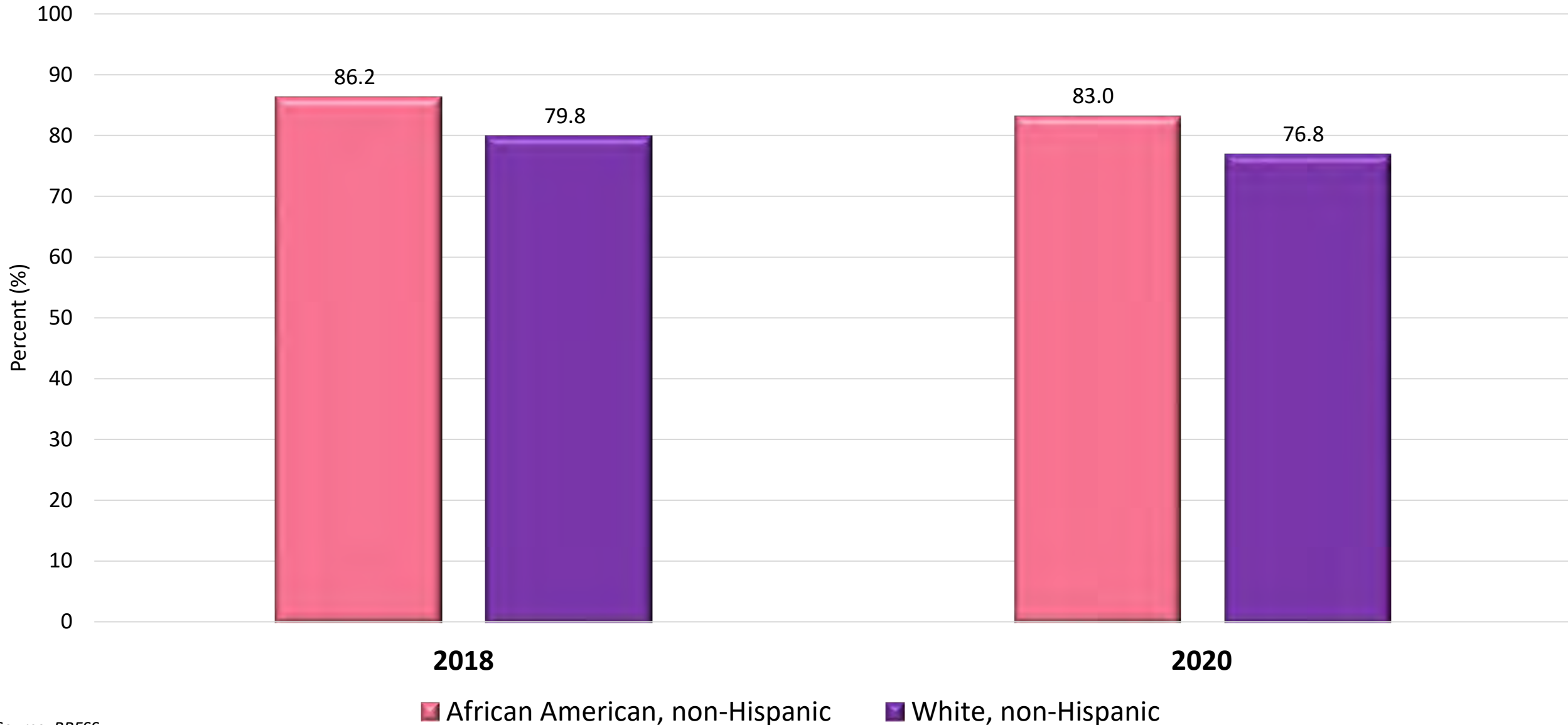
Early Detection & Screening



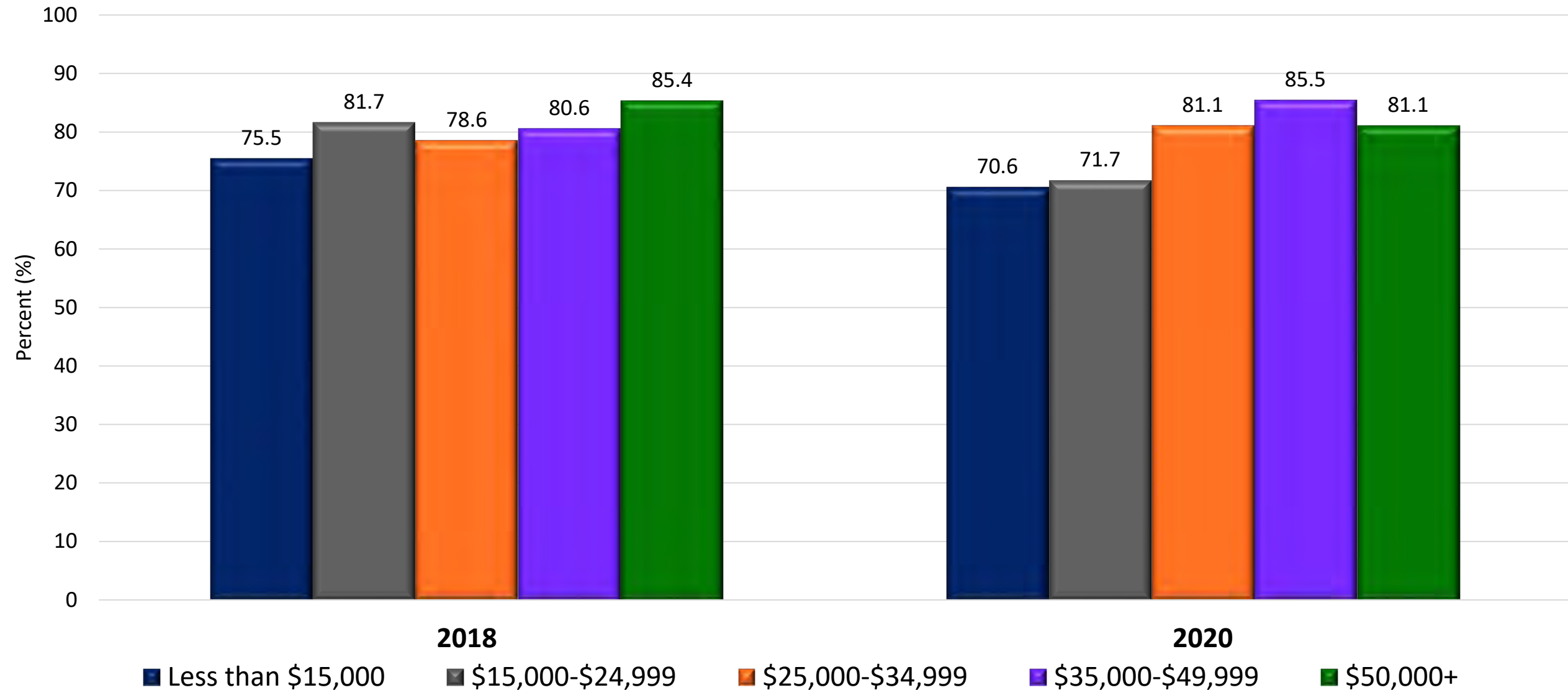
Percent of females who reported receiving a Pap test within the past 3 years in US and Arkansas, 2018-2020



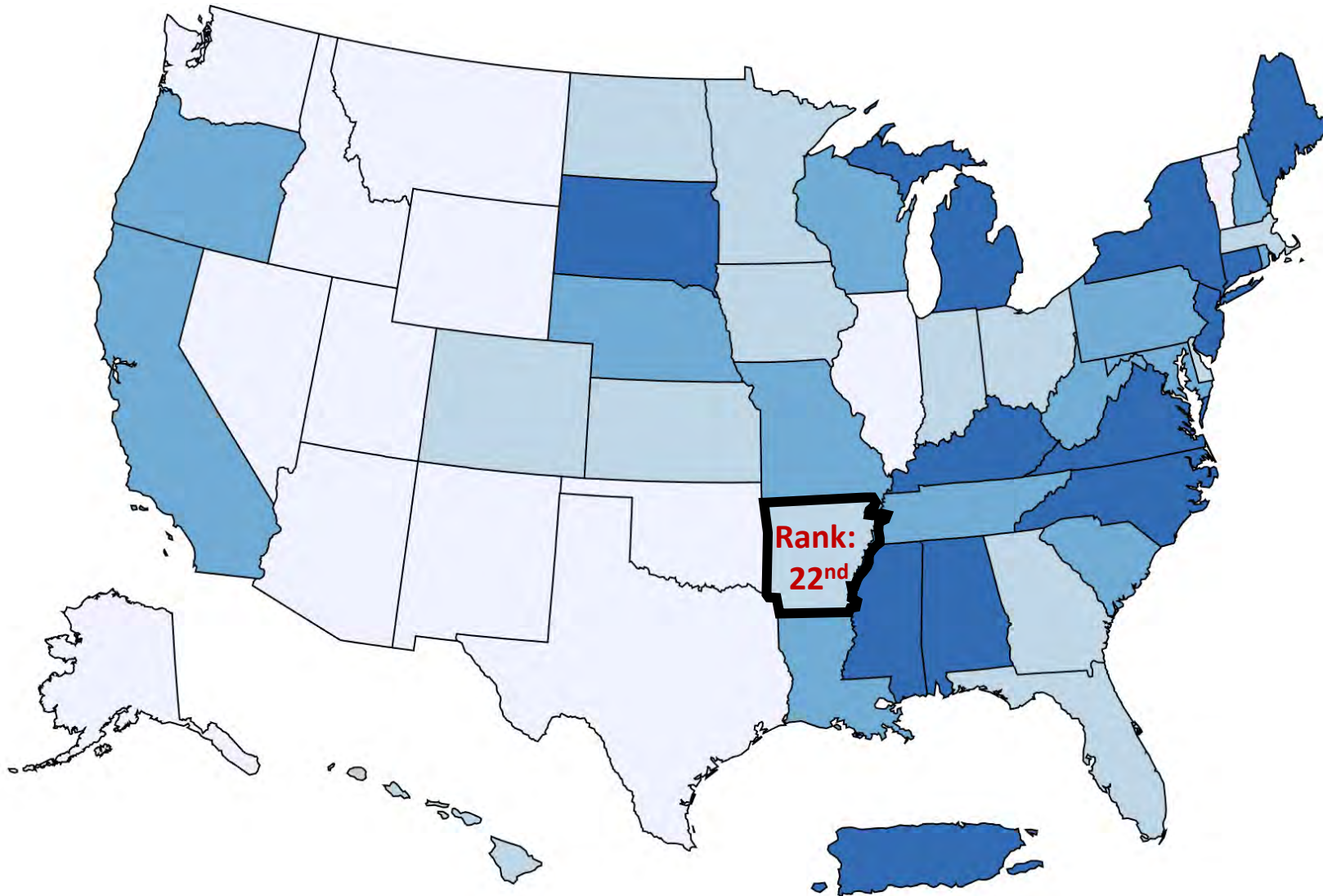
Percent of females who reported receiving a Pap test within the past 3 years by race/ethnicity, Arkansas, 2018-2020

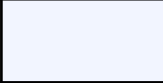
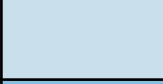




Percent of females who reported receiving a Pap test within the past 3 years by household income, Arkansas, 2018-2020



Percent of females who reported receiving a pap test within the past 3 years, US Map, 2020

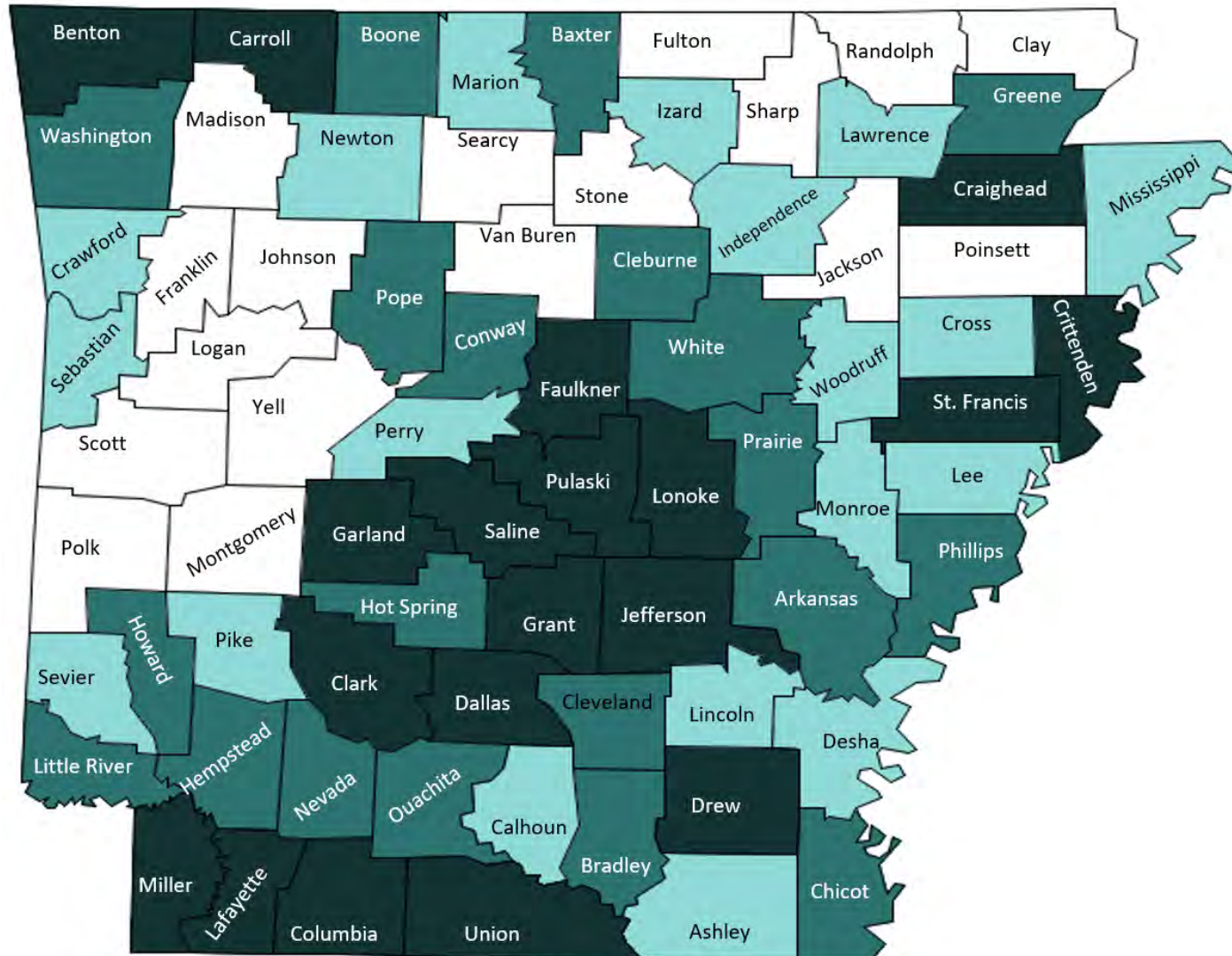


Age-adjusted prevalence percent per 100,000 population	
	68.4 – 80.8
	80.1 – 81.7
	81.8 – 83.2
	83.3 – 87.7

