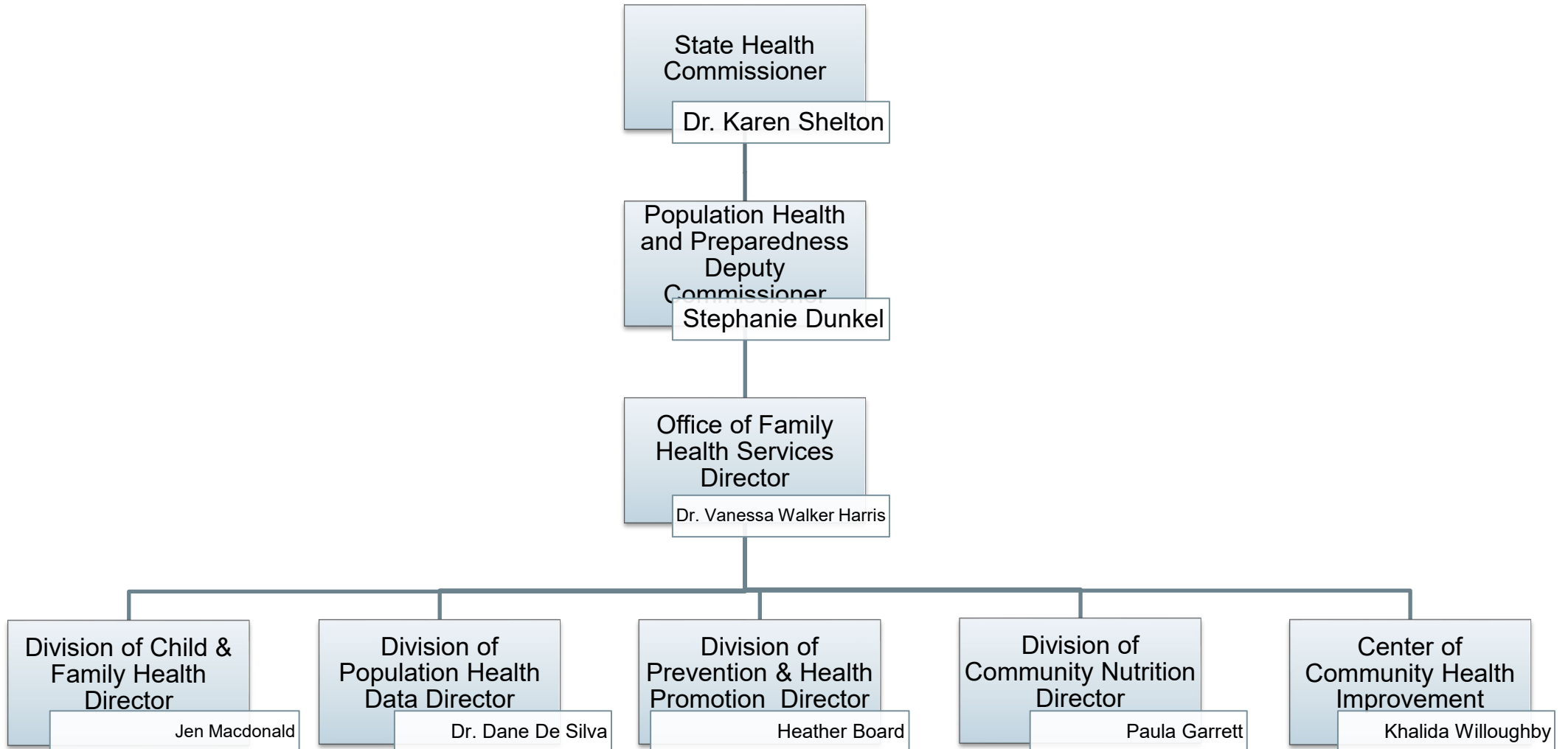


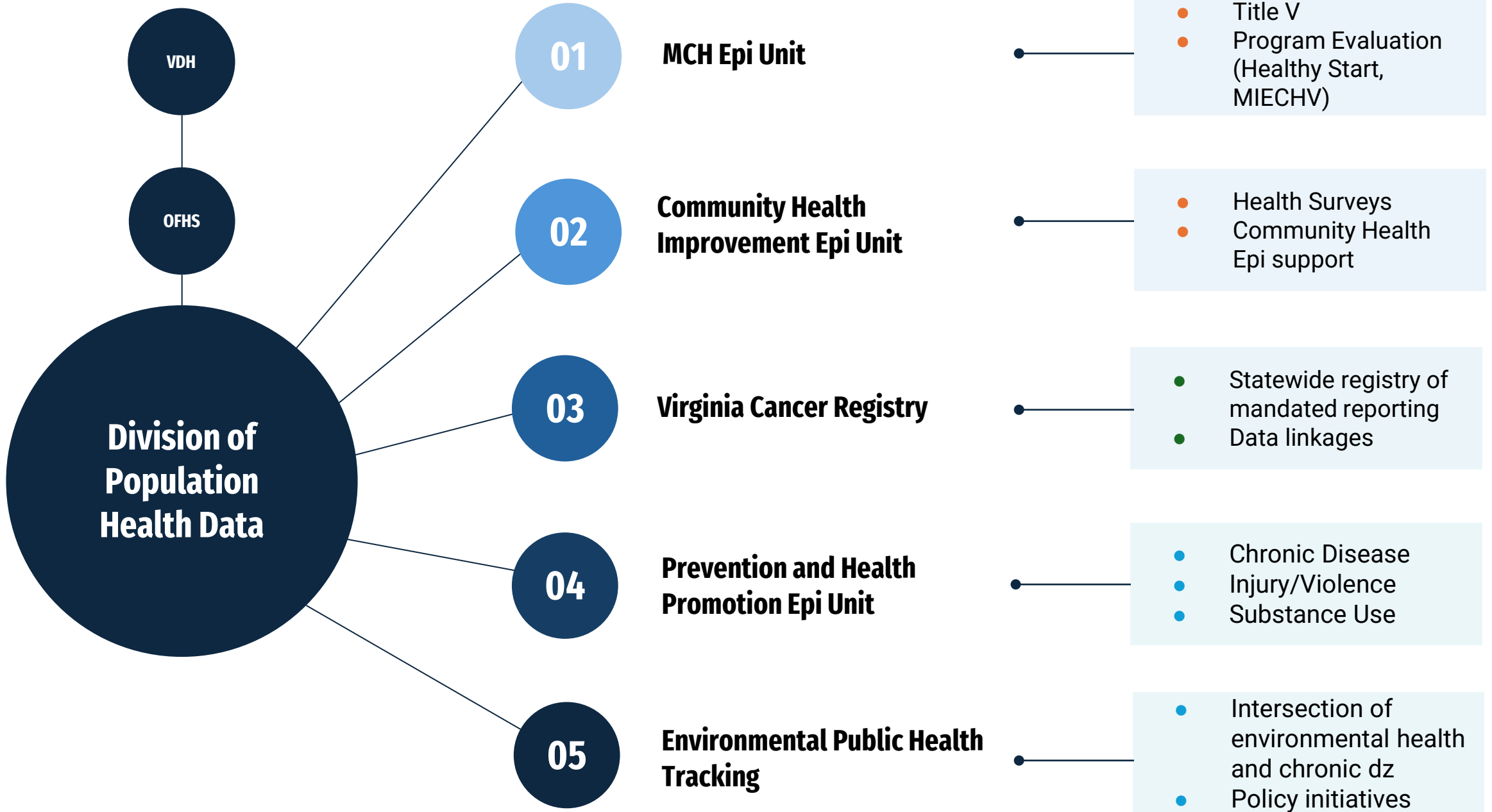
Maternal Health Data Sources at VDH

Task Force on Maternal Health Data & Quality Measures

Kelly Conatser, MCH Epidemiology Unit Supervisor
Virginia Department of Health
Oct 17, 2024

Office of Family Health Services





Overview of Available MCH Data



To expand our understanding and assist in discussions about Maternal and Child Health, we look at trends present in various data sources

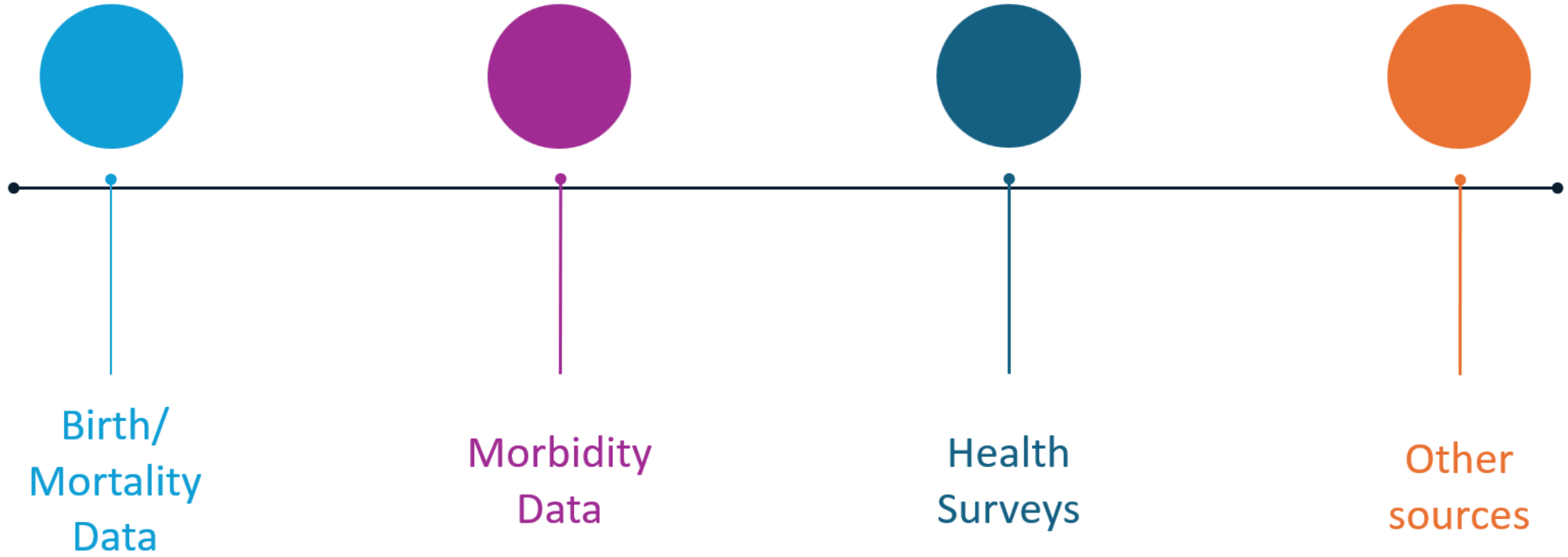


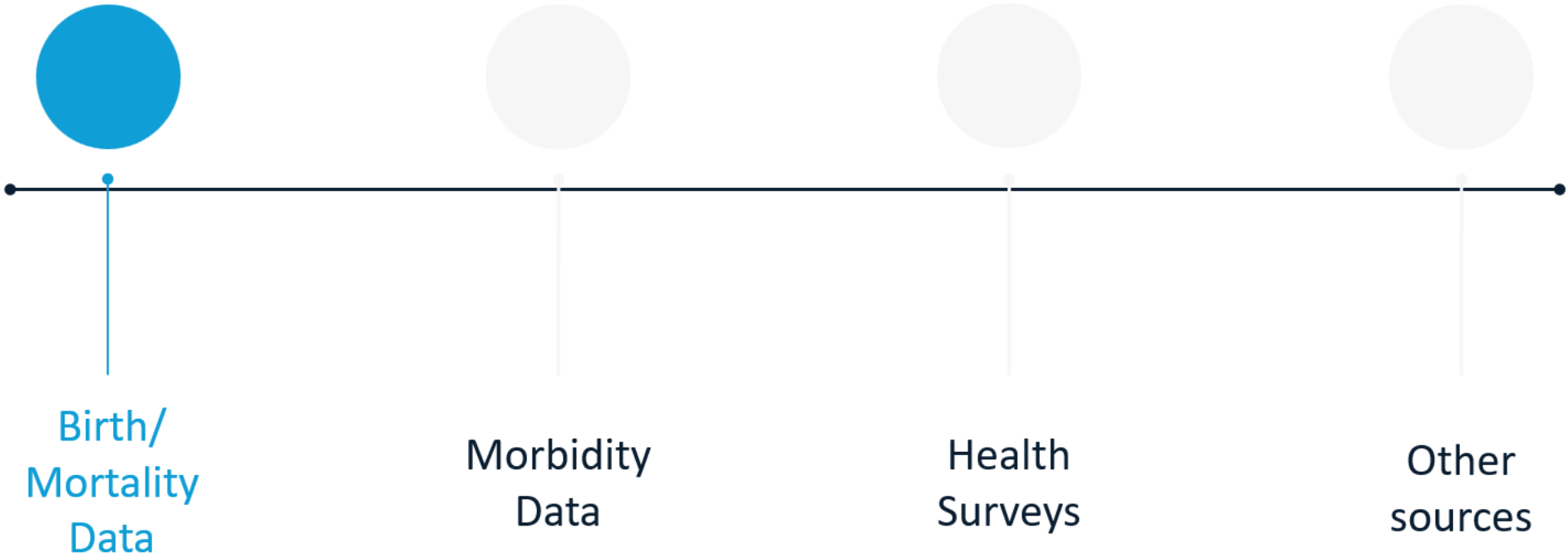
This data can be found in the following forms:

- Internal Data Sources
- External Dashboards
- Programmatic Data
- Publicly Available Data



Publicly available data can be found through federal partners or by organizations that collect, analyze, and process large datasets for users







Vital Records

Data Collection

- Birth certificate data; Fetal death certificate data;
- Death certificate data

Frequency & Years available

- Annual
- 2014-2023
- Prior year data complete by fall of current year (~9 month lag)

Indicators

Birth: Teen pregnancies, preterm birth, low birthweight, smoking, etc.

