



# User-centered Redesign of a COVID-19 Vaccine Dashboard in Washington State

Lauren MacHarg, MPH

Office of Immunization, Division of Prevention and Community Health

# Authors

---



**Anna Frerichs**

*Epidemiologist*



**Kate Lewandowski**

*Epidemiologist*



**Lauren MacHarg**

*Epidemiologist*



**Molly Simonson**

*Epidemiologist*



**Ashley McHugh**

*Epidemiologist  
Team Supervisor*

Office of Immunization, Division of Prevention and Community Health

# Background

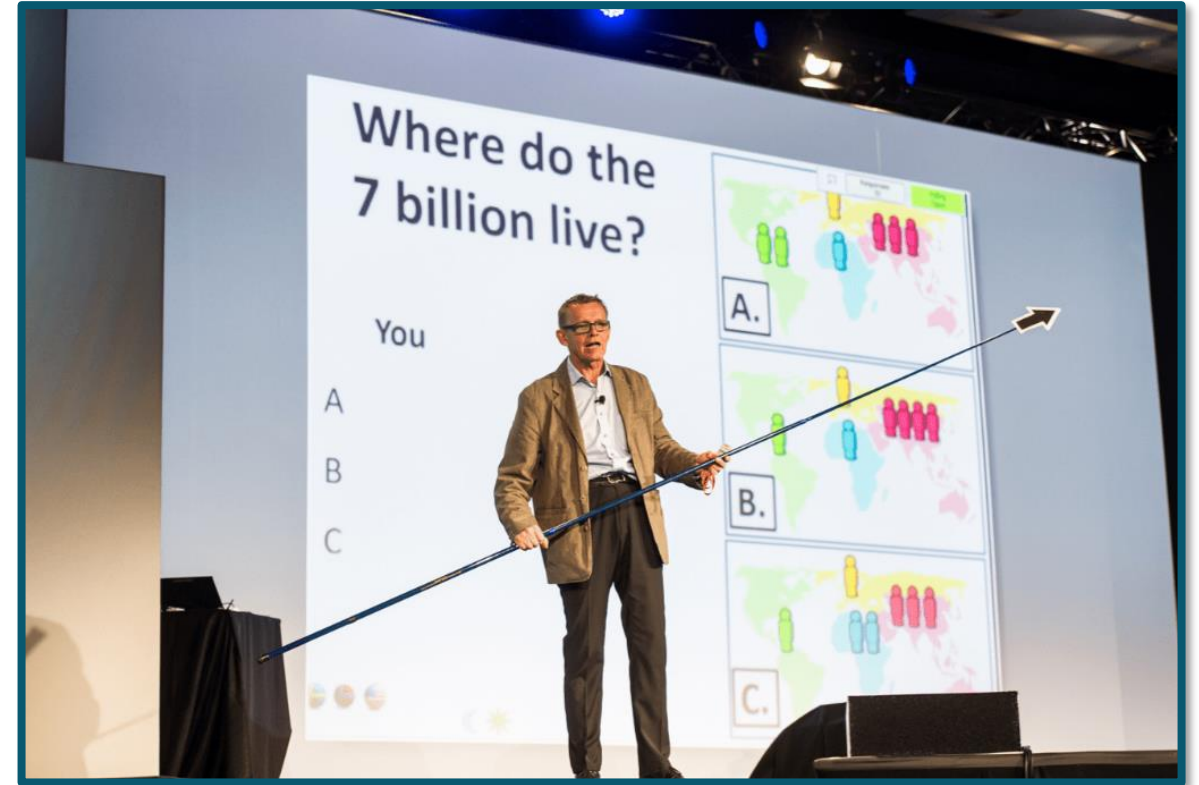
---



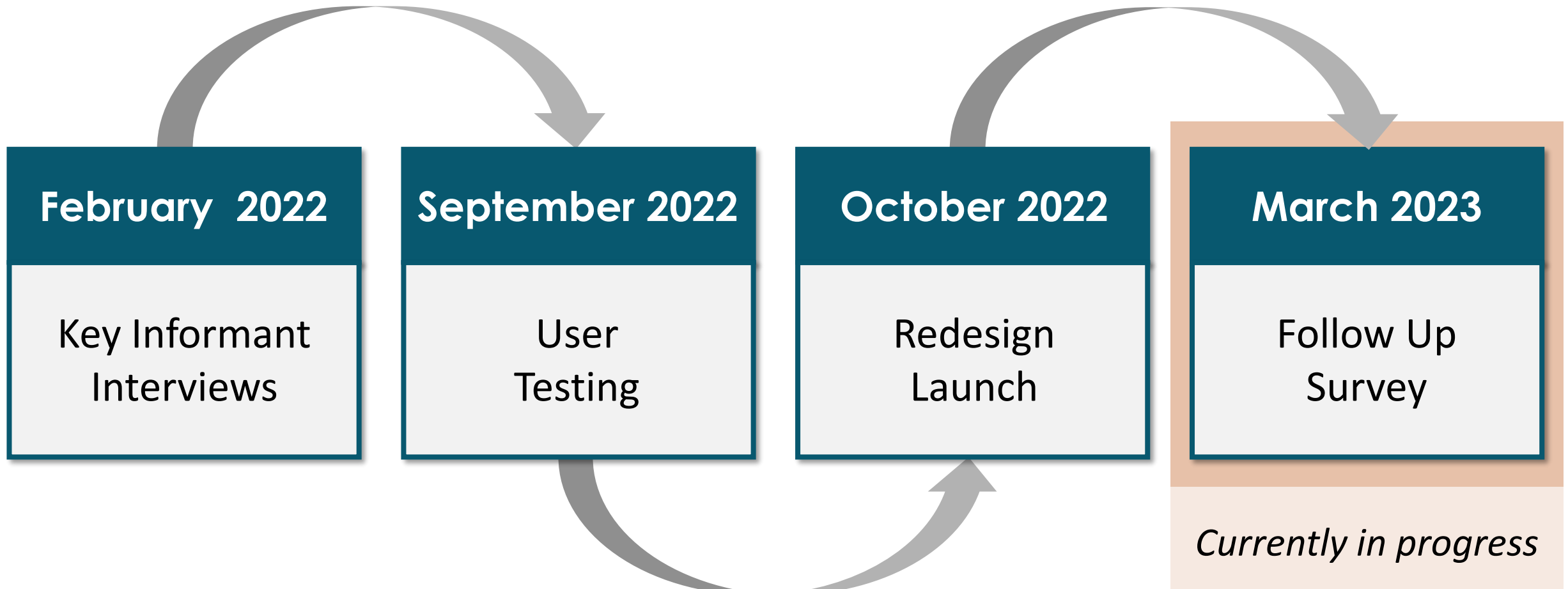
- COVID-19 pandemic created a need for rapid data availability
- Washington State Department of Health (WA DOH) and Microsoft contractors quickly launched Power Bi dashboards
- Original design did not incorporate user feedback

*“Test your ideas. Don’t only collect examples that show how excellent your favorite ideas are. Have people who disagree with you test your ideas and find their weaknesses.”*

