

COVID-19 Response for Vulnerable Populations: Actionable Insights from Public Datasets

October 13, 2020

Today's session

- Hello
- Why this matters
- Meet the data
- A view of COVID-19 in Oregon
- Actionable Insights

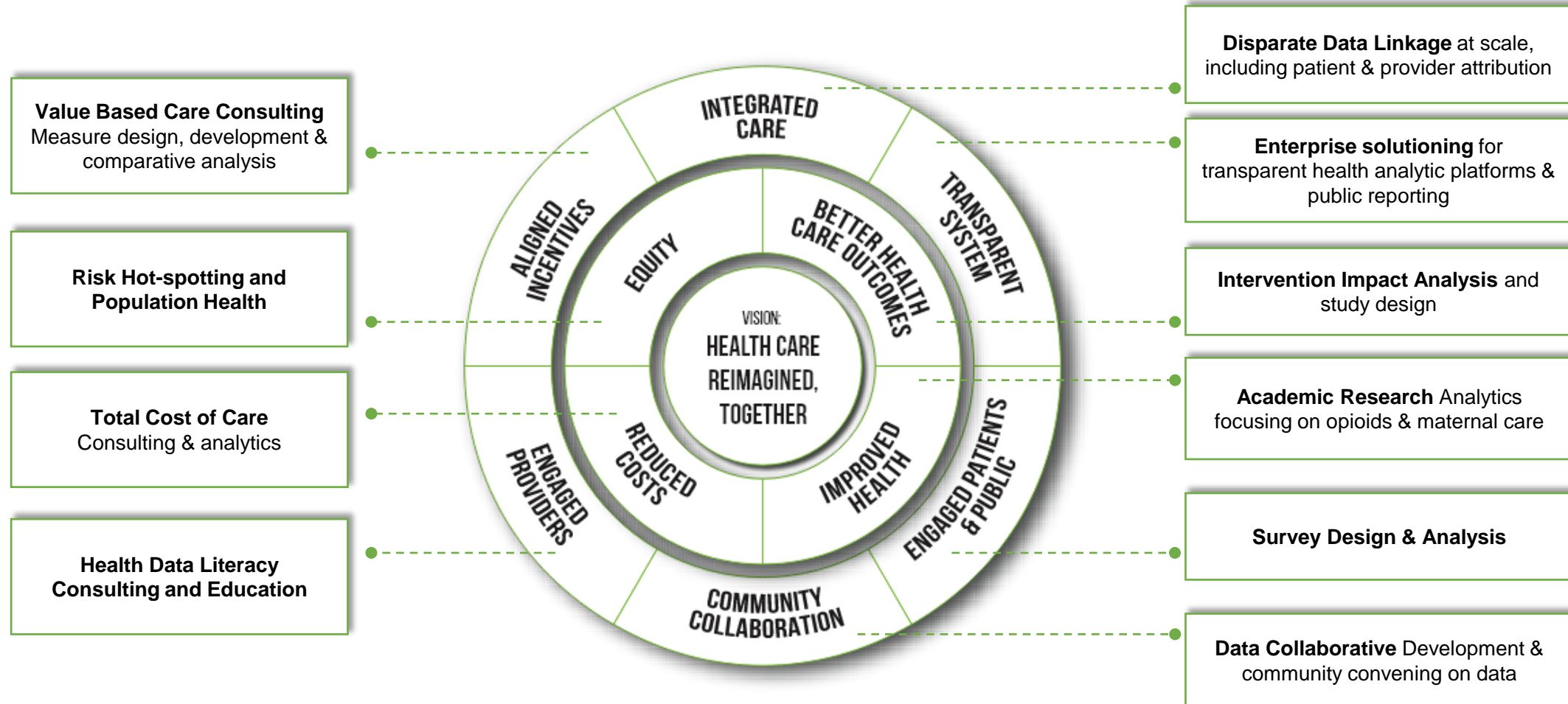
Comagine Health, formerly Qualis Health and HealthInsight, is a national, nonprofit, health care consulting firm.

As a trusted, neutral party, we partner with health care organizations to address key challenges. In all our engagements, we draw upon our expertise in analytics, quality improvement, care management, health information technology and research.