Death: Fetal mortality, Infant mortality, Child mortality, Maternal mortality

Strengths & Limitations

Strengths: Generalizable, provides prevalence, rate calculations, can drill down to census tract

Limitations: Snapshot, limited variables, timing

Timing of Prenatal Care

● First Trimester

Received prenatal care in the 1st to 3rd month of pregnancy

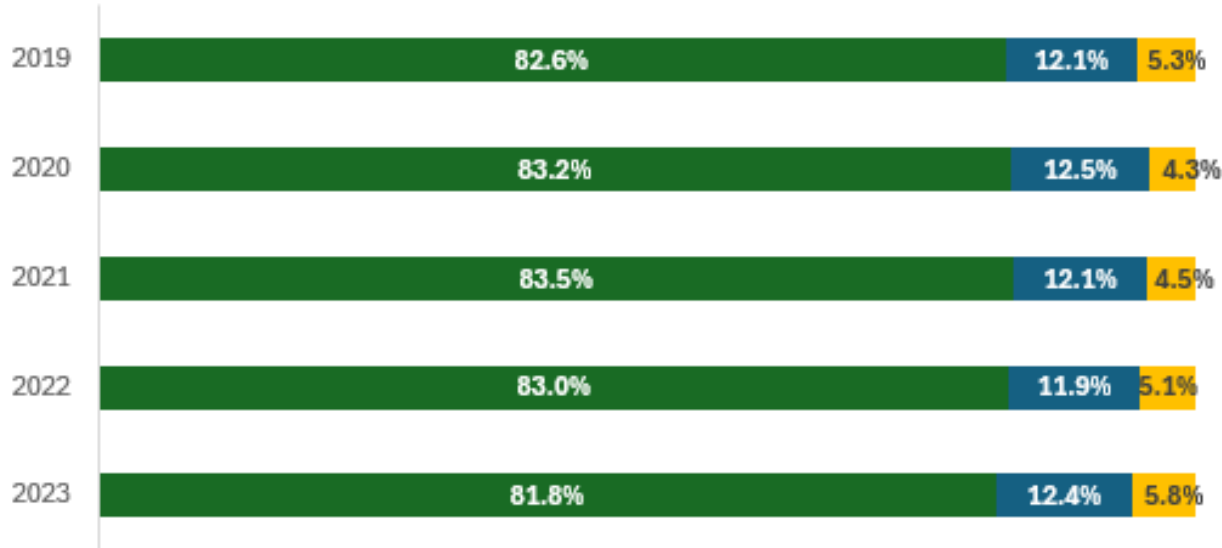
● Second Trimester

Received prenatal care in the 4th to 6th month of pregnancy

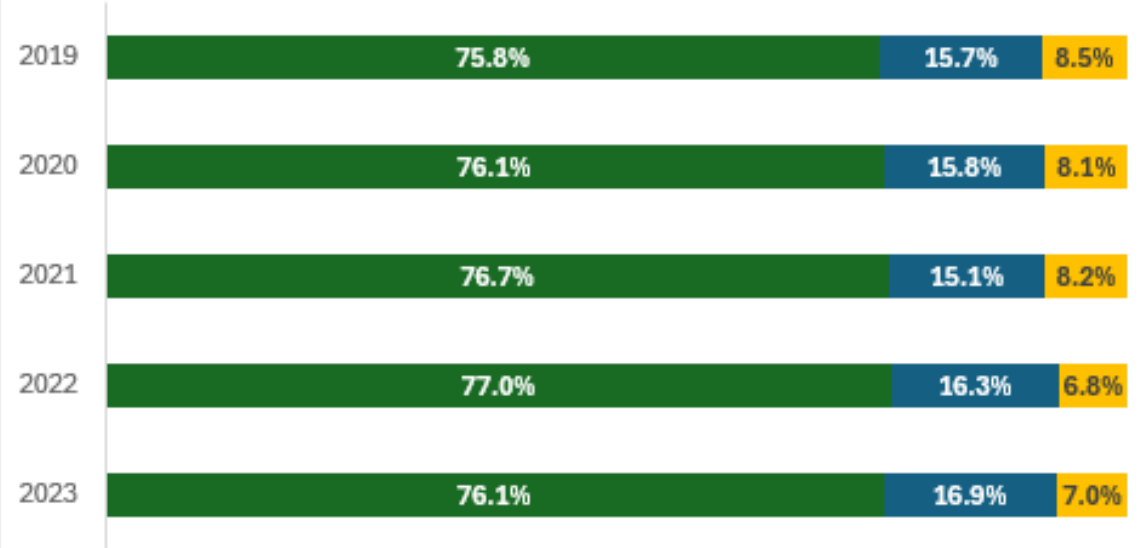
● Late/No Prenatal Care

Received prenatal care in the 7th to final month of pregnancy or none

Virginia - 5 Year Trends



National - 5 Year Trends



Prenatal Care Adequacy

Inadequate

Received <50% of expected visits for gestational age based on ACOG standards

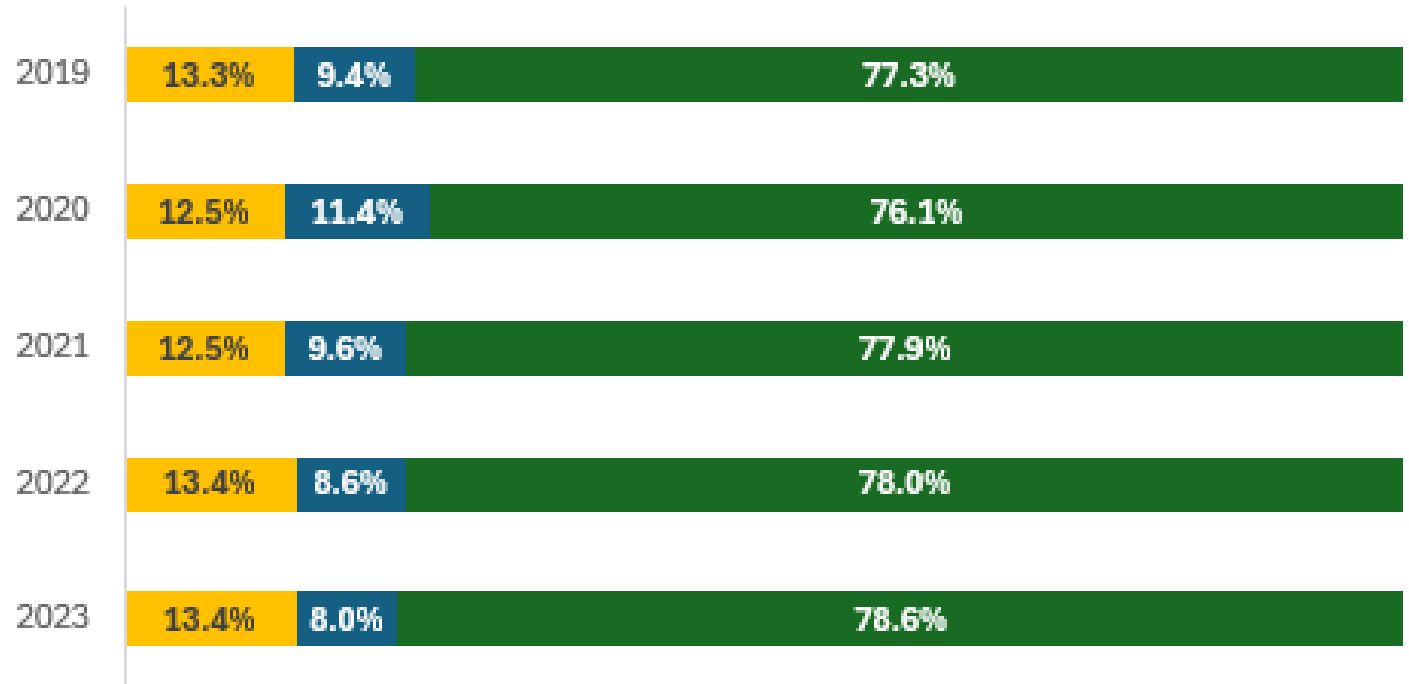
Intermediate

Received 50-79% of expected visits for gestational age based on ACOG standards

Adequate/Adequate Plus

Received at least 80% of expected visits for gestational age based on ACOG standards

Virginia - 5 Year Trends



Maternal & Child Health Dashboard

- The [MCH Dashboard](#) (2015-2022) was recently revamped and launched in May 2024
- The data indicators include:
 - Total Births (serves as denominator for several indicators)
 - Preterm Births, Low Birthweight, Late/No Prenatal Care, Maternal Smoking, Medicaid Births (counts and percentages)
 - Infant Deaths (Counts) and Infant Mortality (rate per 1,000 Live Births)
 - Total Pregnancies, Teen Pregnancies (rate per 1,000 females 15-19)
 - Population Counts (Female 15-44, Females 15-19)
- Dashboard to be updated annually with prior year data by December
- Upcoming dashboards: severe maternal morbidity hospitalizations; maternal mortality; maternal opioid use

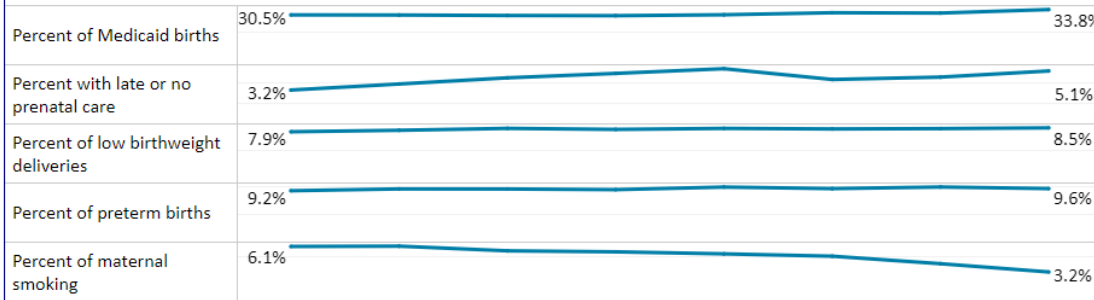
View of MCH Dashboard

Select Year: Show data by: Geography Name or Racial/Ethnic Group:

2022 Snapshot of MCH Population: All races/ethnicities

Females of reproductive age (15-44) [^]	1,697,768	Total pregnancies	113,862
Number of teen pregnancies	4,174	Total live births	95,615
Teen females aged 15-19 [^]	267,017	Number of Infant deaths	593
Teen pregnancy rate [^]	15.6	Infant mortality rate	6.2

2015 - 2022 Percent Trends for Select MCH Indicators: All races/ethnicities

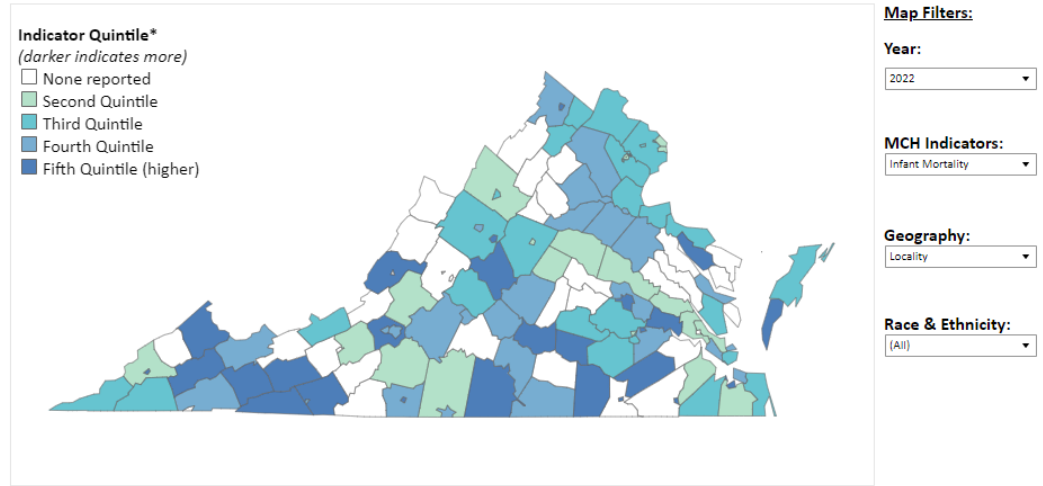


2015 - 2022 Rate Trends for Select MCH Indicators: All races/ethnicities



- Years available include 2015-2022
- Geography includes selections from Locality, District, or Region
- Race/Ethnicity = 5 categories (will expand in future)
- Data reported in Quintiles (Map) and Percent/Rate (Trends)

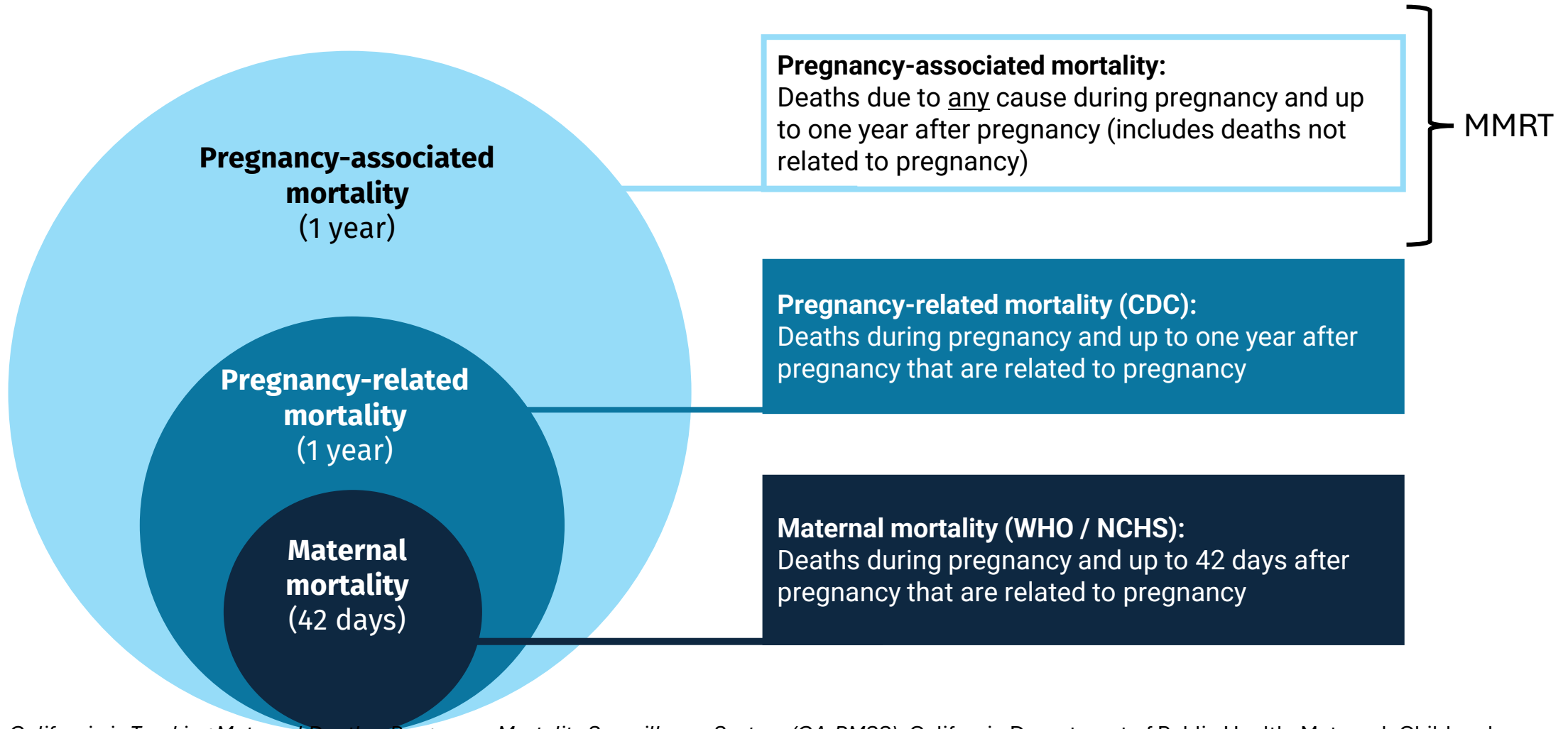
2022 Map of MCH Indicators by Geography and Race/Ethnicity



*For any given indicator, the range of values has been divided into five equal groups or quintiles. A higher quintile indicates higher or worse outcome, as indicated by darker shading.
[^]Population counts for 2021 and 2022 are based on 2020 estimates due to National Center of Health Statistics no longer producing bridged-race estimates. Updated population counts are forthcoming.