– **Hans Rosling**  
Author of “Factfulness”



# Redesign Process



# Key Informant Interviews

February 2022

- 6 Local Health Jurisdictions and 12 Department of Health users.
- Topics of interest:
  - How dashboard was being used
  - What was being accessed regularly
  - How user experience could be improved



## Example Question

Is navigation working for you? Is it easy to navigate?

# Interview Feedback

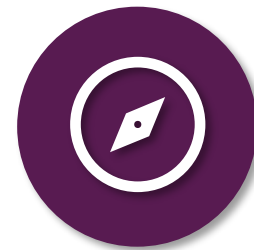
---



Improve existing  
measures

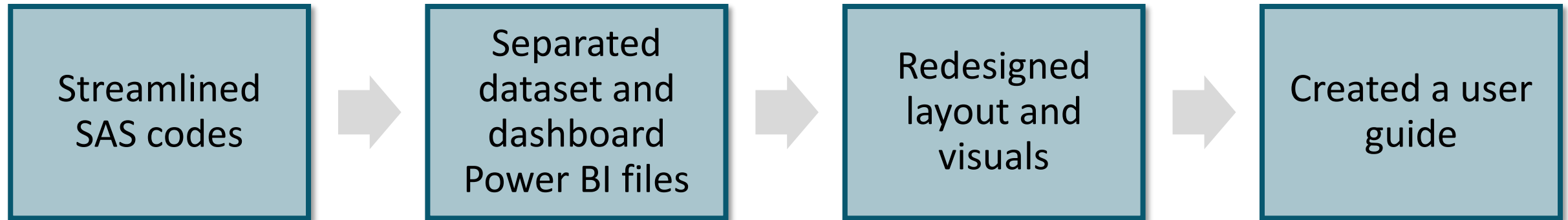


Increase data  
granularity



Create a  
user guide

# Implementation | March - August 2022



# User Testing | September 2022

- Invited users to explore and check the new dashboard prior to launch
- Special focus on:
  - Metrics
  - Ease of navigation
  - Functionality of slicers, tooltips, and tabs