**Approximately 400
professional staff**

- Data analysts
- Health information technology specialists
- Medical directors and nurses
- Case managers
- Clinical reviewers
- Quality improvement experts

Comagine Health's Data and Analytics Services

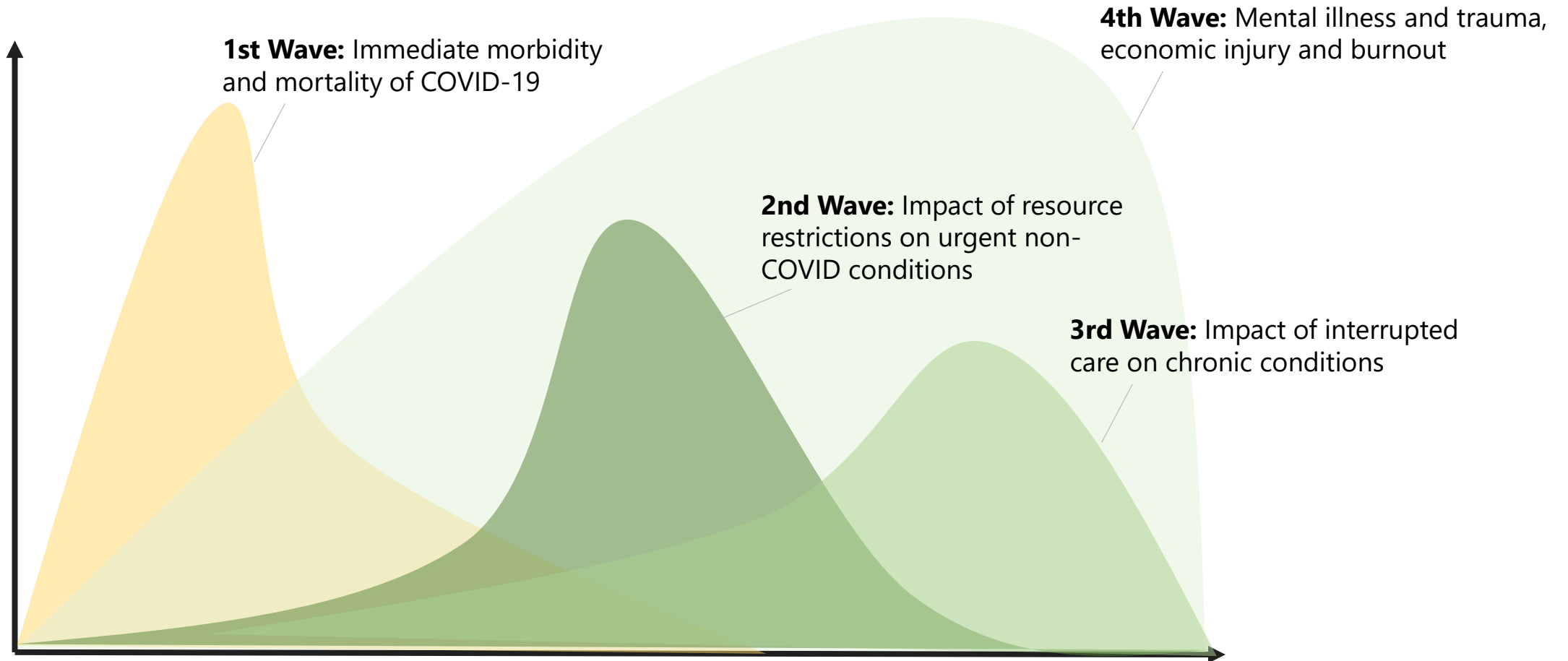


COVID-19 Pandemic Response

We're helping communities and health care organizations respond to COVID-19.

- **Advanced Analytics** – Preparing for the long-term impact of COVID-19
- **Contact Tracing** – Standards-based, data-driven approach
- **Infection Prevention and Control** – Interactive training and education
- **Telehealth and Virtual Services** – Training and consultation

