

# Responsive data visualizations in an ever-changing pandemic environment

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AIRA 2021 National Meeting

August 3-5, 2021



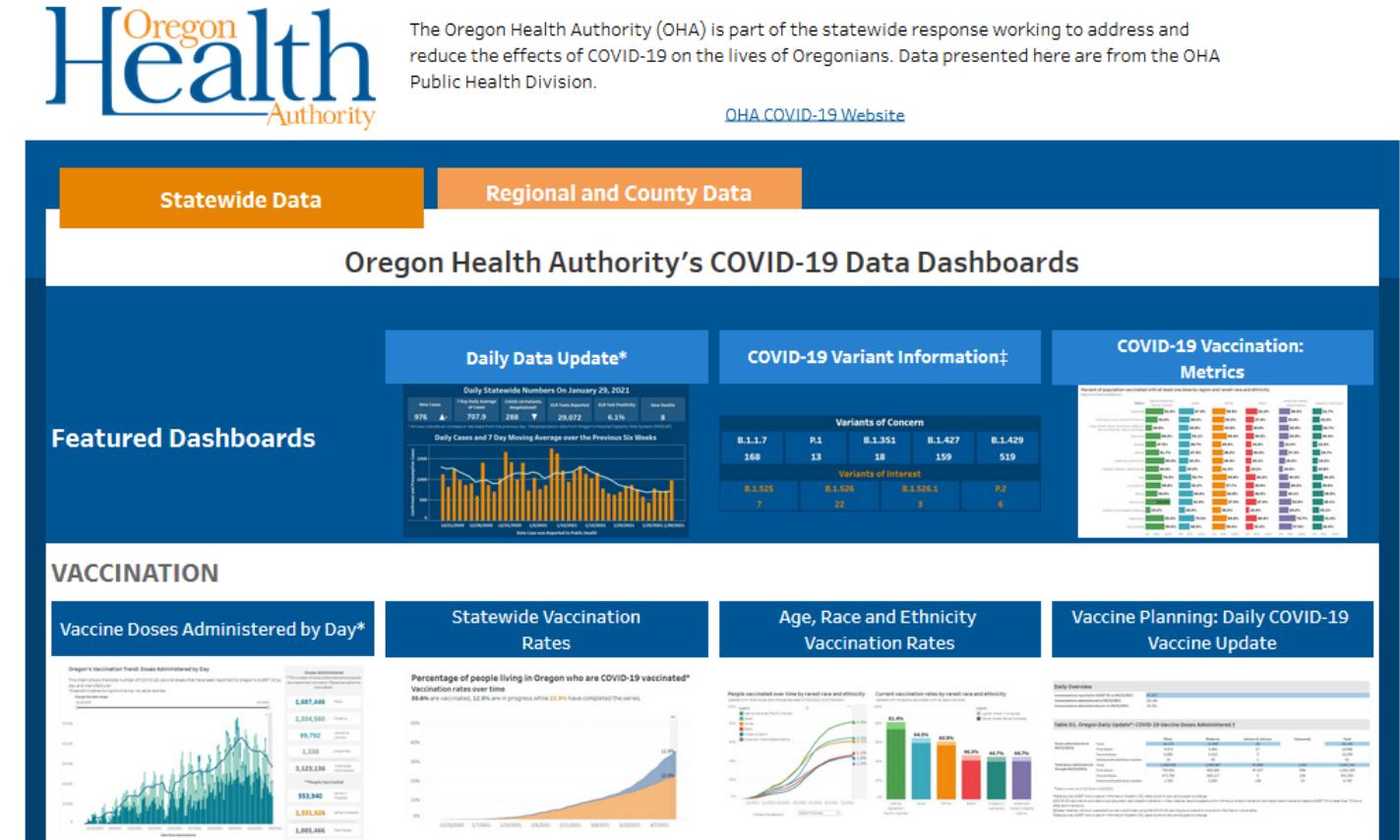
COVID-19 RESPONSE AND RECOVERY UNIT  
Office of the Director

# Overview to response visualizations

1. Data are refreshed daily, organized & cited for users
2. Replace static reporting with Tableau
3. Include resources, data for download, and definitions
4. Start small, add more to the dashboard as you go
5. Respond to media inquiries with help from public information officers
6. Align data visualizations with organization goals
7. Develop analyses requested by leadership and subject matter experts to Tableau
8. Create hidden dashboards for external stakeholders like local public health authorities
9. Combine multiple sources of data
10. Make data visualizations that translate to presentation slides with a screen shot
11. Don't be afraid to re-evaluate and replace
12. Lean into difficult topics, especially when it comes to equity
13. Publishing data visualizations in Tableau allows more people to make evidence-based decisions and impact agency operations
14. Work to promote accessibility

# Data are refreshed daily, organized & cited for users

- Programs within Oregon Health Authority (OHA) develop reports and data analysis both with and without Tableau before the pandemic
- Daily reporting required by the pandemic shifts COVID-19 reporting primarily to Tableau and results in the development of many dashboards
- **OHA COVID-19 Table of Contents** organizes dashboards to help users find the data
- Dashboards also linked on OHA COVID-19 websites, in daily news releases
- Archived, robust quality assurance is essential



# Replace static reporting with Tableau

- Oregon COVID-19 Vaccination Metrics
  - Spreadsheets
  - PowerPoints
- Oregon COVID-19 Vaccination Trends
  - Daily data email briefs
- Oregon COVID-19 Vaccine Provider Enrollment
  - Spreadsheets
  - Internal data systems
- Oregon COVID-19 Vaccine Daily Update
  - Daily data email briefs
  - Public records requests
    - Example, see 'Download Data' for all allocations/deliveries

# Include resources, data for download, definitions

**Oregon Health Authority COVID-19 Vaccination Metrics**

Statewide | Age | Race and Ethnicity | Time to Completion

Data current as of 12:01am 6/18/2021



 OHA's COVID-19 Data Dashboards

 OHA's COVID-19 Vaccine Website

 Download the Data

 Contact Us

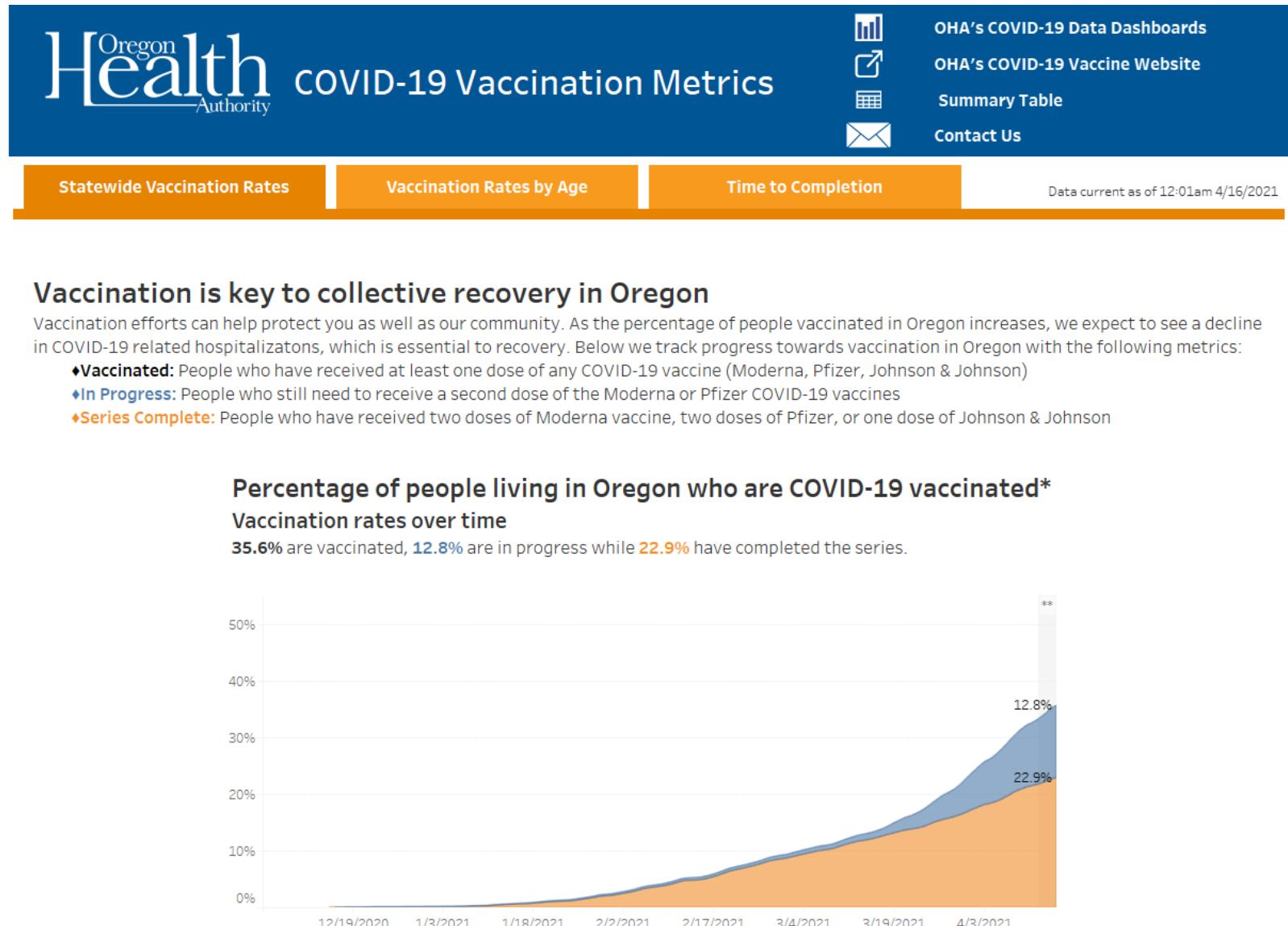
## Vaccination is key to collective recovery in Oregon