- DC
- MD
- DE
- NJ
- CT
- RI
- MA
- VT
- NH

Arkansas:
77.6% reported receiving a pap test within the past 3 years

Percent of females aged 21-65 years who reported receiving a pap test within the past 3 years, 2020

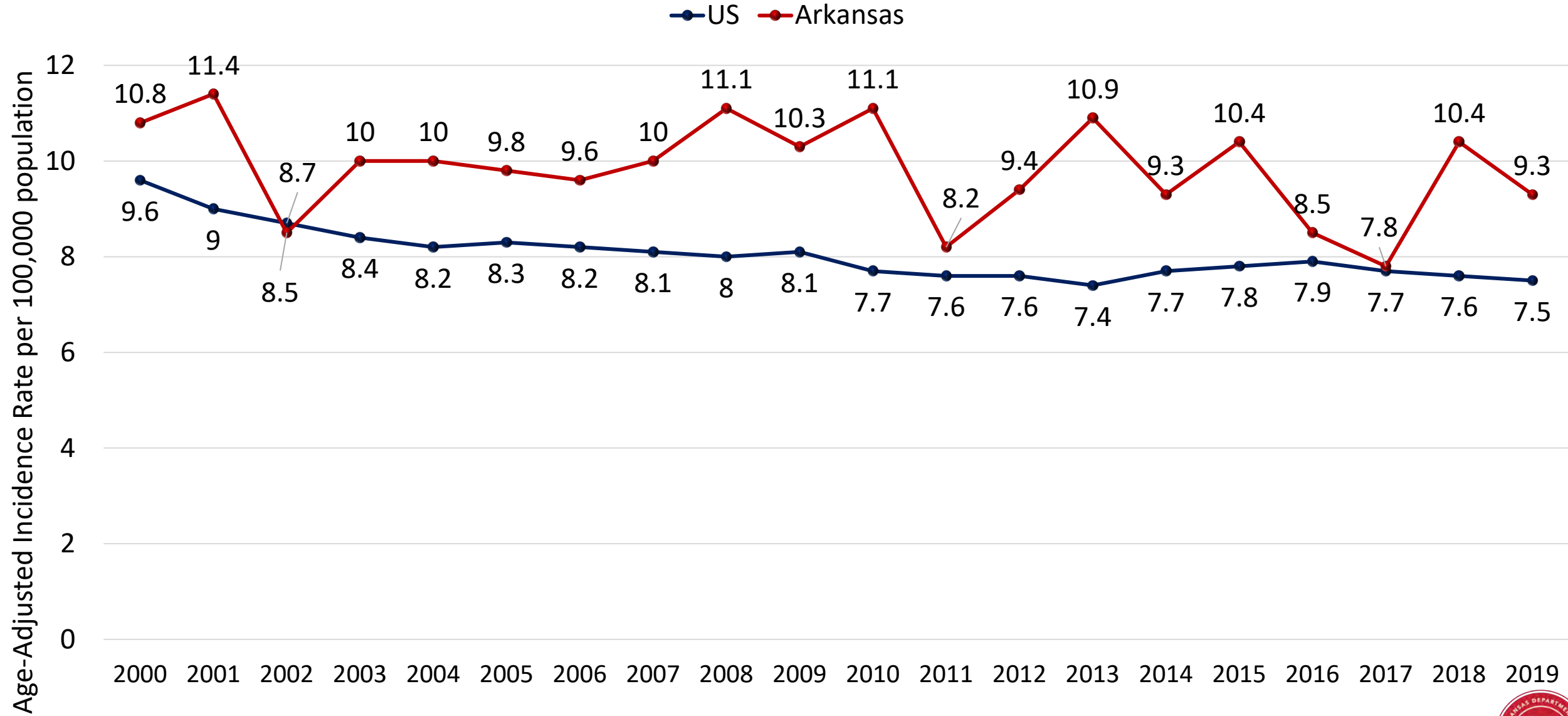


	79.8 - 82.0
	82.1 - 82.8
	82.9 - 83.4
	83.5 - 86.0

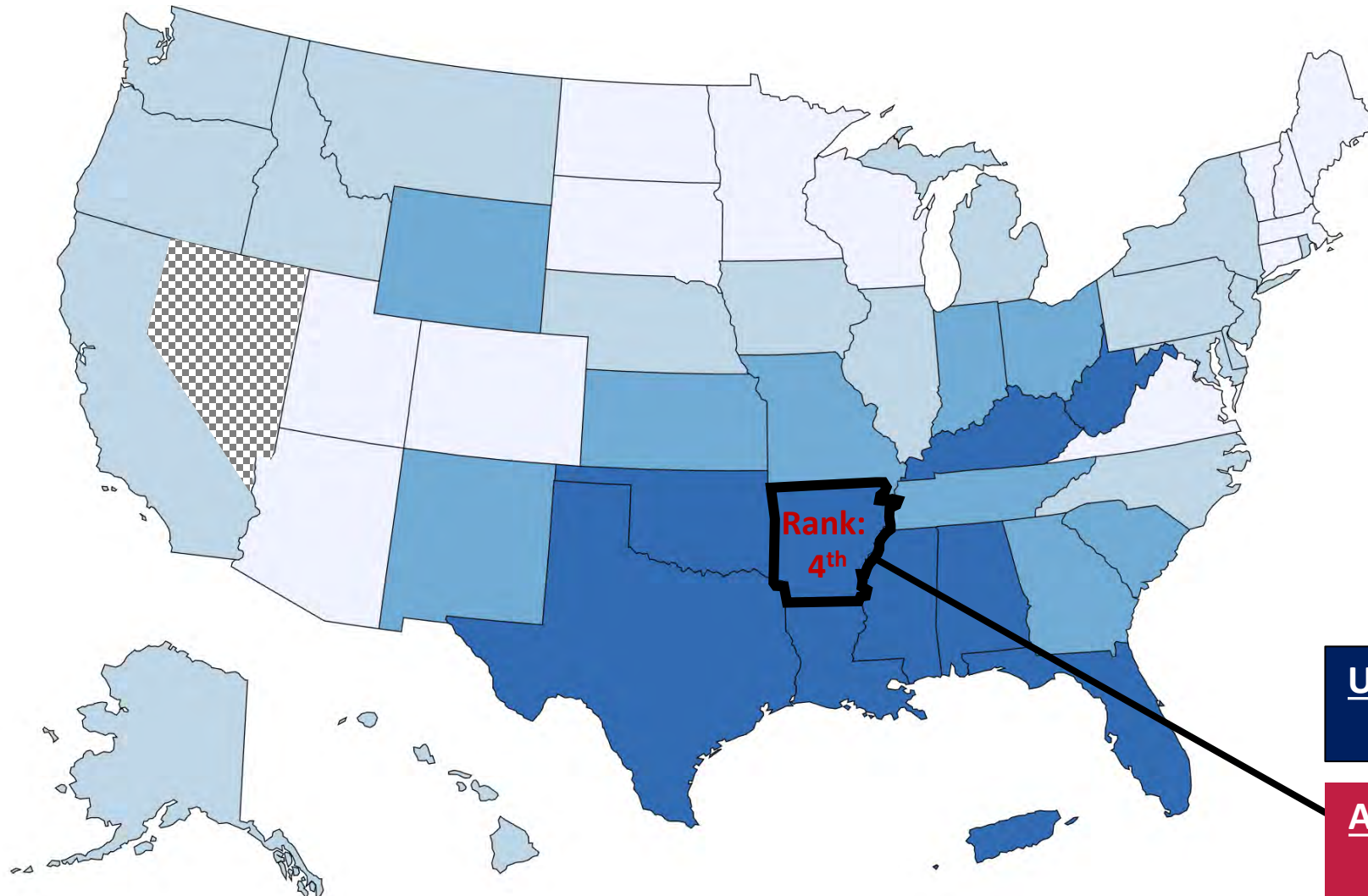
Incidence



Age-Adjusted Incidence Trend for Cervical Cancer US and Arkansas 1997 - 2019



US Map Overview of Cervical Cancer Rate, 2015-2019



- DC
- MD
- DE
- NJ
- CT
- RI
- MA
- VT
- NH

Age-adjusted incidence rate per 100,000 population	
	4.8 – 6.5
	6.7 – 7.7
	7.8 – 8.4
	9.2 – 12.6
	No data/data suppressed

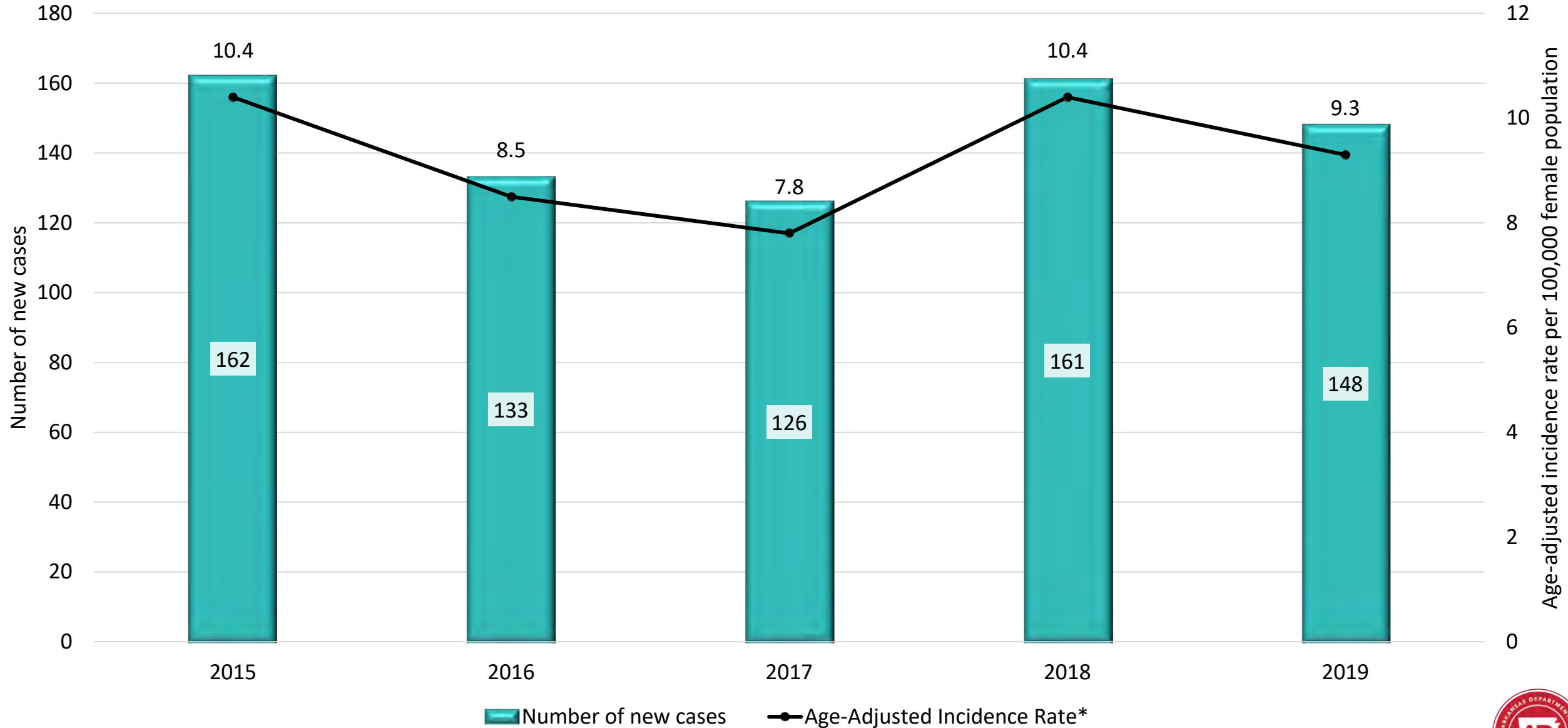
US rate: 7.7 age-adjusted incidence rate