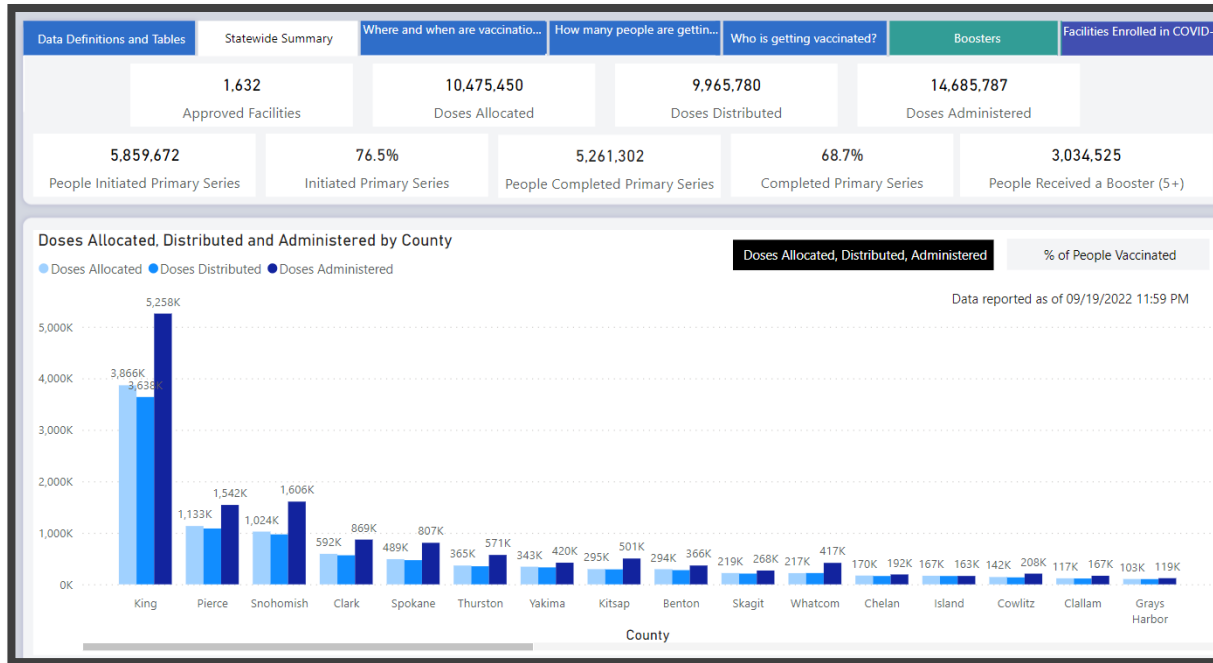


# Redesign Launched

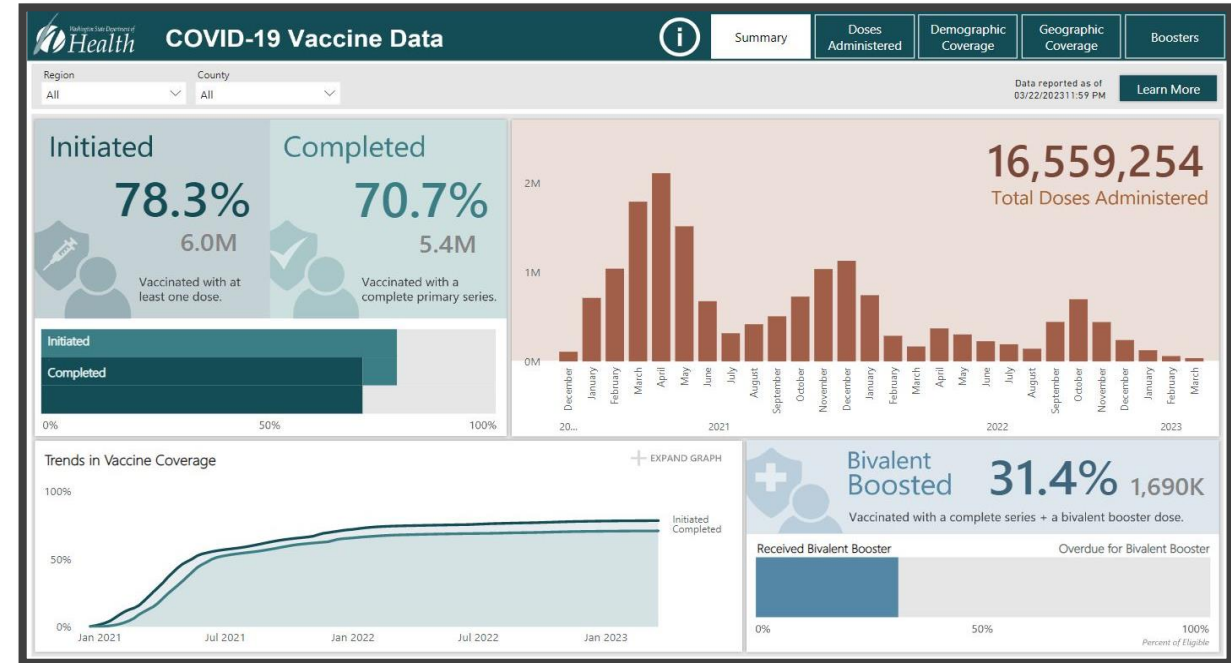
October 2022



# Summary Page



Original Design



Redesign



# COVID-19 Vaccine Data



Summary

Doses Administered

Demographic Coverage

Geographic Coverage

Boosters



Region: All County: All

Data reported as of 03/22/2023 11:59 PM

[Learn More](#)

## Initiated

78.3%

6.0M



Vaccinated with at least one dose.

## Completed

70.7%

5.4M



Vaccinated with a complete primary series.

Initiated

Completed

0% 50% 100%

2M

1M

0M

December  
20...

January

February

March

April

May

June

July

August

September

October

November

December

January

February

March

20...

2021

2022

2023

16,559,254

Total Doses Administered

## Trends in Vaccine Coverage

100%

50%

0%

Jan 2021

Jul 2021

Jan 2022

Jul 2022

Jan 2023

Initiated  
Completed

+ EXPAND GRAPH



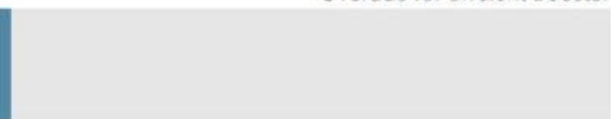
Bivalent Boosted

31.4% 1,690K

Vaccinated with a complete series + a bivalent booster dose.