Vaccination efforts can help protect you as well as our community. Progress in Oregon is measured using the following definitions:

- ◆ **Vaccinated:** People who have received at least one dose of any COVID-19 vaccine (Moderna, Pfizer, Johnson & Johnson)
- ◆ **In Progress:** People who still need to receive a second dose of the Moderna or Pfizer COVID-19 vaccines
- ◆ **Series Complete:** People who have received two doses of Moderna vaccine, two doses of Pfizer, or one dose of Johnson & Johnson

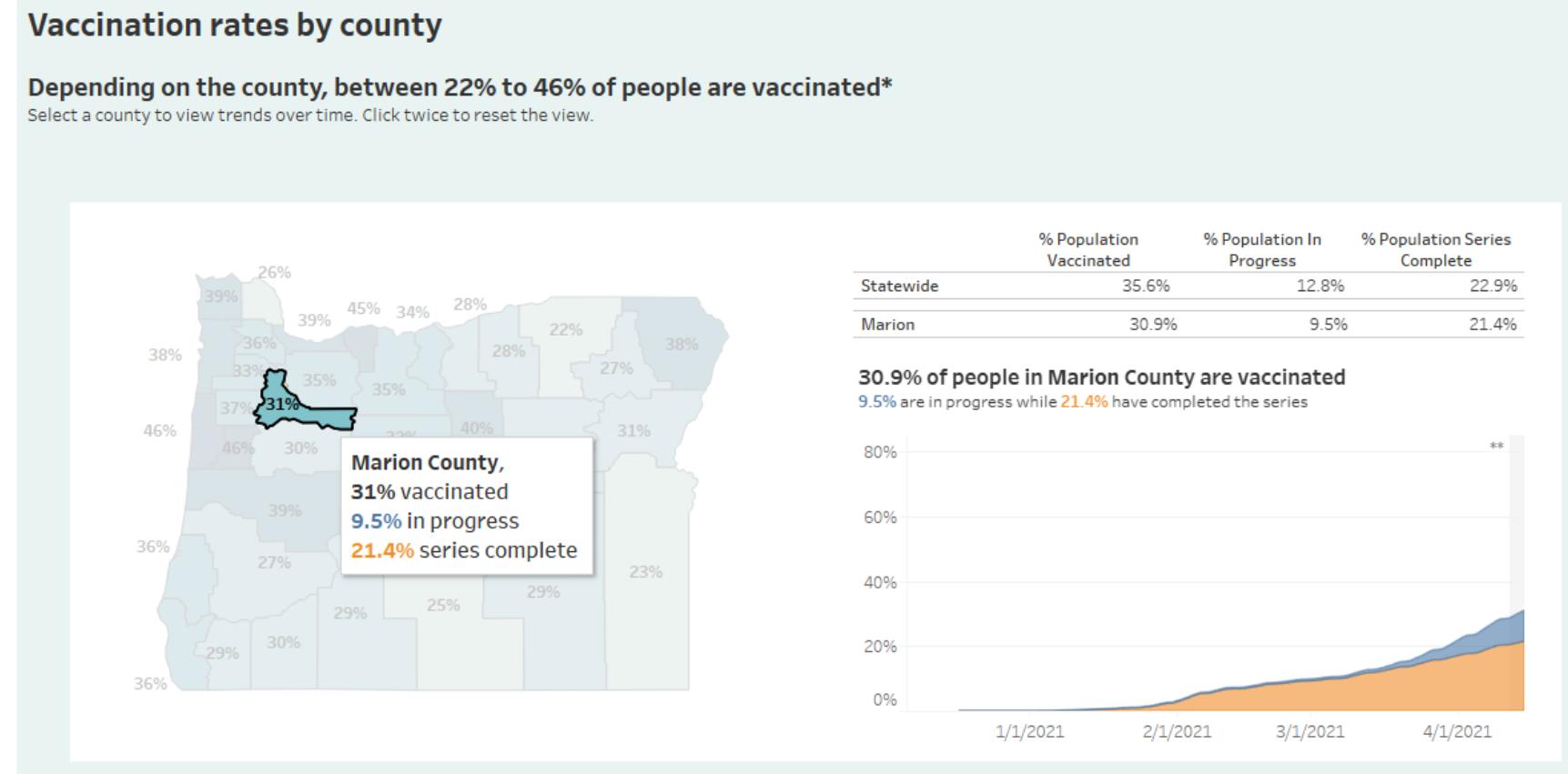
# Start small, add more to the dashboard as you go

- Metrics dashboard started with statewide and county estimates
  - Statewide, all
  - By county, all
  - Statewide, by age
  - By county, by age