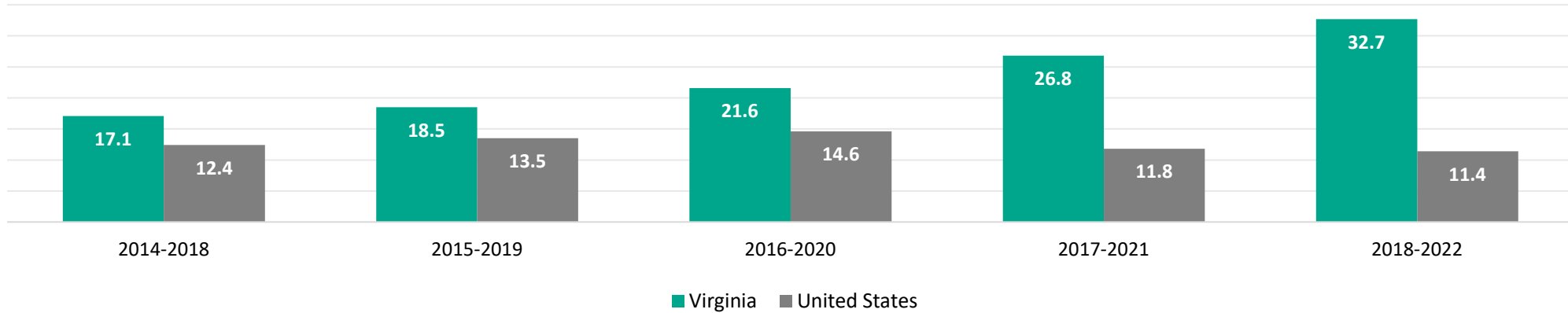
Maternal Mortality Surveillance

Maternal Mortality

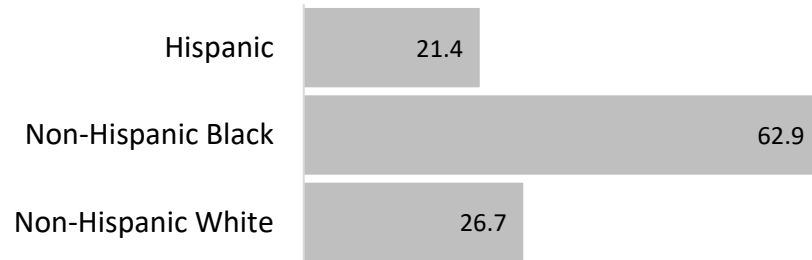


Maternal Mortality Rate (WHO/NCHS)

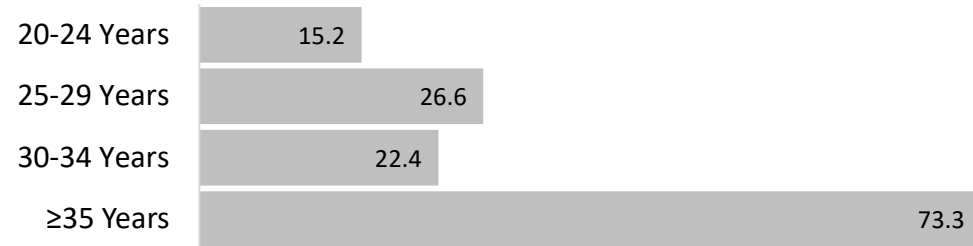
(per 100,000 live births)



Maternal Race & Ethnicity - (2018-2022)



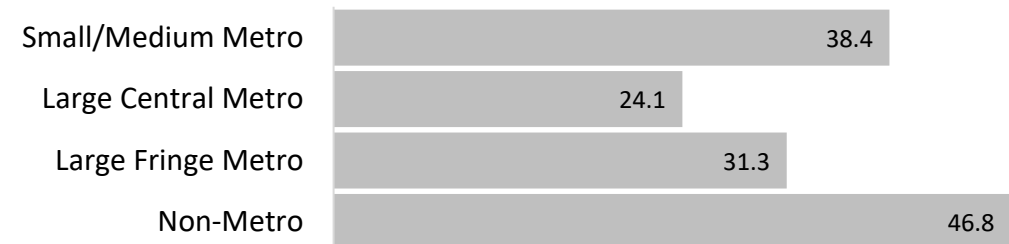
Maternal Age - (2018-2022)



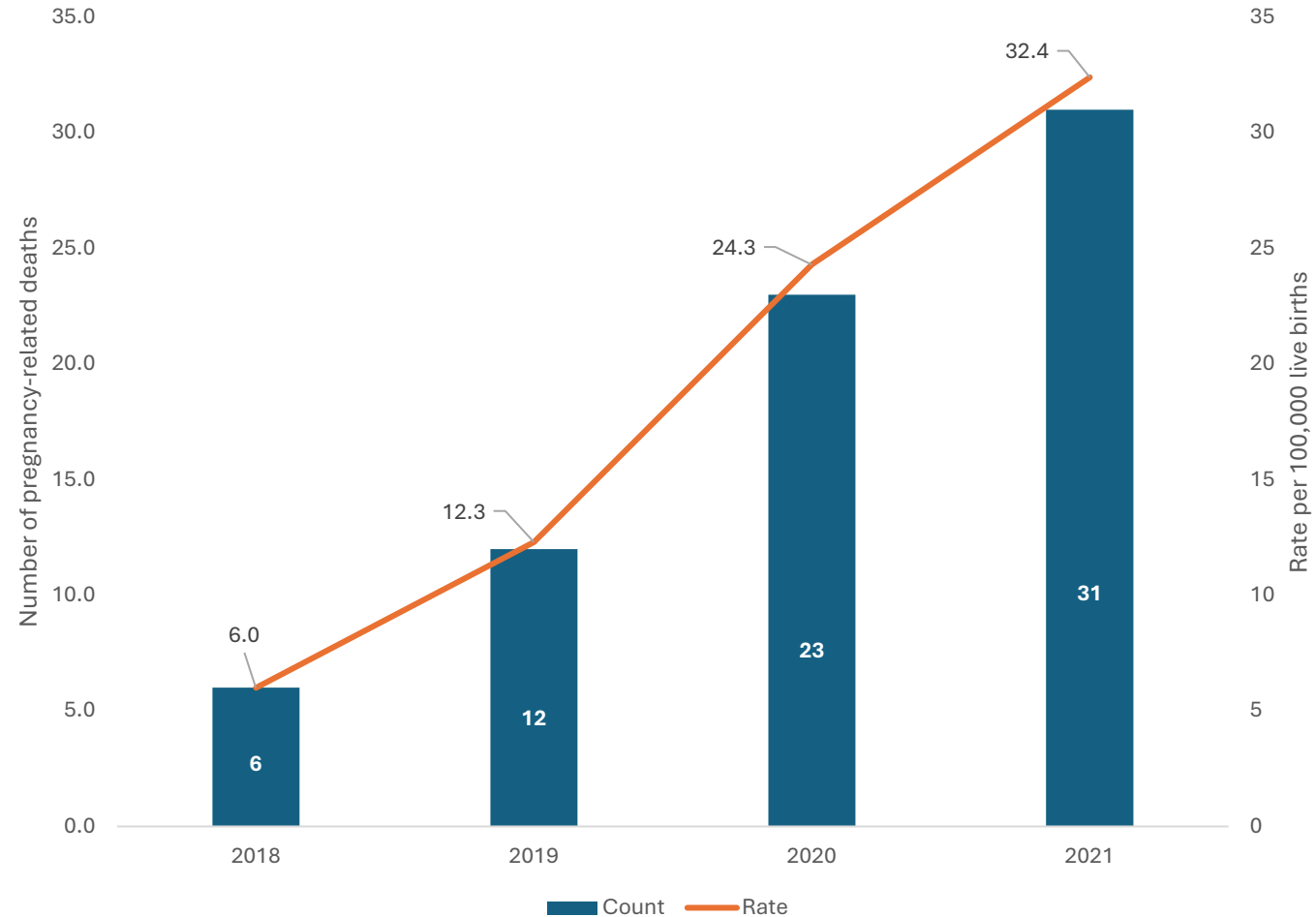
Nativity - (2018-2022)



Urban-Rural Residence - (2018-2022)

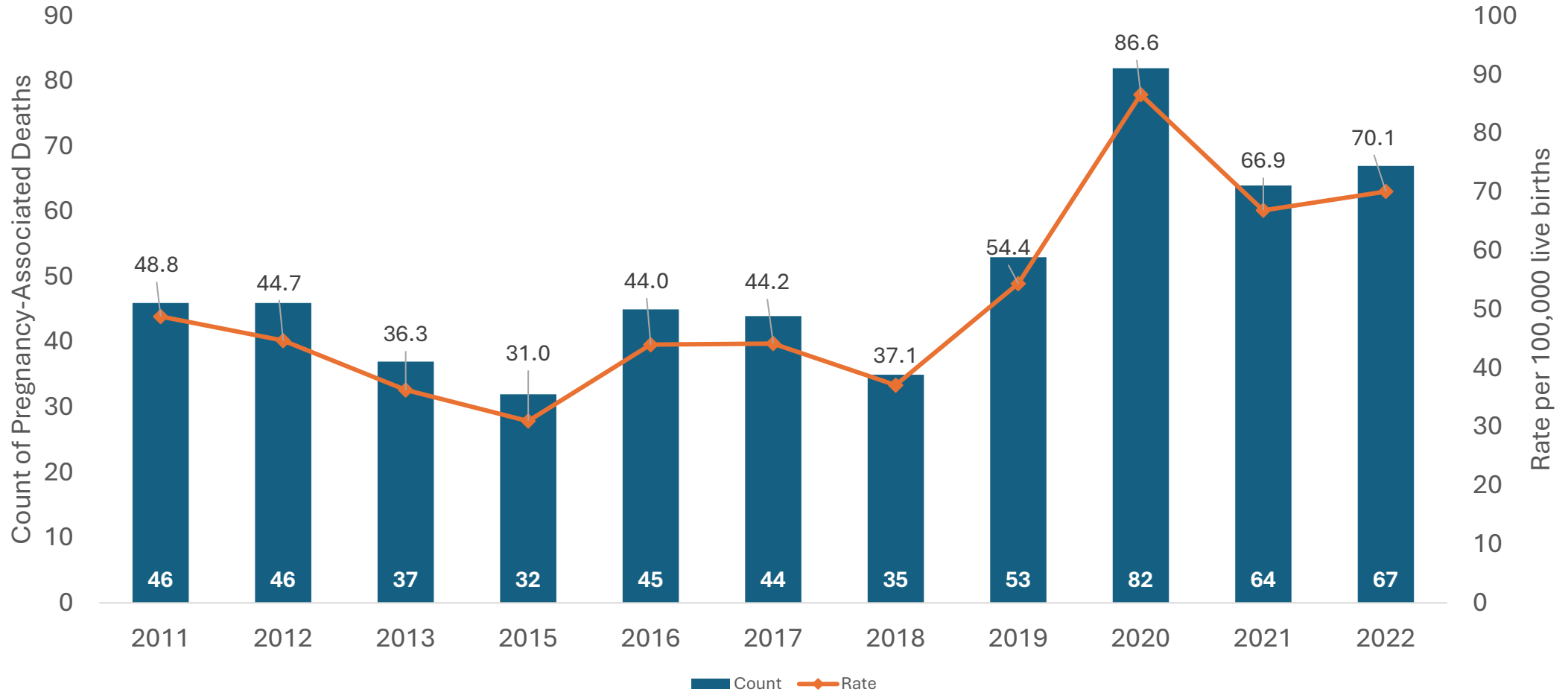


Trends in Pregnancy-Related Mortality (OCME)



***Data for 2019 and 2020 are preliminary

Trends in Pregnancy-Associated Mortality (OCME)

