



Disparities in Minnesota's COVID-19 Vaccination Rates

**Colin Planalp, MPA
Senior Research Fellow, SHADAC**

Tuesday, Nov. 14, 2023

Technical Items

- Participant audio has been automatically muted and video turned off
- Submit questions using the Q&A feature at any time during the webinar
- Problems:
 - Ask for help using the chat feature
 - Send a support request to Zoom at:
<https://support.zoom.us/hc/en-us/requests/new>
- Slides can be viewed and downloaded at:
<https://www.shadac.org/publications/MN-covid-vax-webinar>
- Webinar recording will be posted on SHADAC's website
 - Email notice will be sent to all registrants

Presenters



**Colin
Planalp**

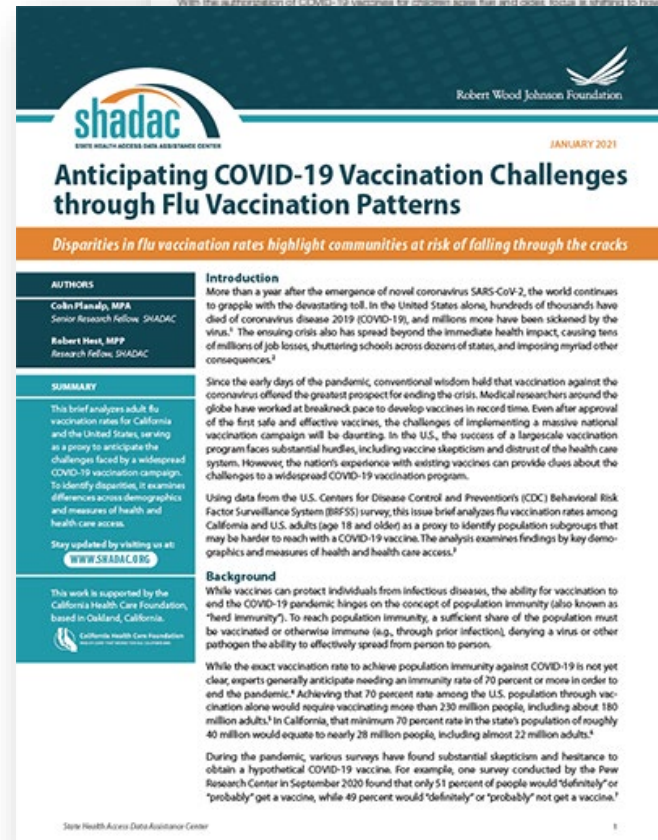


**Tyler
Winkelman**



Why focus on COVID-19 vaccine disparities?

- This isn't about Monday-morning quarterbacking
- COVID-19 isn't going anywhere
- More pandemics are coming, probably sooner than we'd hope
- Vaccine disparities aren't new, but they aren't inevitable



Minnesota COVID-19 vaccination data

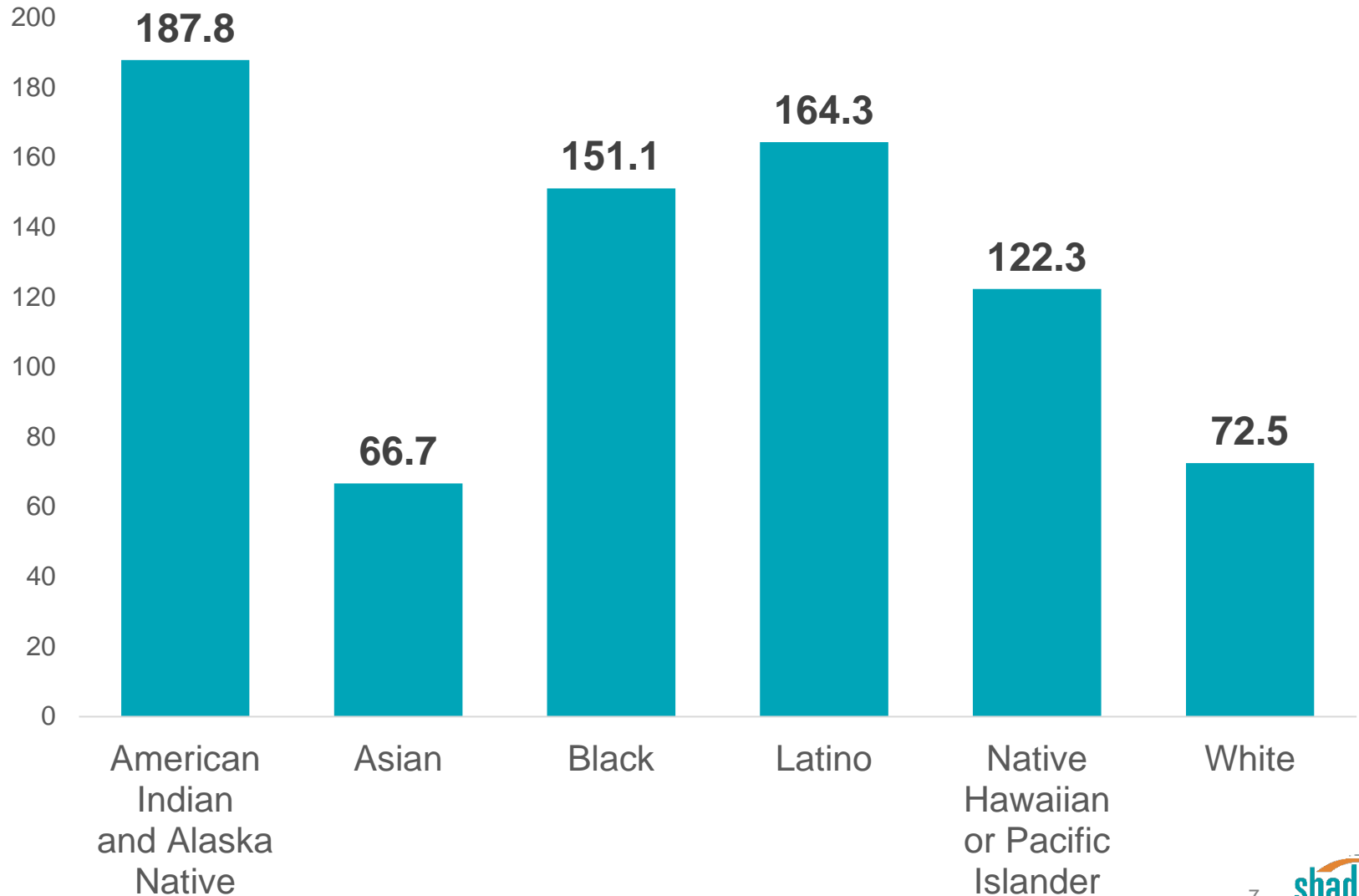
- Minnesota EHR Consortium — partnership between Minnesota health care organizations and public health entities in the state
- Established during the pandemic to enable better data for COVID-19 surveillance
- Pairs data from electronic health records with data from the state's Minnesota Immunization Information Connection (MIIC)
 - Captures nearly all COVID-19 vaccinations administered in the state



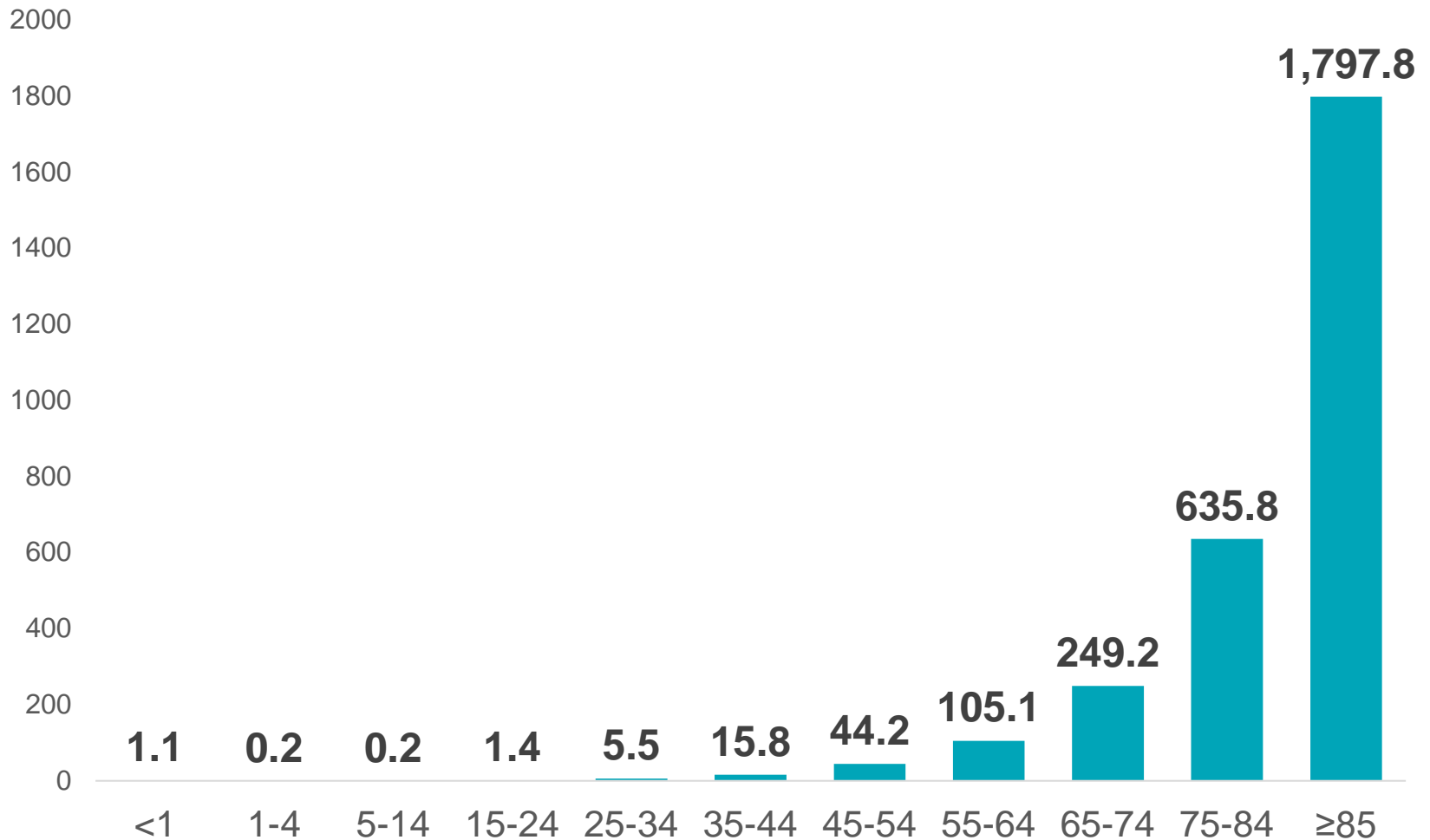
“Persistent health disparities ... have put members of some racial and ethnic minority populations at higher risk for COVID-19 infection, severe illness, and death.”