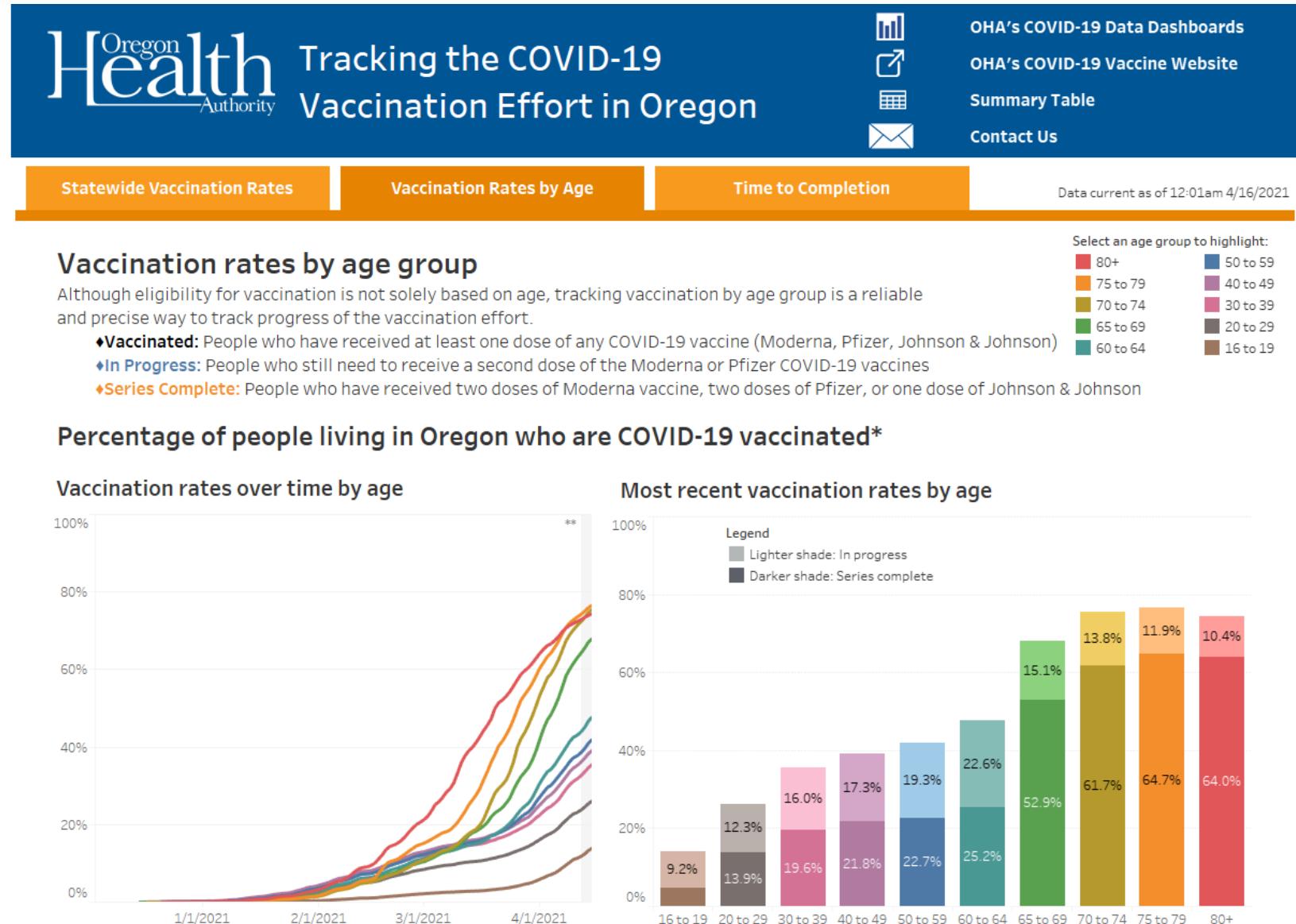
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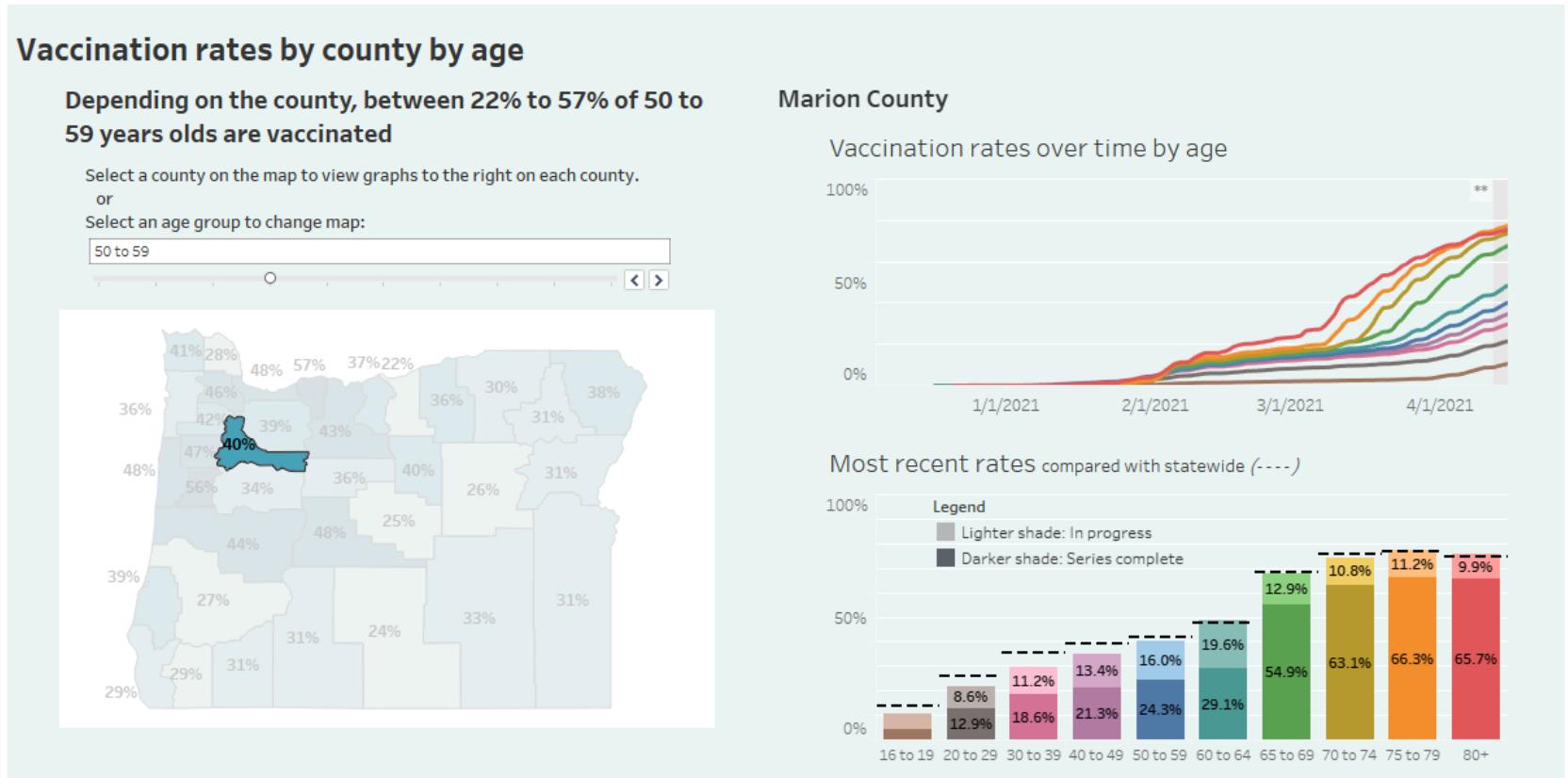
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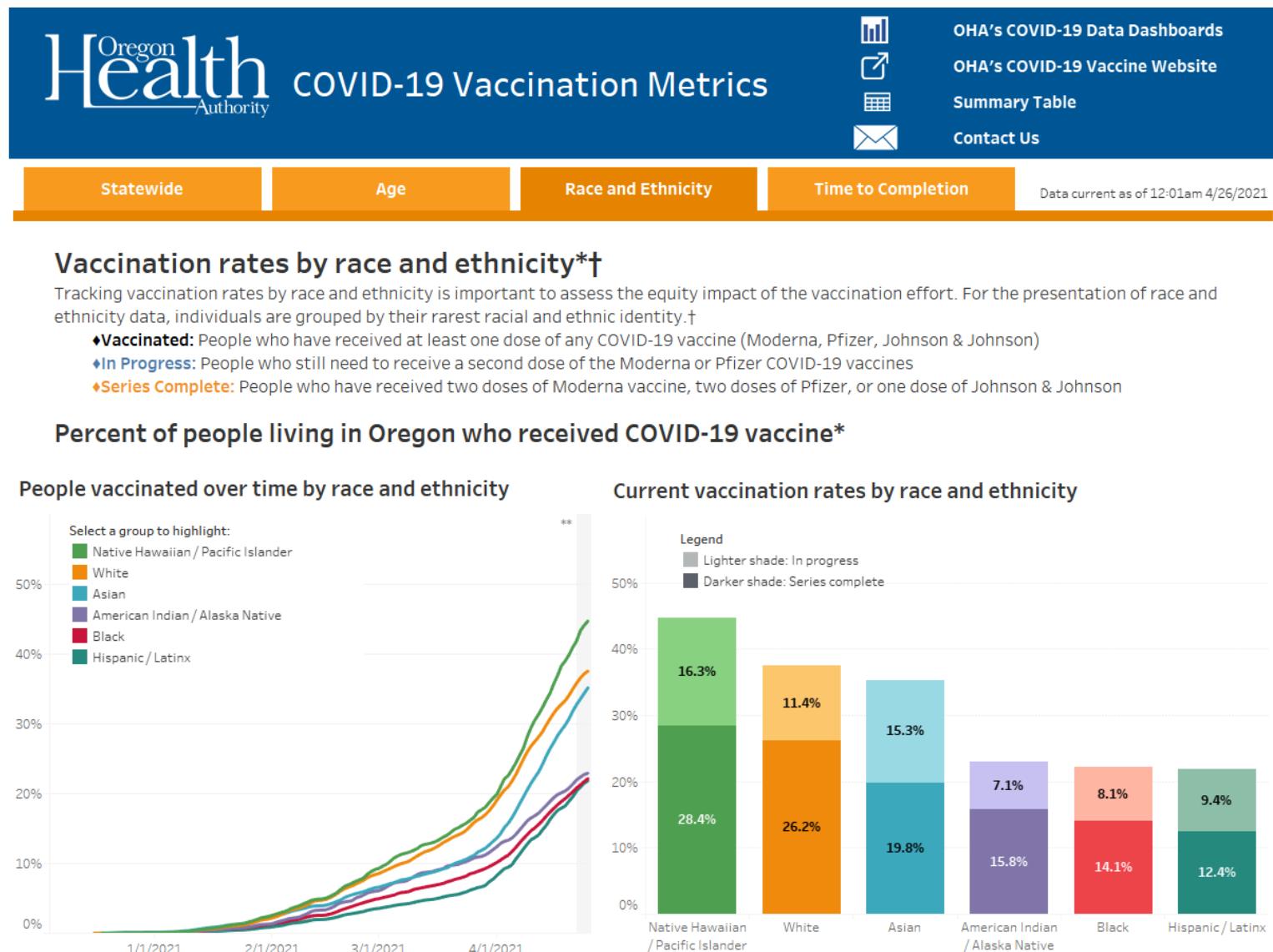
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# Start small, add more to the dashboard as you go