Arkansas rate: 9.5 age-adjusted incidence rate

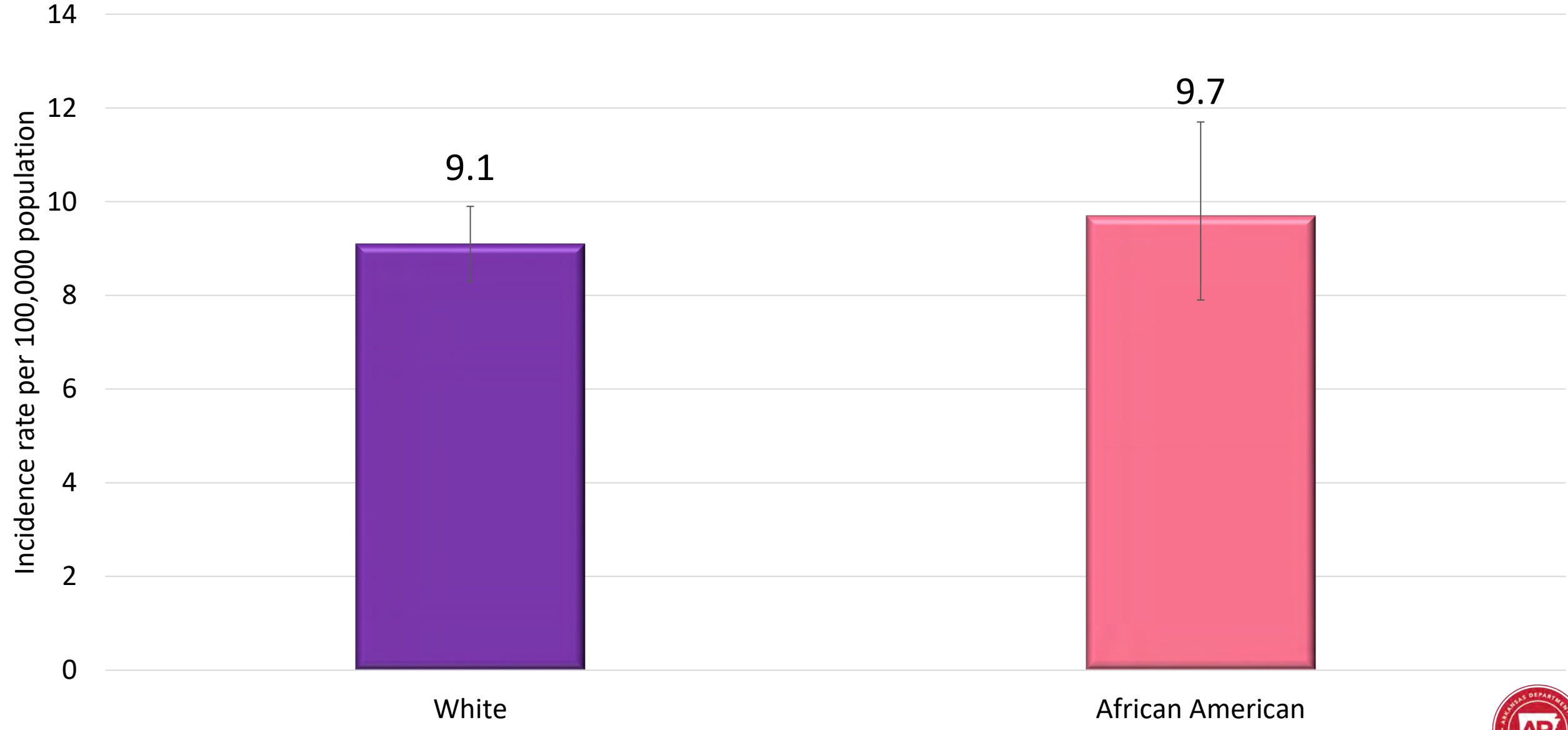
Includes Puerto Rico

Source: U.S. Cancer Statistics (USCS) Data Visualizations Tool

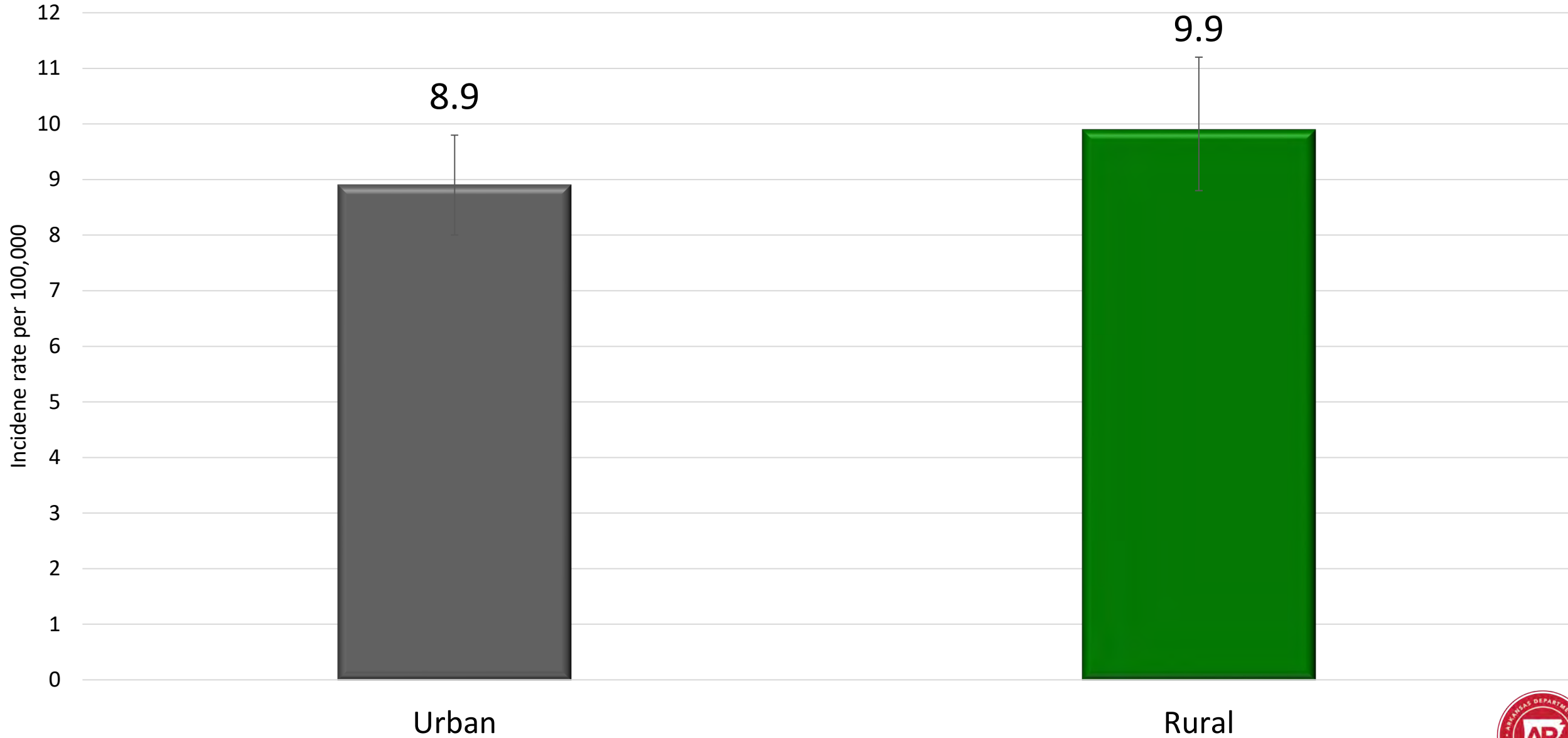
Cervical cancer number of new cases and incidence rate trend among Arkansas females, 2015-2019



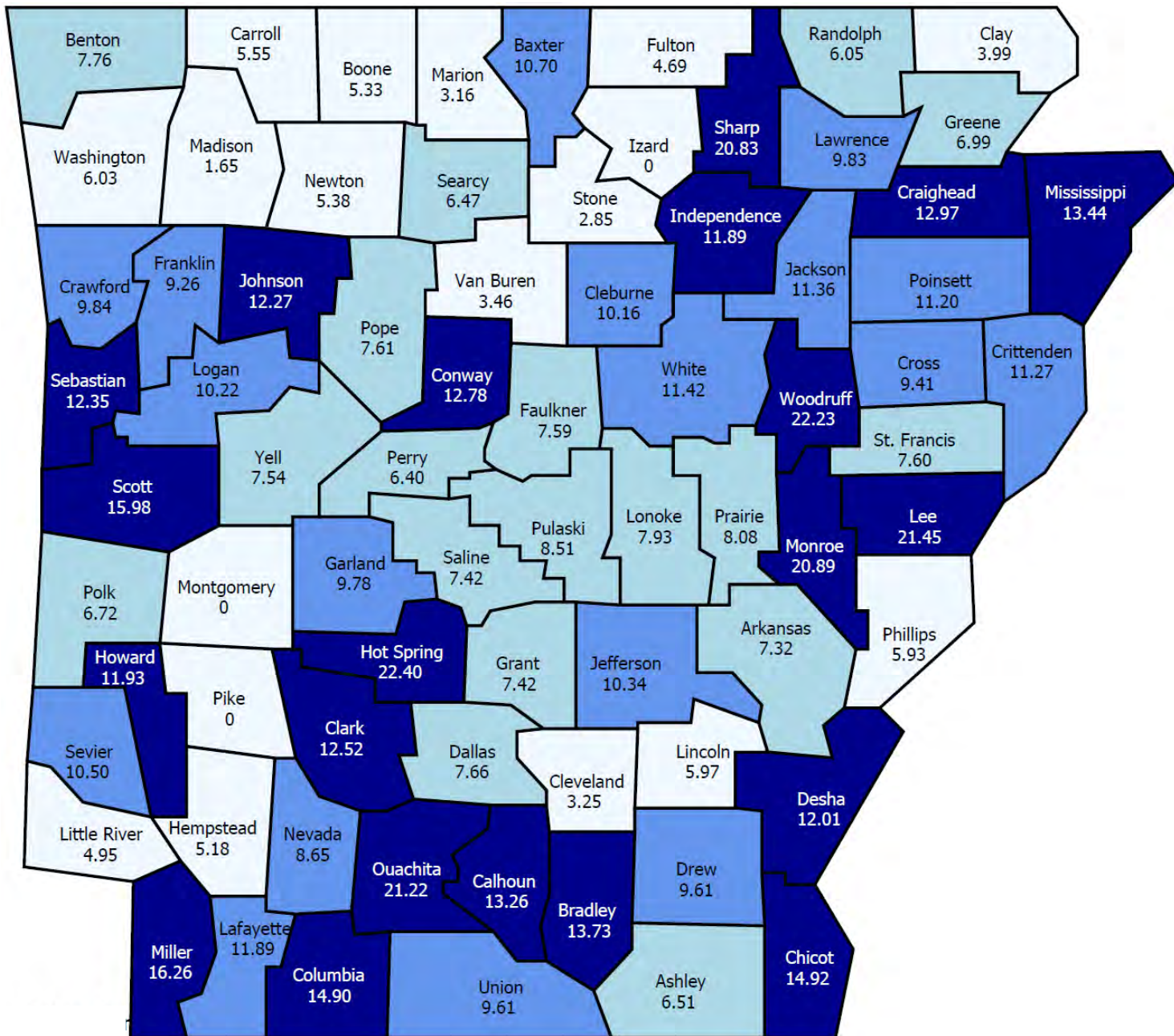
Cervical cancer incidence rate among females by race Arkansas, 2015-2019



Cervical cancer incidence rate among females by urban/rural Arkansas, 2015-2019



Map of cervical cancer incidence rate among Arkansas females by county, 2015-2019



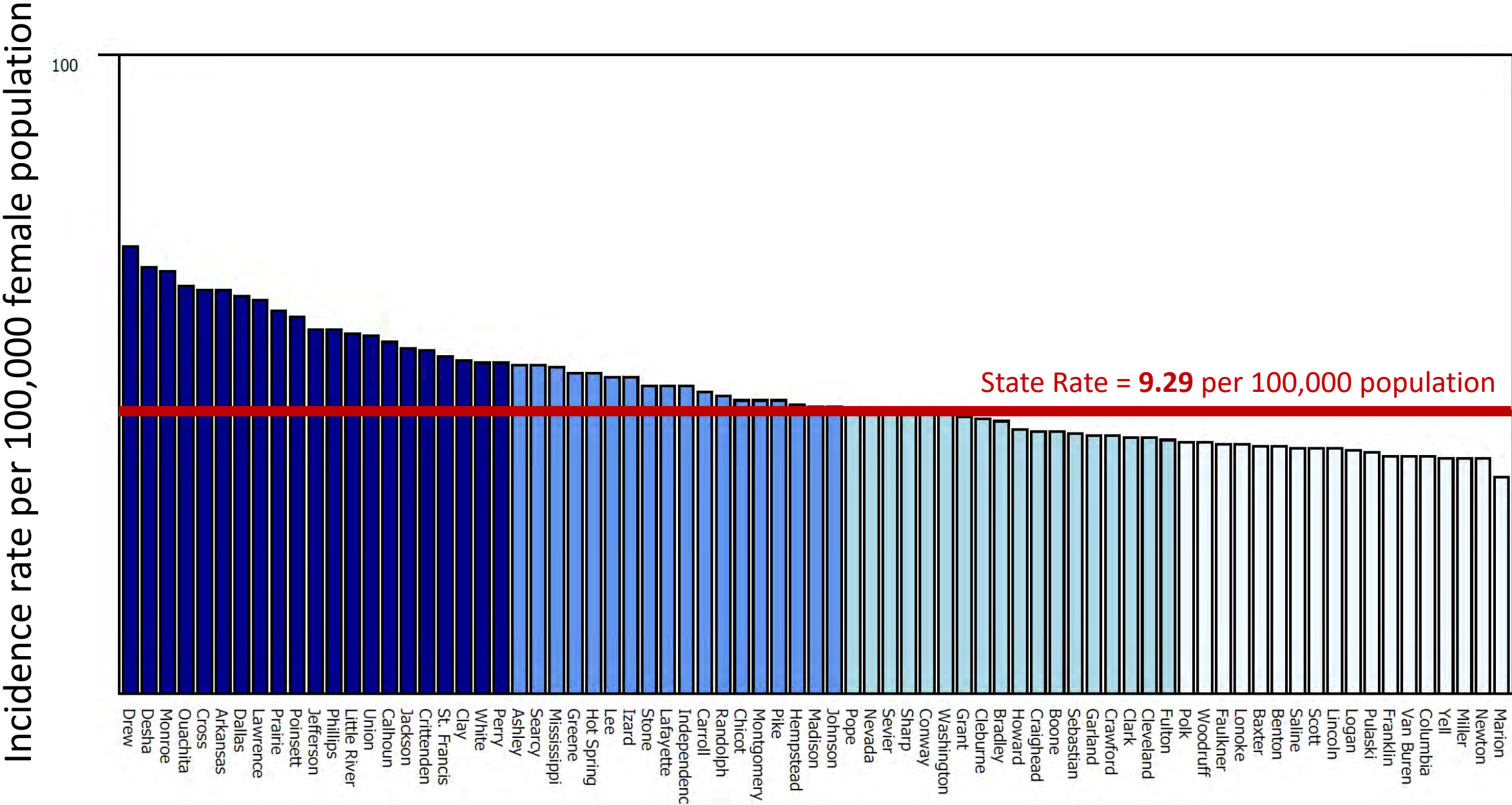
**State age-adjusted incidence rate:
9.29 per 100,000 population**