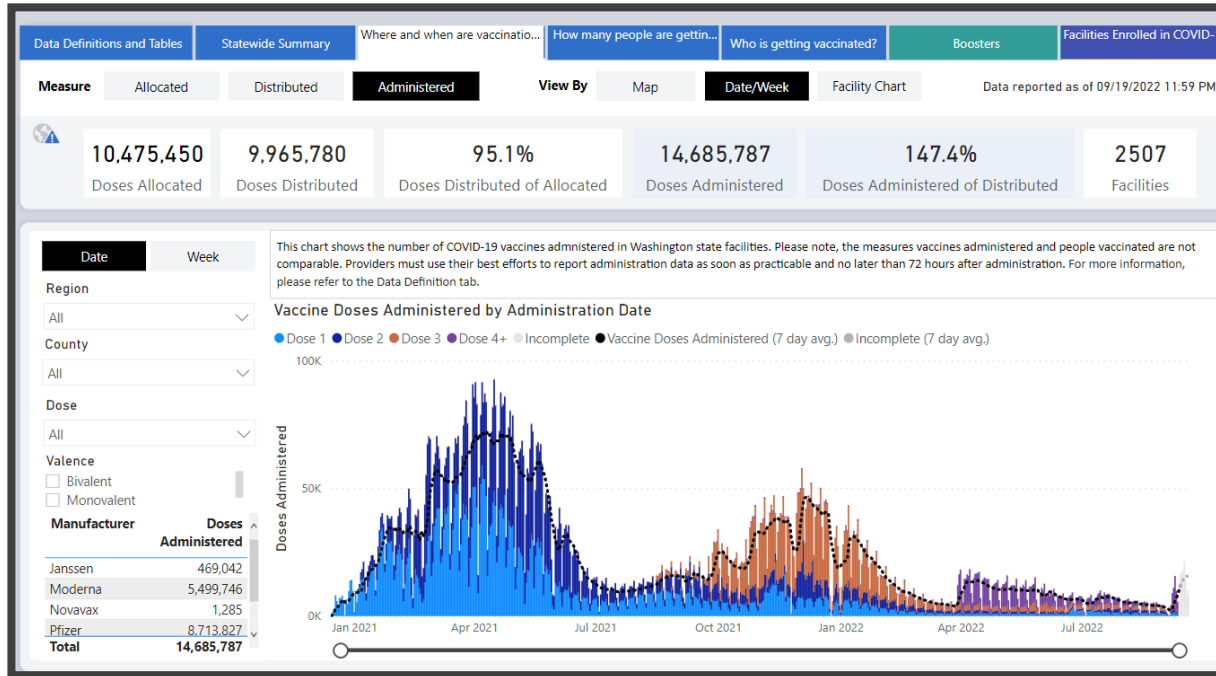
Received Bivalent Booster

Overdue for Bivalent Booster

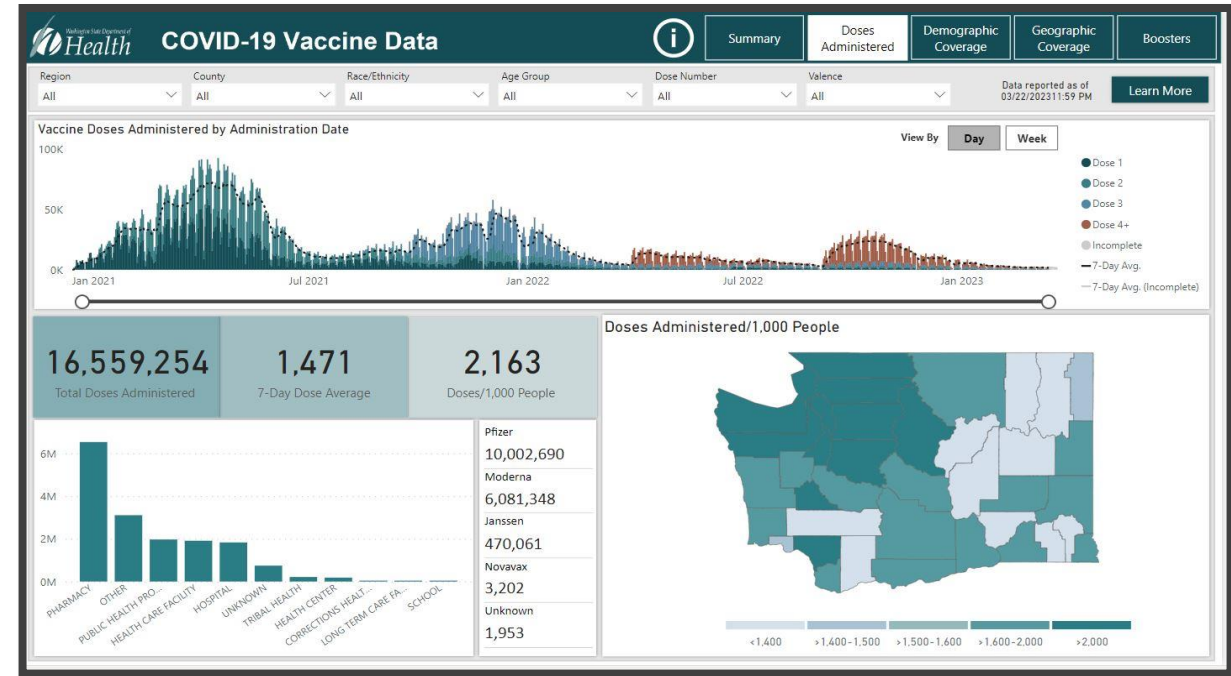


Summary Page: Redesign

# Doses Administered Page



Original Design



Redesign



# COVID-19 Vaccine Data



Summary

Doses  
Administered

Demographic  
Coverage

Geographic  
Coverage

Boosters

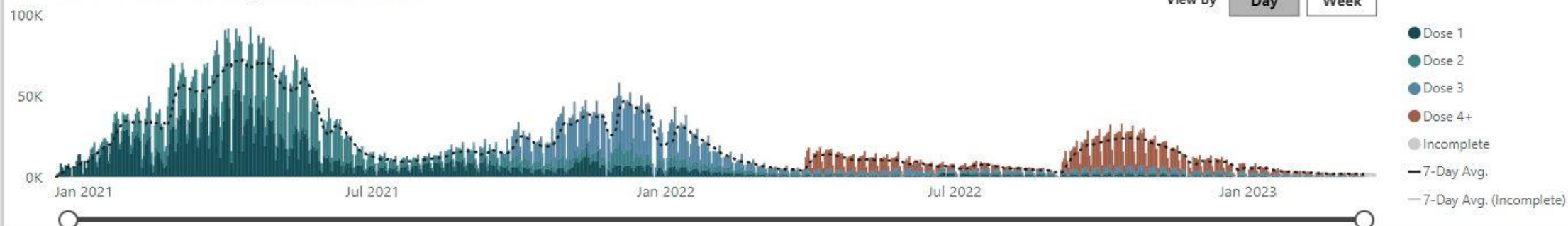


Region: All County: All Race/Ethnicity: All Age Group: All Dose Number: All Valence: All

Data reported as of  
03/22/2023 11:59 PM

[Learn More](#)