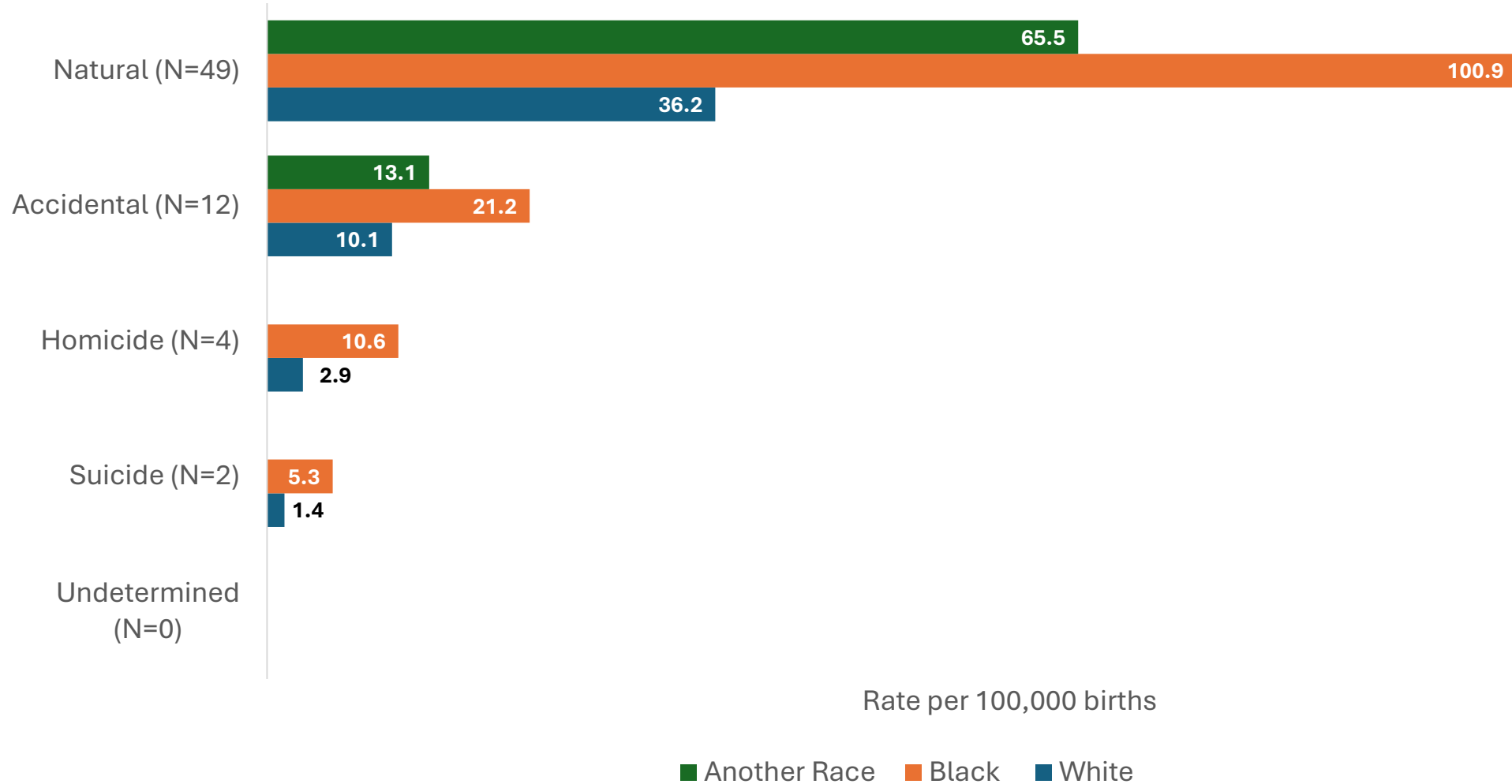


***Data for 2019 and 2020 are preliminary

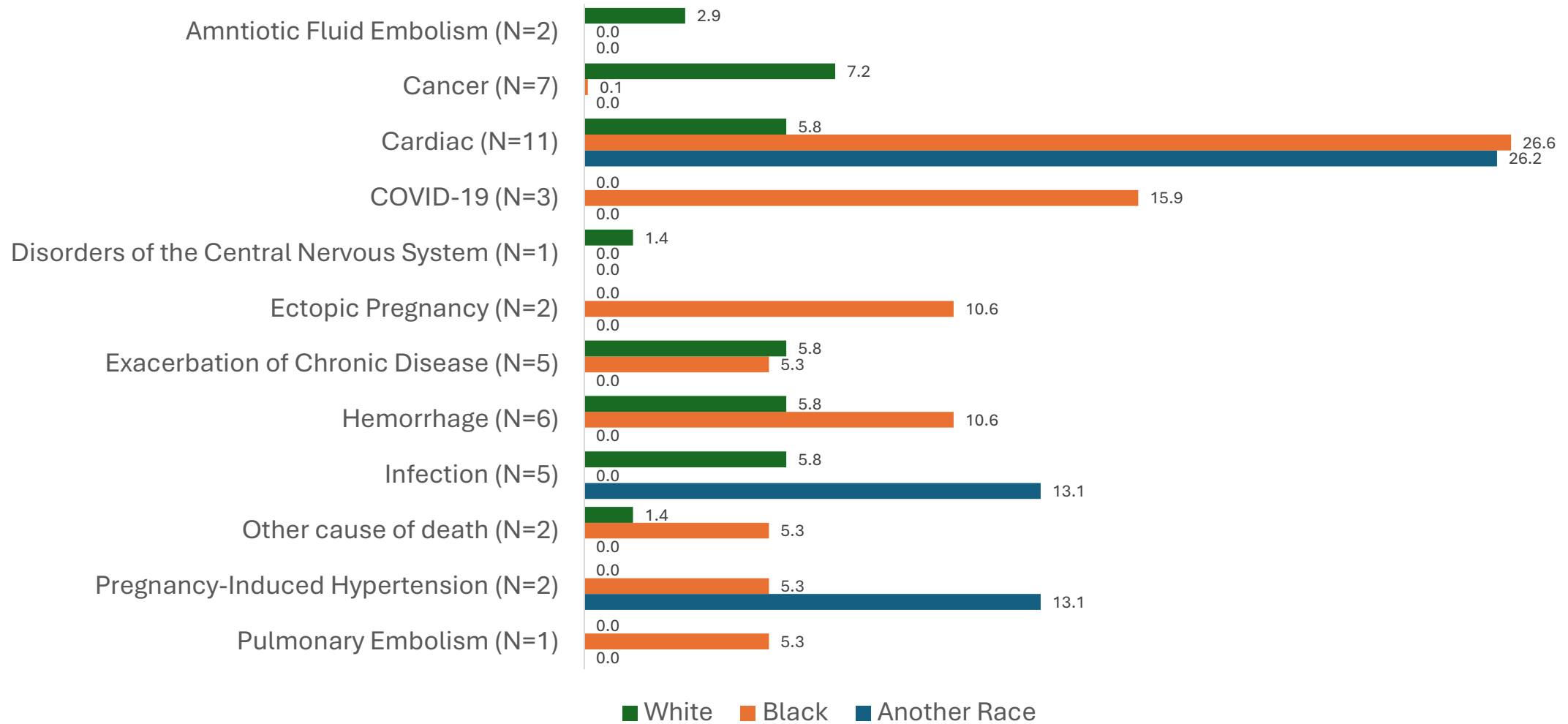
Pregnancy-Associated Mortality Data, 2022

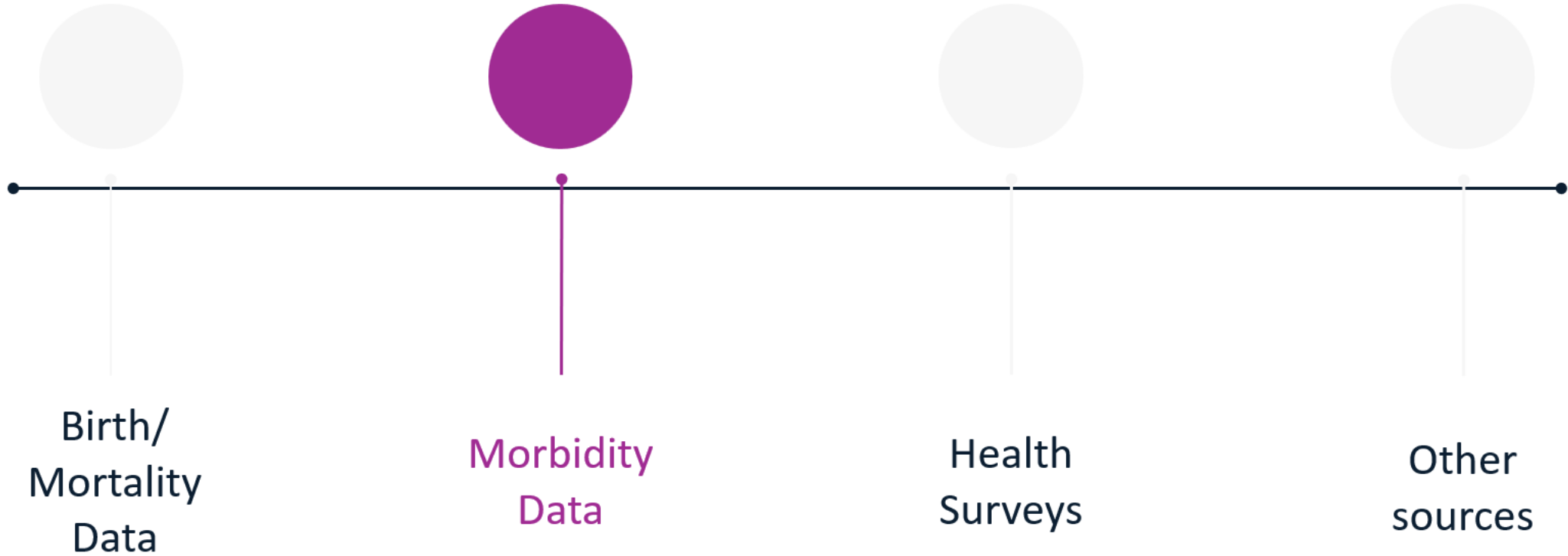
- 34.3% of deaths occurred while pregnant or on the day of delivery (N=23).
- 32.8% of deaths occurred 43 days or more past the date of delivery (N=22).
- Leading causes of death:
 - Cardiac Conditions (N=11; 16.4%)
 - Accidental Overdoses (N=10; 14.9%)
 - Cancer (N=7; 10.4%)
 - Hemorrhage (N=6; 9.0%)
 - Infection (N=5; 7.5%)

Racial Differences in Manner of Death, 2022



Rate of Natural Causes of Death by Race, 2022







Inpatient Hospitalization Data

Data Collection

- Inpatient discharge data from all Virginia-licensed hospitals

Frequency & Years available

- Quarterly (9-12 month lag)
- Up to 2023

Indicators

- **Severe maternal morbidity (21 indicators)***
 - Eclampsia
 - Acute Myocardial Infarction
 - End Organ Failure
- Maternal opioid use disorder
- Neonatal abstinence syndrome

Strengths & Limitations

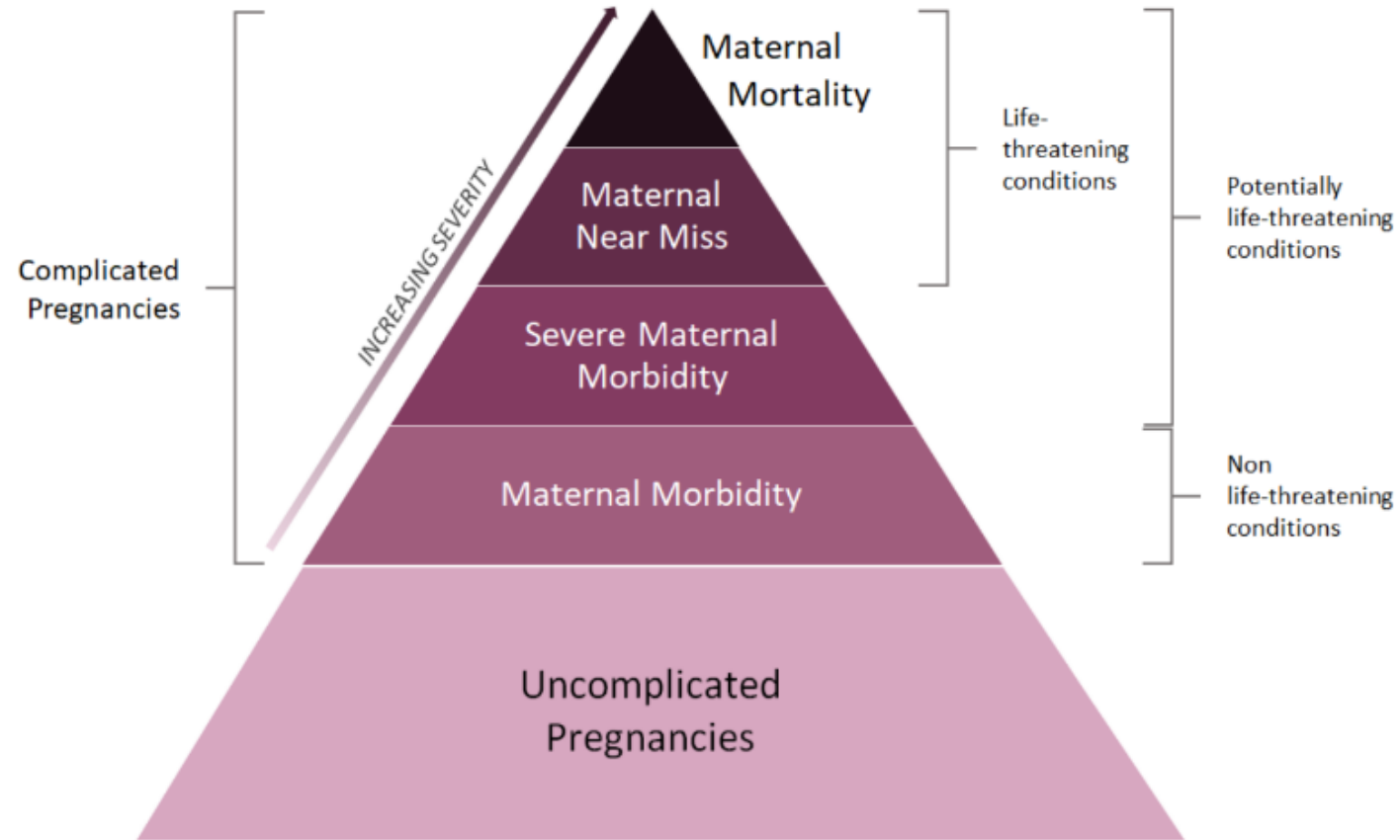
Strengths: Can use ICD-9/10 codes; nearly all acute-care hospitals

Limitations: Limited to inpatients; not linked/longitudinal, rates per hospitalizations; zip code accuracy

Severe Maternal Morbidity

- Collection of 21 unexpected outcomes of labor and delivery that can have serious short- or long-term health consequences
- Includes examples such as end organ failure, sepsis, eclampsia, pulmonary edema, amniotic fluid embolism, transfusion, etc.
- May precede or be associated with maternal mortality, and is relatively common
 - ~70 cases occur for each maternal death in the US
 - Can be used as an indicator of potential systems issues that can be addressed to improve patient outcomes

Severe Maternal Morbidity



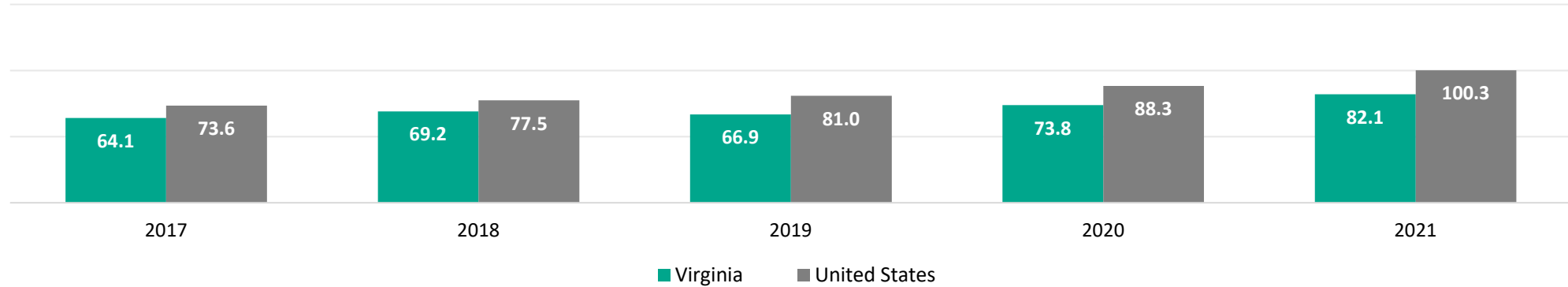
Adapted from:

New York City Department of Health and Mental Hygiene (2016). Severe Maternal Morbidity in New York City, 2008 – 2012. New York, NY.