Age-adjusted incidence rate per 100,000 female population	
	6.00 – 6.04
	6.05 – 8.64
	8.65 – 11.88
	11.89 – 22.40

Source: AR Cancer Rates Query



Cervical cancer incidence rate among Arkansas females by county, 2015-2019

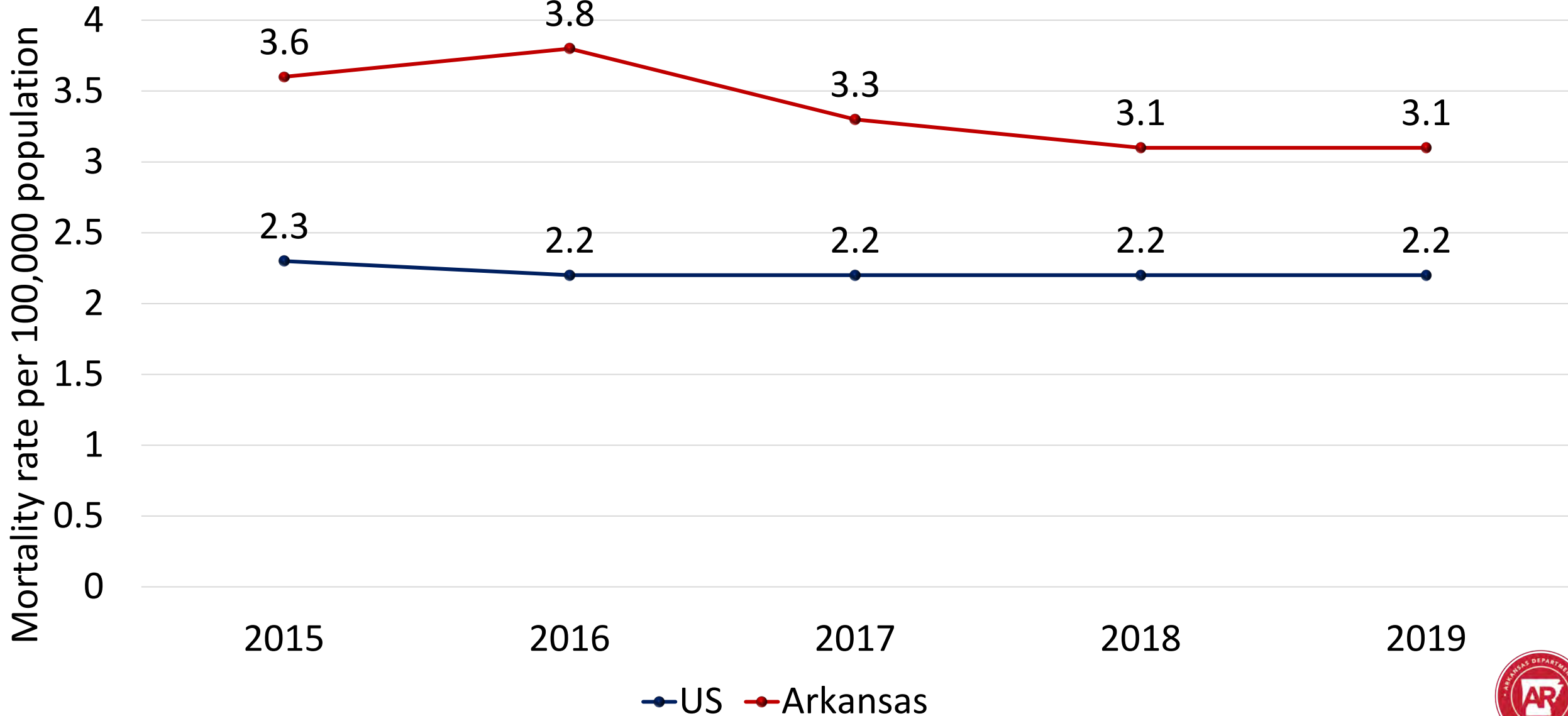


Source: ACCR Query System

Mortality

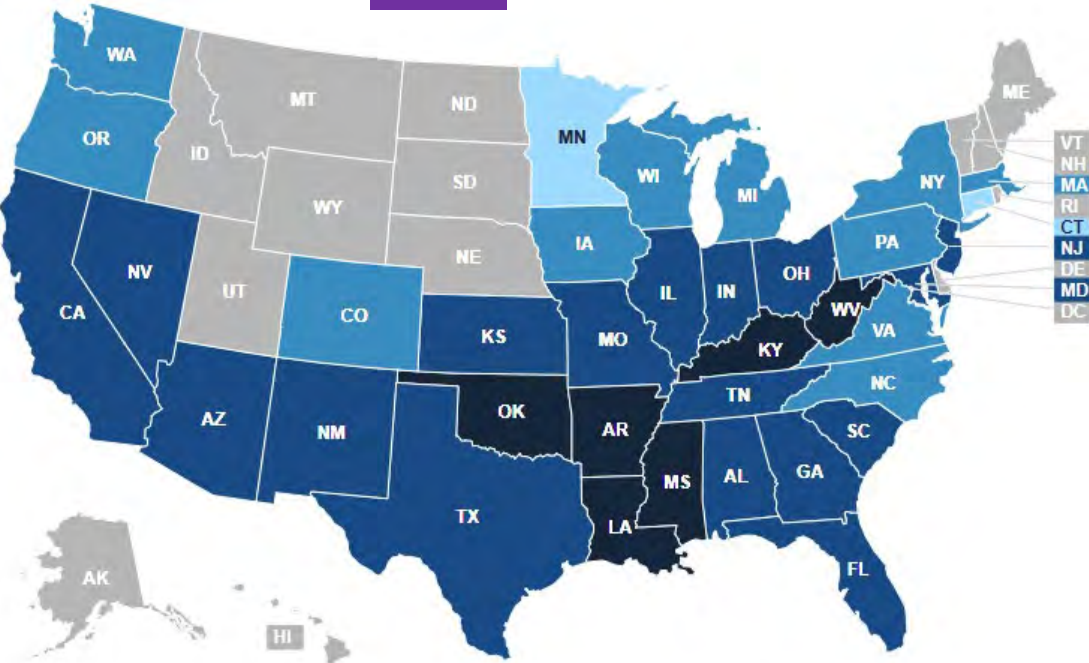


Cervical cancer mortality rate among females US and Arkansas, 2015-2019



Map of Age-Adjusted Mortality Rate of Cervical Cancer by State US and Arkansas, 2019 & 2020

2019

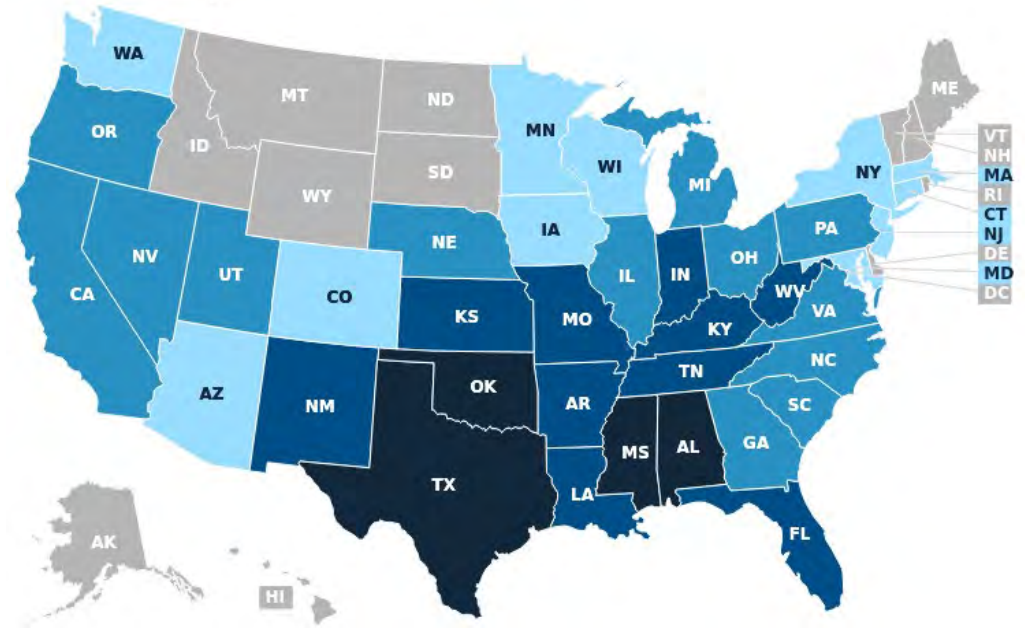


Age-Adjusted Mortality Rate per 100,000 population	
	0.9 – 1.0
	1.2 – 1.8
	2.0 – 2.8
	2.9 – 3.9
	N/A

US:
2.1 per 100,000 population

Arkansas:
3.1 per 100,000 population

2020



Age-Adjusted Mortality Rate per 100,000 population	
	1.0 – 1.8
	1.9 – 2.3
	2.4 – 2.8
	2.9 – 3.8
	N/A

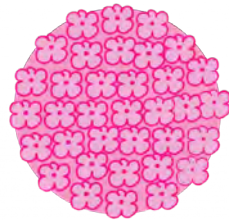
US:
2.2 per 100,000 population

Arkansas:
2.7 per 100,000 population



Source: Kaiser Family Foundation's State Health Facts

HPV and Cervical Cancer

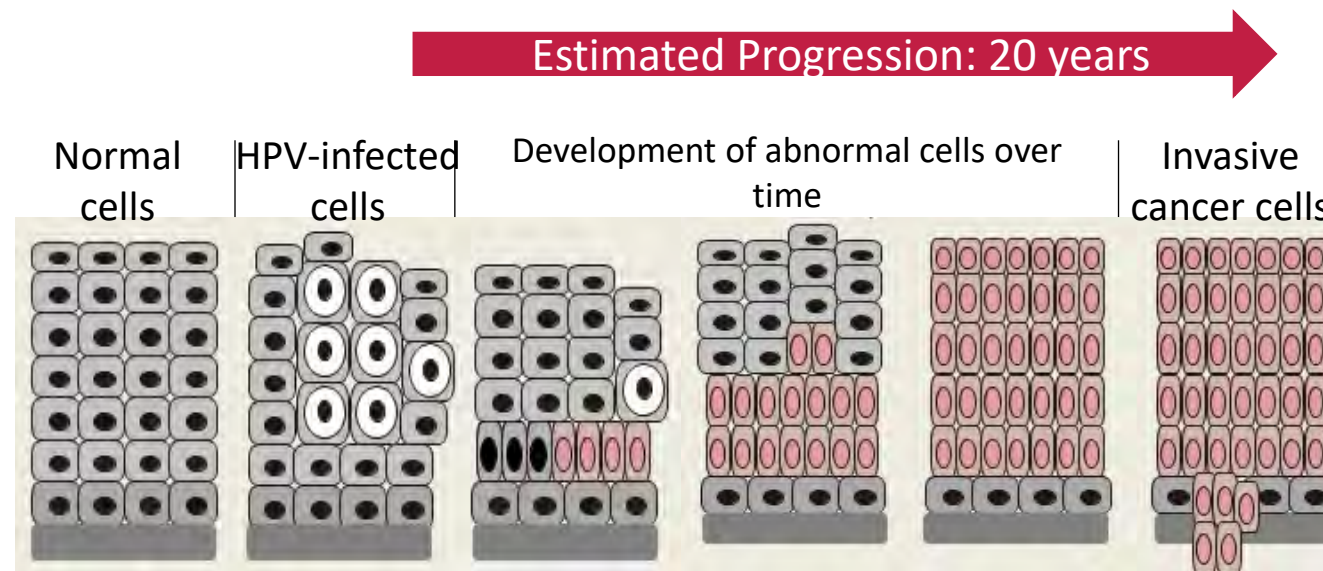


About HPV and Cervical Cancer in the US

- Most people can fight off HPV infection
- CDC: About 90% of cervical cancer cases are due to HPV infections
- ACCR does not collect data on the presence or absence of HPV in cancer tissue.
 - Collects on the cells types that are more likely to be caused by HPV in order to calculate the approximate burden in the state.