## Vaccine Doses Administered by Administration Date



16,559,254

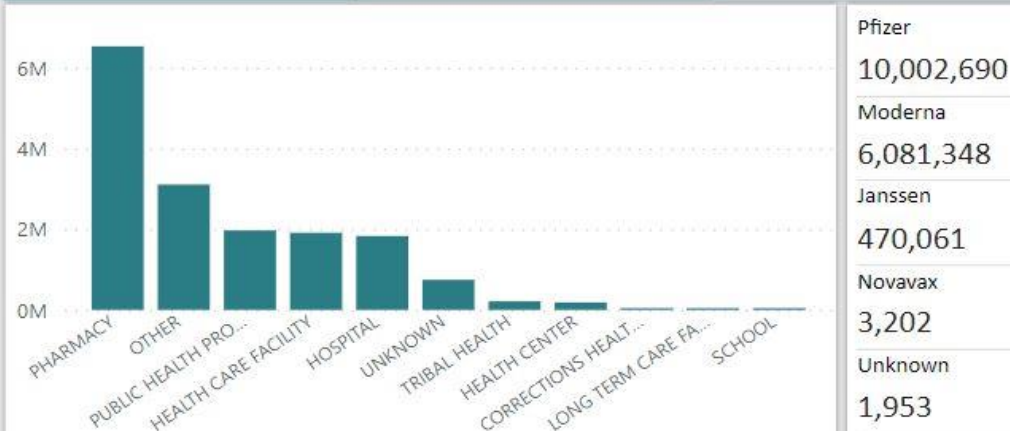
Total Doses Administered

1,471

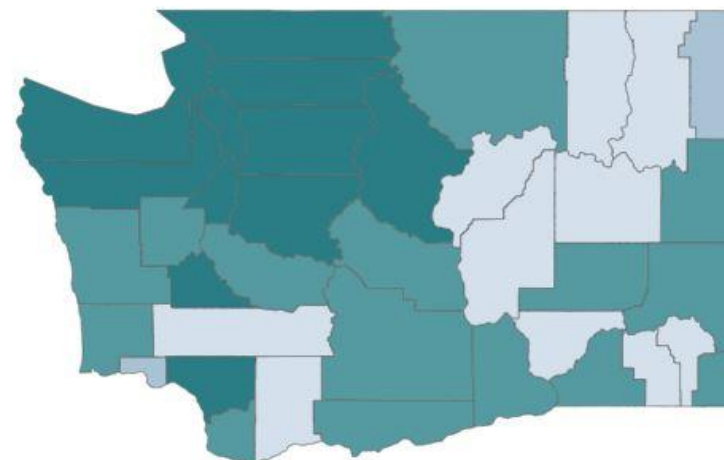
7-Day Dose Average

2,163

Doses/1,000 People

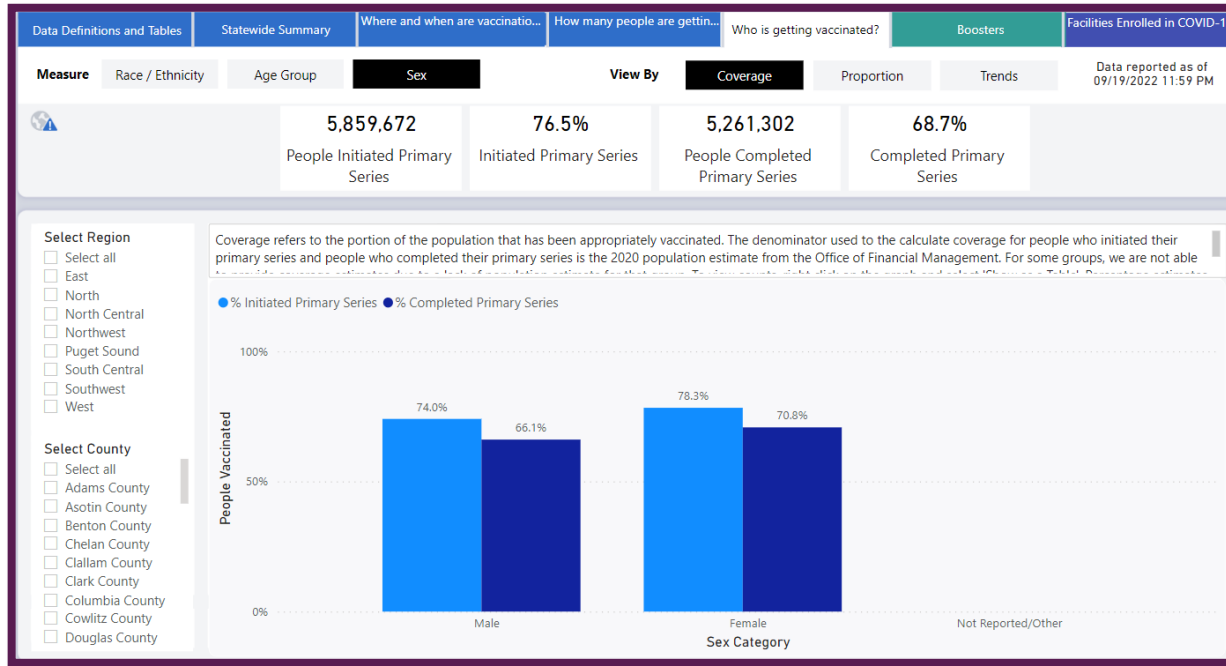


## Doses Administered/1,000 People

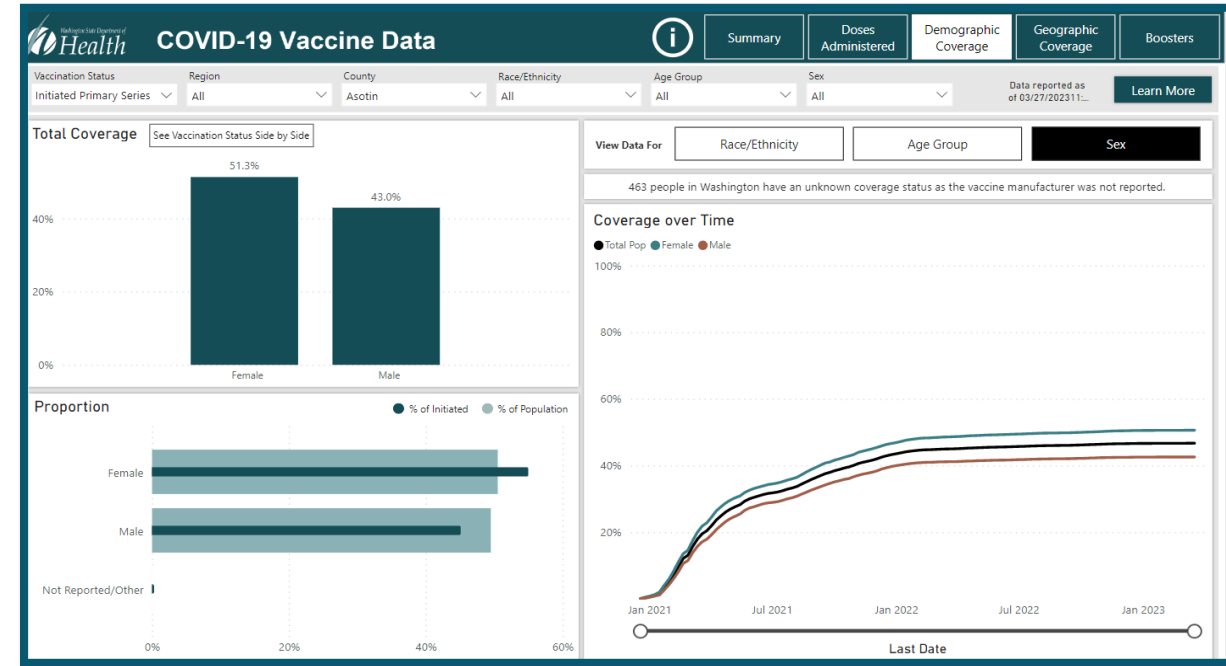