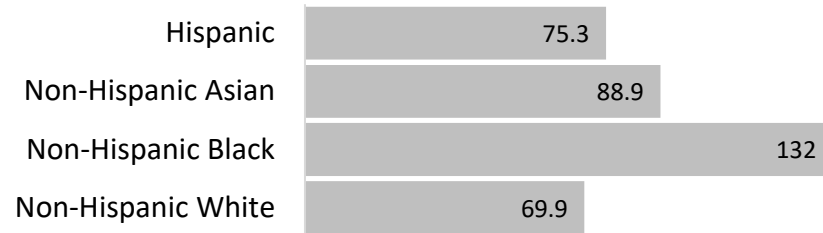
Vandenberghe G, Roelens K, Van Leeuw V, et al., The Belgian Obstetric Surveillance System to monitor severe maternal morbidity. Facts, Views & Vision in Obgyn. 2017;9(4):181-188.

Severe Maternal Morbidity Rate

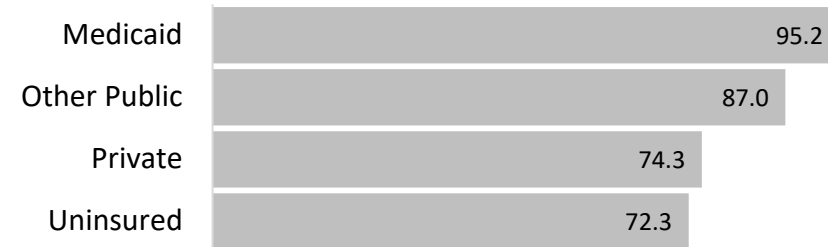
(per 10,000 delivery hospitalizations)



Maternal Race & Ethnicity - 2021



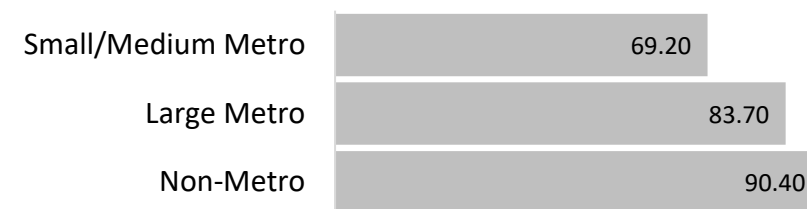
Maternal Insurance Type - 2021



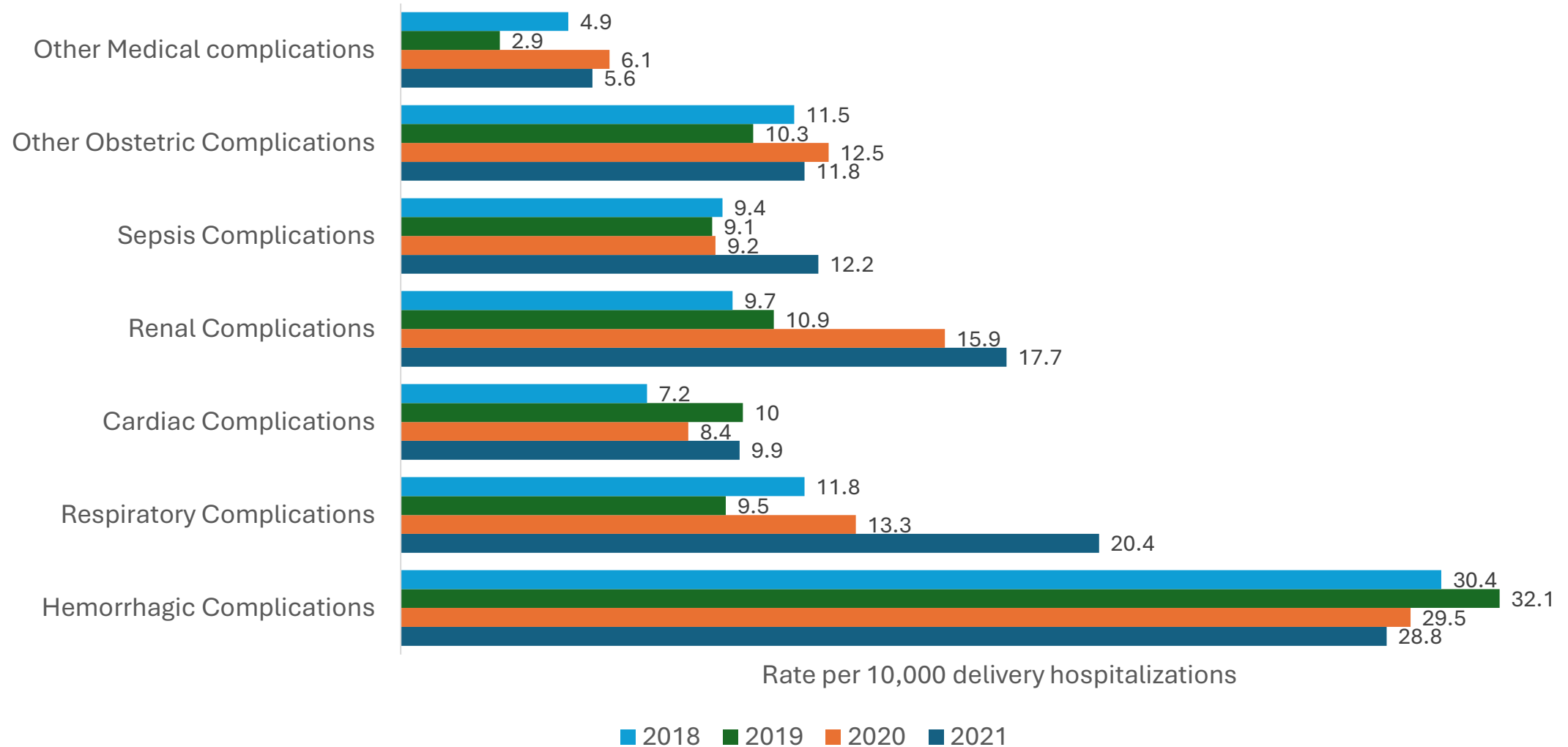
Median ZIP Code Income - 2021



Urban-Rural Residence - 2021



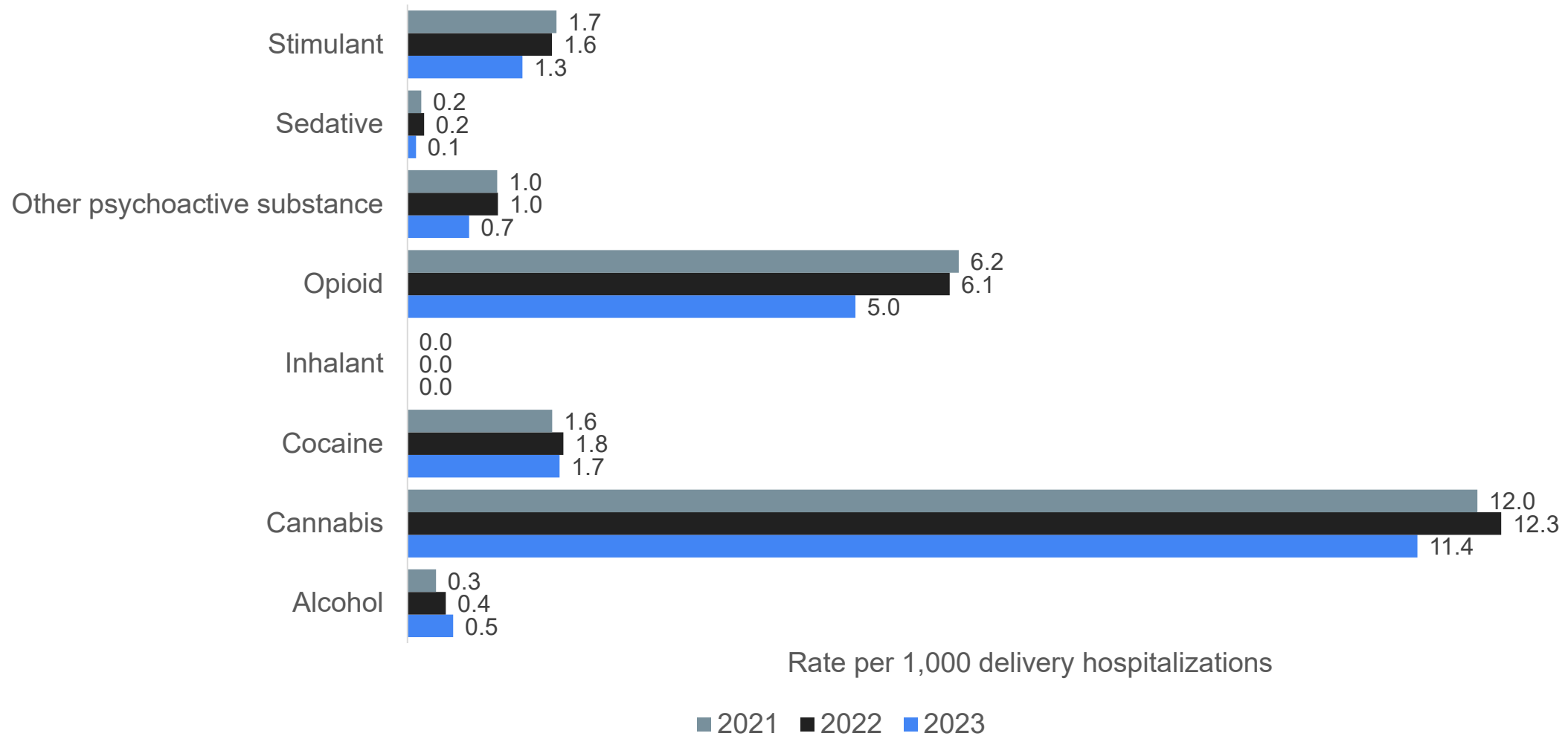
Severe Maternal Morbidity

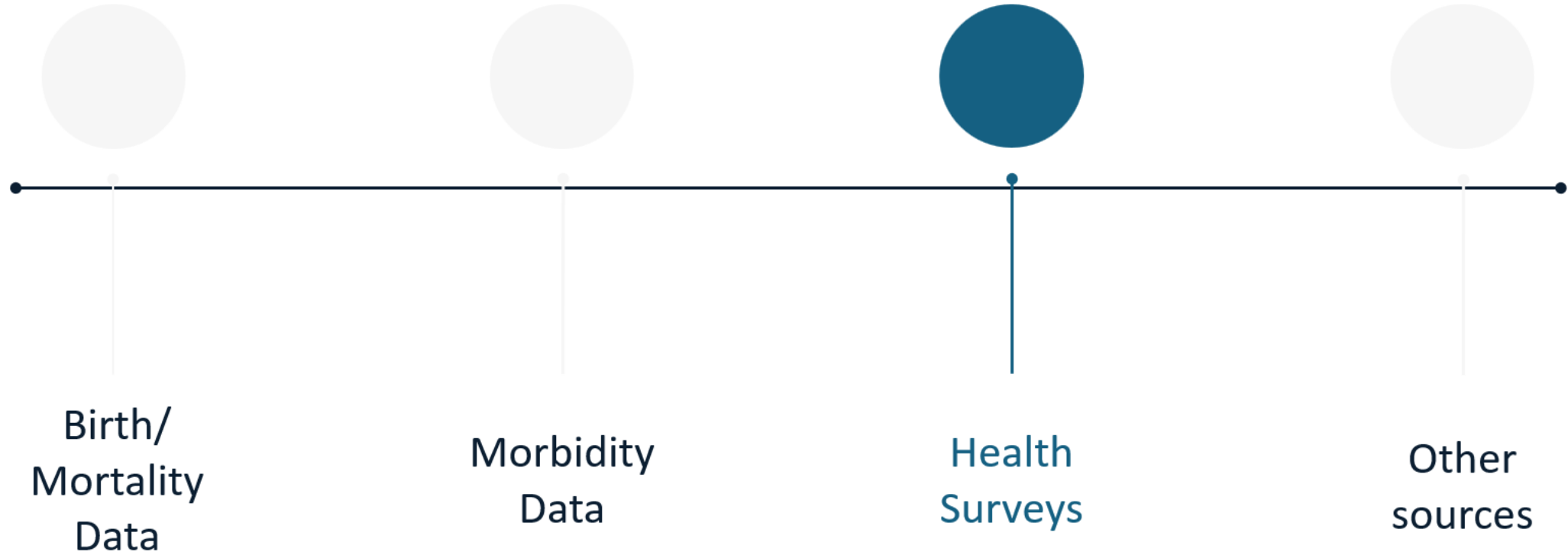


Maternal Substance Use

- Inpatient hospitalization data can be used to look at substance use at the time of delivery
 - E.g., Opioid related use diagnosis, alcohol, cannabis
- Substance-related diagnoses are diagnoses of a substance use disorder or use, abuse, or dependence of these substances.