Framing Our Understanding of What is Coming



Framing Our Understanding of What is Coming

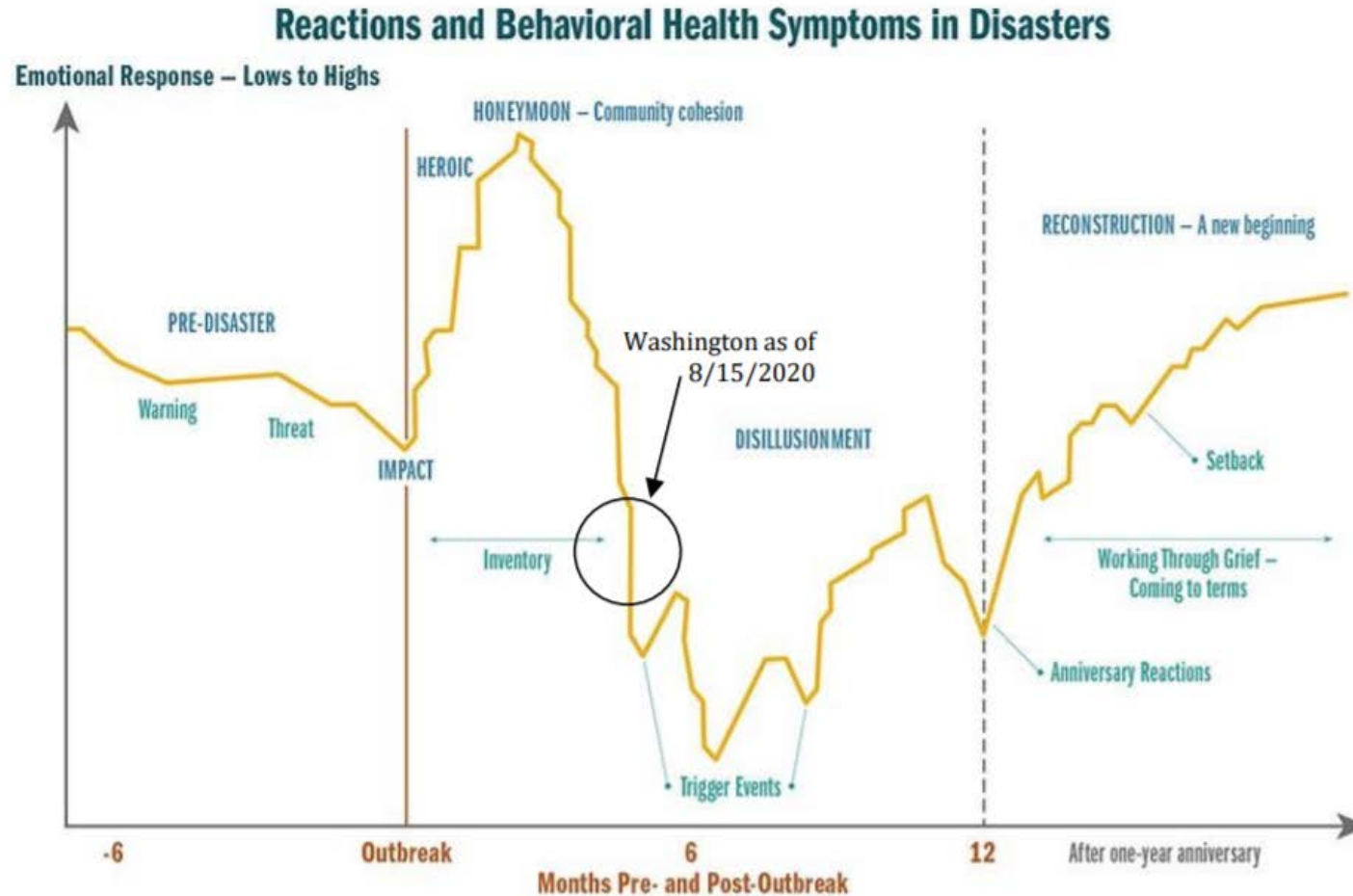


Figure 1: Phases of reactions and behavioral health symptoms in disasters.
Adapted from the Substance Abuse and Mental Health Services Administration (SAMHSA)⁷

Key focus areas

New Needs

- ✓ Increased telehealth
- ✓ Deferred preventative care
- ✓ Health services capacity planning
- ✓ Cost modeling and practice re-design

Population Health Analytics

How are pre-existing conditions exacerbated by isolation and physical distancing?

Research & Evaluation

How has the COVID-19 pandemic affected patients with a history of substance abuse?

Capacity & Utilization Planning

How do we plan for new waves of COVID-19 and predict new utilization patterns?

Cost Analytics

What is the long-term financial impact of fewer face-to-face encounters for primary care clinics?

Care Gap & Quality Analytics

What is the quality impact of deferred or late care for patients with chronic conditions?