Doses Administered Page: Redesign

# Coverage Page



Original Design



Redesign



Summary

Doses Administered

Demographic Coverage

Geographic Coverage

Boosters



Vaccination Status

Initiated Primary Series

Region

All

County

Asotin

Race/Ethnicity

All

Age Group

All

Sex

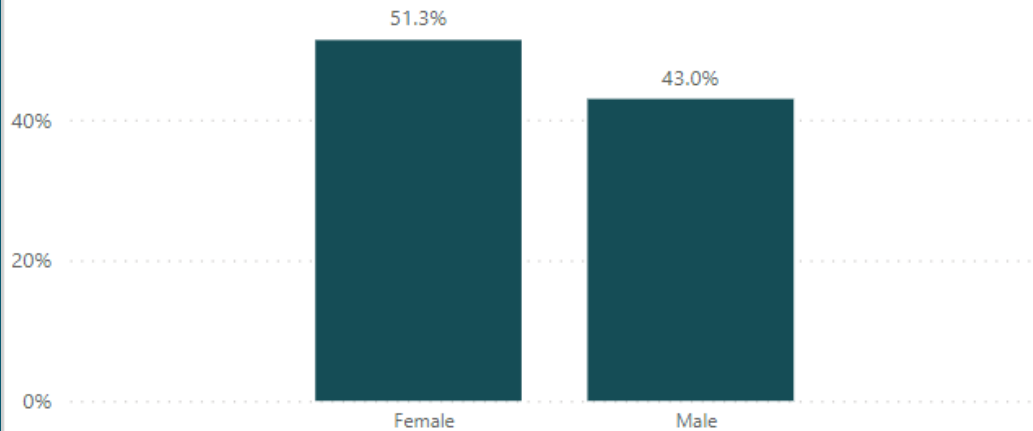
All

Data reported as of 03/27/2023 11:...