- Added rarest race and ethnicity later. First at the statewide level, and even later at a regional level
  - Statewide, by rarest race and ethnicity**
  - By region, by rarest race and ethnicity



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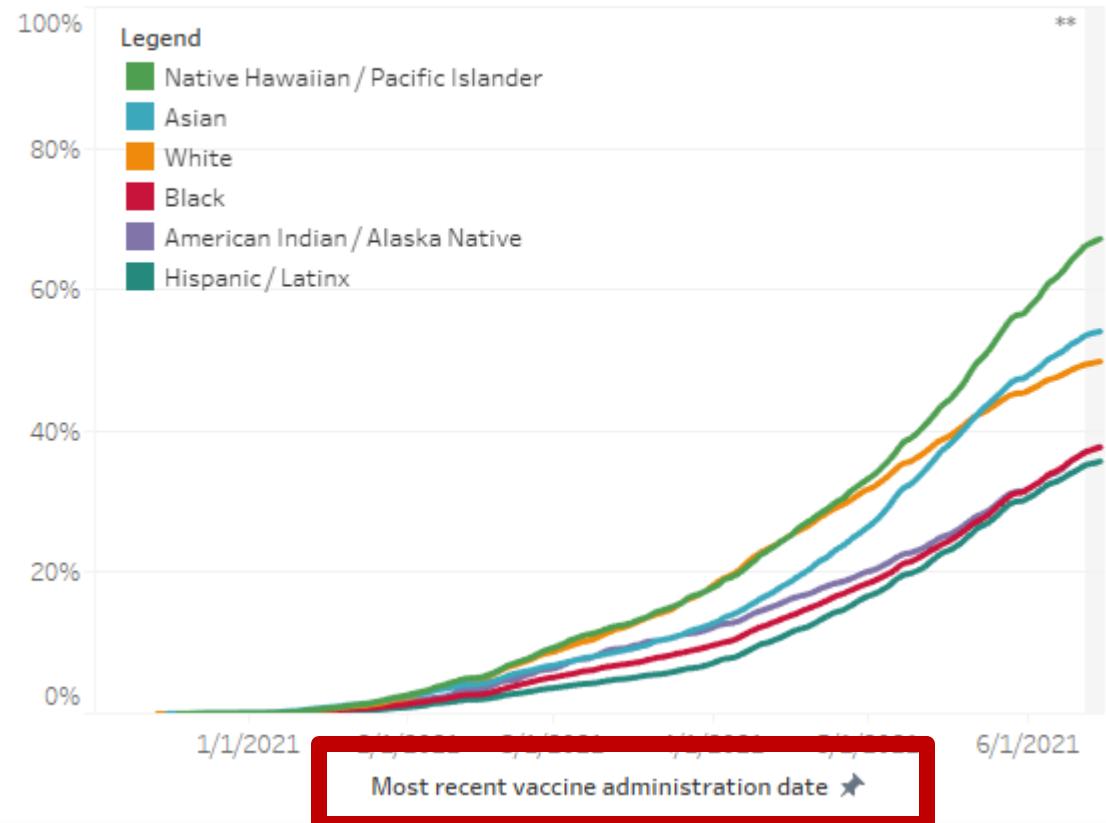
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# Respond to media inquiries with help from public information officers

- Weekly meeting with epidemiologists, data visualization informaticists, web team, public information officers, external communications
- Utilize daily news release to announce dashboard changes and anticipate media questions
- Answer questions about dashboards from media and public in timely manner
- Make additions to dashboards based on questions and suggestions
- Switch to plain language to align with external communications
- When in doubt, add more rather than take away anything

People vaccinated over time by race and ethnicity

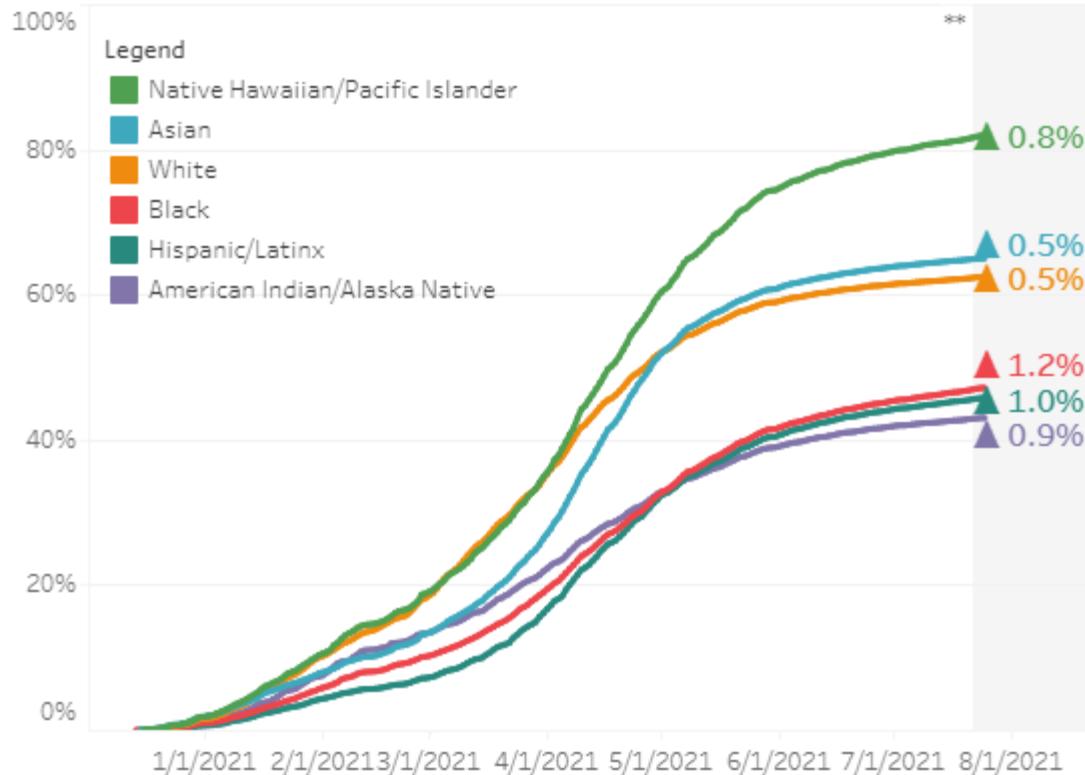


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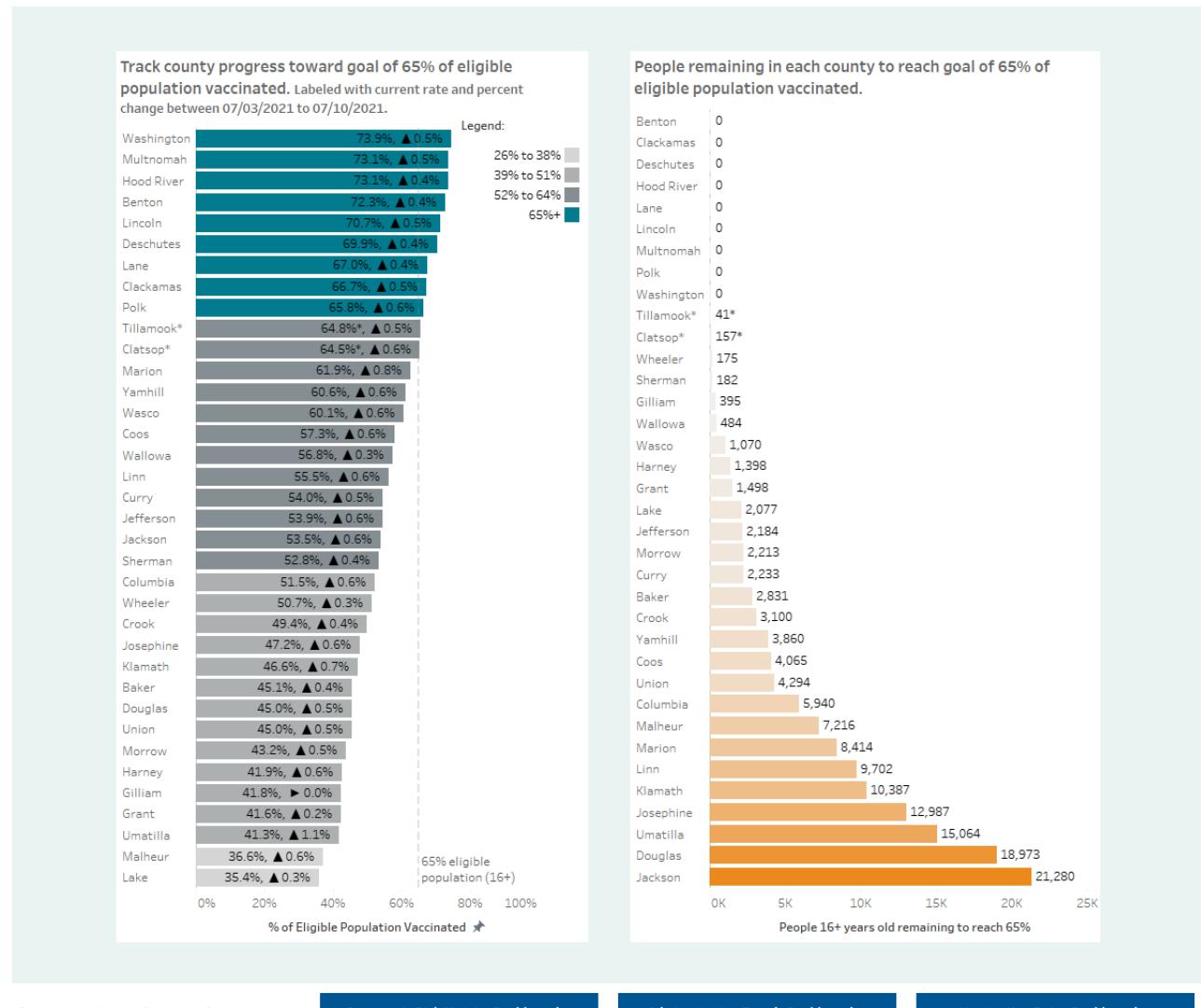
Labeled with relative percent change between 07/15/2021 to 07/22/2021