Analysis

Risk model to predict patients who will have complications from COVID-19

Modeling the impact of deferred care on key cohorts (e.g. diabetes and behavioral health)

Telehealth exploratory data analysis

Application

Enables state agencies and clinicians to prioritize resources and outreach to highest risk populations

Enables clinicians to triage their patient panels to mitigate the effects of deferred care

Enables outpatient practice redesign to plan for the new demand for telehealth and its financial impact

Why this matters

“If you eliminate us in the data, you have effectively eliminated us for the allocation of resources”

Abigail Echo-Hawk, Director, Urban Indian Health Institute

Meet the data

Public Data Sources

- COVID-19 incidence
- Census and American Community Survey
- Indian Health Service facilities
- CDC Community Vulnerability Index, CV19 vulnerability index
- Federal Office of Rural Health

Mostly public data source:

- In-house collation of pandemic response data

Caveats

- Incompleteness
- Inference from correlation
- Granularity
- Confounding factors
- Currency

Why Public Data, then?

- Availability and timeliness
- Data sovereignty
- Relevance and actionability

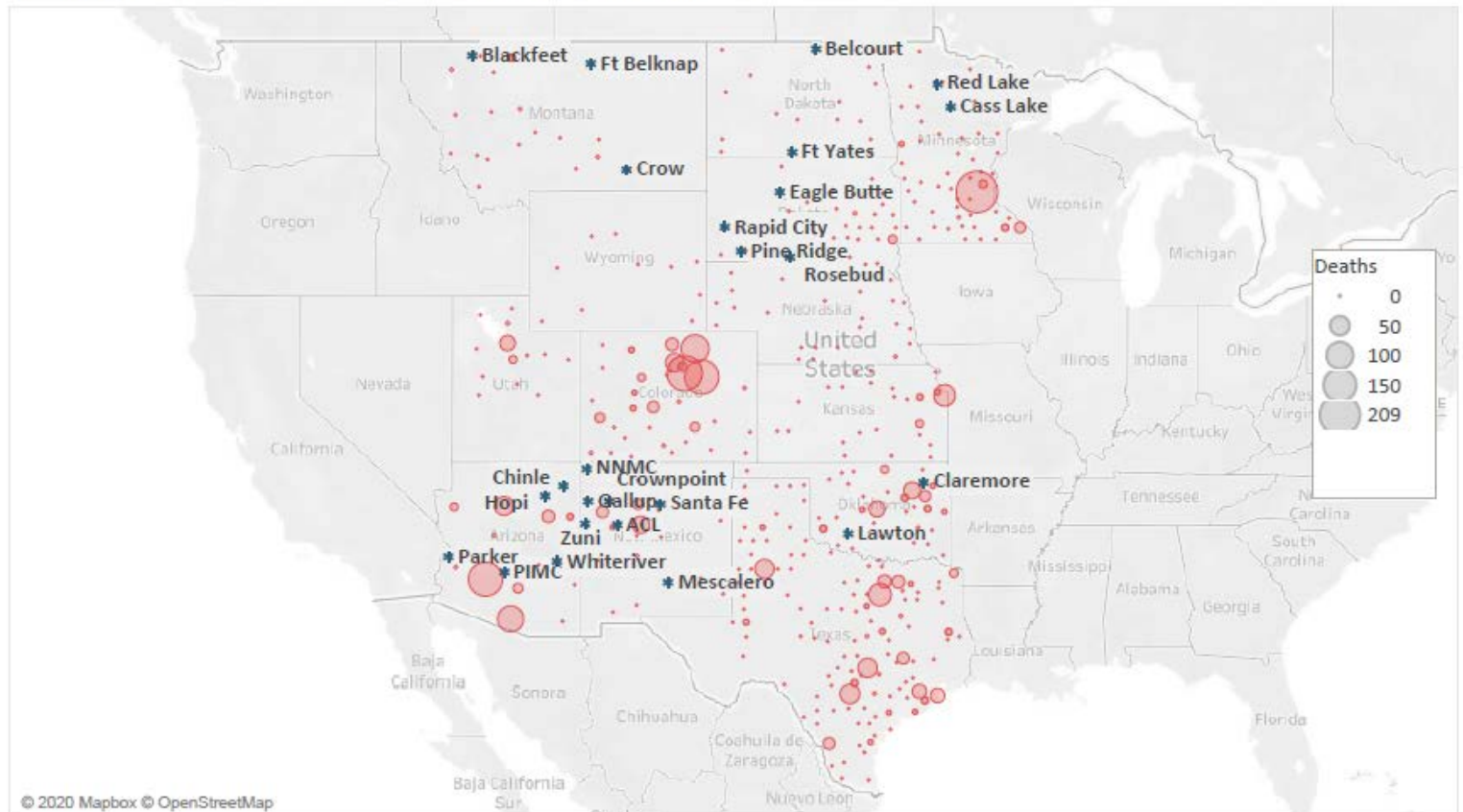
Early efforts



COVID-19 Deaths by County near IHS hospitals in the PATH Project

This data is likely an underestimate.