Human Papillomavirus-Associated Cancers^{3, 8-11}

Cancer	ICD-O-3 site codes	ICD-O-3 histology codes	Additional restrictions
Cervical carcinoma	C53.0-53.9	8010-8671, 8940-8941	Restrict to females and restrict to microscopically confirmed

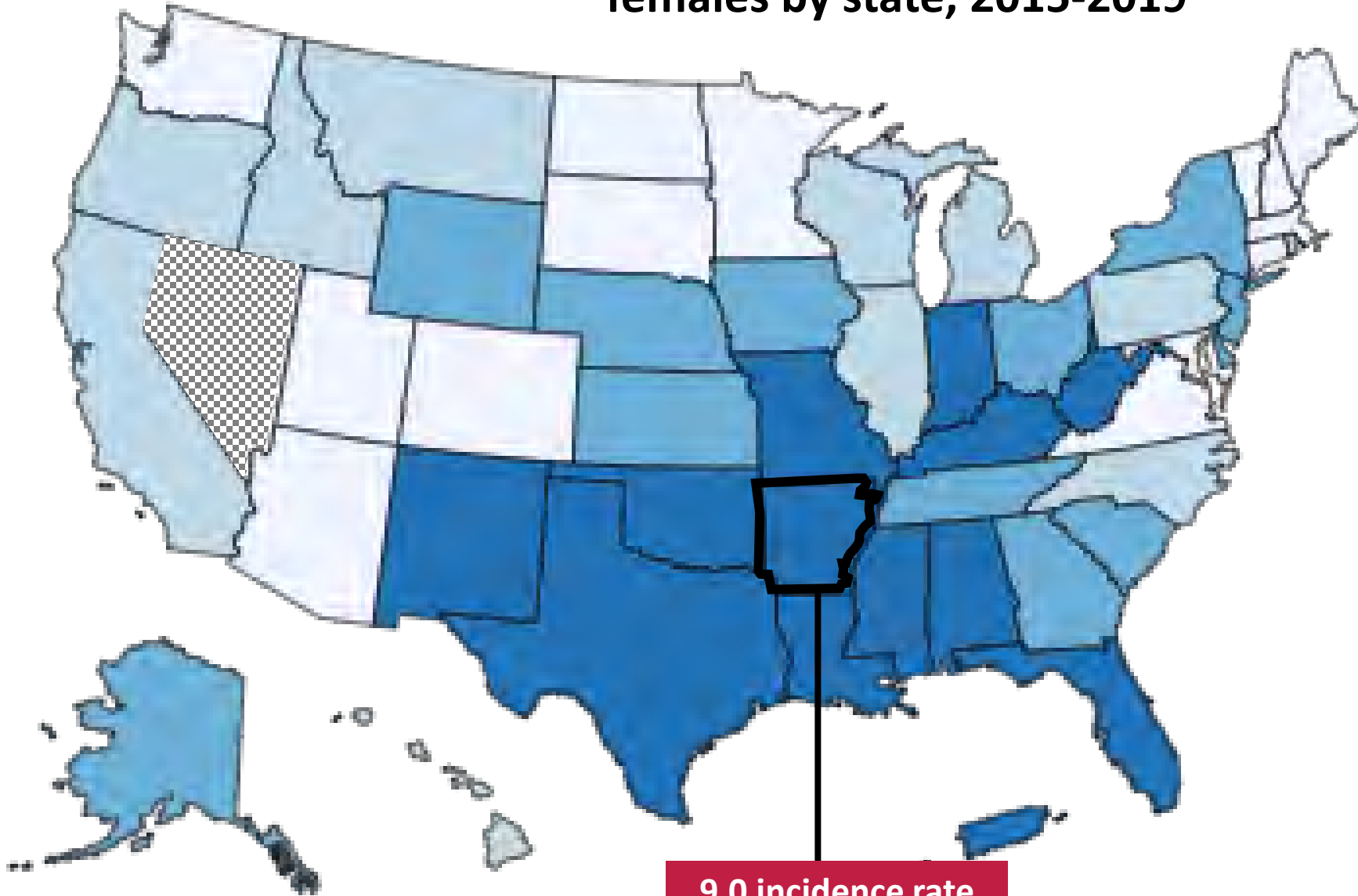


HPV Cervical Cancer Risk Factors








Sexual History	<ul style="list-style-type: none">• Many sexual partners• Partner considered high-risk (with HPV infection or has many sexual partners)• Sexually active at an early age
Chlamydia Infection	Chlamydia bacteria helps HPV grow and live on in the cervix → increased risk of cervical cancer
Smoking	Can negatively impact immune system in fighting HPV infections
Socioeconomic Status	Low-income females limited access to health care services, including HPV tests
Multiple Full-Term Pregnancies	<ul style="list-style-type: none">• Increase exposure to HPV infection with sexual activity• Hormonal changes increasing HPV exposure
Family History of Cervical Cancer	Some females may have a rare instance where inherited conditions are less able to fight off HPV infection
DES Exposure	Increase risk of developing pre-cancers of the cervix linked to HPV
Weakened Immune System	<ul style="list-style-type: none">• Higher risk of HPV infections• Drug suppression for autoimmune diseases and organ transplant recipients• Quick development of HPV-to-invasive-cancers among females with HIV

Map of HPV-associated cervical (carcinoma) cancer incidence rate among females by state, 2015-2019



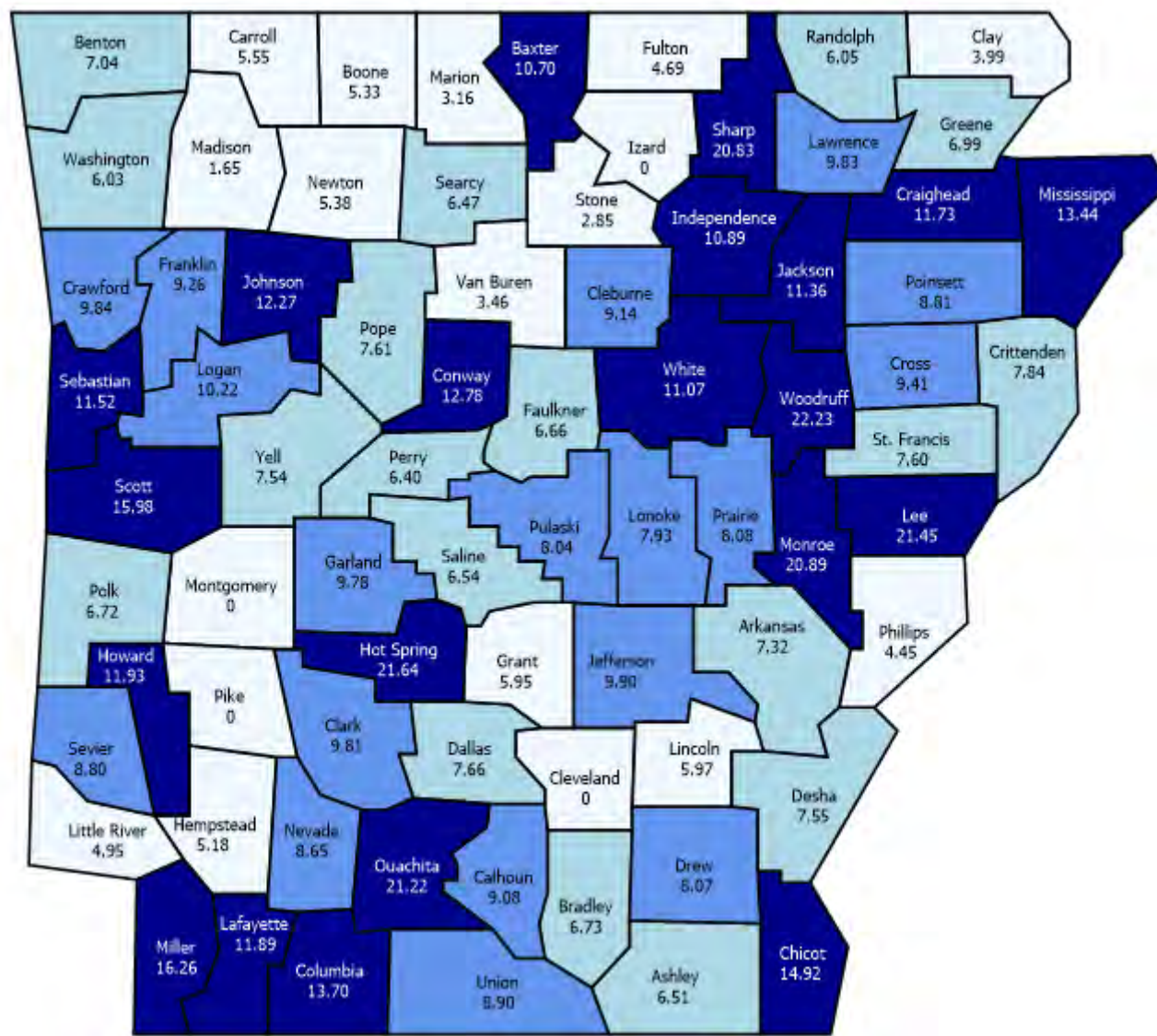
US rate:
7.3 incidence rate
(95% CI: 7.3 – 7.4)

Age-adjusted incidence rate per 100,000 population	
	4.7 – 6.3
	6.4 – 7.2
	7.3 – 7.9
	8.1 – 11.9
	No data/data suppressed

9.0 incidence rate
(95% CI: 8.3 – 9.7)



Map of Age-Adjusted Incidence Rate of HPV-Associated Cervical Cancer by County Arkansas, 2015 - 2019



State Age-Adjusted Incidence Rate:
8.77 per 100,000 population

Age-Adjusted Incidence Rate per 100,000 population	
	0.00 – 6.02
	6.03 – 7.92
	7.93 – 10.69
	10.70 – 22.23

Source: SEER*Stat
Map created on March 21, 2023



Cervical Cancer Prevention Methods



HPV Vaccine



As of 2017, Gardasil® 9 is the only HPV vaccine available in the U.S.

It is given as a series of either two or three doses, depending on age at initial vaccination.



Key Benefits

Long-lasting health benefits:

- Prevents cervical, vulvar, and vaginal infections
- Prevents cancers caused by HPV types (**including cervical cancer**)

Early protection works best

ACIP Recommendations Summary

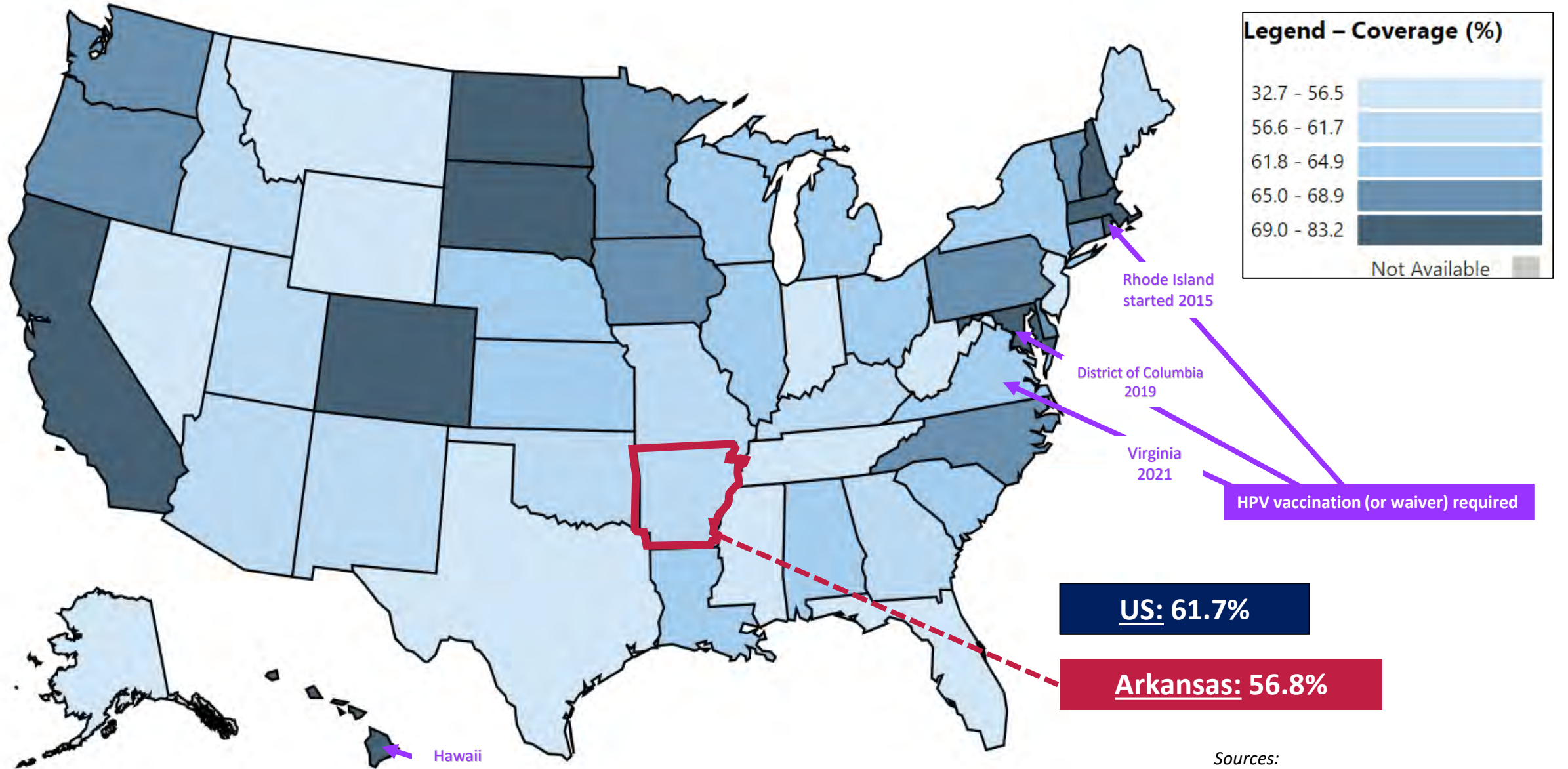
- Routine vaccination at age 11 or 12 years for both females and males (can start as early as 9 years of age)
- Recommends vaccination for everyone through age 26 years if not adequately vaccinated when younger.
- For adults ages 27 through 45 years, clinicians can consider discussing HPV vaccination with people who are most likely to benefit.
- See ACIP's shared clinical decision-making FAQs for more information: <https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html>