Change the date axis:

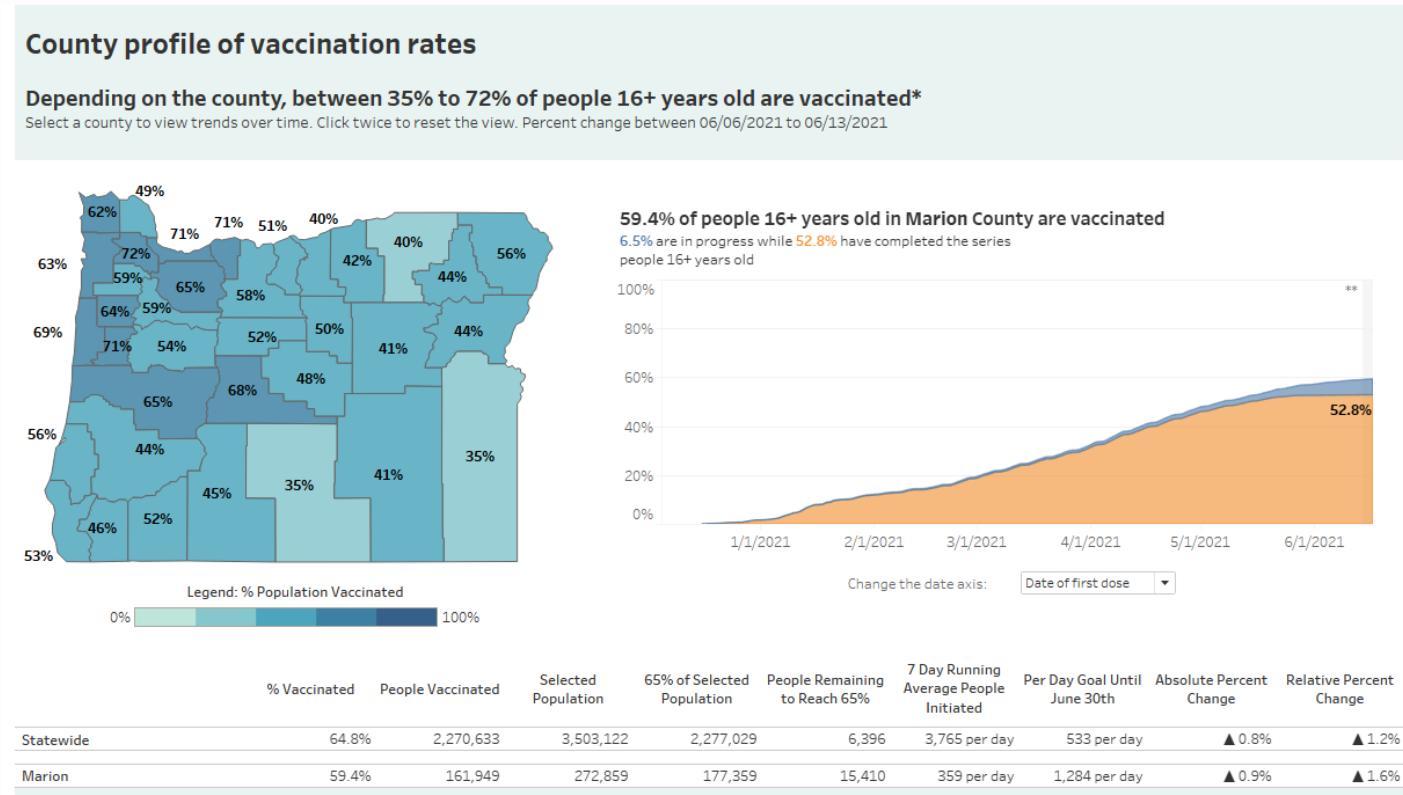
# Align data visualizations with organization goals

- Governor announced a 65% vaccination goal
  - Became more important to easily know which counties had passed the goal and how many people remained
- Since this was first introduced, we've switched the vaccination goal to 80%
- We're, again, adding more to what was already visualized – retained county specific estimates on each dashboard