– U.S. Centers for Disease Control and Prevention

U.S. COVID-19 deaths per 100,000 by race and ethnicity, 2020



U.S. COVID-19 deaths per 100,000 by age category, 2020



Minnesota vaccine priority groups

1. Health care workers and nursing home residents
2. Elderly adults (age 65+); school and childcare workers
3. People at medically high risk (e.g., cancer); food processing workers
4. People with other chronic conditions (e.g., diabetes); other “essential workers” in sectors such as agriculture, manufacturing and transit
5. Adults age 50-64; workers in other selected sectors
6. Remaining general population

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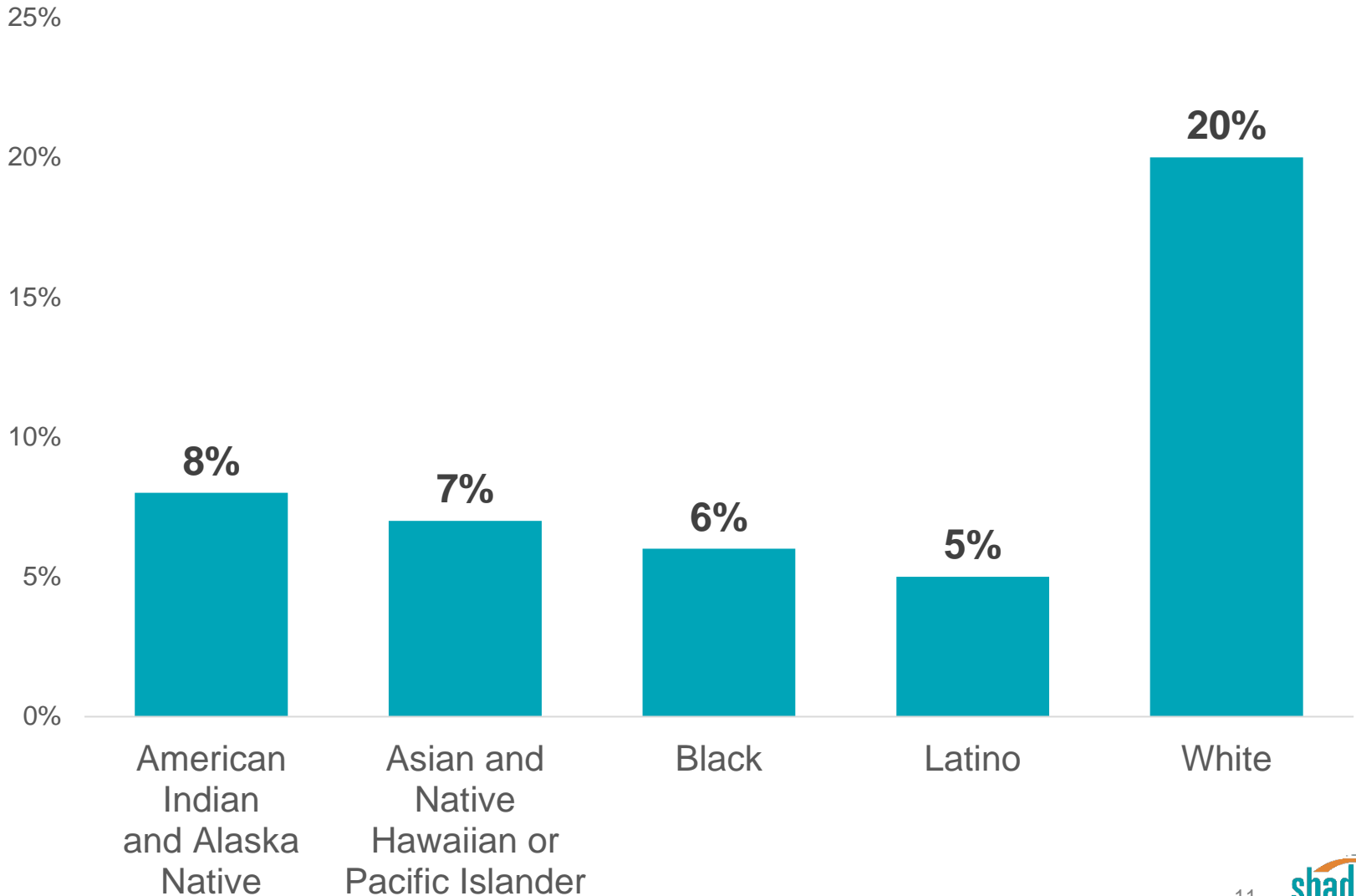
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Age 65+ by racial and ethnic groups in Minnesota, 2020

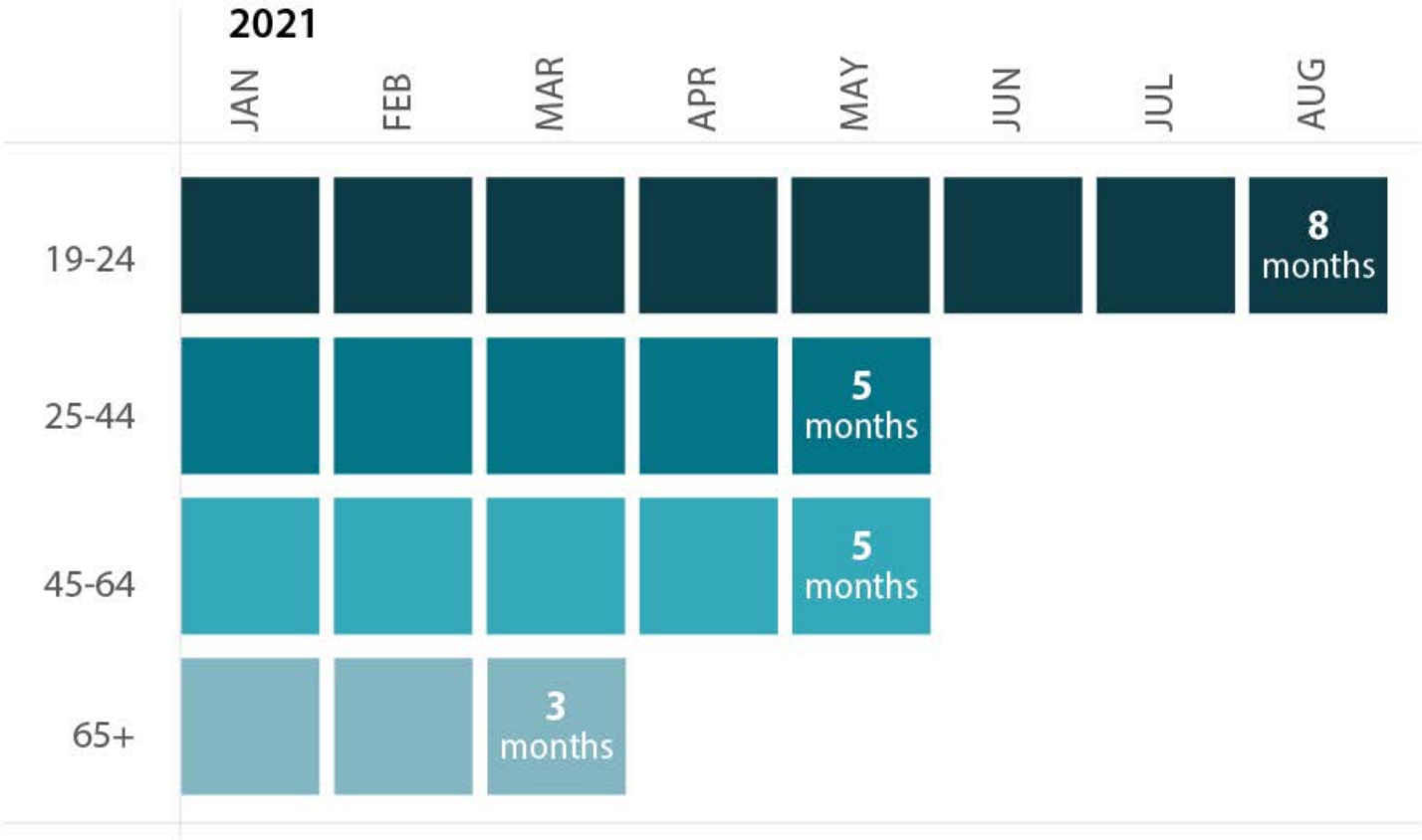


Disparities in COVID-19 Vaccination Rates

Measuring vaccine inequities

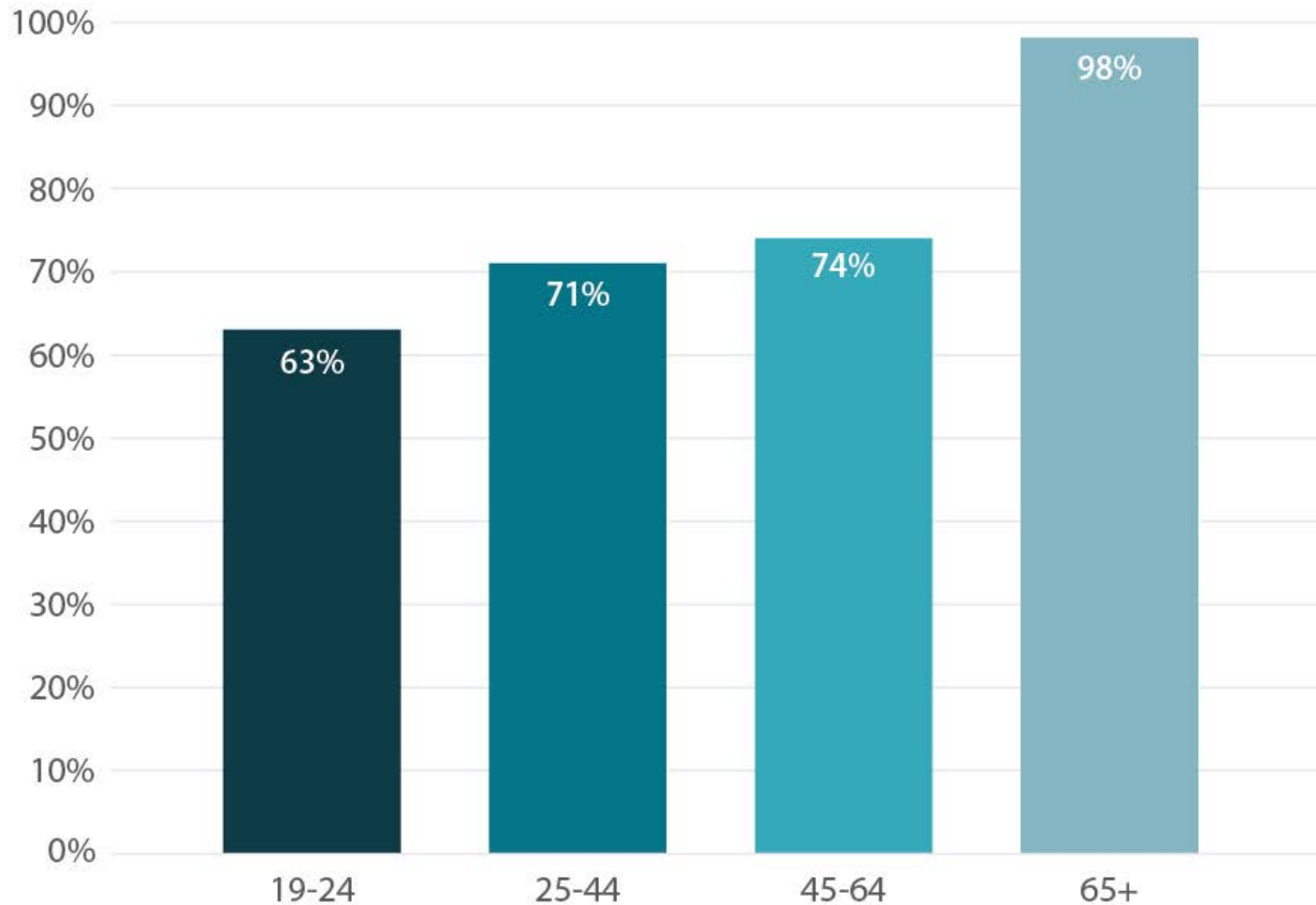
- First, measuring the number of months until sub-population groups reached a threshold of 50% “fully vaccinated” (i.e., when half each sub-group was vaccinated)
- Second, reporting the COVID-19 vaccination rate for each sub-population group at the end of 2022