Learn More

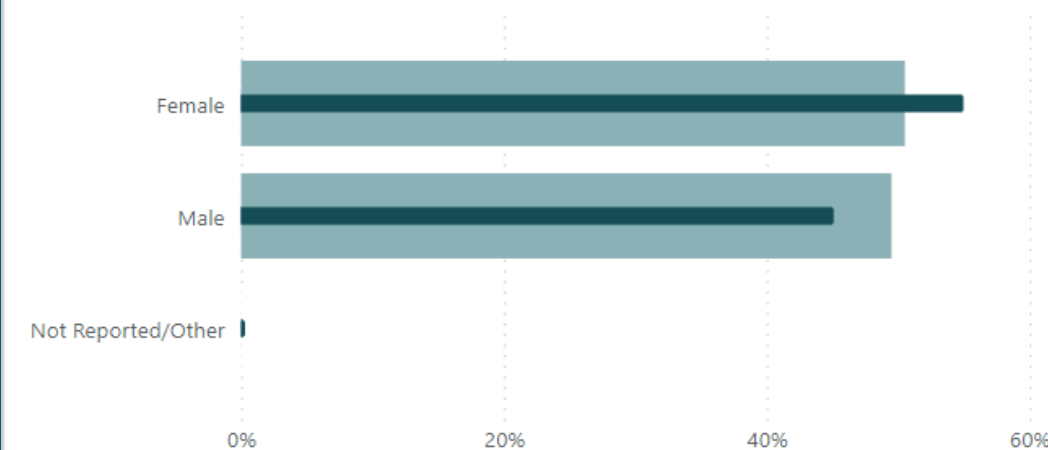
## Total Coverage

See Vaccination Status Side by Side



## Proportion

● % of Initiated ● % of Population



View Data For

Race/Ethnicity

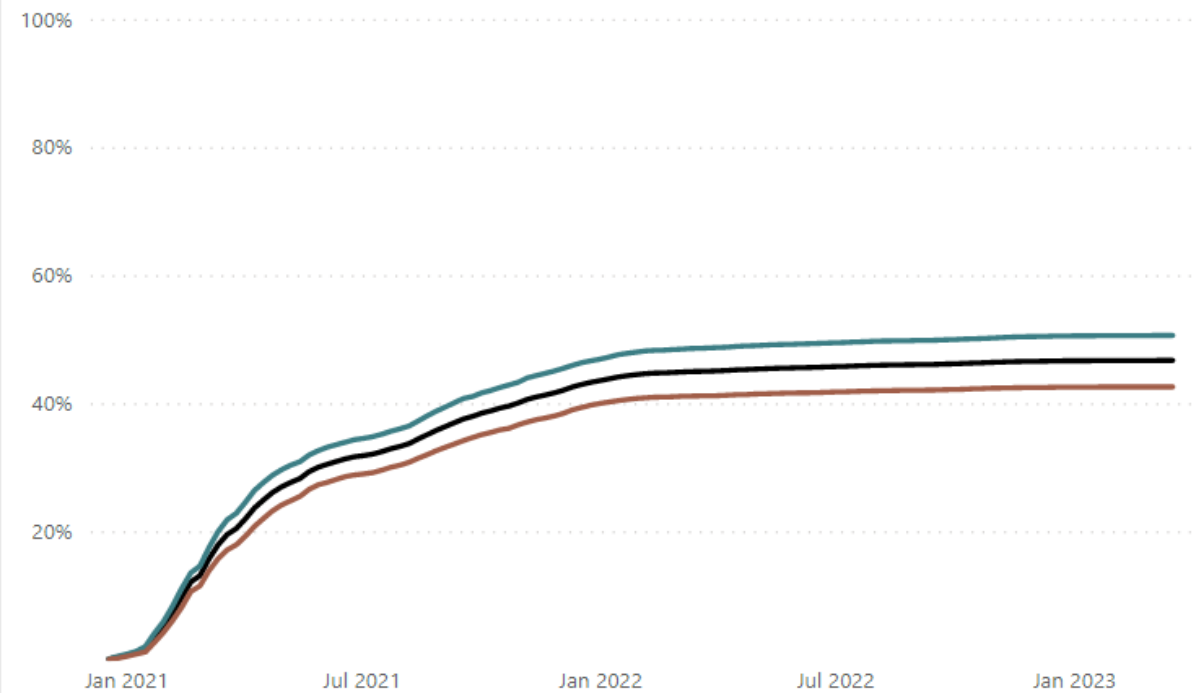
Age Group

Sex

463 people in Washington have an unknown coverage status as the vaccine manufacturer was not reported.