Maternal Substance Use







Pregnancy Risk Assessment Monitoring System

Data Collection

- Survey of postpartum people 2-6 months after birth
- Birth certificate serve as sampling frame
- Postpartum Assessment of Health Survey for 2020 birth year

Frequency & Years available

- Annual
- Through 2022

Indicators

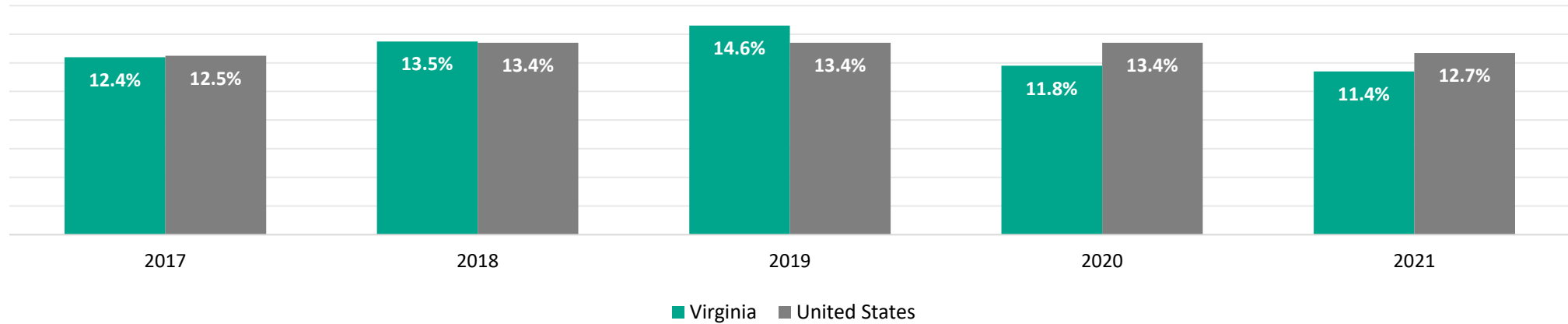
- Unintended and mistimed pregnancy
- Breastfeeding
- Postpartum depression
- Safe sleep
- Dental health

Strengths & Limitations

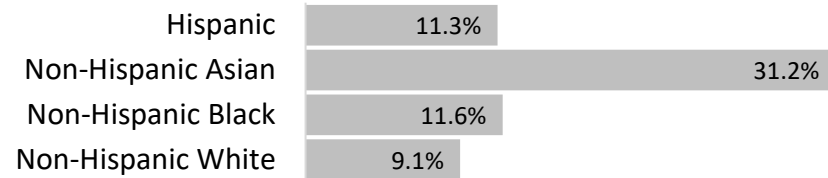
Strengths: Generalizable to the state; understand experiences before, during, after pregnancy

Limitations: Not able to drill down to district/localities (except RCHD, BRHD)

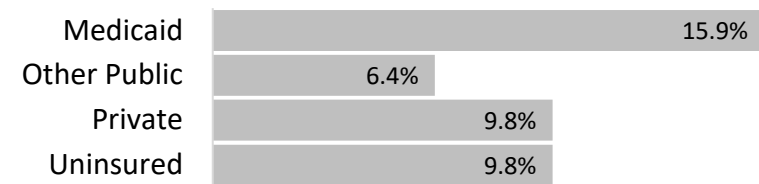
Percentage of Postpartum Depression



Maternal Race & Ethnicity - 2021



Maternal Insurance Type - 2021



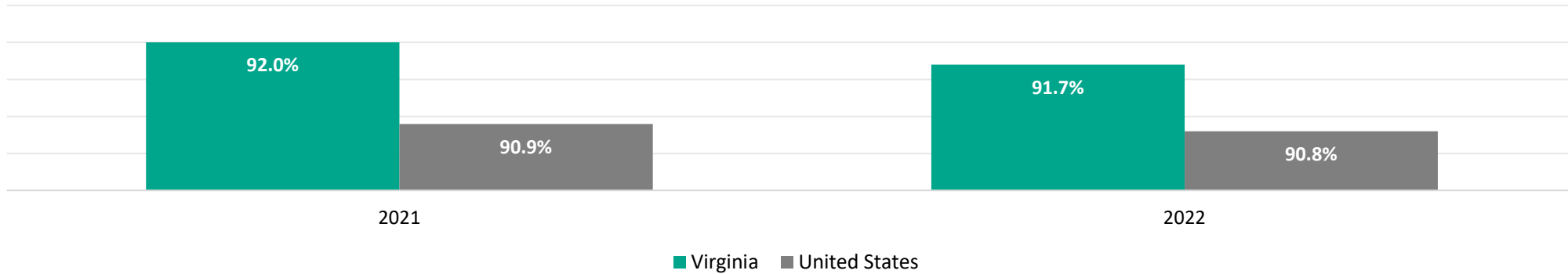
WIC Participation - 2021



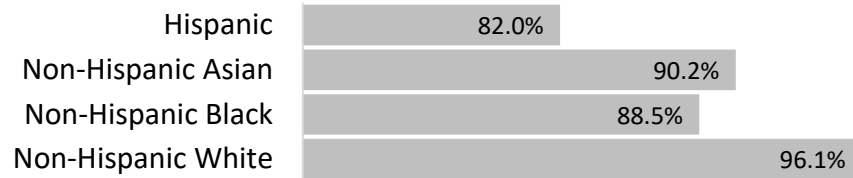
Urban-Rural Residence - 2021



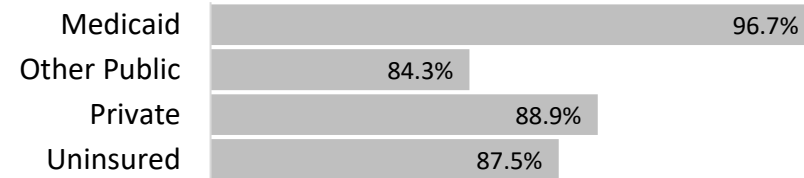
Percentage of Postpartum Visit - Attendance



Maternal Race & Ethnicity - 2022



Maternal Insurance Type - 2022



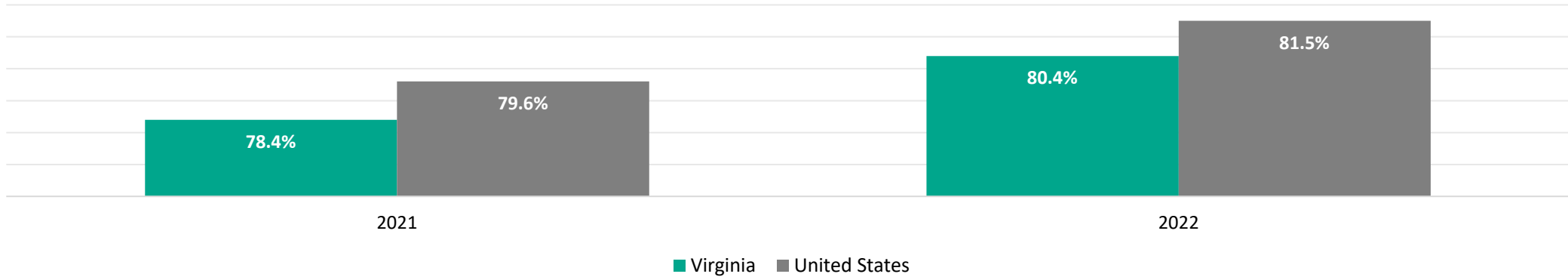
WIC Participation - 2022



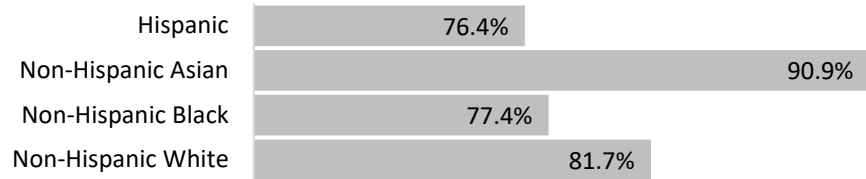
Urban-Rural Residence - 2022



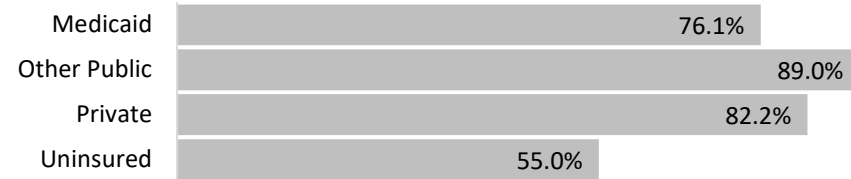
Percentage of Postpartum Visit - Recommended Components:
a) Discussed birth control and b) Asked about depression and anxiety



Maternal Race & Ethnicity - 2022



Maternal Insurance Type - 2022



WIC Participation - 2022

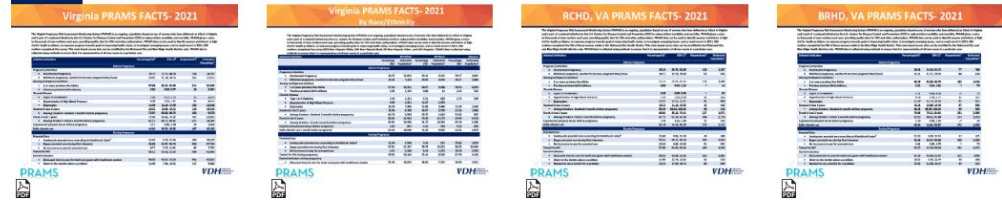


Urban-Rural Residence - 2022



View of PRAMS Website and Dashboard

ANNUAL SURVEILLANCE DATA



- Virginia PRAMS Facts 2021
- Virginia PRAMS Facts by Race 2021
- Richmond City Health District 2021
- Blue Ridge Health District 2021
- Virginia PRAMS Facts 2020
 - Virginia PRAMS Facts by Race 2020
 - Richmond Health District
 - Blue Ridge Health District
- Virginia PRAMS Facts 2019
 - Virginia PRAMS Facts by Race 2019
 - Richmond Health District
 - Thomas Jefferson Health District
- Virginia PRAMS Facts 2018

Dashboards on unintended pregnancy and breastfeeding are available. Additional dashboards to be added.

Breastfeeding Initiation - Yes Ever Breastfed or Pumped to Feed Baby

VA PRAMS Data: 2017-2021

Table 1: Percent of Breastfeeding Initiation by Year & Stratum

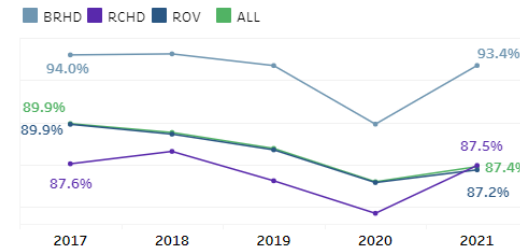
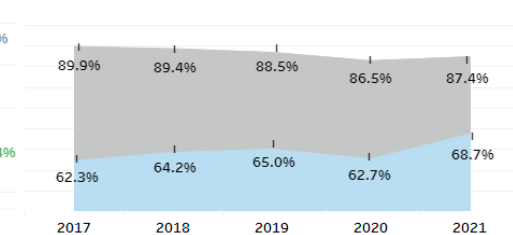


Table 2: Percent by Year of Mothers Reporting: Breastfeeding Initiation & Breastfeeding at Time of Survey



Filters:

- Stratum *:
 - All of VA
 - BRHD
 - RCHD
 - ROV

* Does not filter Table 1

Year *:

- 2017
- 2018
- 2019
- 2020
- 2021
- All Years

* Only filters Demographics

Demographics of Breastfeeding Initiation

Table 3: Race/Ethnicity

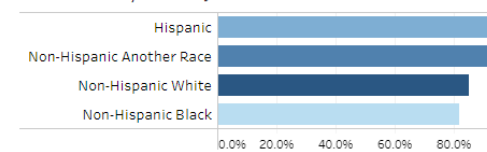


Table 4: Highest Level of Education Completed

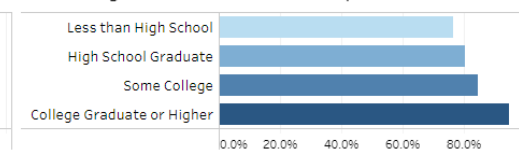


Table 5: Insurance Coverage

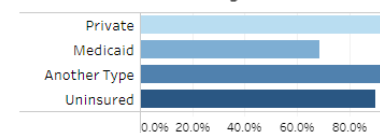


Table 6: Marital Status

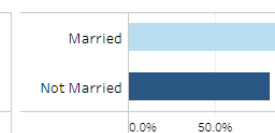
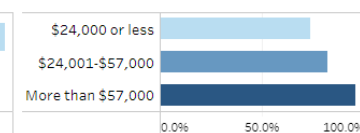


Table 7: Income Level



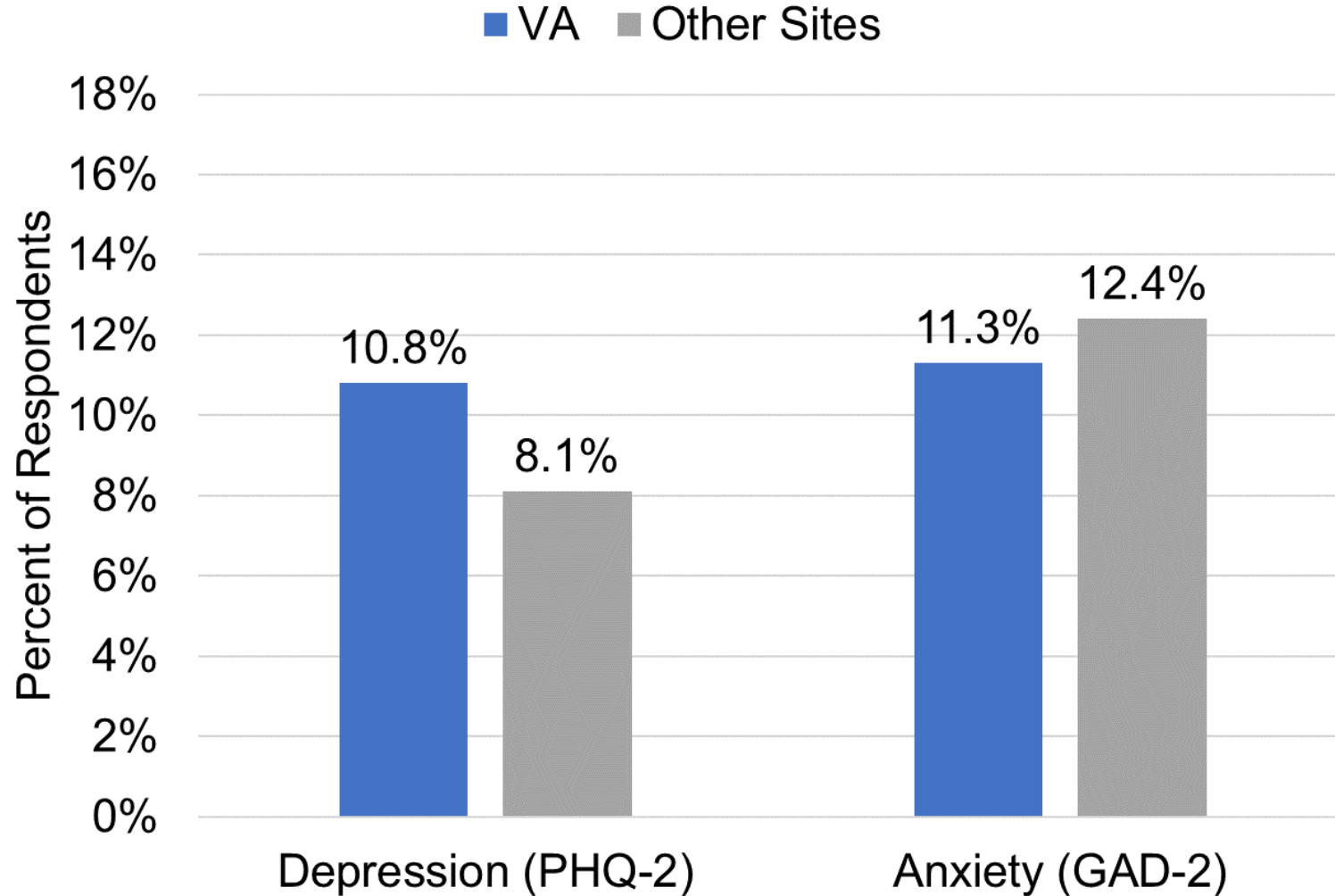
*Note: BRHD: Blue Ridge Health District, RIC: Richmond City Health District, ROV: Rest of Virginia

The PRAMS "DATA" tab contains tables of commonly requested indicators, select topics by demographics, and fact sheets/ infographics.