Months to 50% threshold, by age



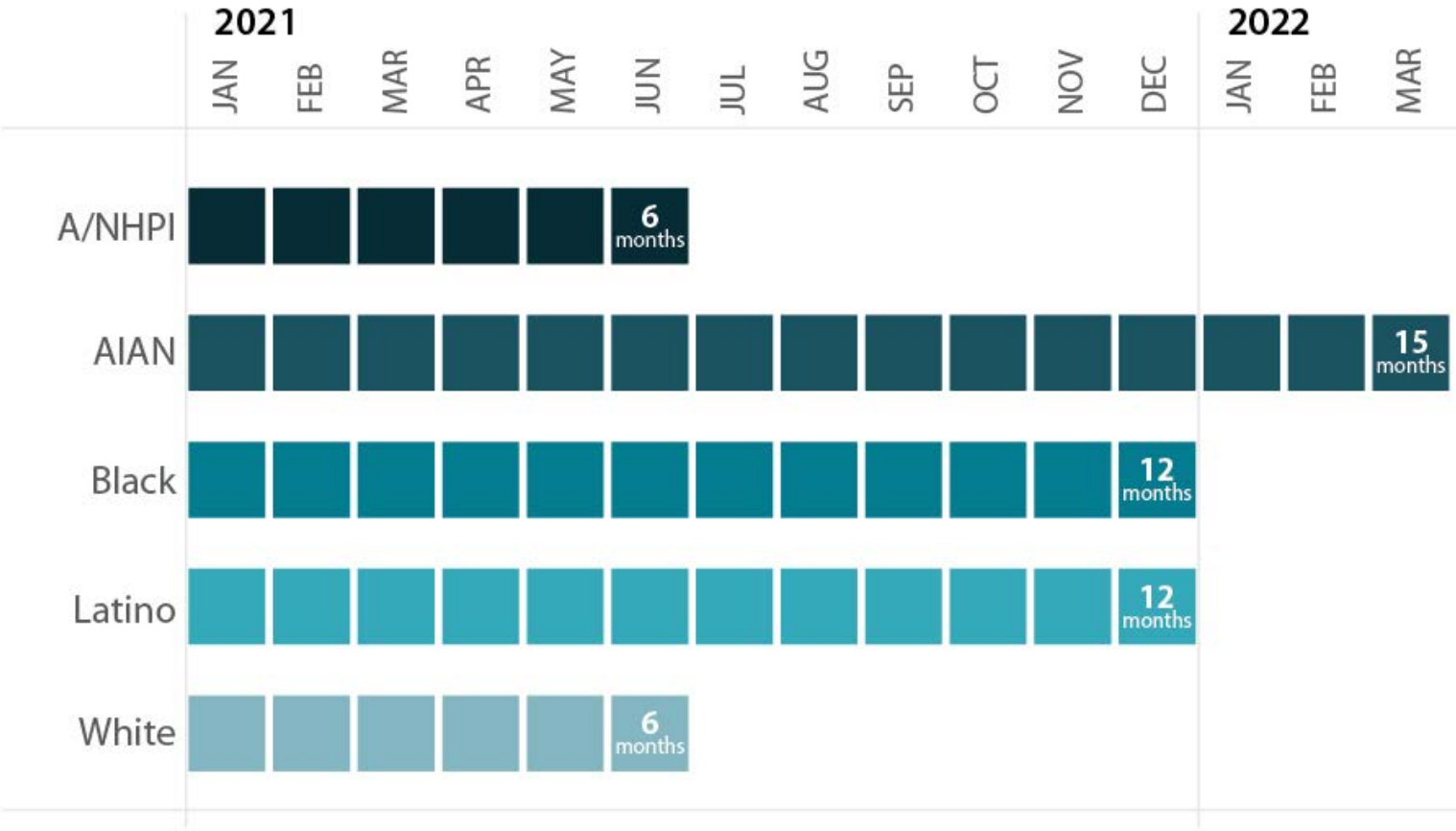
Source: SHADAC analysis of Minnesota EHR Consortium data.

Fully vaccinated by age, end of 2022



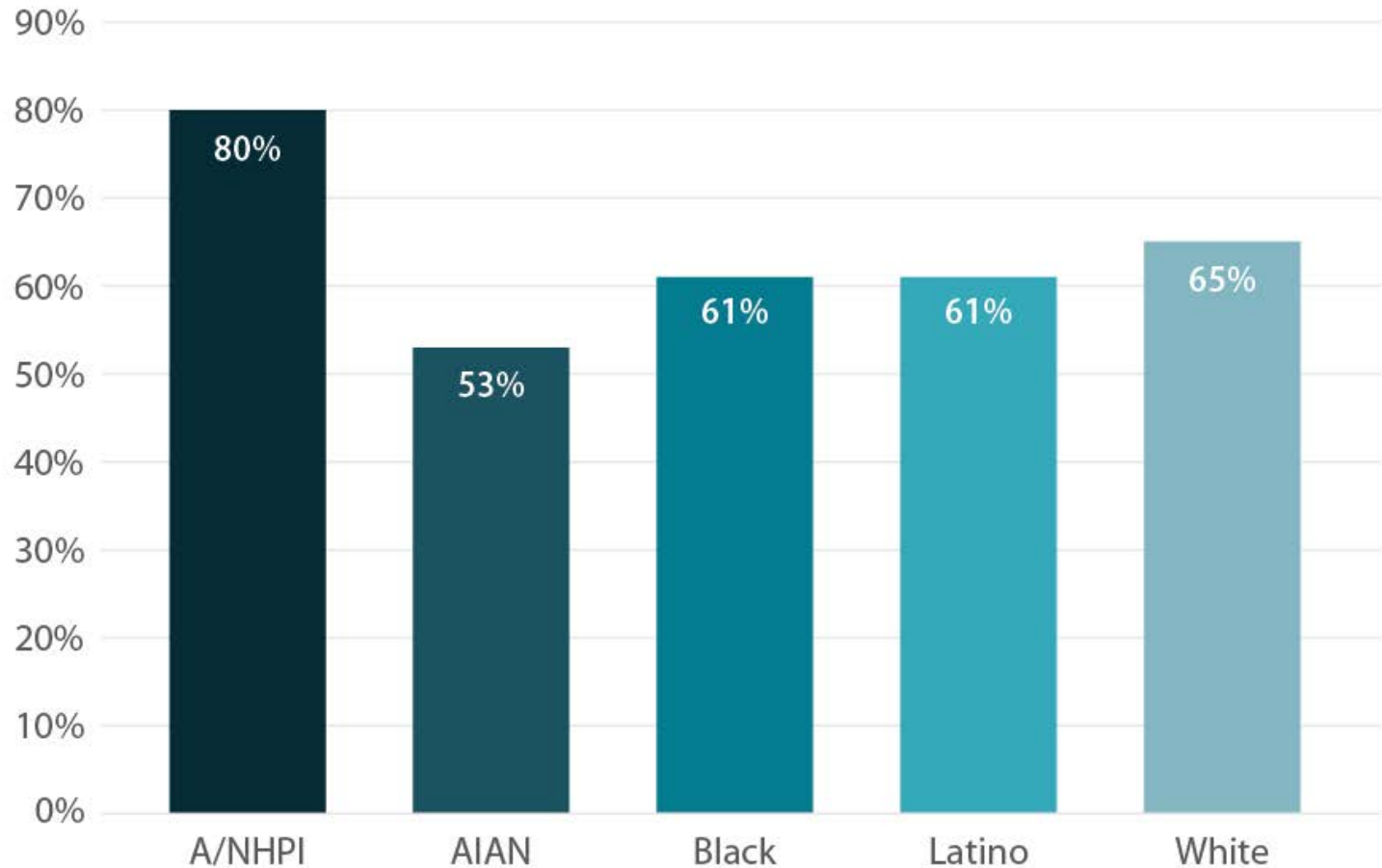
Source: SHADAC analysis of Minnesota EHR Consortium data.

Months to 50% threshold, by race/ethnicity



Source: SHADAC analysis of Minnesota EHR Consortium data.
 A/NHPI: Asian and Native Hawaiian or Pacific Islander. AIAN: American Indian or Alaska Native.

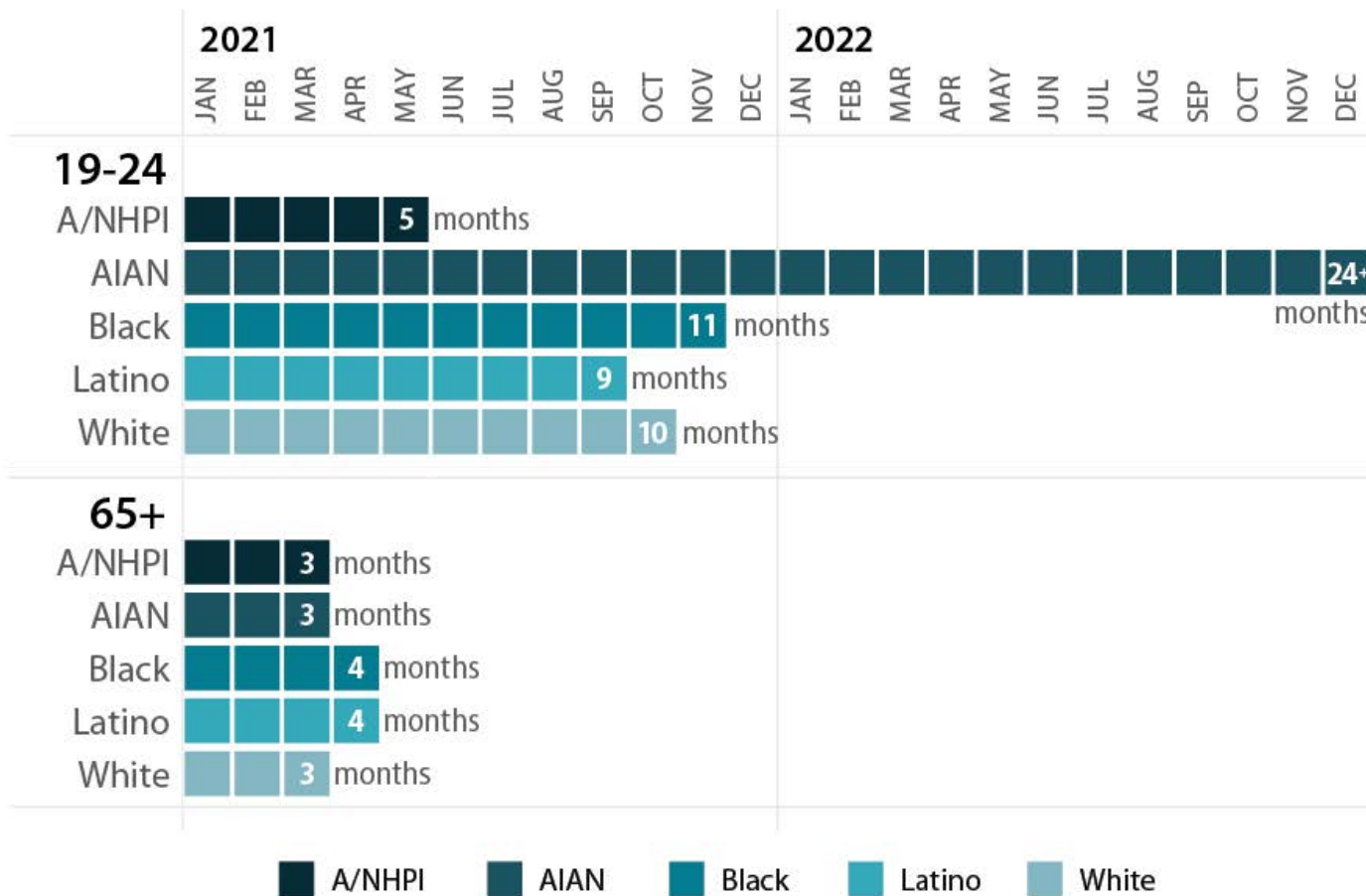
Fully vaccinated by race and ethnicity, end of 2022



Source: SHADAC analysis of Minnesota EHR Consortium data.

