



Creating robust datasets by securely matching data across organizations

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# Land Acknowledgement

*The state of Minnesota is home to 11 federally recognized Indian tribes with elected tribal government officials. The State of Minnesota acknowledges and supports the unique status of the Minnesota tribal nations and their absolute right to existence, self-governance, and self-determination. The United States and the State of Minnesota have a unique relationship with federally recognized Indian tribes, formed by the Constitution of the United States, treaties, statutes, case law, and agreements. The State of Minnesota and the Minnesota Tribal governments significantly benefit from working together, learning from one another, and partnering where possible.*

*This partnership, through a government-to-government relationship, with the eleven tribal nations of Minnesota has the potential to effectively address inequities and build trust that will lead to better outcomes for all of Minnesota.*

Who/what is the MN EHRC

Why team up with MN EHRC

How did we combine our data

How do we use the combined data

# Who/what is the EHRC

# Who



- Unique partnership of health care professionals, researchers, and leaders from Minnesota health systems and statewide health care.
- The MN EHR Consortium provides robust information on health equity indicators related to COVID-19, substance use disorders, and other chronic conditions such as cardiovascular disease and hypertension.
- <https://mnehrconsortium.org/>

# Why team up with EHRC

- COVID-19
- Complimentary data
- Developed a model for aggregating summary electronic health records data
- The mission of the EHR Consortium and MDH were well aligned

How did we combine our data

- Cannot share identified data via the EHRC
- EHRC maintains a fully de-identified data set
- Immunization Data Sharing statute (§144.3351)
  - Each provider organization can access their own data

## Minnesota Immunization Information Connection

f_name	l_name	dob	sex	race	phone
Bill	Clinton	8/19/1946	M	White	501-683-5228
Good	Match	5/21/1975	M	Black	612-624-5555
Joan	Smith	8/20/1965			612 781-5544

f_l_dob_sex	f_l_dob_race	f_l_dob	f_phone
billclinton08191946m	billclinton08191946w	billclinton08191946	bill5016835228
goodmatch05211975m	goodmatch05211975b	goodmatch05211975	good5126245555
joansmith08201965	joansmith08201965	Joansmith08201965	joan6127815544

f_name	l_name	dob	sex	race	phone
Joan	Smith	8/20/1965			612 781-5544

f_l_dob_sex	f_l_dob_race	f_l_dob	f_phone
joansmith08201965	joansmith08201965	Joansmith08201965	joan6127815544