## Coverage over Time

● Total Pop ● Female ● Male



Coverage Page: Redesign

# Internal Dashboard Redesign User Guide

## Dashboard Pages & Navigation



### Information & Data Notes

This page contains information about the dashboard, as well as a user statement,...

### Summary

#### Summary

This initial landing page contains a snapshot of vaccination coverage across the state.

### Doses Administered

#### Doses Administered

This page contains information of all vaccine doses by administering facility type, major...

### Demographic Coverage

#### Demographic Coverage

This page includes the ability to view pre-completed status by recipient demographic...

### Geographic Coverage

#### Geographic Coverage

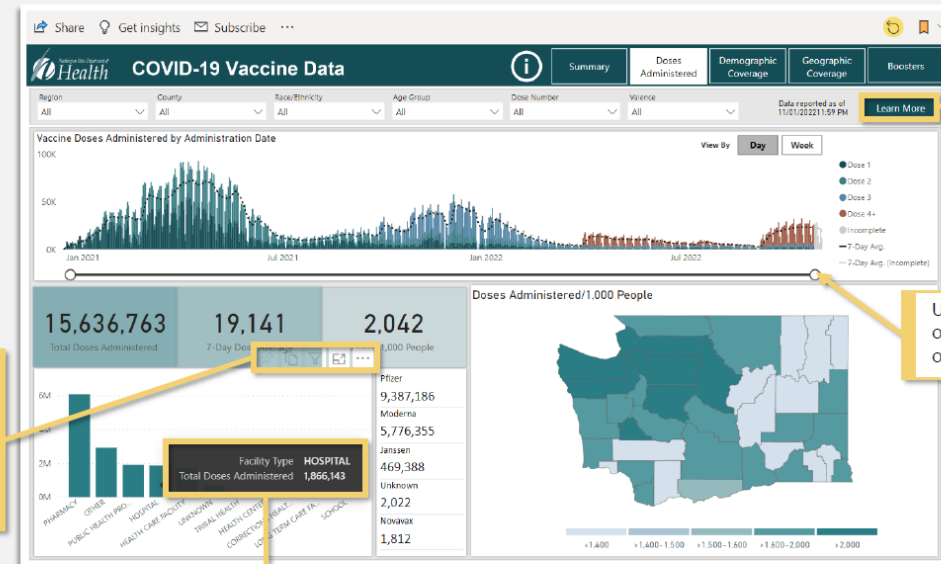
This page also contains information on where recipients live, including counties...

### Boosters

#### Boosters

This page contains information on booster completion of their primary series.

## General Dashboard Features



Icons at the top of visuals provide the ability to **copy** the visual and enlarge it with **focus mode**. Clicking on the **three dots** provides options to export, show as a table, and sort the data.

Click **Learn More** in the upper right corner for more information about the data and measures used in a specific tab.

Use the **sliders** to zoom in on or view a specific range of dates.

**Tooltips** are boxes of information that appear when you hover over visuals. This may include information not otherwise available in the chart or graph.

# Follow Up Survey | March-April 2023

- ➡ Dashboard usage and purpose of use
- ➡ User satisfaction with overall design and specific metrics
- ➡ How will the dashboard inform future COVID-19 vaccination work
- ➡ What data page is most useful to users
- ➡ How users anticipate using the dashboard moving forward
- ➡ Any additional feedback for improving the dashboard

14 total responses: 7 LHJs and 7 DOH employees

# Survey Feedback | March-April 2023

---



4.07 Average Rating



Varied user  
frequency and  
utilization



High user  
satisfaction  
with design and  
metrics



Users anticipate  
ongoing reporting and  
prioritization of equity

# Survey Feedback | March-April 2023

---

“This vaccine data report has been very valuable,  
thank you for your work maintaining it!”

# Key Takeaways

---



Power Bi dashboards continue to expand in state health agencies



Targeted user feedback is invaluable and provides user input into dashboard design



Dashboard design is continually iterative and requires collaboration across skillsets

# Questions?



Photo by Debra Feinman (WA DCHS)

# WA State Department of Health Contributors

---

**Anna Frerichs, MPH**

*Epidemiologist*

Office of Immunization

**Ashley McHugh, MPH**

*Epidemiologist*

Office of Immunization

**Katherine Lewandowski, MPH**

*Epidemiologist*

Office of Immunization

**Jessica Marcinkevage, PhD**

*Epidemiologist*

Office of Immunization

**Lauren MacHarg, MPH**

*Epidemiologist*

Office of Immunization

**Molly Simonson, MPH**

*Epidemiologist*

Office of Immunization

[www.doh.wa.gov](http://www.doh.wa.gov)



@WADeptHealth

# Presenter Contact Information

---



**Lauren MacHarg, MPH**

*Epidemiologist*

Office of Immunization

[Lauren.MacHarg@doh.wa.gov](mailto:Lauren.MacHarg@doh.wa.gov)



To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email [civil.rights@doh.wa.gov](mailto:civil.rights@doh.wa.gov).