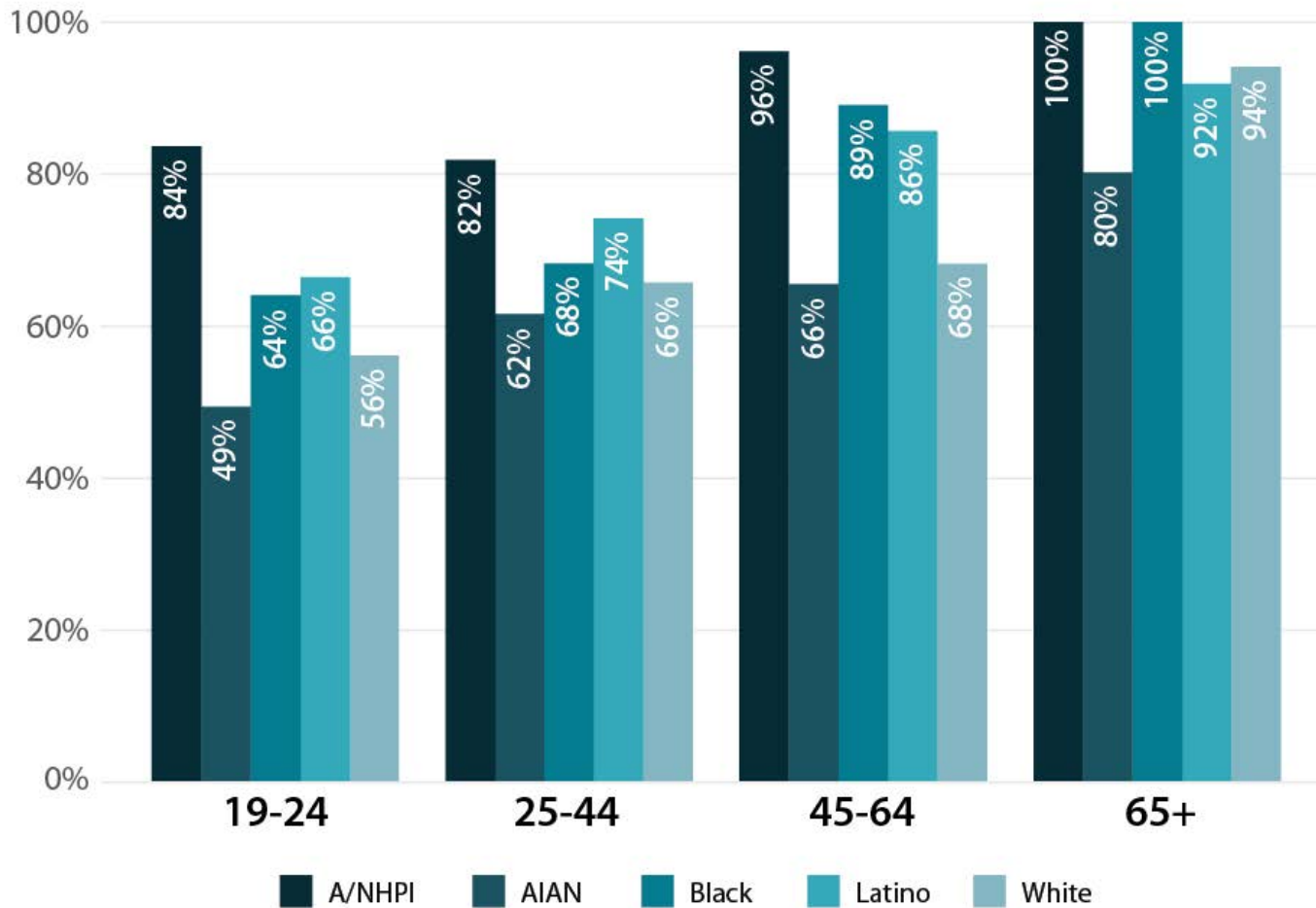
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Months to 50% threshold, by age and race/ethnicity



Source: SHADAC analysis of Minnesota EHR Consortium data.
A/NHPI: Asian and Native Hawaiian or Pacific Islander. AIAN: American Indian or Alaska Native.

Fully vaccinated by age and race and ethnicity, end of 2022



Source: SHADAC analysis of Minnesota EHR Consortium data.

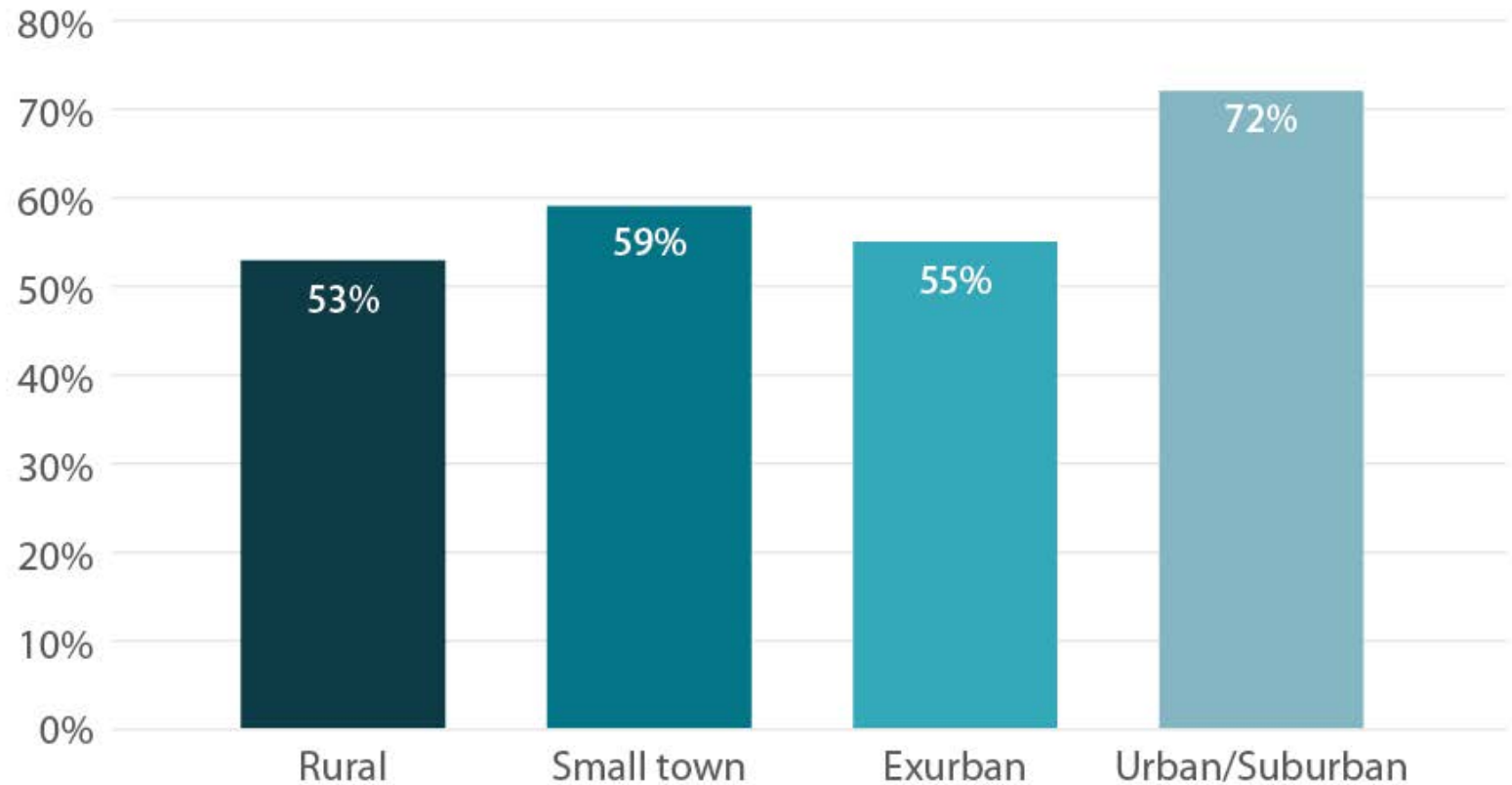
A/NHPI: Asian and Native Hawaiian or Pacific Islander. AIAN: American Indian or Alaska Native.

Months to 50% threshold, by urbanization



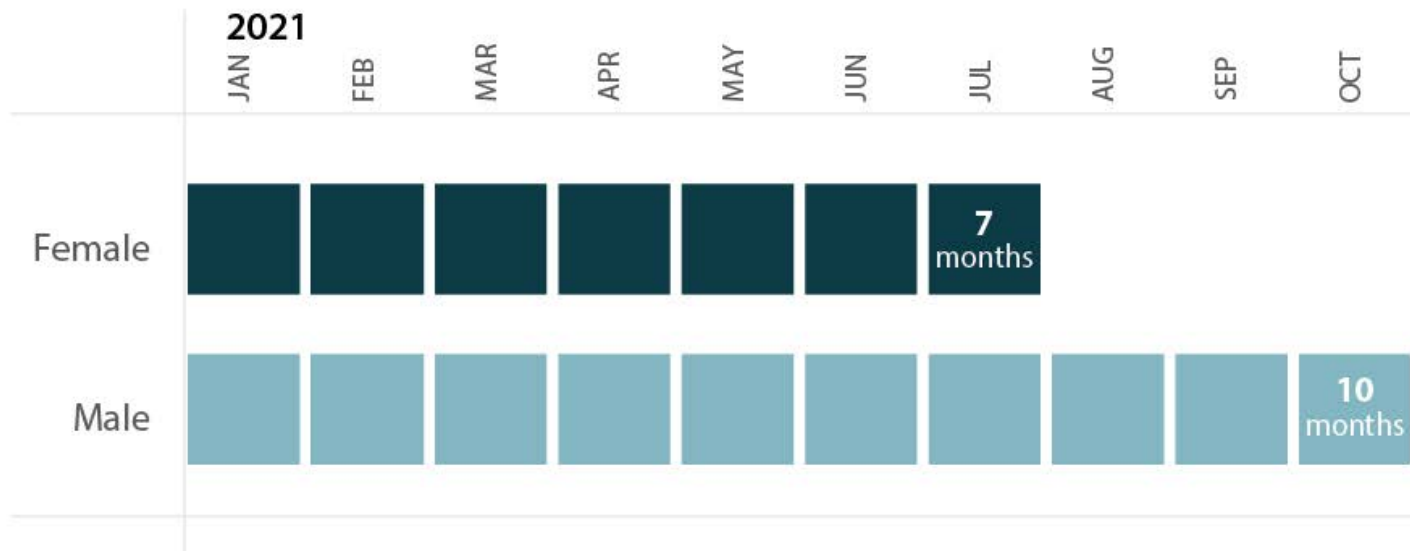
Source: SHADAC analysis of Minnesota EHR Consortium data.