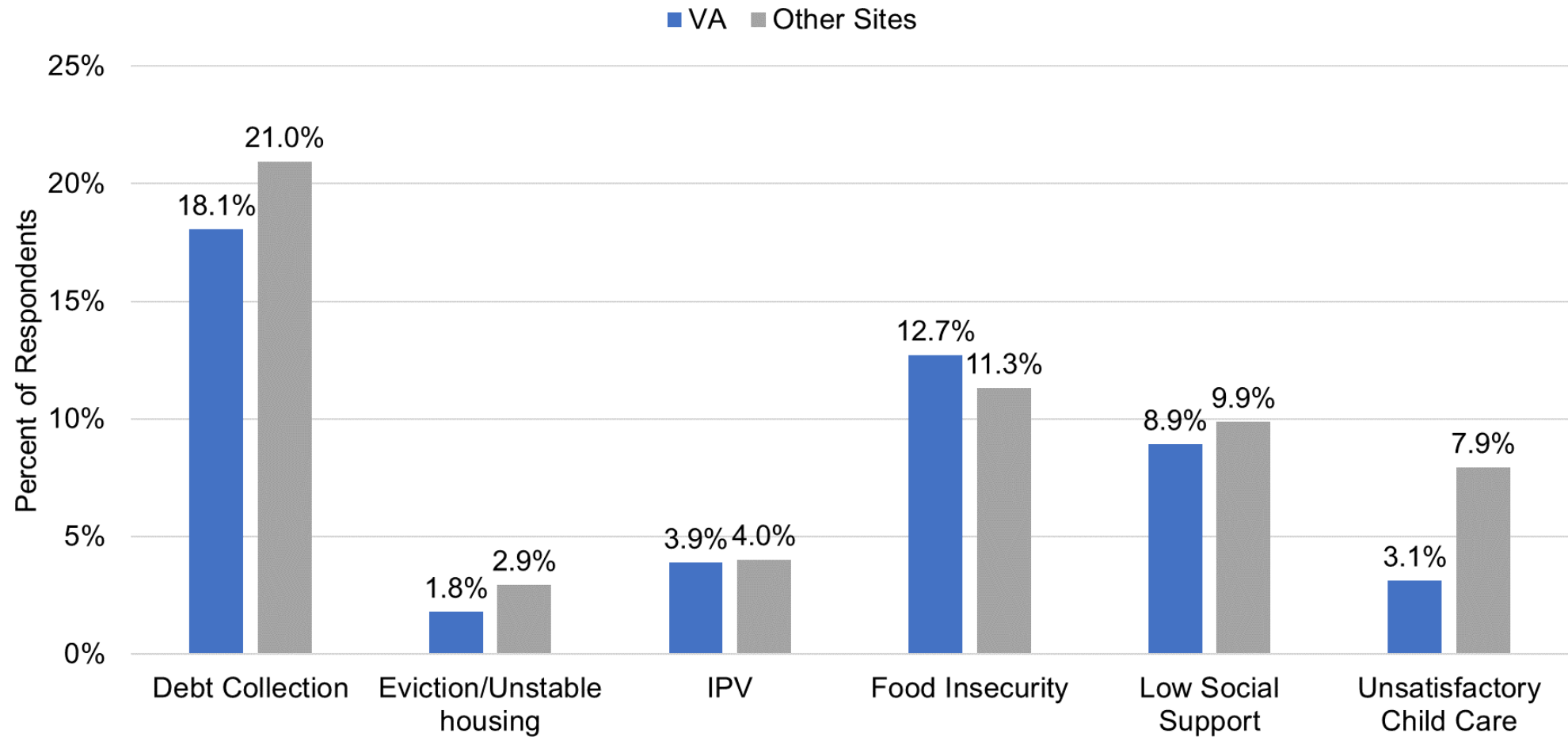
Postpartum Assessment of Health Survey (PAHS)

- Survey among PRAMS respondents 12-14 months after birth and uses CDC PRAMS methodology
- Interdisciplinary research collaboration between Columbia University and seven city and state departments of health (including VDH) to inform state/local initiatives to improve postpartum health
- Data collected on 2020 Birth cohort
- Includes information on sociodemographics, health care access, physical and mental health (including substance use), social determinants, mistreatment and discrimination experienced, family leave

Mental Health (VA vs other sites)



Social Needs and Risks (VA vs other sites)



Intimate Partner Violence (IPV)

- IPV is a contributor to pregnancy-associated mortality
- IPV has maternal and fetal impacts:
 - Maternal: insufficiency of care, poor nutrition, illicit substance use, sexual risk, and mental health
 - Fetal: poor birth outcomes, perinatal death
- Data on IPV in pregnancy is lacking due to low screening, despite recommendations for universal screening
 - Several validated tools exist, but no gold standard
 - Computer-assisted, self-administered modality for screening preferred
- Barriers:
 - Provider knowledge/perceptions, lack of effective interventions, fear of offending patients, provider personal experiences, lack of standardized recommendations



Behavioral Risk Factor Surveillance System

Data Collection

- Telephone survey of adults age 18 and older
- Collects state data regarding health-related risk behaviors, chronic health conditions, and use of preventive services

Frequency & Years available

- Annual
- Through 2022

Indicators

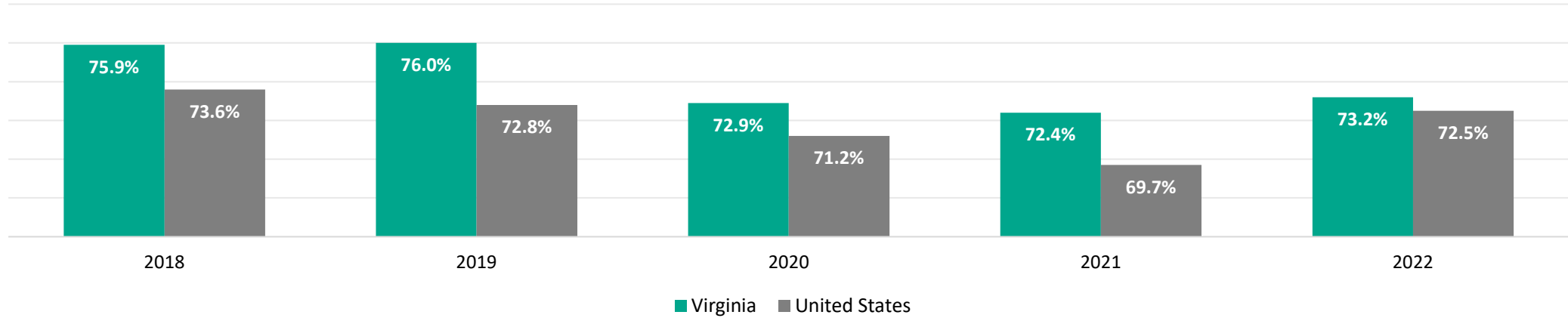
- Full family planning module
- Health care access
- Demographics (i.e., pregnancy status)
- Oral health
- Tobacco use and Alcohol consumption

Strengths & Limitations

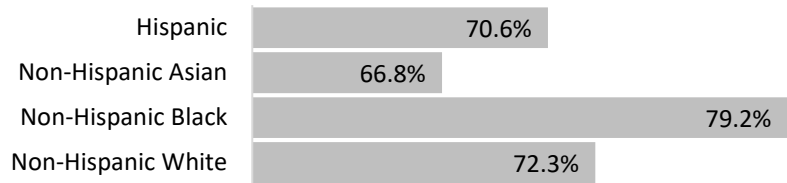
Strengths: Generalizable to the state; small area estimates available