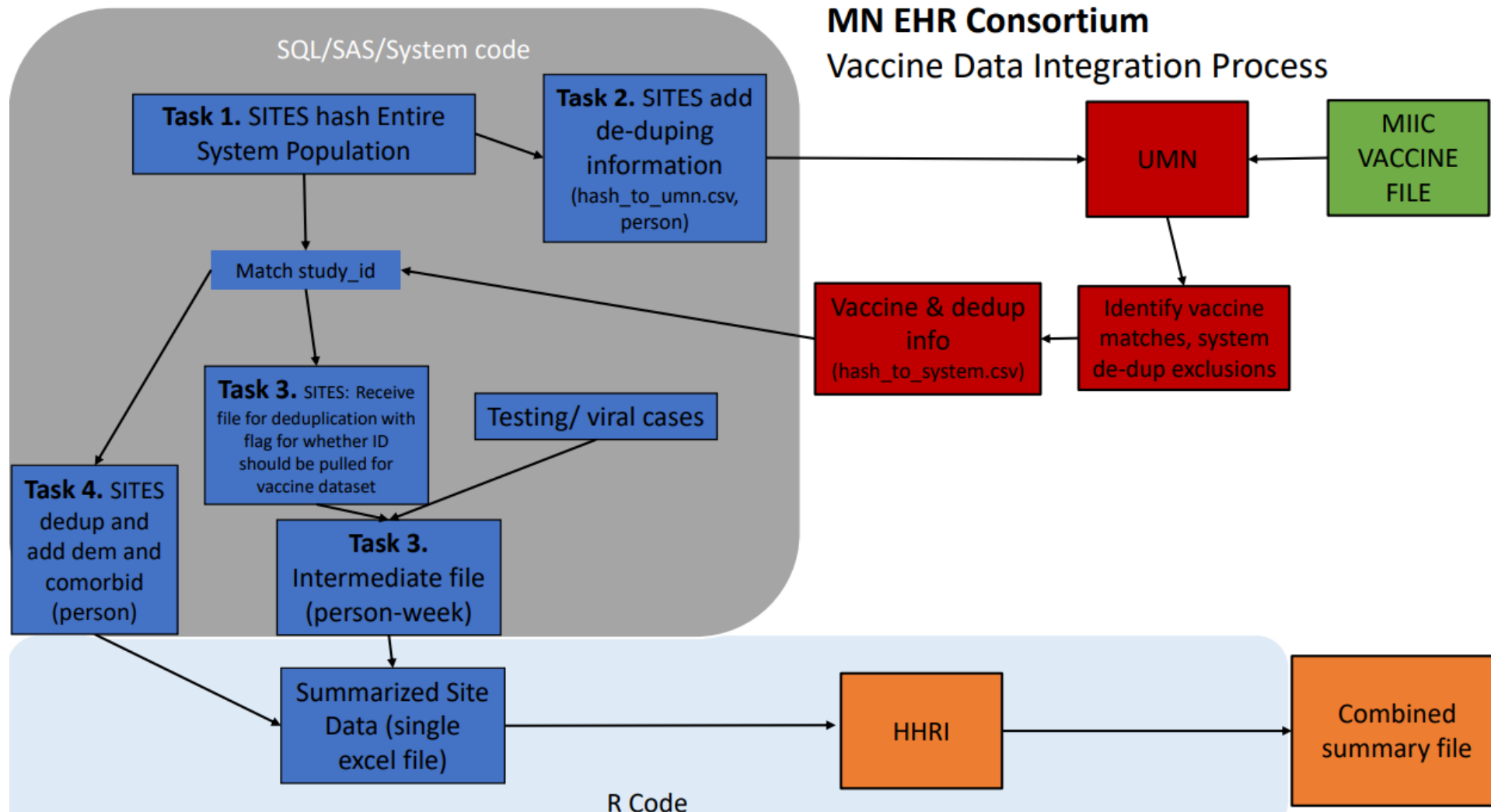
hash function

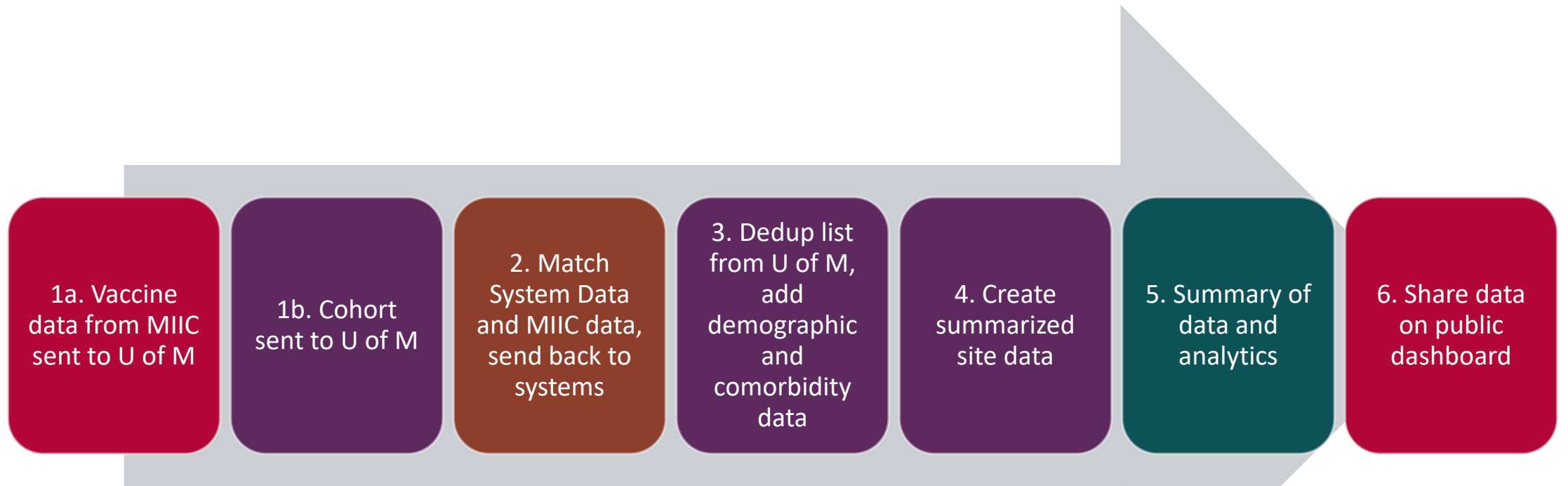


hash1	hash2	hash3	hash4
j3r8	j2w4	j9s3	j4x8

Hashes simplified for display purposes