Fully vaccinated by urbanization, end of 2022



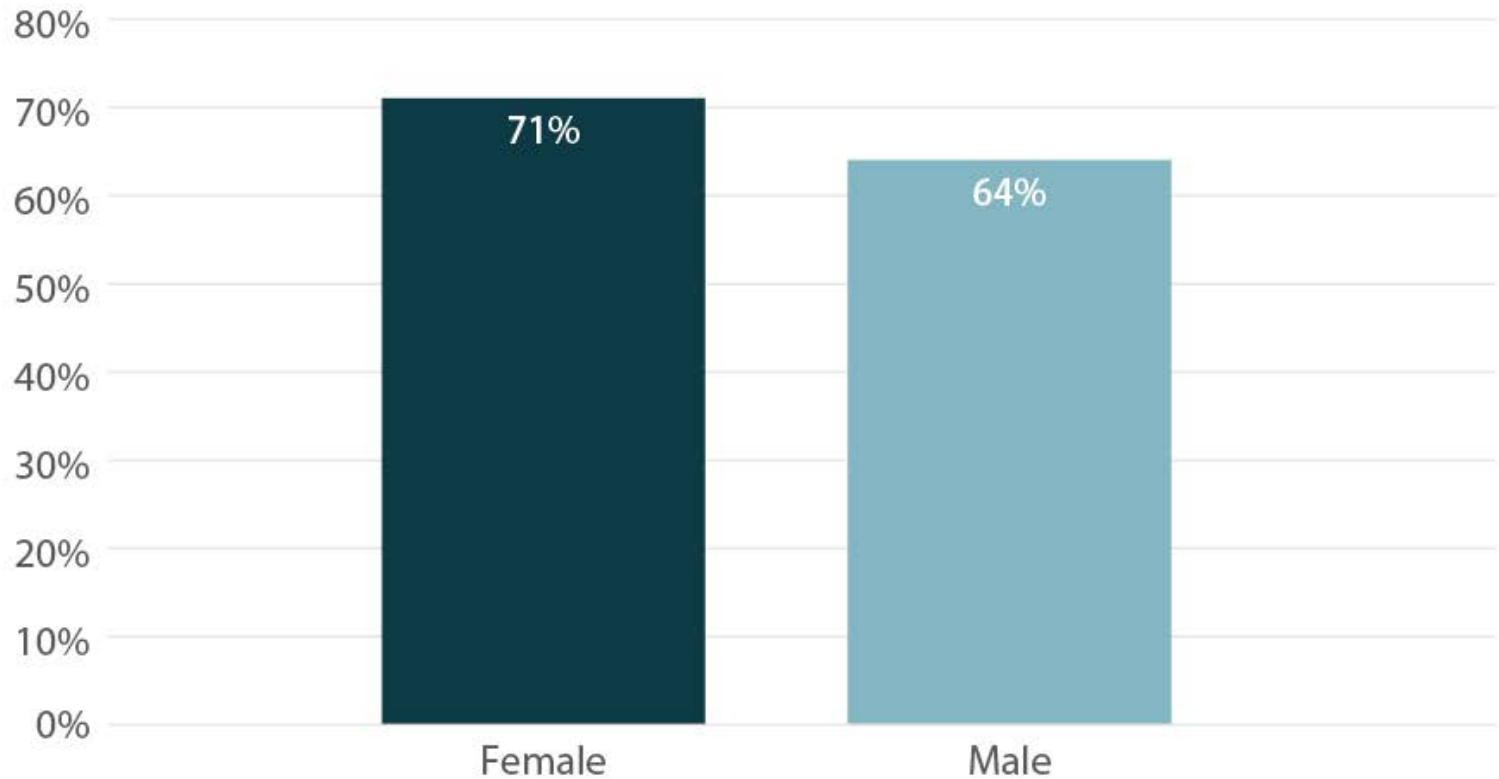
Source: SHADAC analysis of Minnesota EHR Consortium data.

Months to 50% threshold, by gender



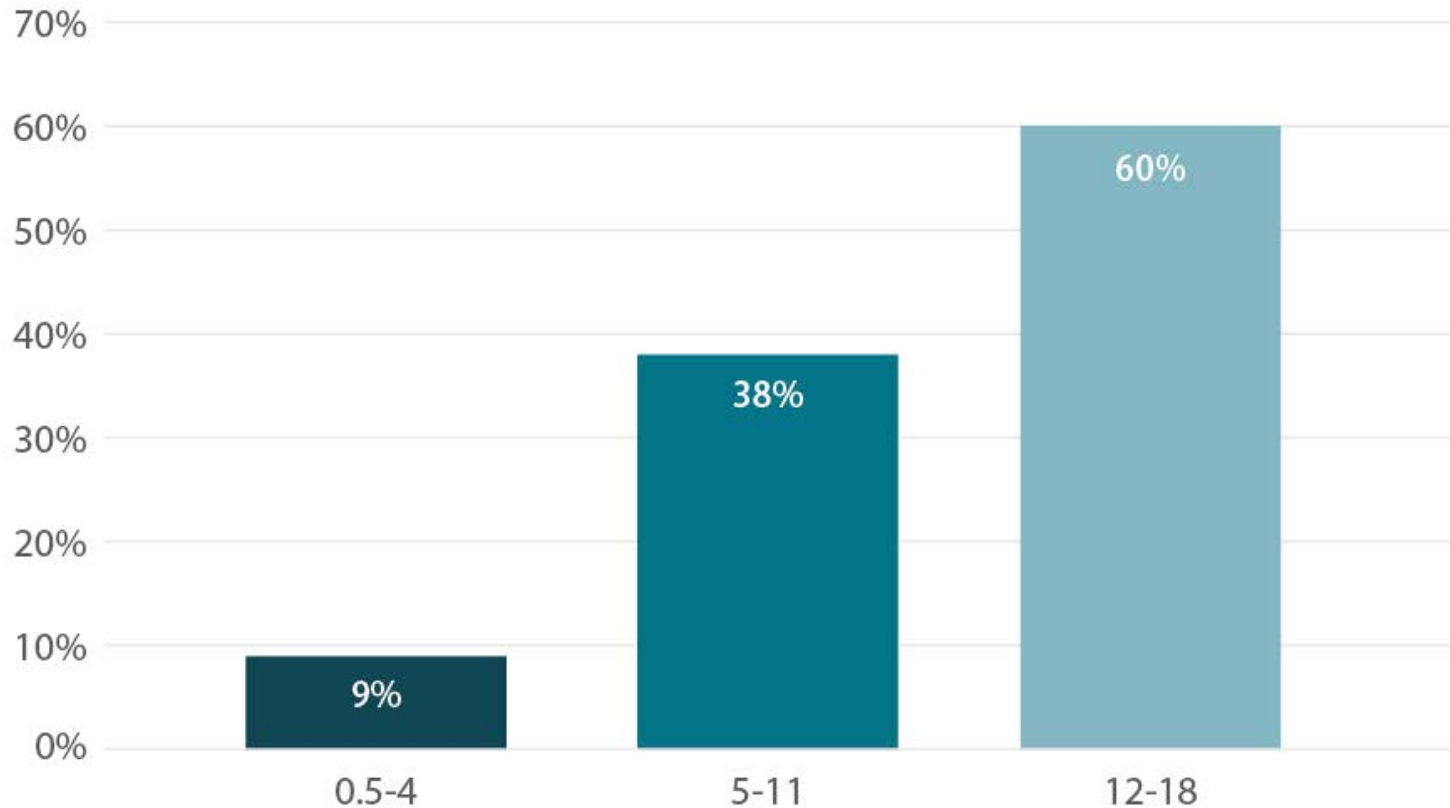
Source: SHADAC analysis of Minnesota EHR Consortium data.

Fully vaccinated by gender, end of 2022



Source: SHADAC analysis of Minnesota EHR Consortium data.