Limitations: Not all questions are asked every year, in every state

Percentage of Well-Woman Visits



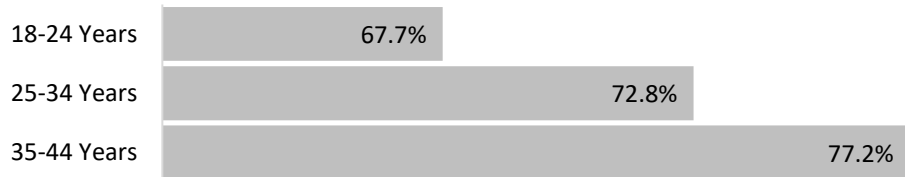
Maternal Race & Ethnicity - 2022



Insurance Type - 2022

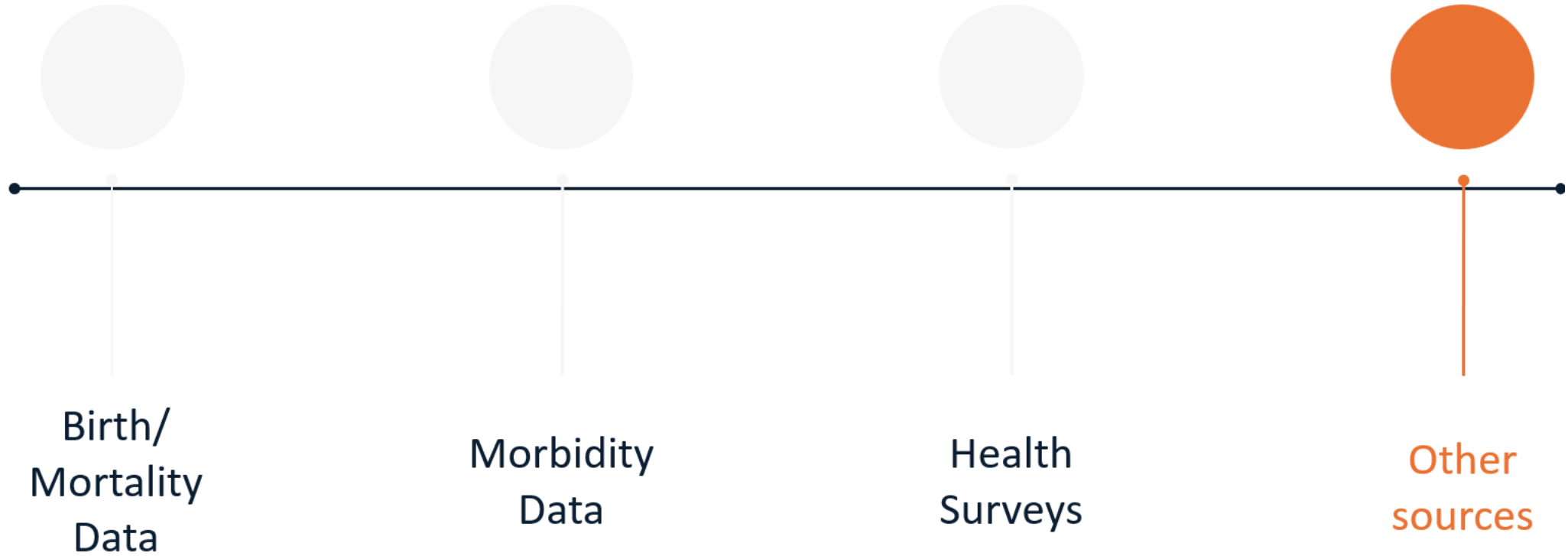


Reproductive Age - 2022



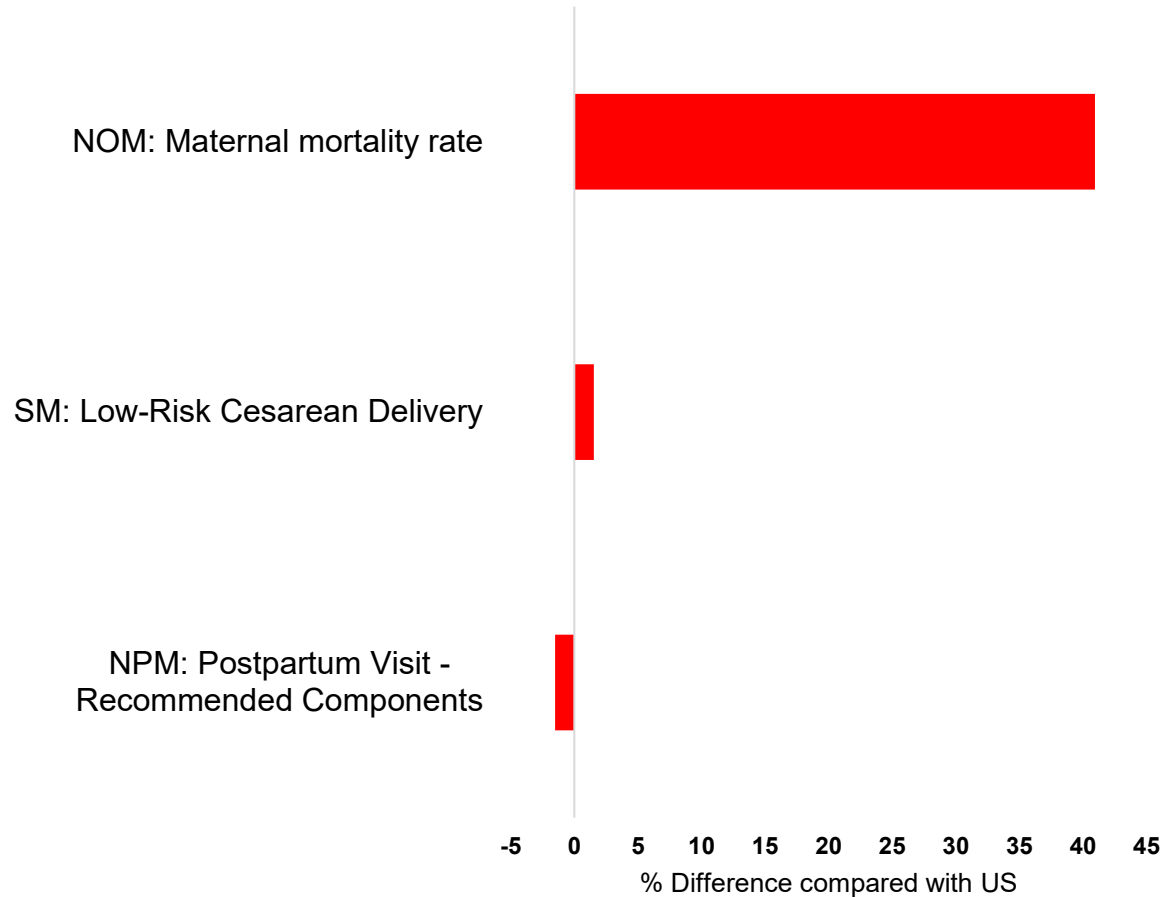
Urban-Rural Residence - 2022



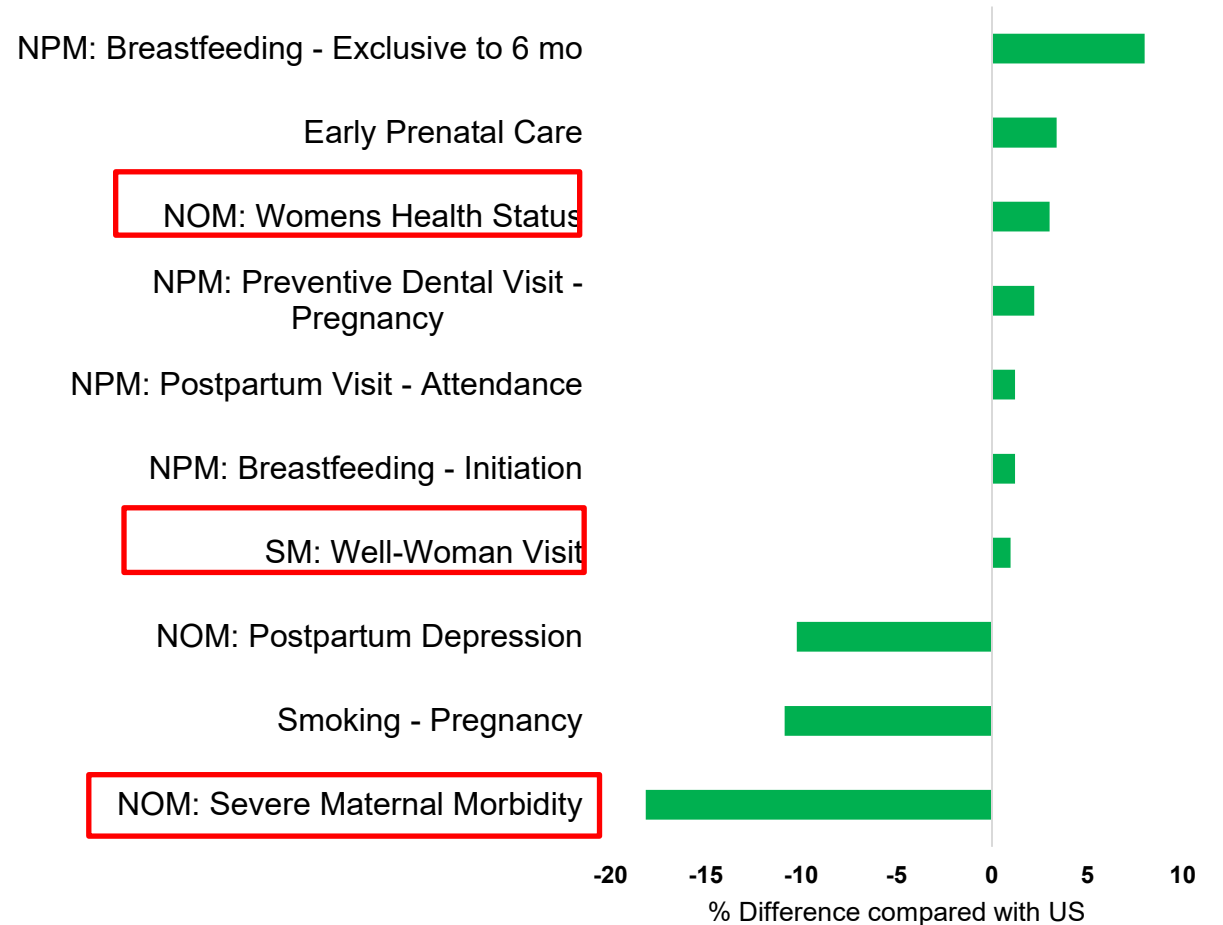


Title V Maternal and Child Health

Women/Maternal Health Metrics where VA has opportunity



Women/Maternal Health Metrics where VA is doing well



Other Dashboards and Portals

Current

[Community Health Improvement Data Portal](#)
[mySidewalk](#)
[Neonatal Abstinence Syndrome](#)

External

[March of Dimes - PeriStats](#)
[Title V Information System](#)
[HRSA Maternal/Infant Health Mapping Tool](#)

Future

- Division webpage
- Expanded PRAMS dashboard
- Expanded Infant Mortality dashboard
- Severe Maternal Morbidity Dashboard
- Maternal Mortality Dashboard
- Environmental Public Health Tracking



Virginia Maternal and Child Health Overview

What is mySidewalk?

- Data story telling platform combining data topics to inform policy and change about communities

What makes it unique?

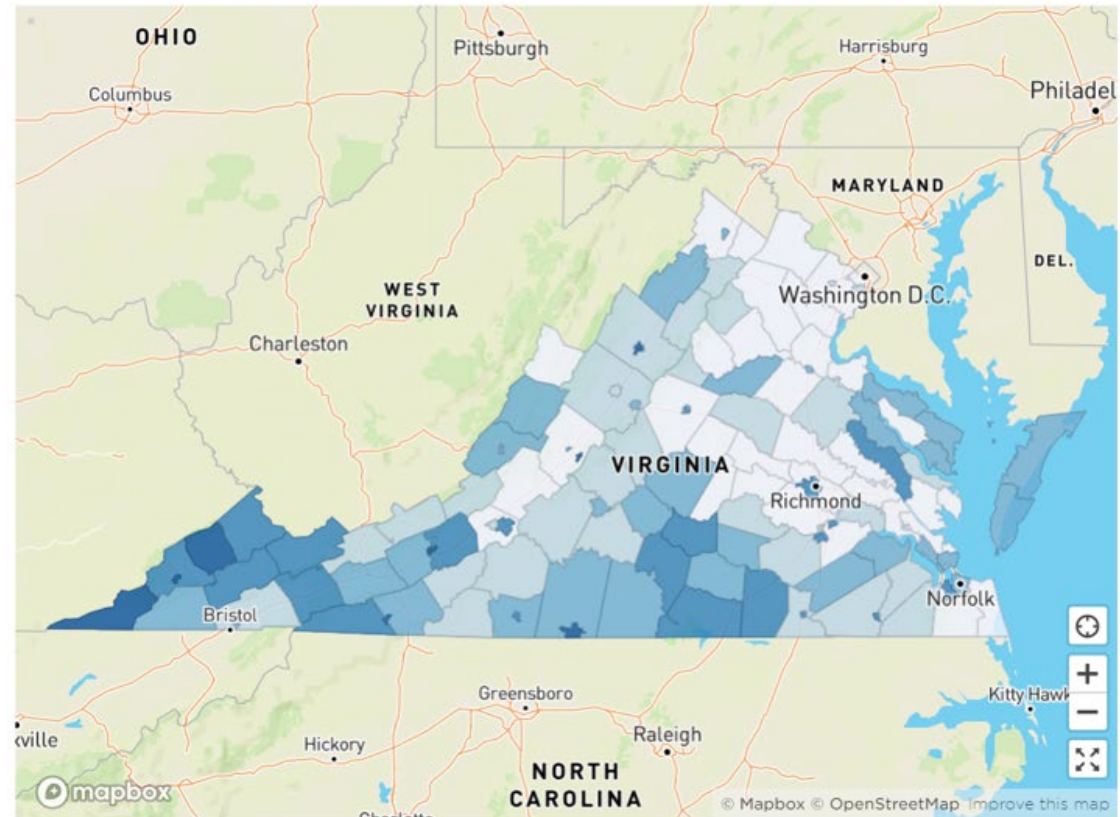
- 5 billion data points
- 50+ trusted sources
- 16 levels of granularity
- Incorporates AI to query data points quickly
- Ability to use state data to visualize data that is not part of the library

Impact of Maternal and Child Health

- Women/Maternal Health**
- Infant Health
- Child and Adolescent Health
- Social Determinants of Health

Generate PDF

Female Population Below Poverty by County



VIRGINIA'S PLAN FOR WELL-BEING

DATA ▾

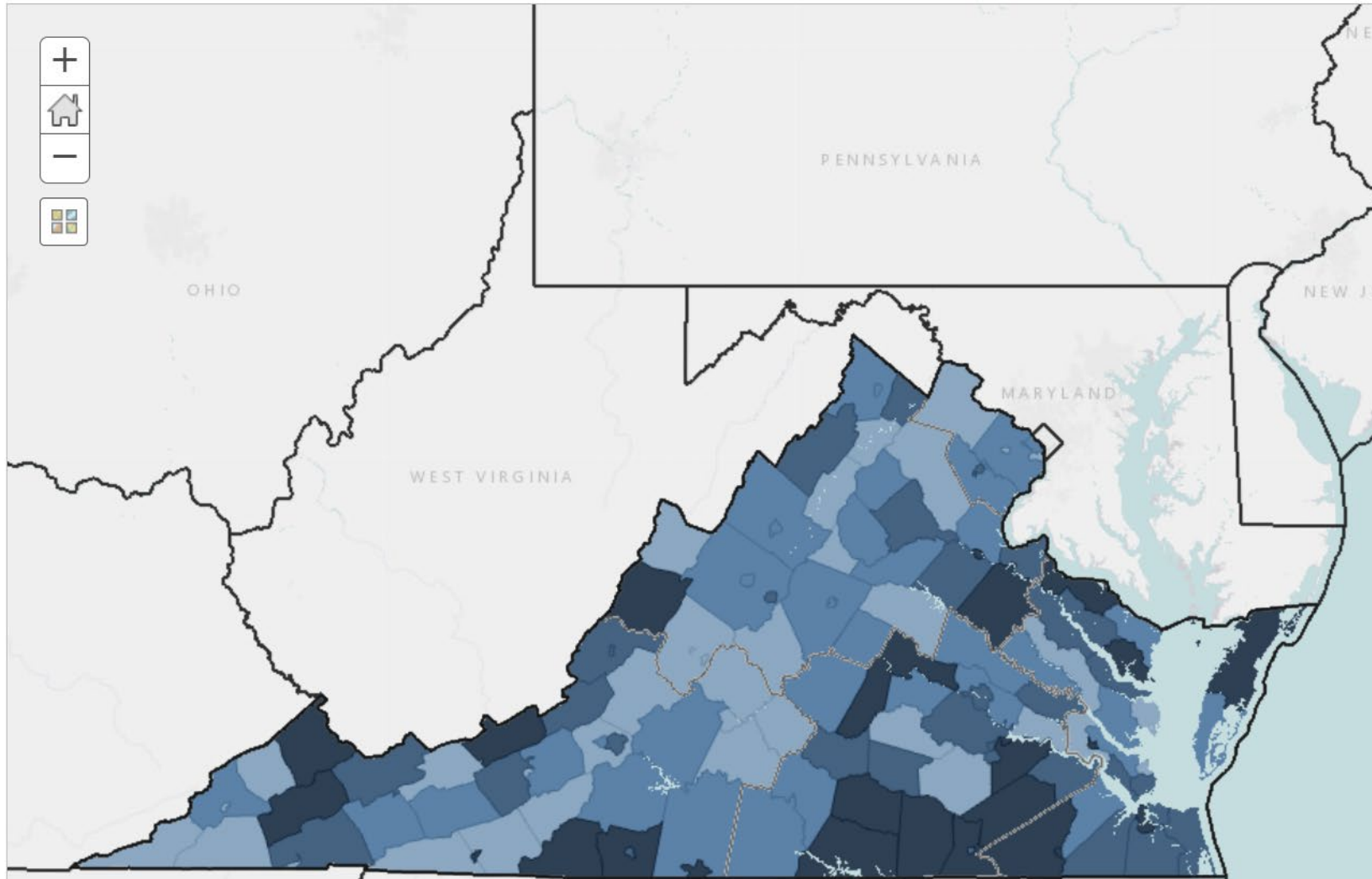
VIRGINIA'S PLAN FOR WELL-BEING ▾

RESOURCES

GET INVOLVED! ▾

[+ ADD DATA](#) [⚙ TOOLS](#) [🗑 CLEAR MAP](#)

[↗ Share](#) [📄 Export](#) [🛈 Help](#)



Enter a location

MAP LAYERS

Map Label ⋮

Health Region Boundaries

Transparency 0%

Map ⋮

Health District Boundaries

Map Label ⋮

Preterm Births, Percent of Total Live Births by County, VDH 2022

- Over 12.0%
- 10.1 - 12.0%
- 8.0 - 10.0%
- Under 8.0%

Geography ▾

Transparency 0%

Key Insights from Maternal Health Data Sources at VDH

- **Data Sources:** Internal (Vital Records, Inpatient Discharge Data) and external (Federal Partners, Data Storytelling Platforms).
- **Maternal Health Indicators:** Focus on severe maternal morbidity and rising maternal mortality.
- **Disparities in Outcomes:** Significant racial differences in maternal outcomes, with Black women experiencing adverse outcomes.
- **Emerging Trends:** Increasing deaths from accidental overdoses and higher rates of severe maternal morbidity among Black and rural populations.
- **Next Steps:** Update dashboards with new data and continue to address racial disparities in maternal health care.

Questions?



DPHD Request
Form

[Request MCH and other data here!](#)



Data Feedback

[Evaluation Survey](#)



Links

[MCH Dashboard](#)
[PRAMS Dashboard](#)
[BRFSS Dashboard](#)



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