HPV Vaccination



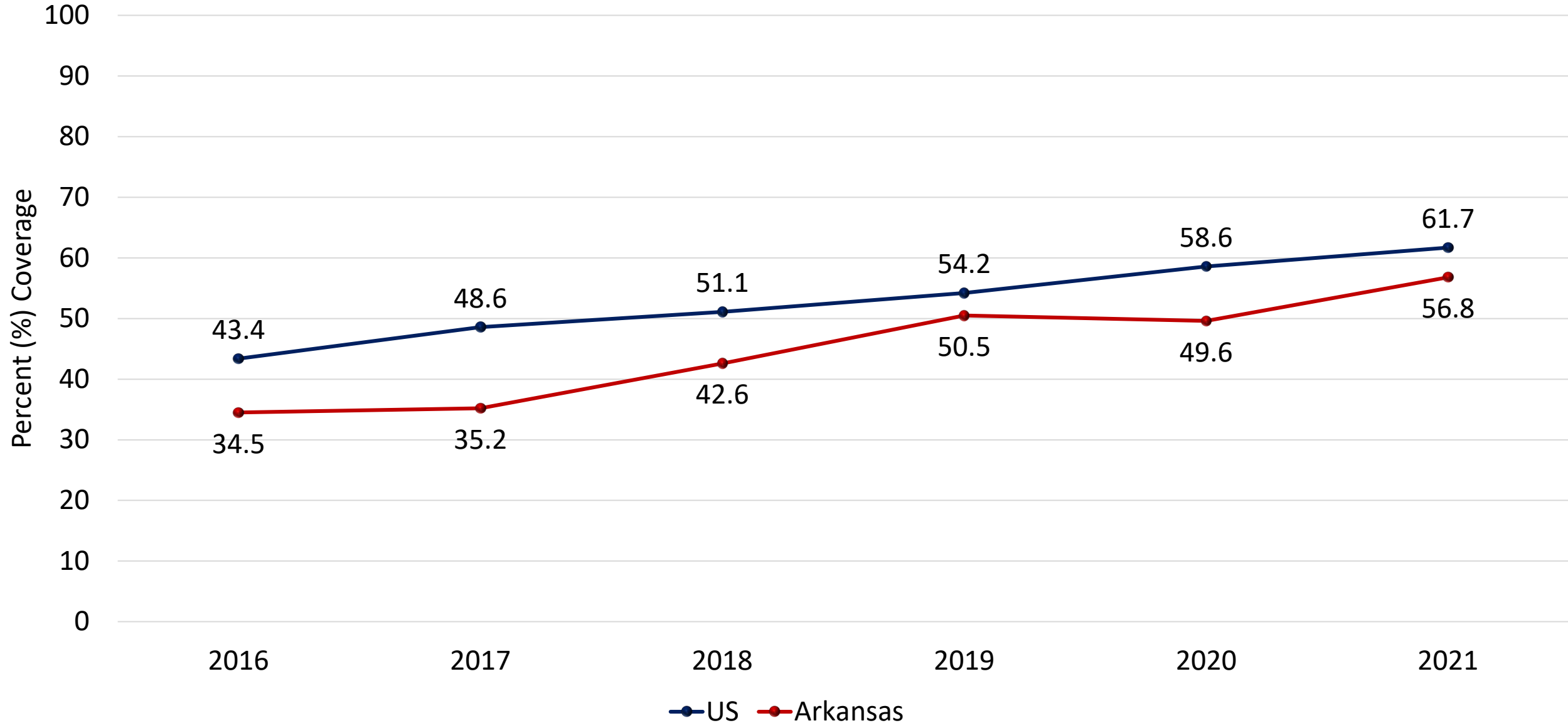
Up-to-date HPV Vaccine Rate per County for Children Ages 13-17, All Males and Females

US Map, 2021

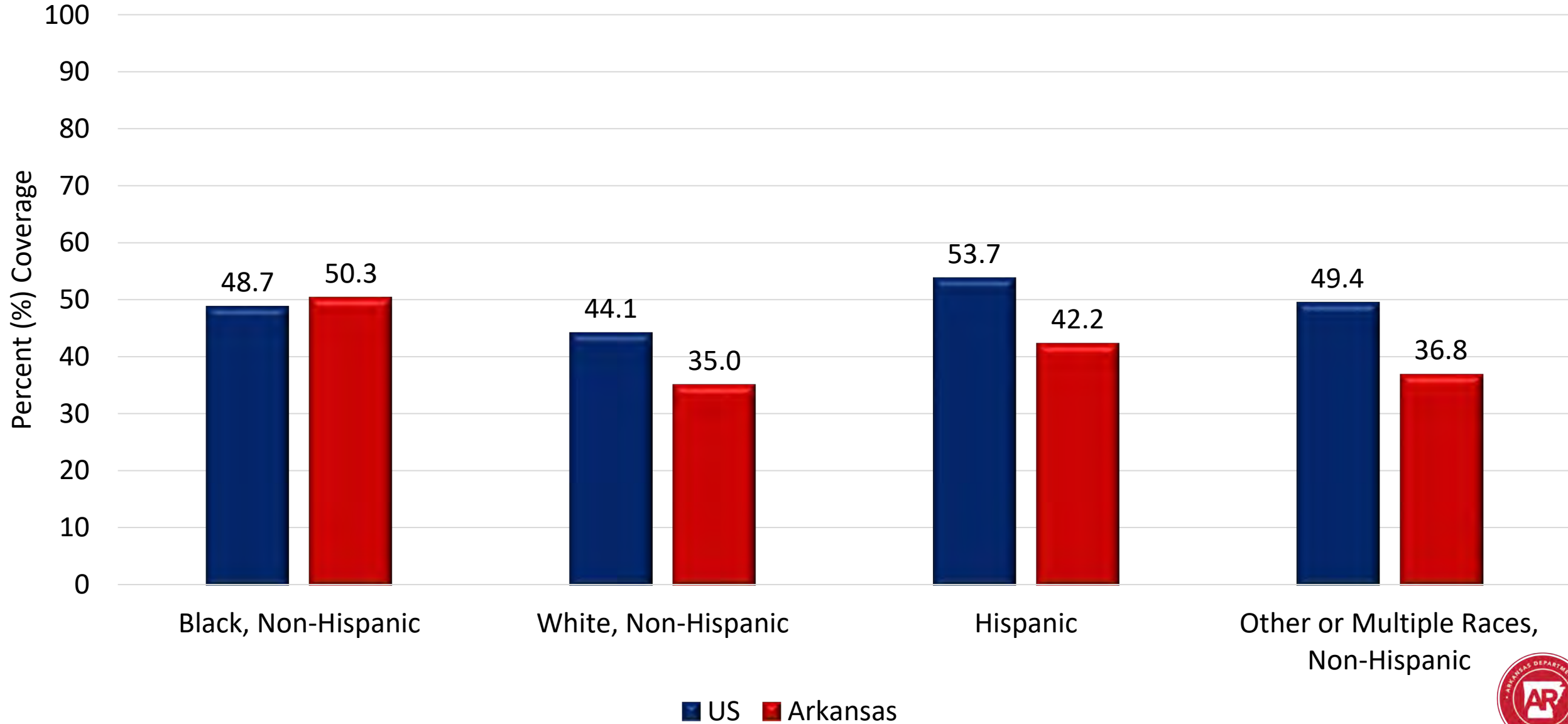


Sources:
 CDC, National Immunization Survey (NIS)-Teen
<https://www.immunize.org/laws/hpv.pdf>

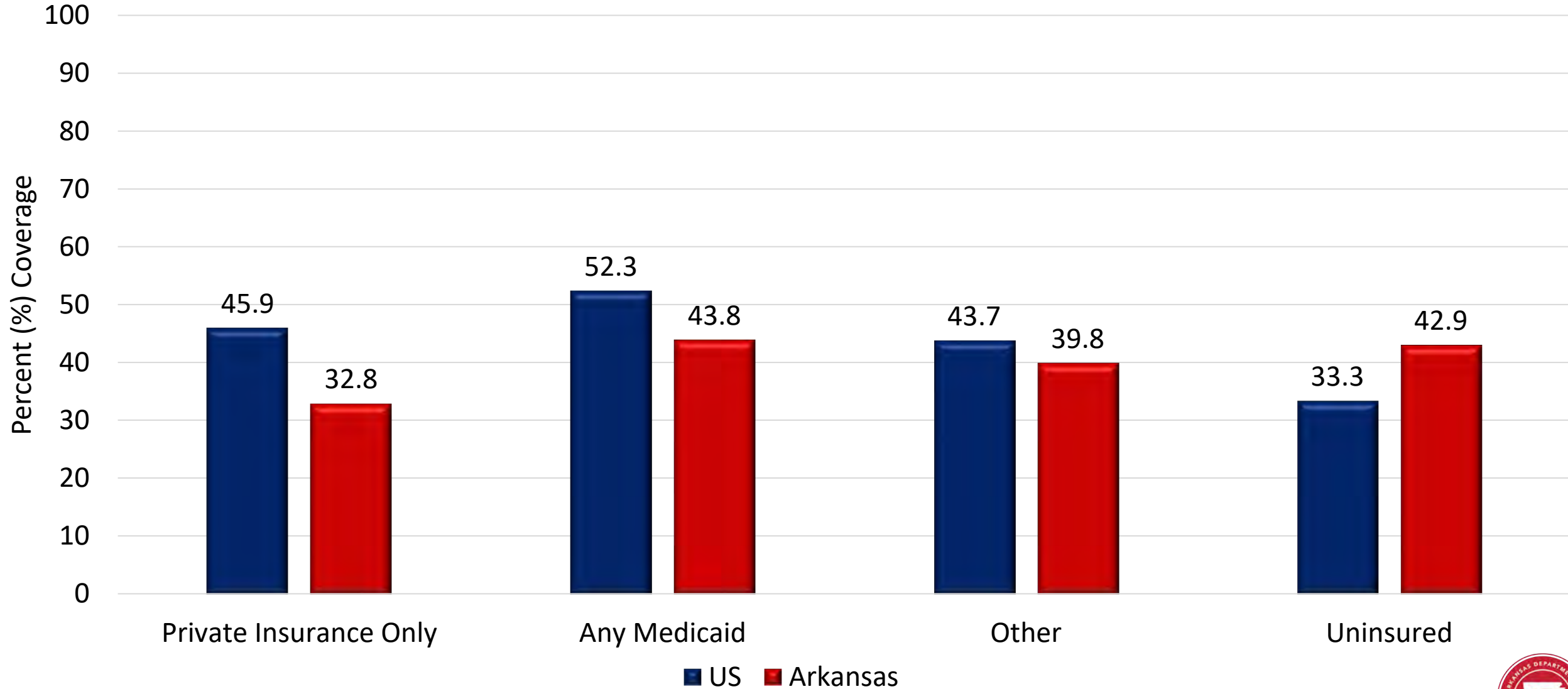
Estimated Coverage Percent of Up-to-Date HPV Vaccination Doses for Children Ages 13-17, All Males and Females, by Year US and Arkansas 2016 – 2021



Estimated Coverage Percent of Up-to-Date HPV Vaccination Doses for Children Ages 13-17, All Males and Females, by Race/Ethnicity US and Arkansas 2015 - 2019



Estimated Coverage Percent of Up-to-Date HPV Vaccination Doses for Children Ages 13-17, All Males and Females, by Insurance Coverage Arkansas and US, 2015-2019