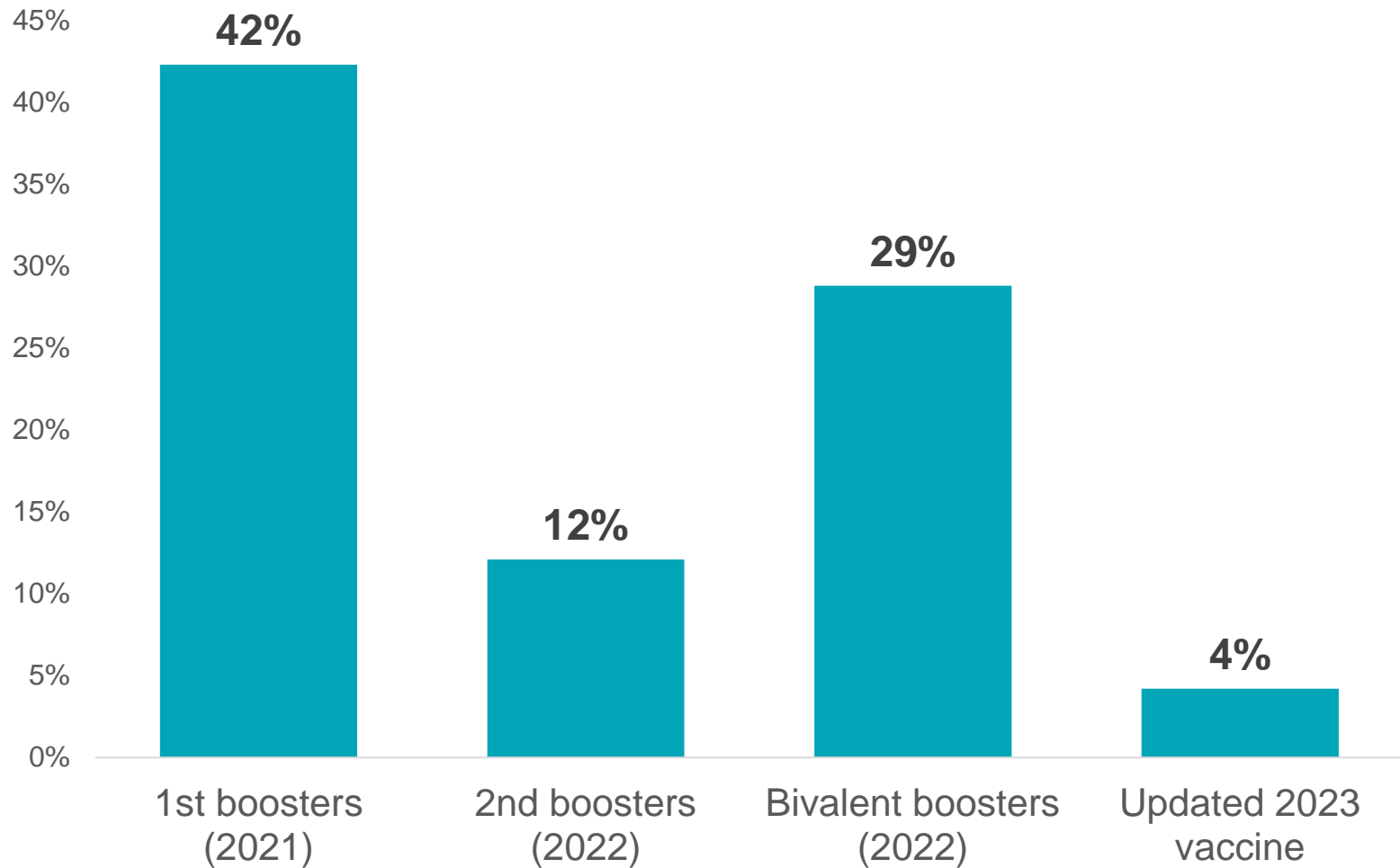
Fully vaccinated children, end of 2022



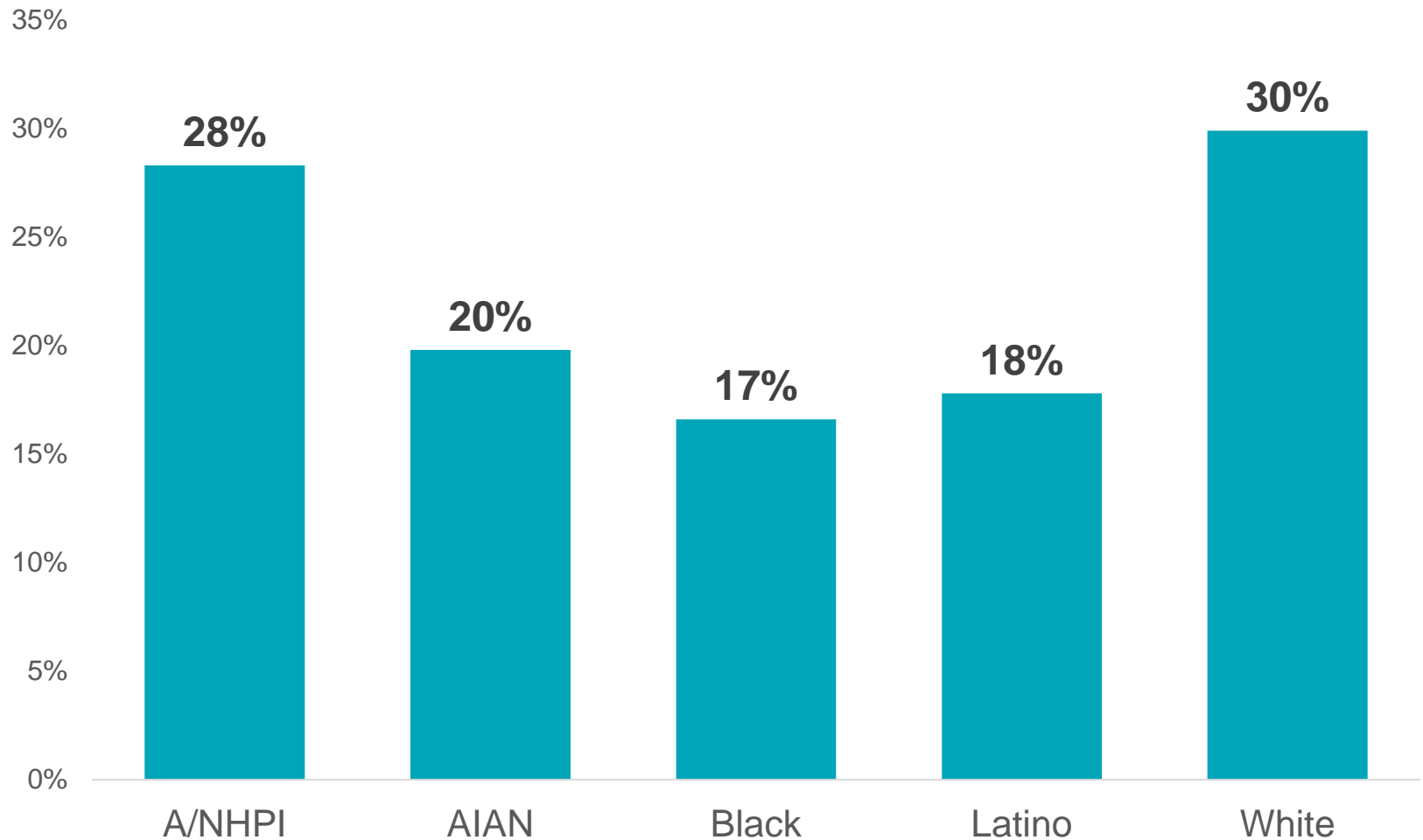
Source: SHADAC analysis of Minnesota EHR Consortium data.

Recent COVID-19 Vaccination Rate Data

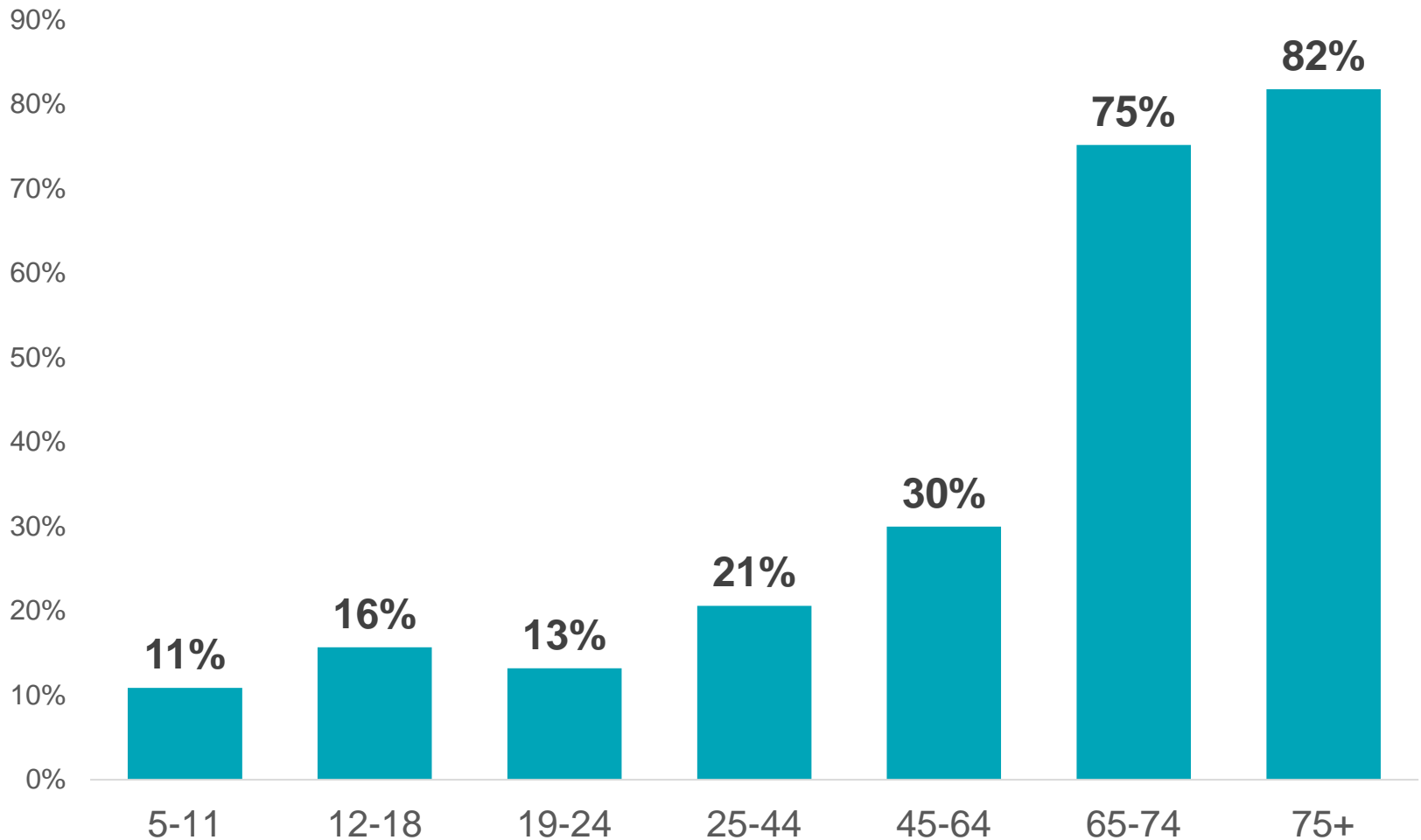
Later COVID-19 vaccinations, Oct. 2023



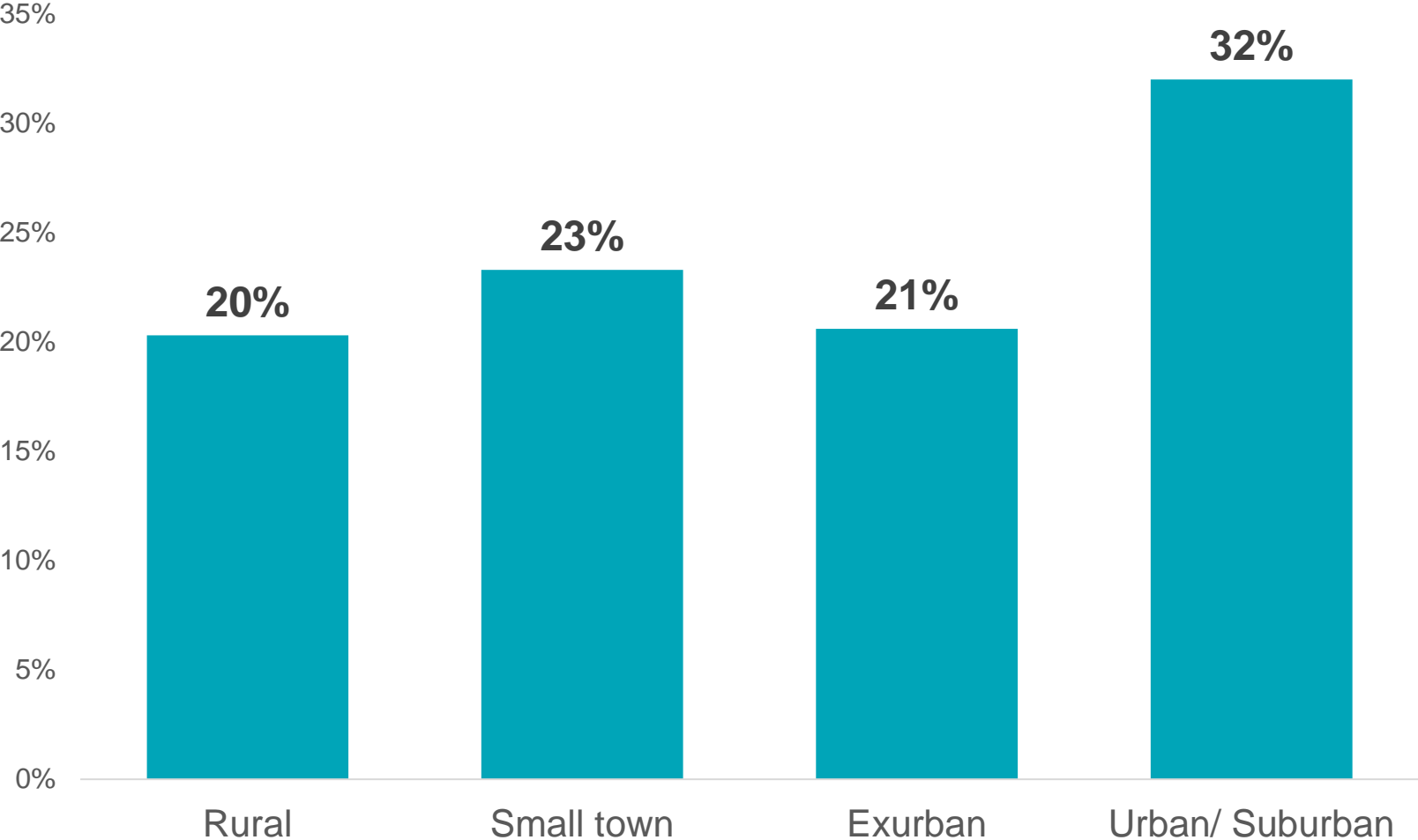
Bivalent boosters by race and ethnicity, Sept. 2023