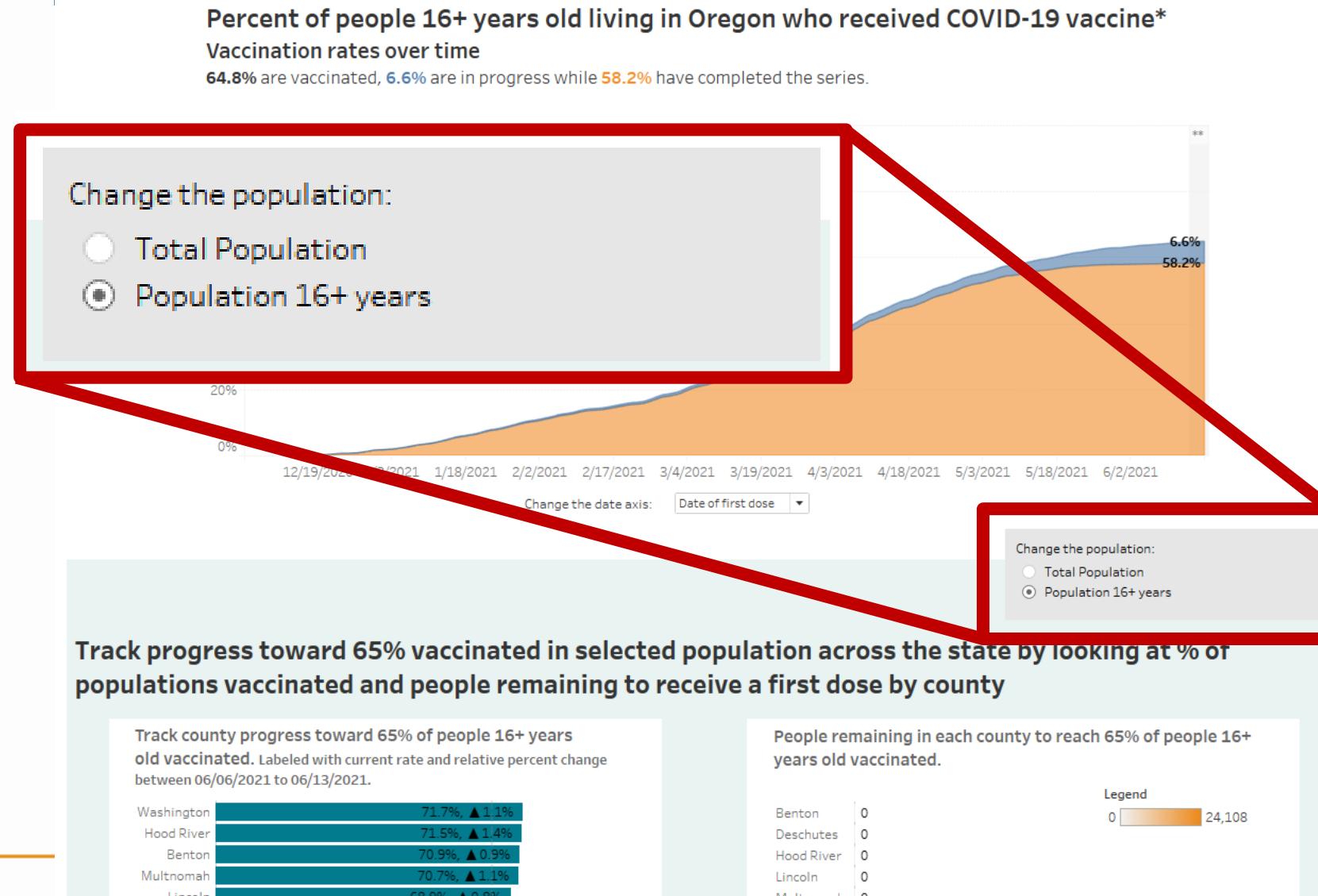
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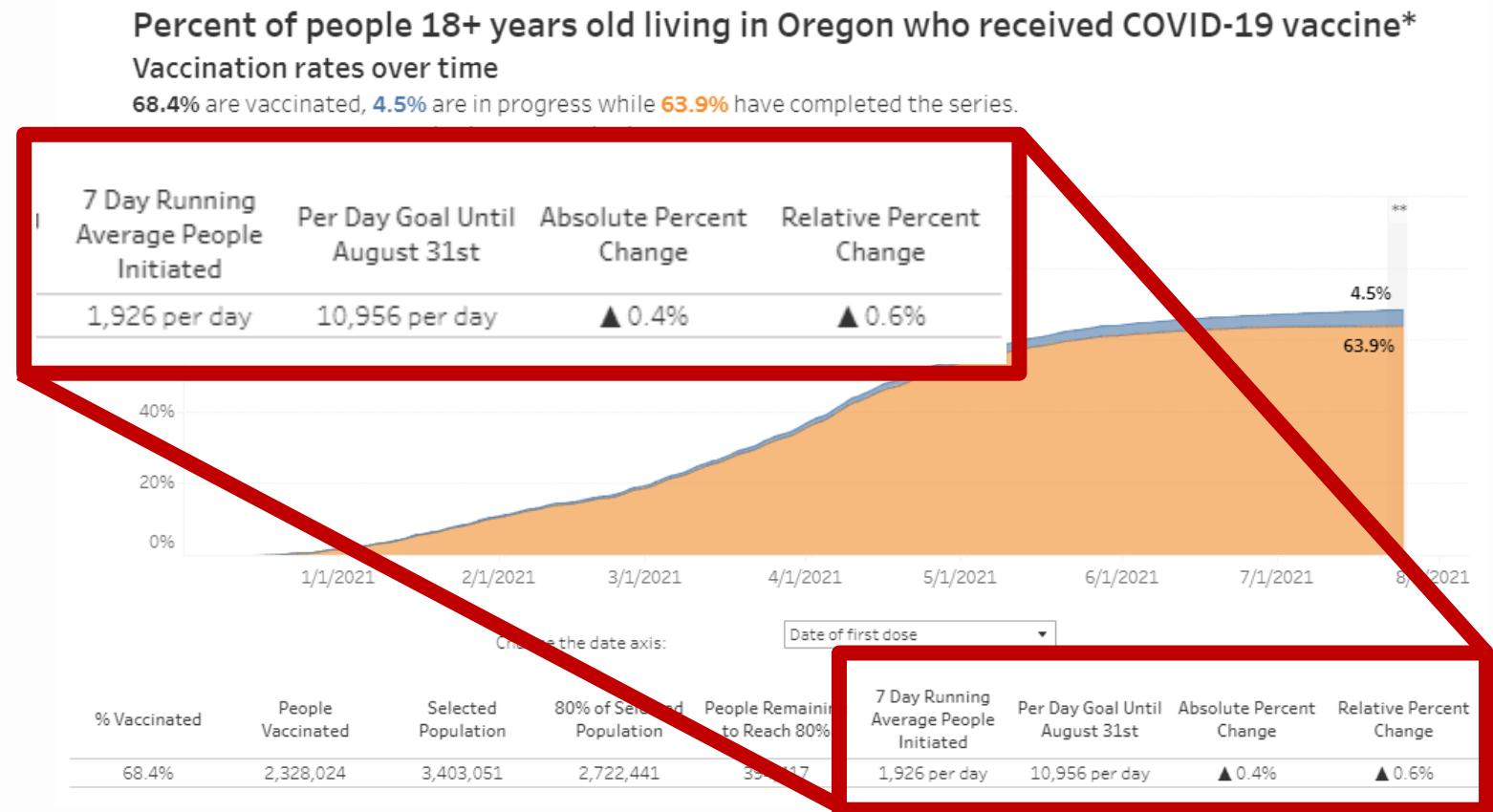
# Develop analyses requested by leadership and subject matter experts to Tableau

- Vaccination rates for the total population vs the eligible population
- 7 day running averages
  - Administrations
  - People initiated
- Per day goals
- Absolute/relative percent change
- Feedback from meetings, emails, news conferences, spreadsheets, etc.



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# Create hidden dashboards for external stakeholders like local public health authorities

Track progress toward 80% vaccinated in population 18+ with both ALERT IIS and federal data

## Track county progress toward 80%

Legend

Under 80% with Federal data

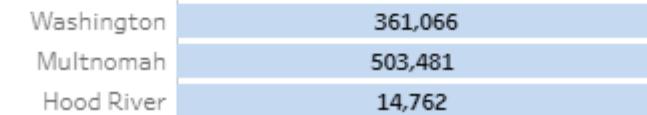


## Track portion of federal doses

Legend

Federal (Tiberius)

ALERT IIS



## Track people remaining to 80%

Legend

332 42,012

Washington 17,903 (267 per day)

Multnomah 29,525 (352 per day)

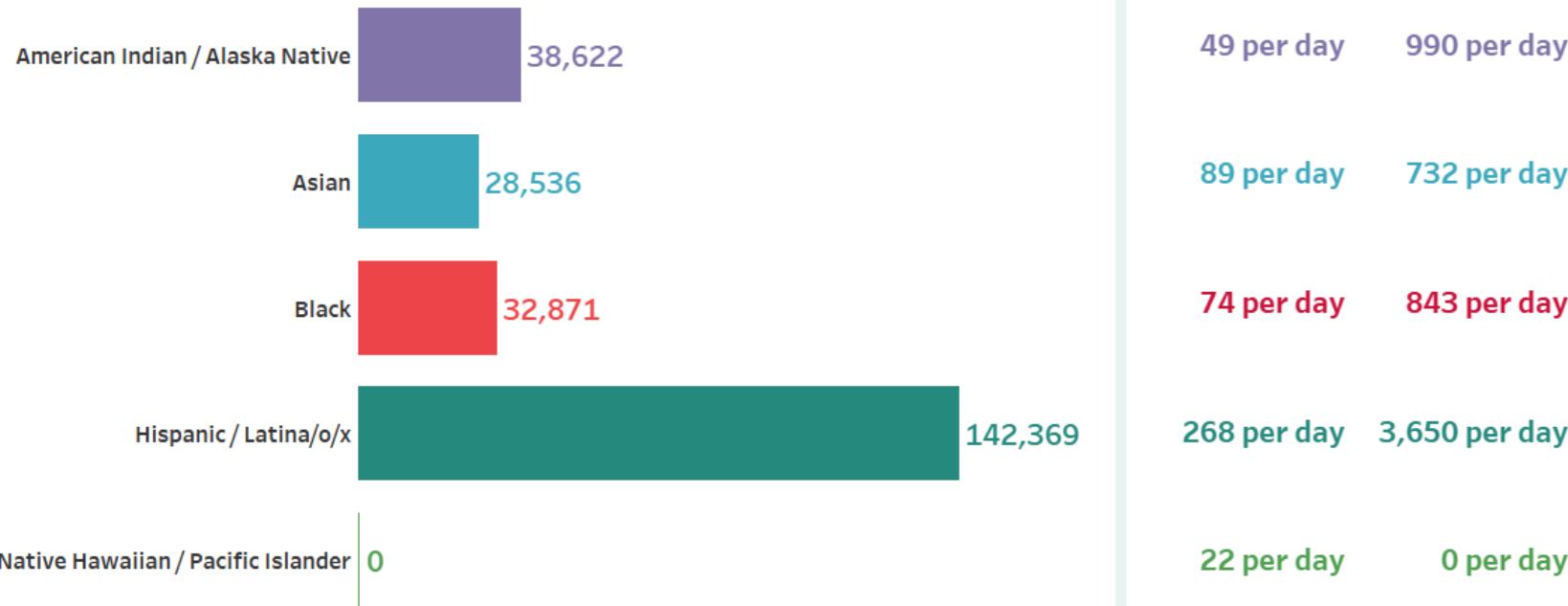
Hood River 963 (16 per day)