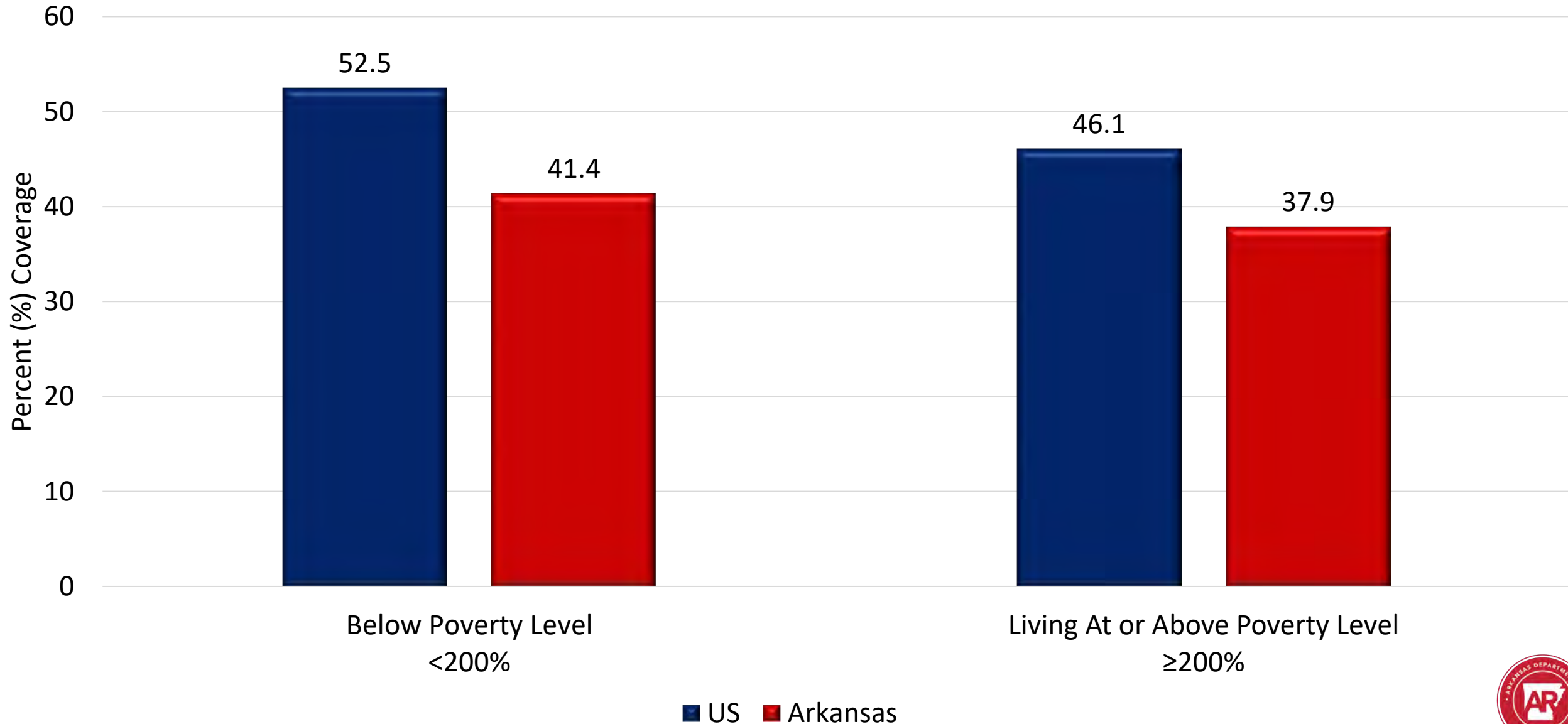


Other Insurance includes Children's Health Insurance Program (CHIP), military insurance, coverage via the Indian Health Service and any other type not mentioned elsewhere.

Source: CDC, National Immunization Survey (NIS)-Teen



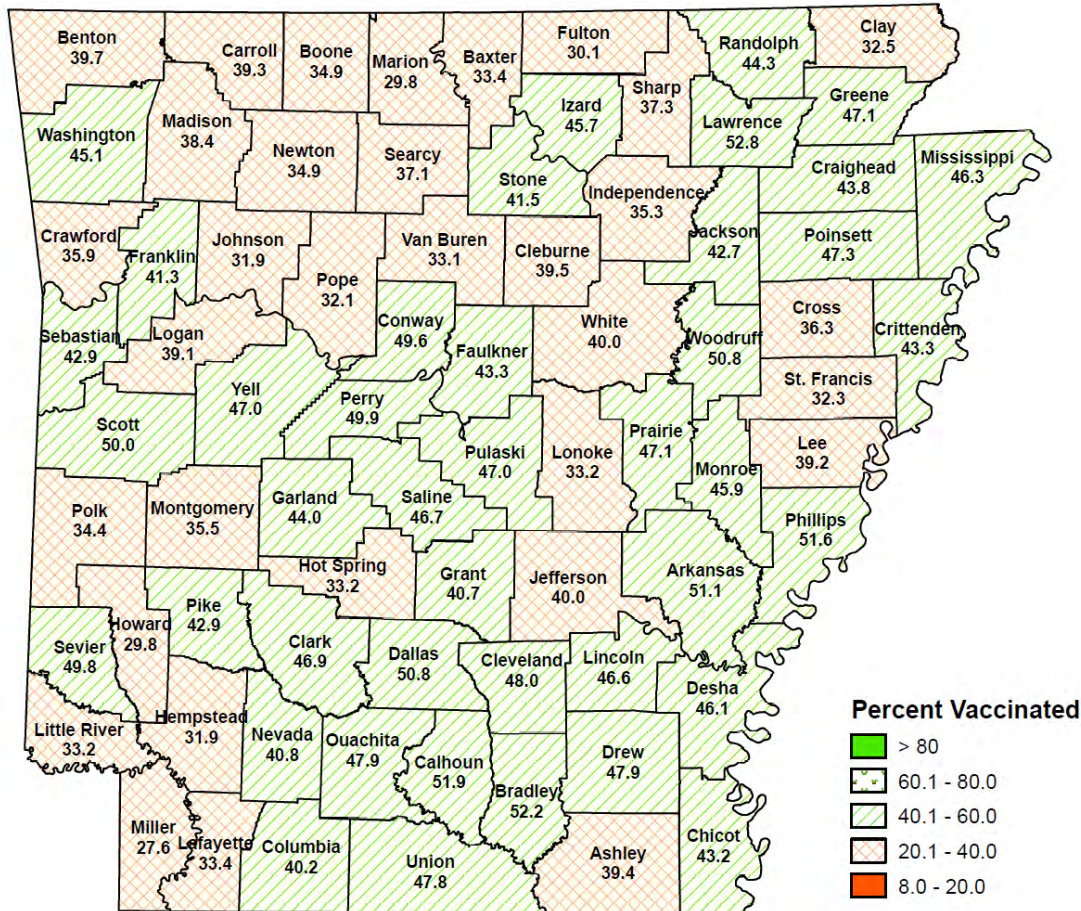
Estimated Coverage Percent of Up-to-Date HPV Vaccination Doses for Children Ages 13-17, All Males and Females, by Poverty Level Arkansas and US, 2015-2019



At least 1 or more HPV Vaccine Rate per County for Children Ages 11-14 years Arkansas, 2022 & 2023

2022

Extracted: March 25th, 2022

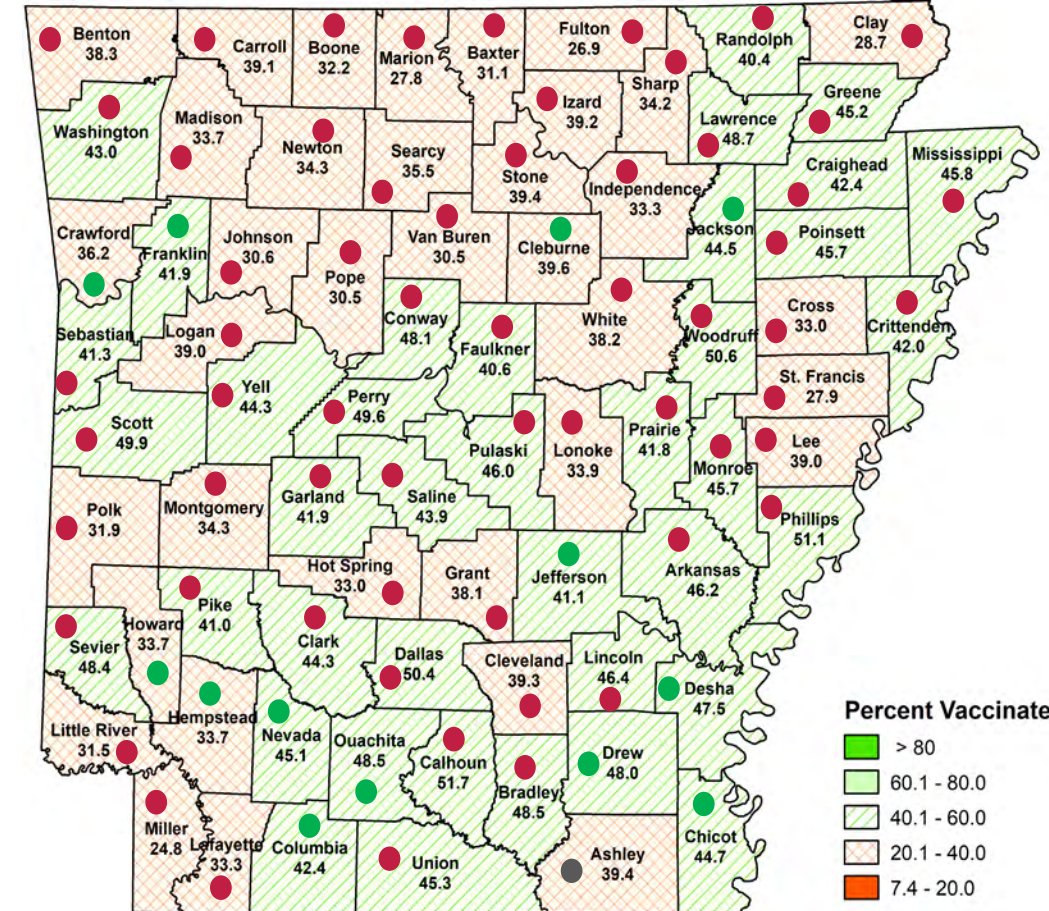


Percent Vaccinated



2023

Extracted: March 10th, 2023



Percent Vaccinated



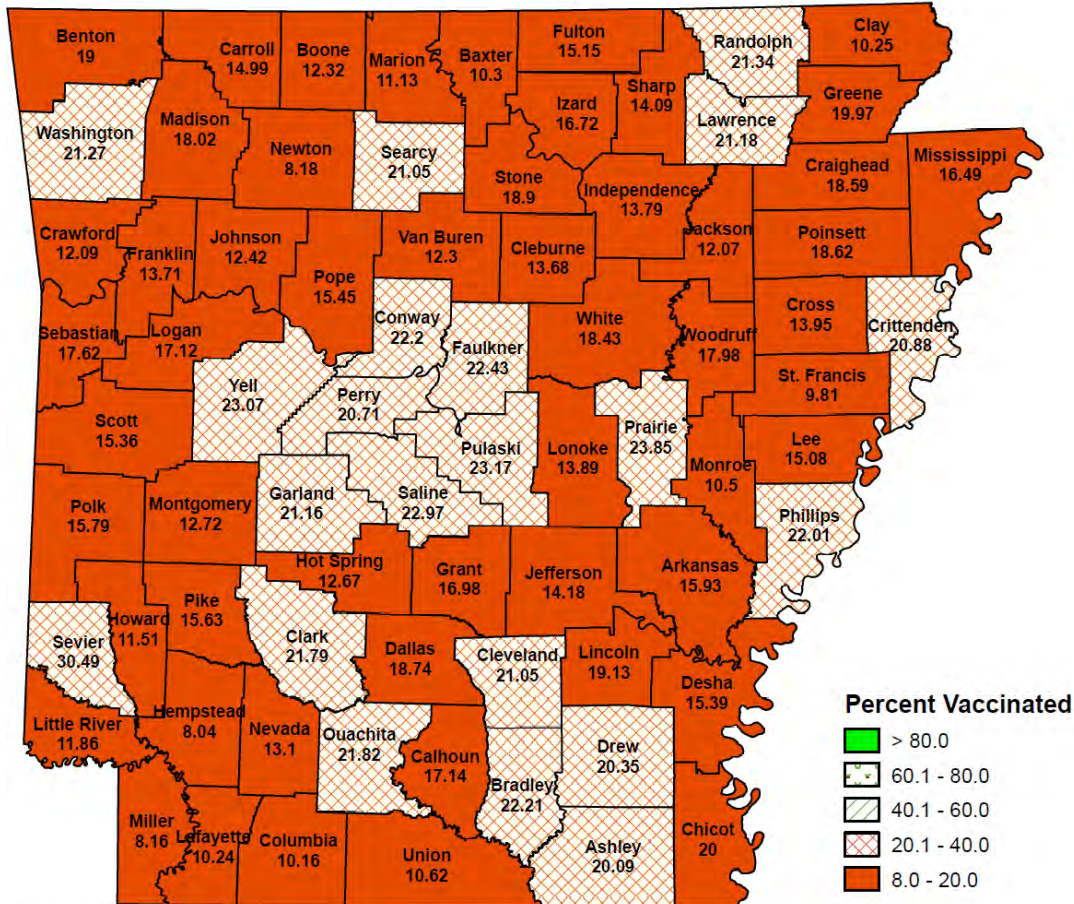
- = No change
- = Increase
- = Decrease



At least 2 or more HPV Vaccine Rate per County for Children Ages 11-14 years Arkansas, 2022 & 2023