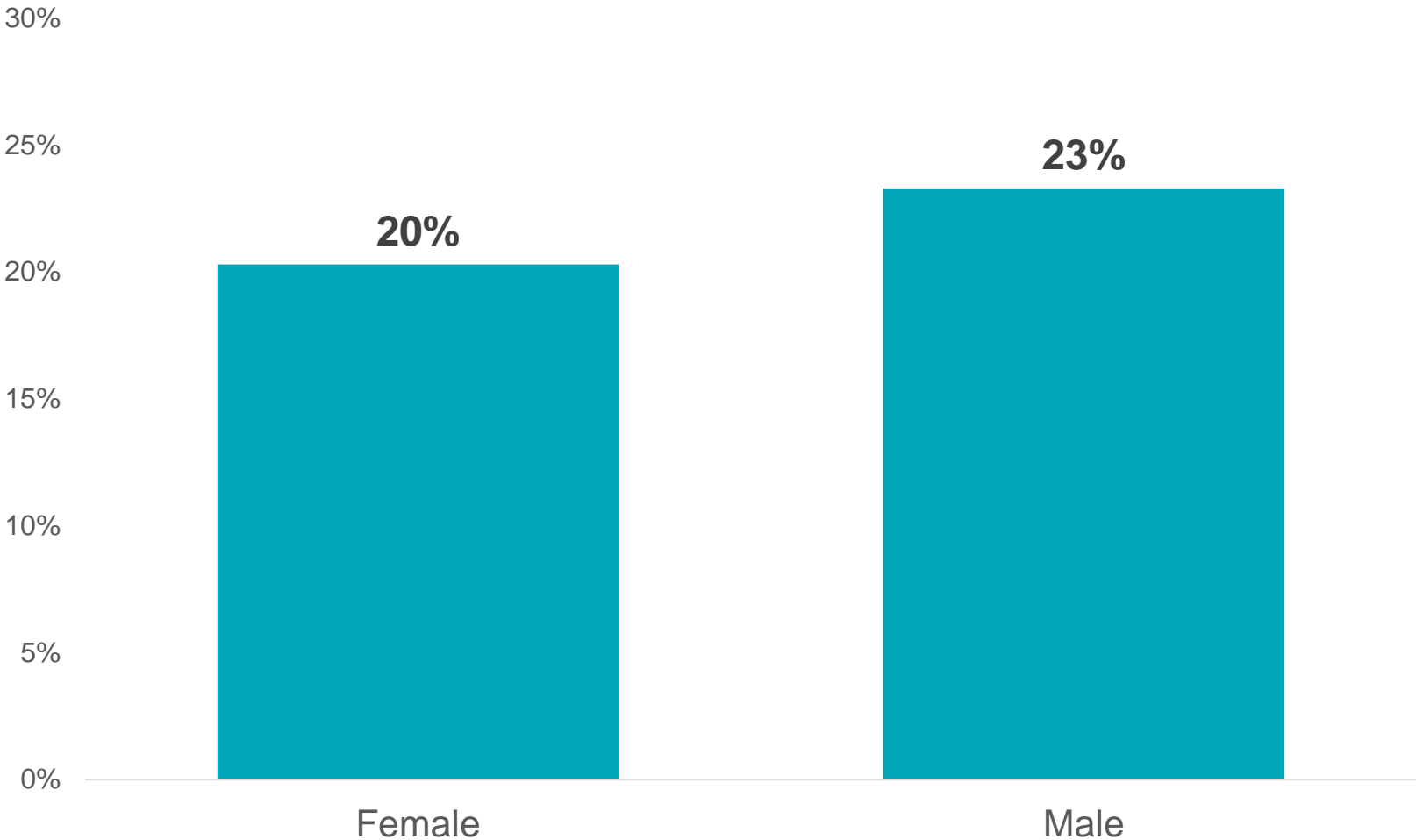
Bivalent boosters by age, Sept. 2023



Bivalent boosters by urbanization, Sept. 2023



Bivalent boosters by gender, Sept. 2023



MN EHR Consortium: COVID-19 and Beyond

Tyler Winkelman, MD, MSc

Hennepin Healthcare

Tuesday, November 14, 2023



MN EHR
CONSORTIUM

Outline

- Development of MN EHR Consortium
- MN EHR Consortium Data Model
- Current/Future Directions



MN EHR Consortium

Mission: To improve health by informing policy and practice through data-driven collaboration among members of Minnesota's health care community

Key Principles:

- Prioritize privacy through a distributed data model
- Voluntary collaboration
- Good governance through our Governance Board and Executive Committee
- Adaptable and nimble



MN EHR Consortium Partners



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CONSORTIUM

What is Driving the Need?

- Communities in crisis – epidemics, disasters, public emergencies
- Lack of data to identify and act on place-based risk in a timely manner
 - Traditional data sources are at the county or ZIP code level
- Recognition that many conditions affect a person's ability to be healthy
- Increasing health costs – disease prevention is critical
- Community health (needs) assessments (CHA/CHNA)



Strengths and Limitations



Electronic Health Record Data

Strengths

- Timely
- Granular geographic information
- Large sample size (~90% of MN)
- Established collection methods

Limitations

- Only includes care-seeking population
- Limited qualitative data (in current state)
- Currently does not include data from small clinics and FQHCs
- Some data quality issues (missingness)

Population Health Survey Data

Strengths

- Can capture knowledge, attitudes, beliefs, perceptions, health behaviors
- Can include qualitative data
- Customizable

Limitations

- Self-report bias
- Time lags
- Resource intensive + declining responses
- Disproportionate response by certain demographic groups

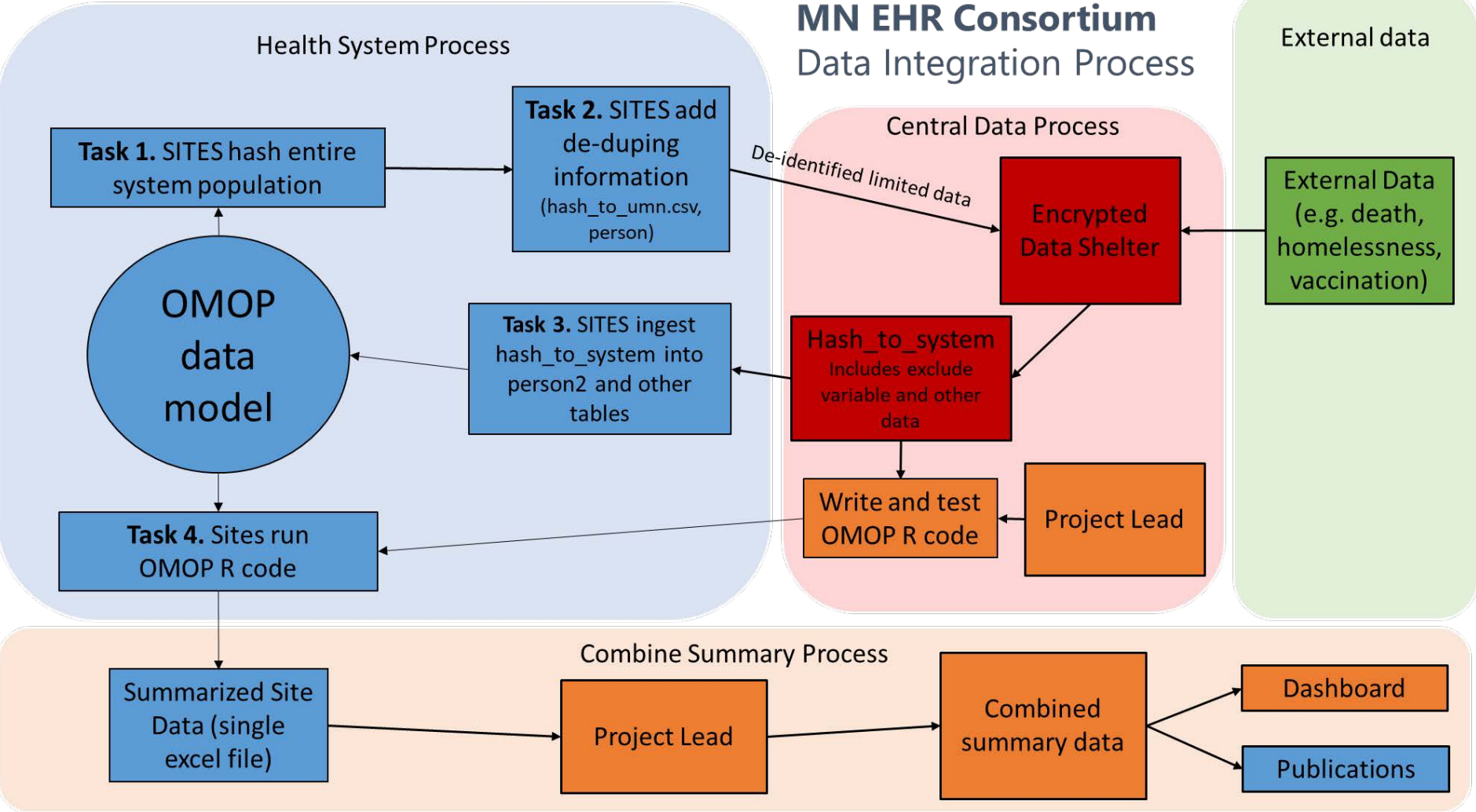


MN EHR Consortium Data

- Electronic Health Record (EHR) Data
- Distributed data model (OMOP)
- Data sharing governed via an 11 system Data Use Agreement
- Central management by Administrative and Technical Cores
- Includes:
 - MN residents
 - Encounters within a look-back period (2, 3 or 5 years)
 - Not known to have died (statewide data)
- Deduplication process to avoid double counting
- Merge with external sources for SDoH and vaccination data



MN EHR Consortium Data Integration Process



Current Projects

- Hennepin County Substance-Related Healthcare Use
- Health Trends Across Communities (HTAC)
- MDH Telehealth Evaluation
- CDC Modeling Project



Current Projects

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Hennepin County SUD Project

EXHIBIT 2

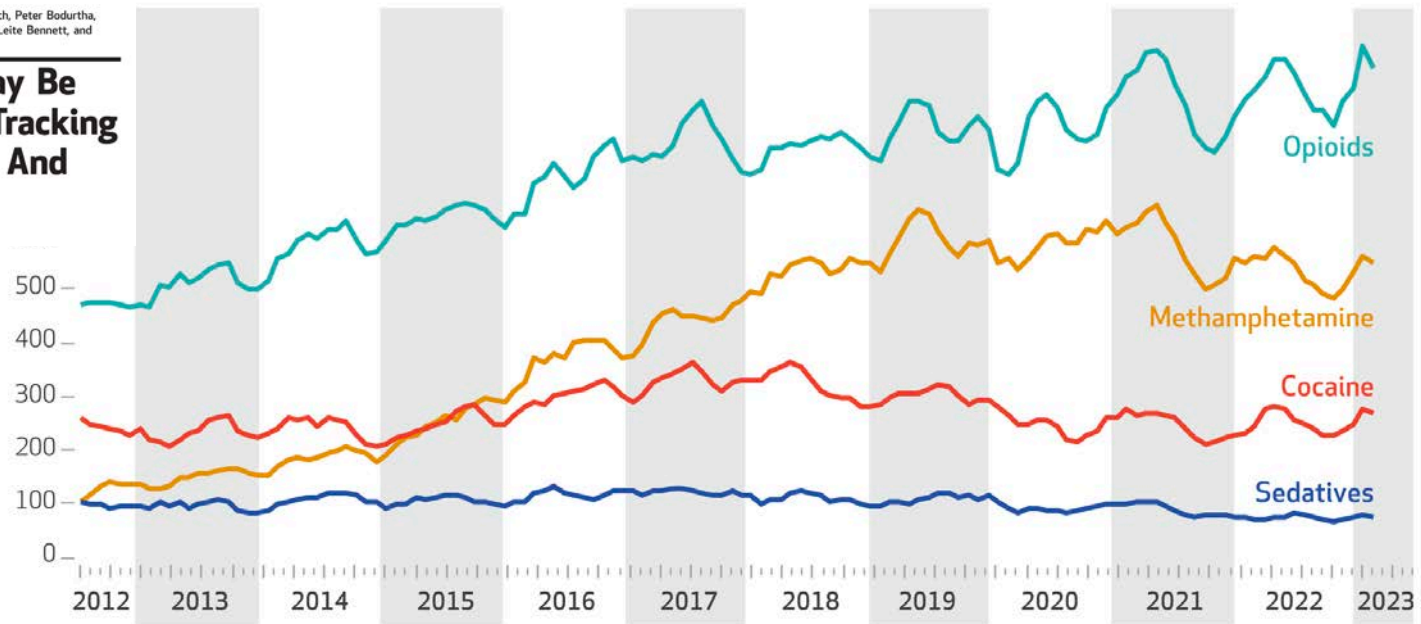
Selected drug-involved hospital and emergency department (ED) visits in Hennepin County, Minnesota, July 2012–June 2023

HEALTH INFORMATION TECHNOLOGY

By Riley D. Shearer, Rebecca Rossom, Paul J. Christine, Madison Hoover, Julie Bauch, Peter Bodurtha, Nayanjot Kaur Rai, Michelle Clegg, Bjorn C. Westgard, Kirsten R. Ehresmann, Amy Leite Bennett, and Tyler N. A. Winkelman

Minnesota Data Sharing May Be Model For Near-Real-Time Tracking Of Drug Overdose Hospital And ED Trends

Drug-involved hospital and ED visits



SOURCE Authors' analysis of data from the Minnesota Electronic Health Record Consortium. **NOTE** Data points are three-month rolling averages.