# Combine multiple sources of data

# Make data visualizations that translate to presentation slides with a screen shot

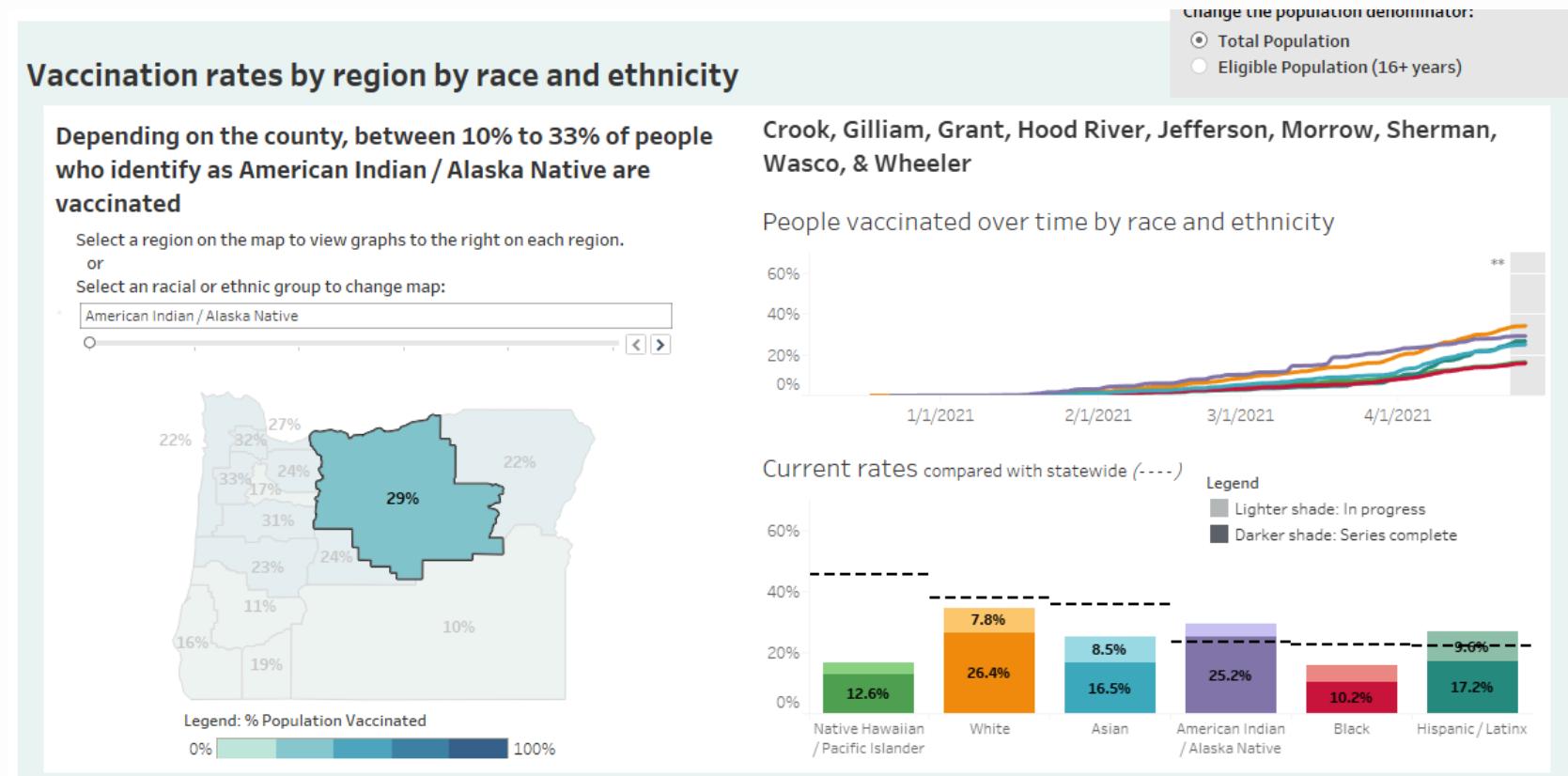
**242,398**

people remaining to reach 80% vaccinated in tribal communities and communities of color



# Don't be afraid to re-evaluate and replace

- At first, I developed this as a map
- However, it's much easier to see the big picture in a large column bar chart

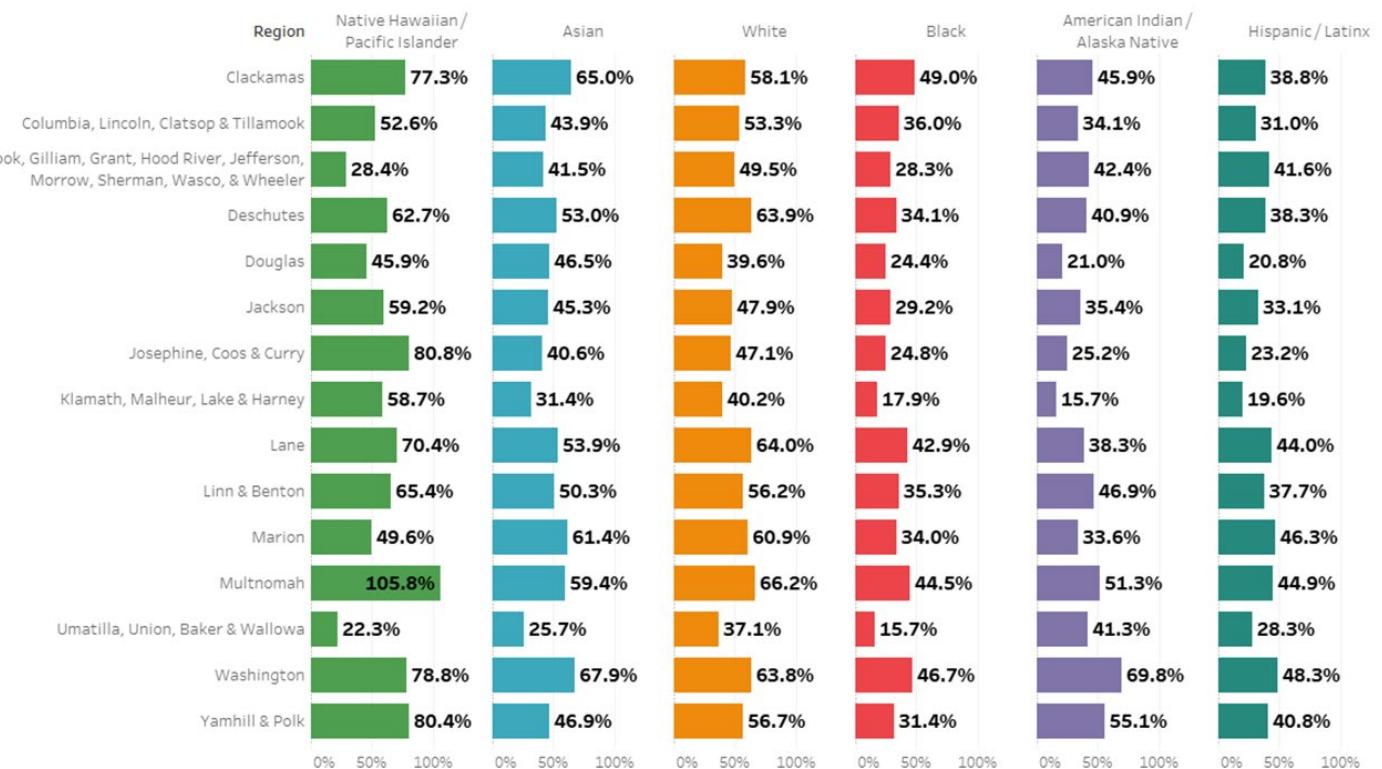


# Don't be afraid to re-evaluate and replace

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Track progress toward 65% vaccinated by rarest race and ethnicity across the state by looking at % of populations vaccinated and people remaining to receive a first dose by region

Percent of population vaccinated with at least one dose by region and rarest race and ethnicity