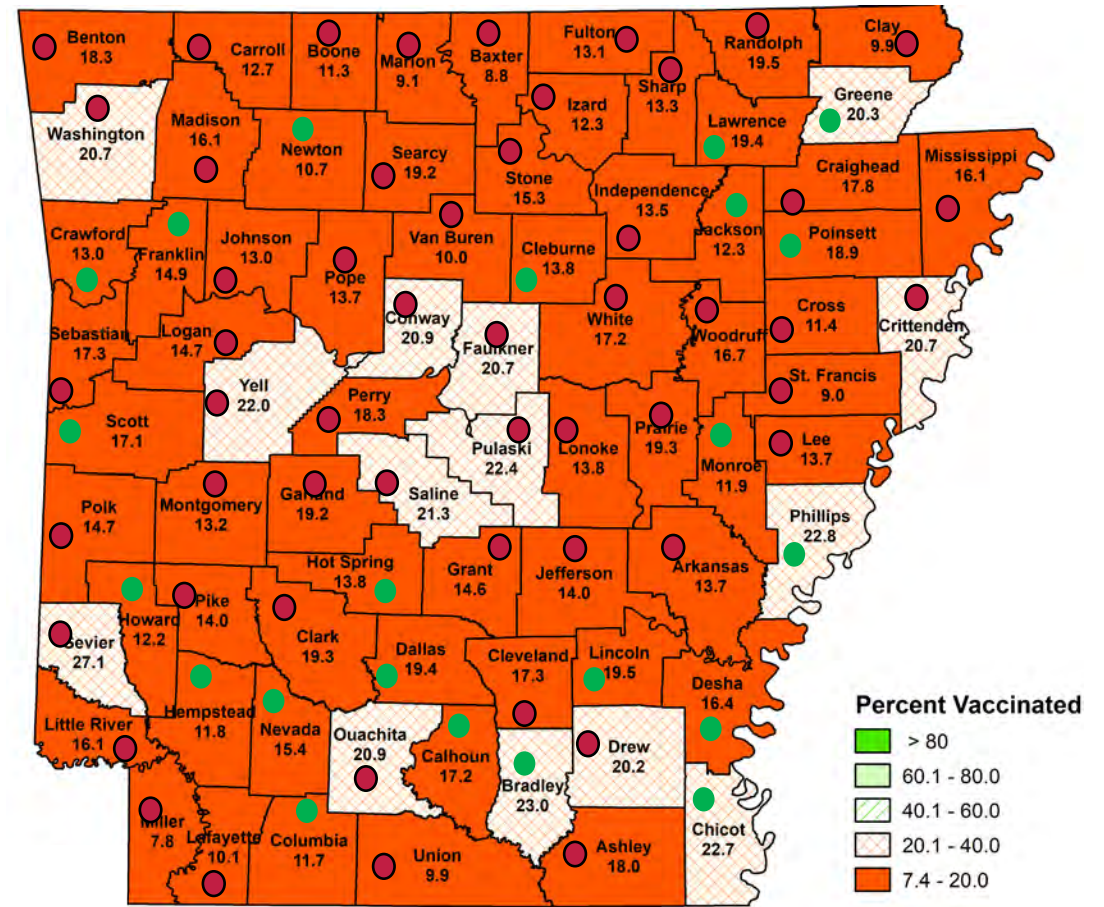
2022

Extracted: March 25th, 2022



2023

Extracted: March 10th, 2023



● = Increase
● = Decrease



ACCR Investigates:

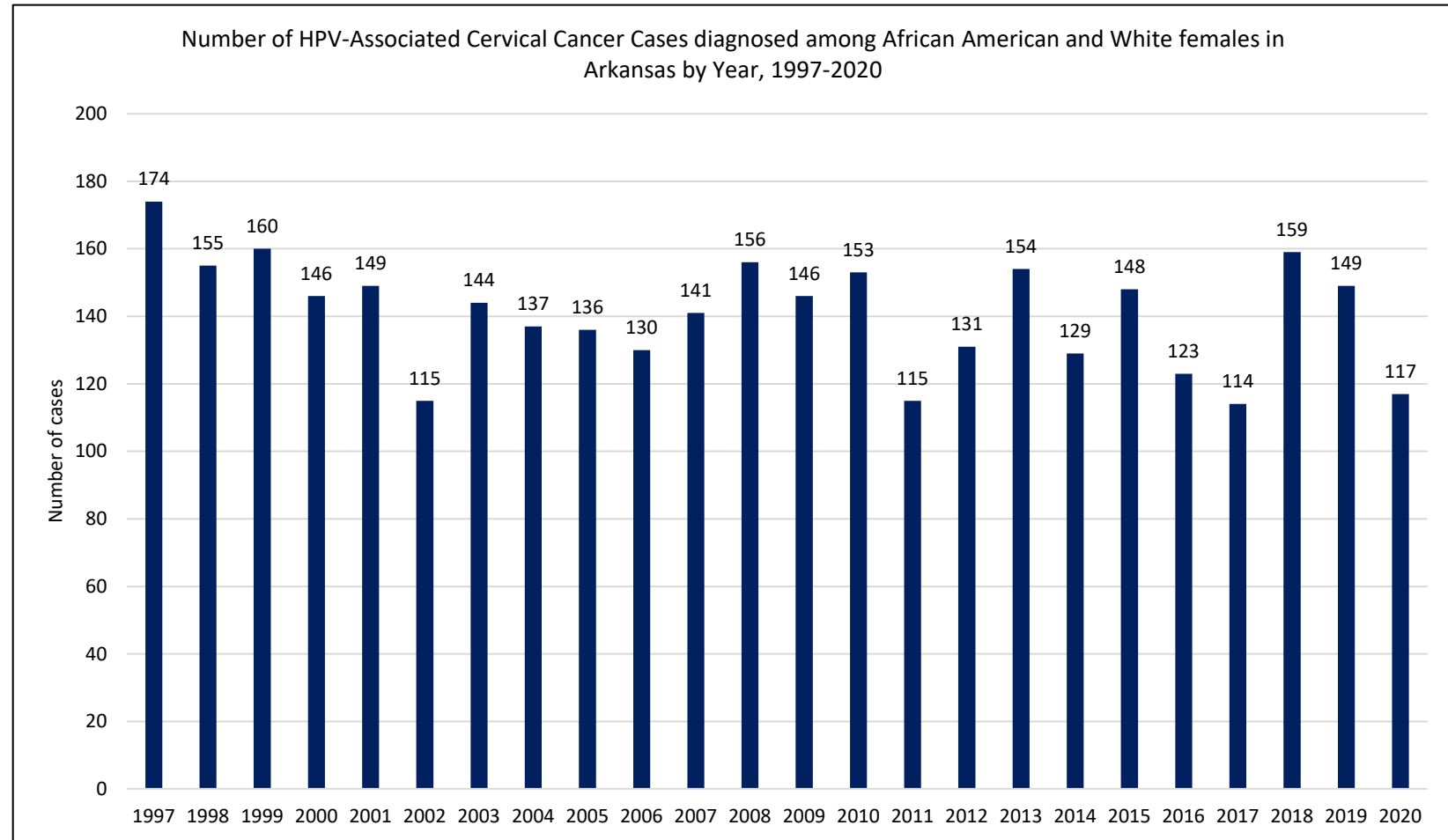
A Look Into HPV-Associated Cervical Cancers and Risk Factors 1997-2020



Characteristics of HPV-Associated Cervical Cancer Cases among African American and White Females, 1997-2020



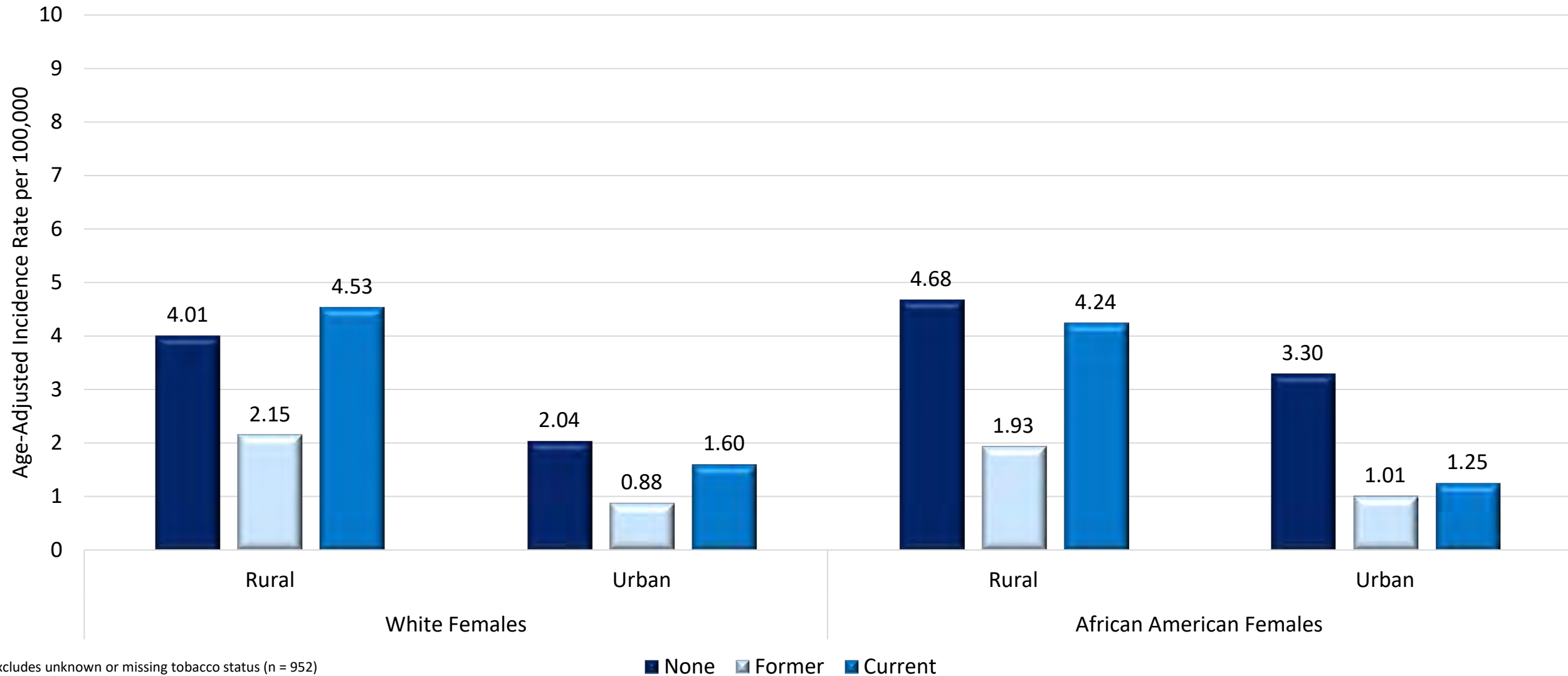
Number of cases (N = 3,381)		%
Race		
African American	613	17.49
White	2769	79.02
Tobacco Status		
Current	908	26.85
None	1043	30.84
Previous	507	14.99
Unknown	924	27.32
Family History of Cancer		
None	728	21.53
Yes	1504	44.47
Unknown	1150	34.00



HPV-Associated Cervical Cancer Cases by Risk Factors (N = 3,382): Tobacco Usage



Age-Adjusted Incidence Rate of HPV-Associated Cervical Cancer by Tobacco Status, Arkansas, 1997-2020

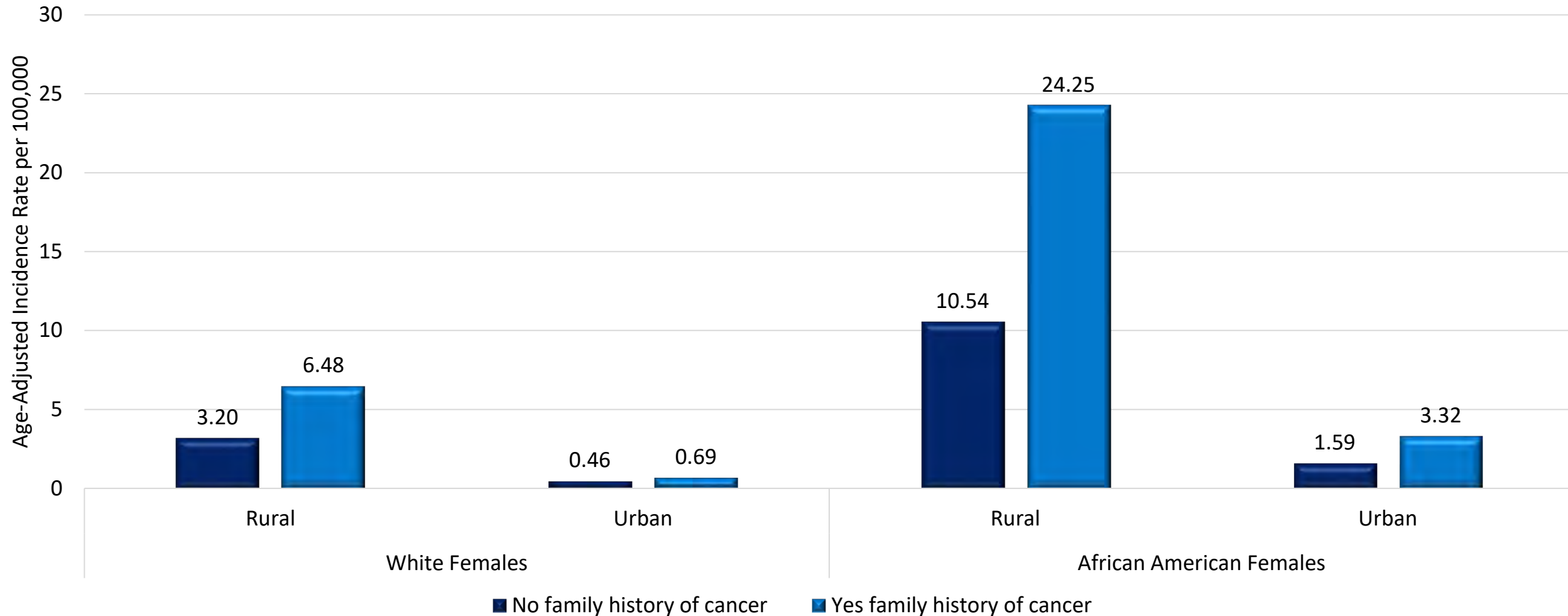


Excludes unknown or missing tobacco status (n = 952)
Source: U.S. Cancer Statistics (USCS) Data Visualizations Tool

HPV-Associated Cervical Cancer Cases by Risk Factors: Family History of Cancer



Age-Adjusted Incidence Rate of HPV-Associated Cervical Cancer by Family History of Cancer, Arkansas, 1997-2020



Excludes unknown or missing family history of cancer (n = 1,175)

Source: U.S. Cancer Statistics (USCS) Data Visualizations Tool

Thank you!

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