# Data flow



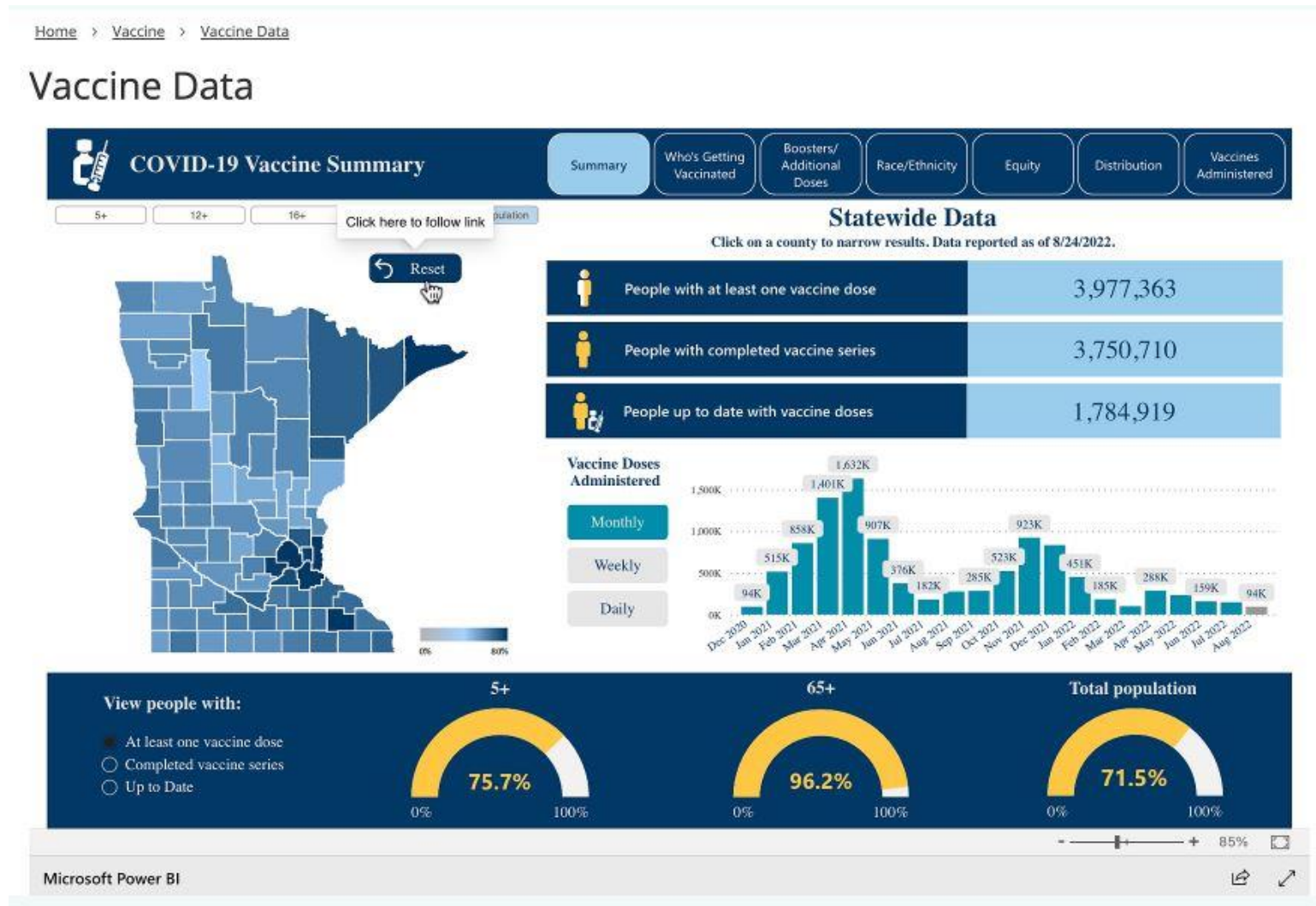


-  MDH
-  Health Systems
-  University of Minnesota
-  Hennepin Health Research Institute