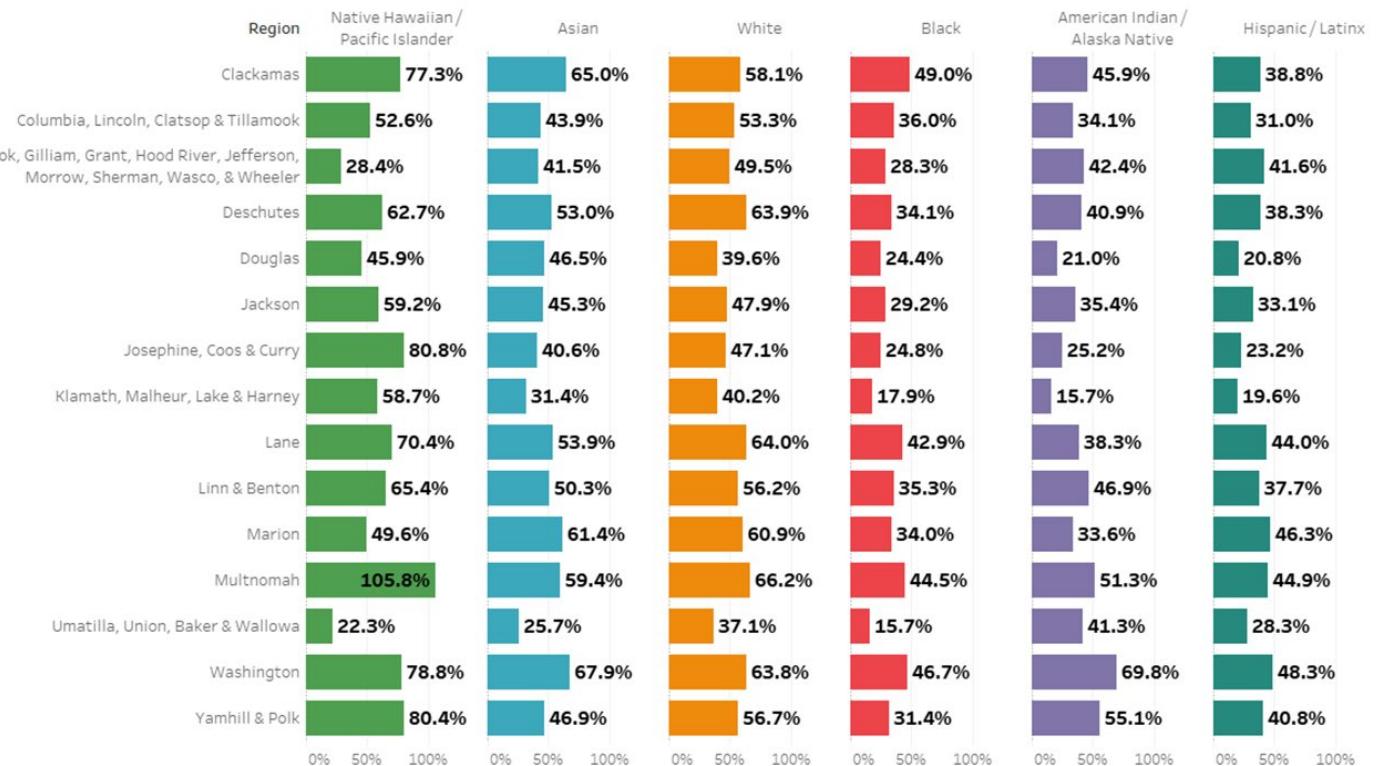


# Lean into difficult topics, especially when it comes to equity

- Presented race and ethnicity data with a novel approach – where people are grouped by their **rarest racial and ethnic identity**.
- Important to publish regional estimates – not widely available – for local public health authorities (LPHAs)

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Percent of population vaccinated with at least one dose by region and rarest race and ethnicity



# Lean into difficult topics, especially when it comes to equity



██████████ 6/30 9:09 AM

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Equity Impact - Data dashboards- To understand the differences in COVID-19's impact on racial groups in the US and to develop solutions, it's necessary to look beyond the topline numbers to disaggregated, granular, localized data that can offer a clearer, more empathetic picture of the challenges. When we know to look for the hidden stories in data, we are acknowledging that every data point is a person with unique needs and circumstances that we should bring into view.

# Publishing data visualizations in Tableau allows more people to make evidence-based decisions and impact agency operations

## People remaining to be vaccinated for COVID-19 by ZIP code\*\*

Tracking people remaining to be vaccinated by ZIP code will help target where vaccination efforts can reach the most people and promote access across the state. **Vaccinated** includes people who have received at least one dose of any COVID-19 vaccine (Moderna, Pfizer, Johnson & Johnson).

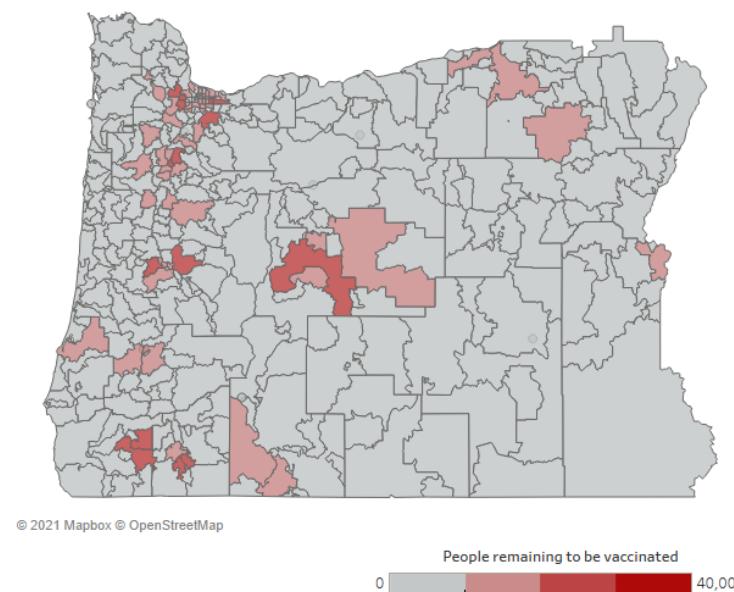
The map shows the number of people not vaccinated for COVID-19 by ZIP code of residence. ZIP code vaccinations are reported to align with ZIP Code Tabulation Area (ZCTA) population estimates by the American Community Survey which include the **total population of all ages** (eligible population estimates are not available). ZIP codes with less than 50 people in the population are grouped with nearby ZIP codes within the same county.

Select a county to filter the views below:

(All)

**ZIP codes with the most people remaining to be vaccinated for COVID-19 are shown in red.**

The darker the red, the more people in the ZIP code who are not vaccinated for COVID-19. Select a ZIP code to highlight the bar chart.



**Top-ranked ZIP codes on the map with the most people remaining to be vaccinated.**

ZIP codes are sorted and ranked with the most people remaining at the top. Select a ZIP code to highlight the map.

Rank	County	ZCTA	Count
1	Marion	97301	28,878
2	Jackson	97501	26,799
3	Washington	97006	25,860
4	Clackamas	97045	25,161
5	Washington	97007	24,068
6	Jackson	97504	23,069
7	Marion	97305	22,783
8	Deschutes	97701	22,475
9	Josephine	97527	21,913
10	Washington	97124	21,636
11	Lane	97402	21,554
12	Multnomah	97080	20,998
13	Josephine	97526	20,759
14	Multnomah	97233	20,175
15	Lane	97478	20,041
16	Multnomah	97236	20,003
17	Marion	97303	19,395
18	Deschutes	97702	18,955
19	Linn	97322	18,714
20	Douglas	97471	18,498
21	Washington	97123	18,488
22	Deschutes	97756	18,127
23	Multnomah	97206	17,905
24	Multnomah	97030	17,850
25	Klamath	97603	17,719
26	Washington	97223	17,110

# Work to promote accessibility

- However, Tableau is not always accessible
  - Test with screen readers
  - Provide visual descriptions and talking points for presentations
  - Form an accessibility workgroup
- Test your vizzes in mobile
- We have a lot of work to do.

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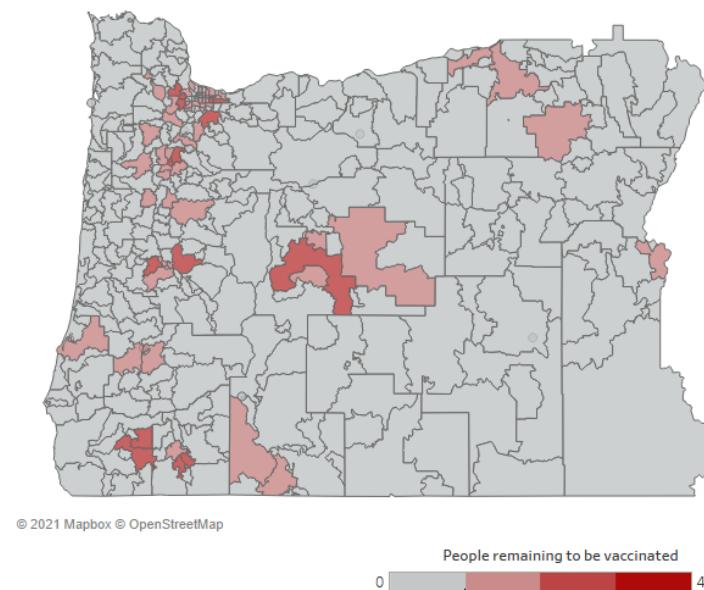
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