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Hennepin County SUD Dashboard

HENNEPIN COUNTY

Substance involved emergency and hospital visits in Hennepin County



Race/ethnicity percentage

Race/ethnicity count

Substance category

- opioids
- psychostimulants
- sedatives
- cocaine
- opioids/psychostimulants
- any substance excluding ...
- alcohol
- cannabis
- any substance including a...

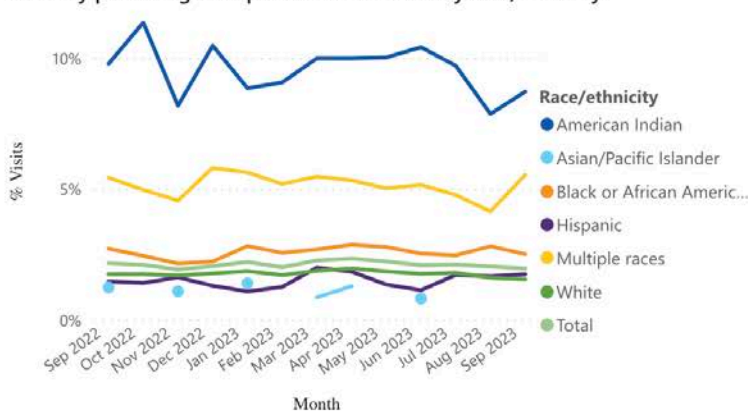
Non-fatal overdose (NFOD)

All encounters (inc NFO... ▼

Race/ethnicity

All ▼

Monthly percentage of opioid involved visits by race/ethnicity



Monthly opioid involved visits by race/ethnicity

Month Race/ethnicity	Sep 2022			Oct 2022	
	Visits	All Visits	% Visits	Visits	All Visits
American Indian	83	849	9.8%	93	819
Asian/Pacific Islander	16	1,295	1.2%	<11	1,308
Black or African American	276	10,173	2.7%	252	10,322
Hispanic	40	2,737	1.5%	42	2,984
Multiple races	37	682	5.4%	34	685
White	412	23,708	1.7%	420	24,153
Unknown race/ethnicity	20	1,467	1.4%	25	1,474
Total	884	40,912	2.2%	874	41,749

Substance description

Opioids including prescription pain relievers, heroin, and synthetic opioids such as fentanyl.

Data is updated monthly and currently available through 9/30/2023.

Notes

Please contact PublicHealthData@hennepin.us with any questions or feedback about this report. Visit Microsoft's [Power BI For Consumers page](#) for more information on how to use Power BI.



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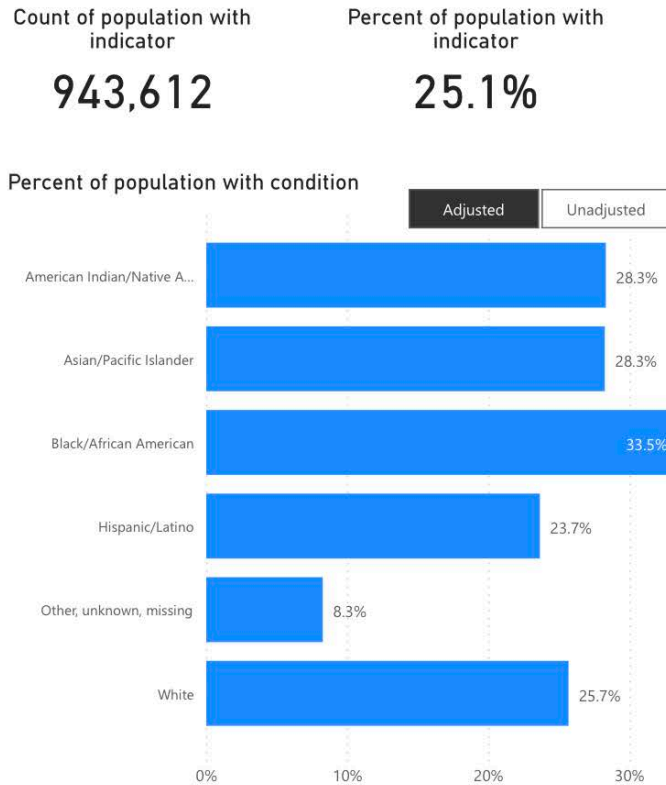
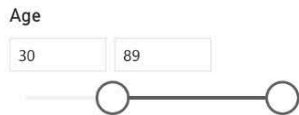
HTAC Indicators

Substance Use	Mental Health	Chronic Conditions	Maternal & Child Health	Other
<p>Opioid use</p> <p>Alcohol use</p> <p>Methamphetamine use</p> <p>Cocaine use</p> <p>THC use</p> <p>Other substance use</p>	<p>Depression</p> <p>Anxiety</p> <p>PTSD</p> <p>Bipolar disorder</p> <p>Psychotic disorders</p> <p>Suicide</p>	<p>Hypertension</p> <p>Obesity / Overweight</p> <p>Hyperlipidemia</p> <p>Diabetes</p> <p>CAD / IHD</p> <p>Heart failure</p> <p>Chronic kidney disease</p> <p>Asthma</p> <p>COPD</p>	<p>Maternal morbidity</p> <p>Maternal opioid use</p> <p>Childhood vaccination</p>	<p>Gun violence</p> <p>Climate change</p>

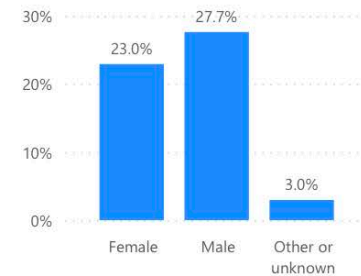
Health Trends Across Communities

Prevalence

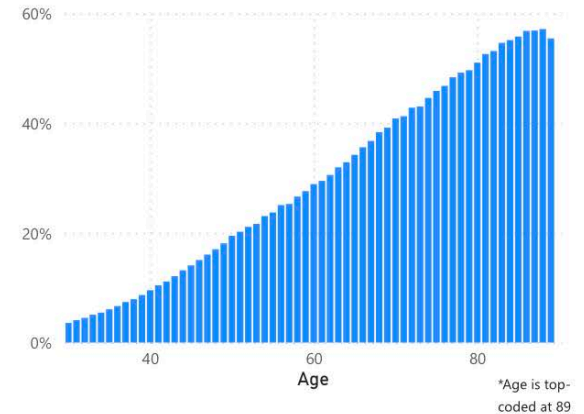
- Indicators
- Bipolar disorder
 - Cannabis
 - Cocaine
 - COPD
 - Depression
 - Hallucinogens
 - Heart failure
 - Hypertension
 - Inhalants
 - Lung cancer
 - Opioids



Prevalence by gender



Percent of age group with indicator



Health Trends Across Communities

Geography

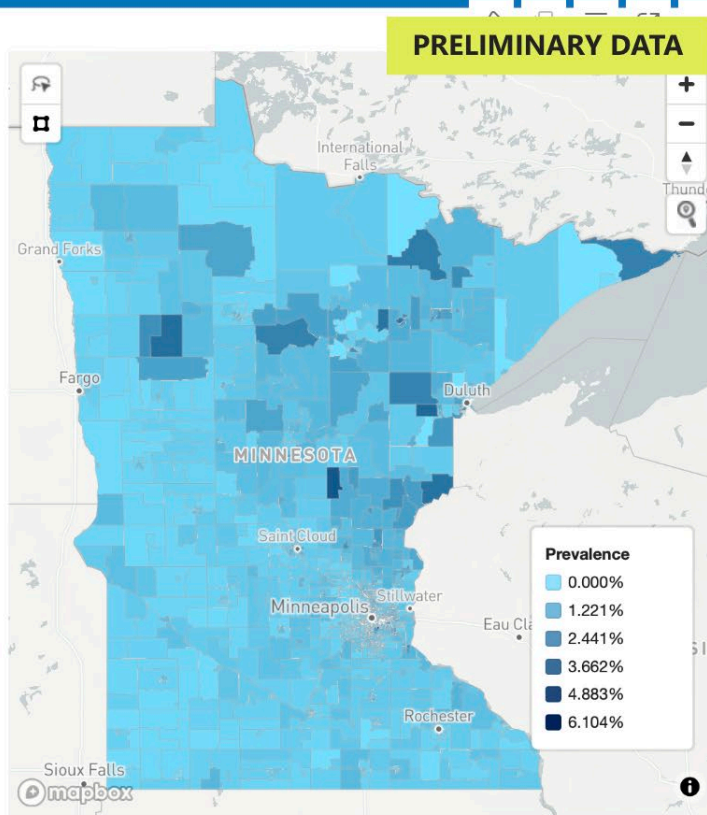
- Indicators**
- Inhalants
 - Lung cancer
 - Opioids
 - Pregnancy
 - Psychostimulants
 - Psychotic disorder
 - PTSD

Region

- Central
- Metro
- Northeast
- Northwest
- South Central
- Southeast
- Southwest
- West Central

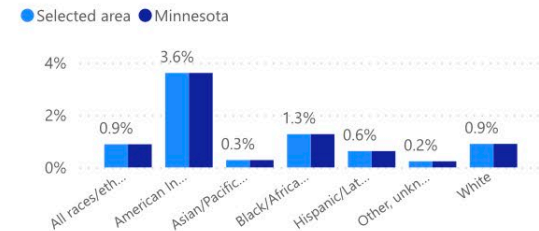
Social vulnerability

- High vulnerabil...
- Mid-High vulne...
- Mid-Low vulner...
- Low vulnerability

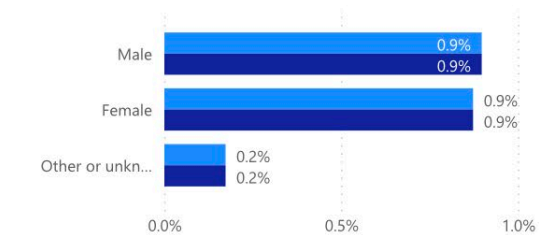


Prevalence

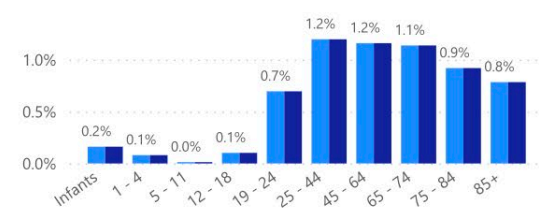
Race/ethnicity



Gender



Age



Conclusions

- Collaboration across public health, research, health systems, and analytics has been essential to developing actionable data
- COVID-19 provided a spark to develop this collaboration
- MN EHR Consortium actively extending well beyond COVID
- HTAC will result in one of the most robust, real-time, cross-sector data sources in the United States



Questions & Contact

- Tyler Winkelman, MD, MSc
- tyler.winkelman@hcmed.org
- Website: www.mnehrconsortium.org



Question & Answer



Tyler Winkelman



Colin Planalp

***Please submit questions using
the Q&A feature.***

Thank you for joining us!

SHADAC

Please email cplanalp@umn.edu or shadac@umn.edu with any follow-up questions, and find the brief on our website: www.shadac.org.

MN EHR Consortium

Please email tyler.winkelman@hcmcd.org with any follow-up questions, or visit the website: www.mnehrconsortium.org