- Report monthly
  - SQL updated/run, results reviewed for obvious issues and then securely uploaded, download MDH's list, run R code, securely upload – 1 hr
- Update process
  - New base/periodic file (once a year?) – 1 hr each
  - Updates to the R code – 30 min each

# Data Use

# Public COVID-19 Vaccine Dashboard

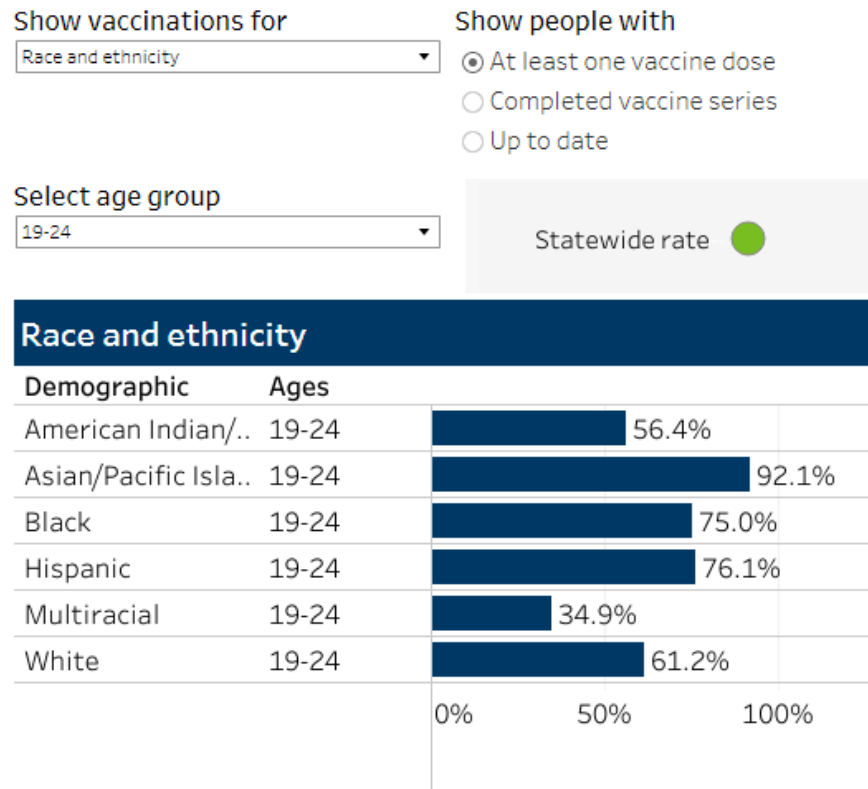


# Race/Ethnicity Data



# MDH Situation Update

## Health Equity



Bar chart showing rates for Minnesotans with at least one vaccine dose, complete vaccine series, and up to date on vaccine doses by age and special population.

### Data Available by:

- Race/Ethnicity
- Medicaid Status
- SVI
- Incarceration Individuals (Jails and Prisons)
- People Experiencing Homelessness
- Age
- Vaccination Status

[COVID-19 Vaccine Data COVID-19 Situation Update - MN Dept. of Health \(state.mn.us\)](https://state.mn.us/covid-19/vaccine-data)

## Minnesota EHR Consortium: COVID-19 Project, Vaccines

**Category**

- Total
- Race/Ethnicity
- Gender
- Income
- Urban/Rural
- Physical health

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**Attribute**

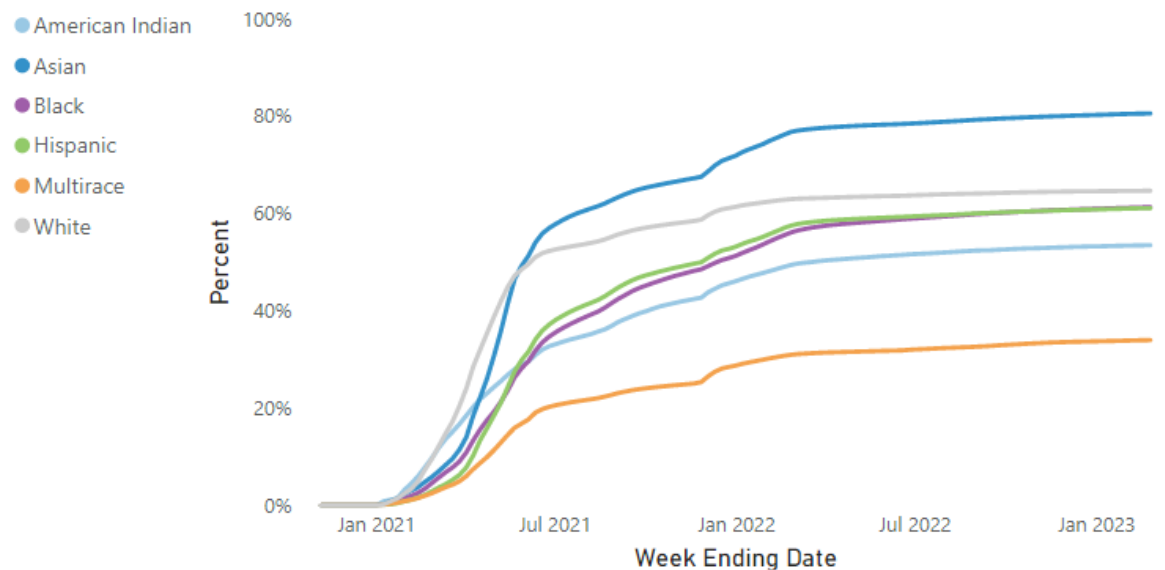
- Select all
- American Indian
- Asian
- Black
- Hispanic
- Multirace
- White

Reset page

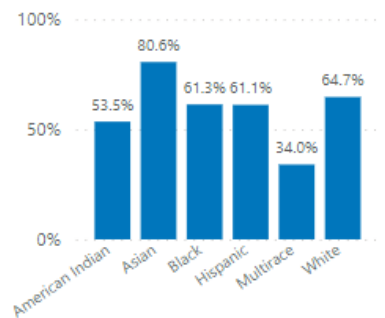
Up to date	Bivalent Booster	2nd Booster	1st Booster	Completed vaccine series	At least one vaccine dose	Cumulative	Percent	Disparities	
Total	Total, adj.*	Ages 75+	Ages 65-74	Ages 45-64	Ages 25-44	Ages 19-24	Ages 12-18	Ages 5-11	Ages 1-4

*Hold CTRL while selecting to group multiple age categories together.*  
*\*Adjusted so results are age-neutral. All denominators are for the entire population, including those under age 12.*  
*For disparities, values greater than 0 = over-represented, values less than 0 = under-represented compared to MN population*  
*The up to date metric accounts for bivalent boosters in all age categories.*

Percent Vaccinated, by Week

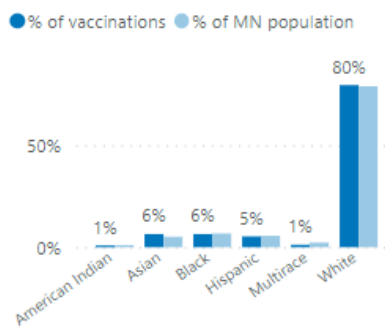


Percent MN population vaccinated to date



*Note: Due to differences in tabulation between health systems and the U.S. Census Bureau, multirace is likely under-reported*

Vaccinated population vs MN population



- Trend Data
  - [COVID-19 Vaccination Of People Experiencing Homelessness And Incarceration In Minnesota](#)
  - [Trends in COVID-19 Vaccine Administration and Effectiveness Through October 2021](#)
  - [Minnesota Electronic Health Record Consortium COVID-19 Project: Informing Pandemic Response Through Statewide Collaboration Using Observational Data](#)
  - [Notes from the Field: COVID-19 Vaccination Coverage Among Persons Experiencing Homelessness - Six U.S. Jurisdictions, December 2020-August 2021](#)
- Vaccine Efficacy
  - [Effectiveness of BNT162b2 and mRNA-1273 Second Doses and Boosters for Severe Acute Respiratory Syndrome Coronavirus 2 \(SARS-CoV-2\) Infection and SARS-CoV-2-Related Hospitalizations: A Statewide Report From the Minnesota Electronic Health Record Consortium](#)

# Thank You!

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