All counties from states with PATH hospitals and adjacent states as of 4/29/2020.



Data from The New York Times, based on reports from state and local health agencies. <https://github.com/nytimes/covid-19-data>

This material was prepared by Comagine Health, the Medicare Quality Innovation Network–Quality Improvement Organization for Nevada, New Mexico, Oregon and Utah, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. 115OW-AIAN-20-11

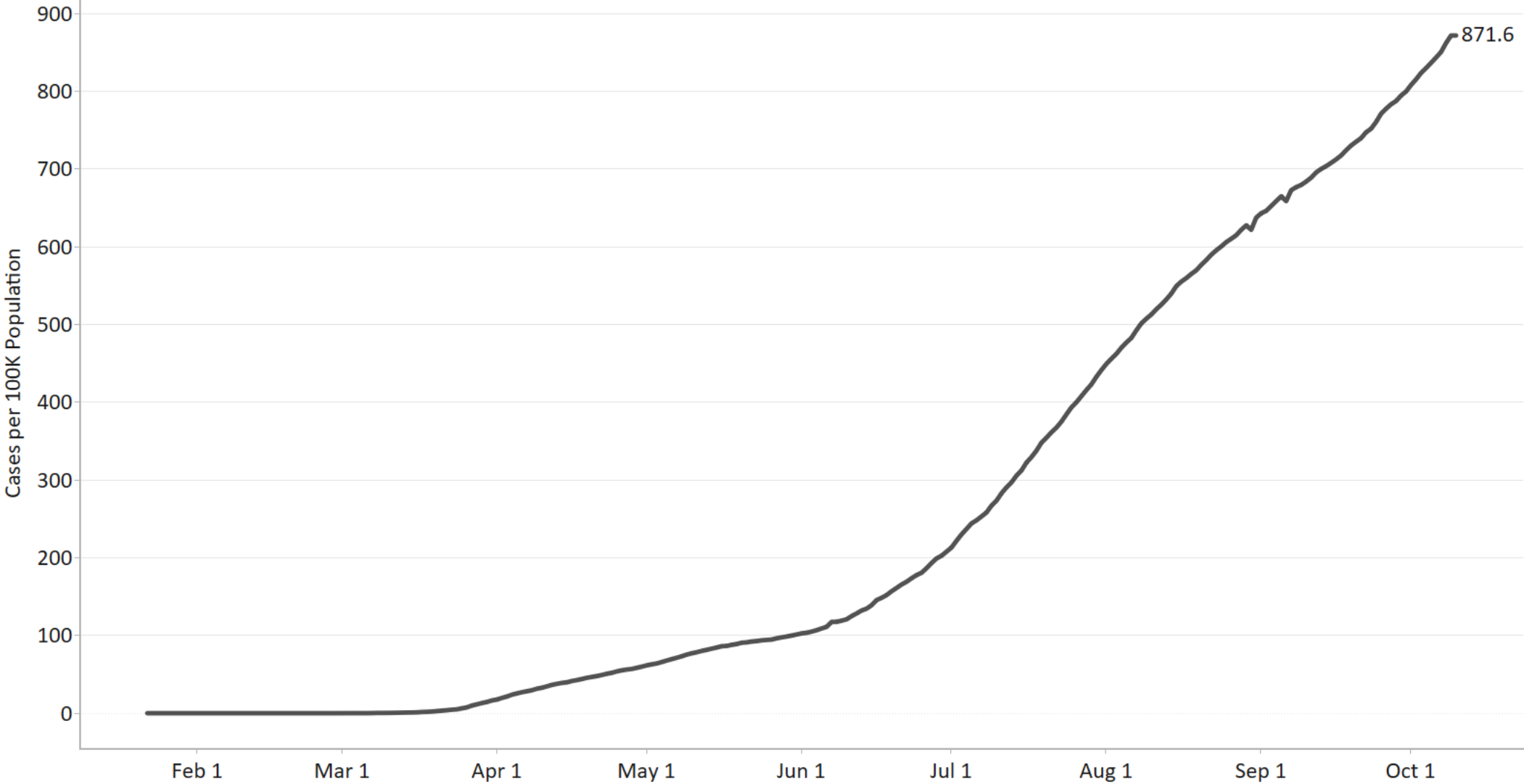
Mostly public

Framework for reporting pandemic response status

- Coordinated response
- Community infection control measures
- Test availability

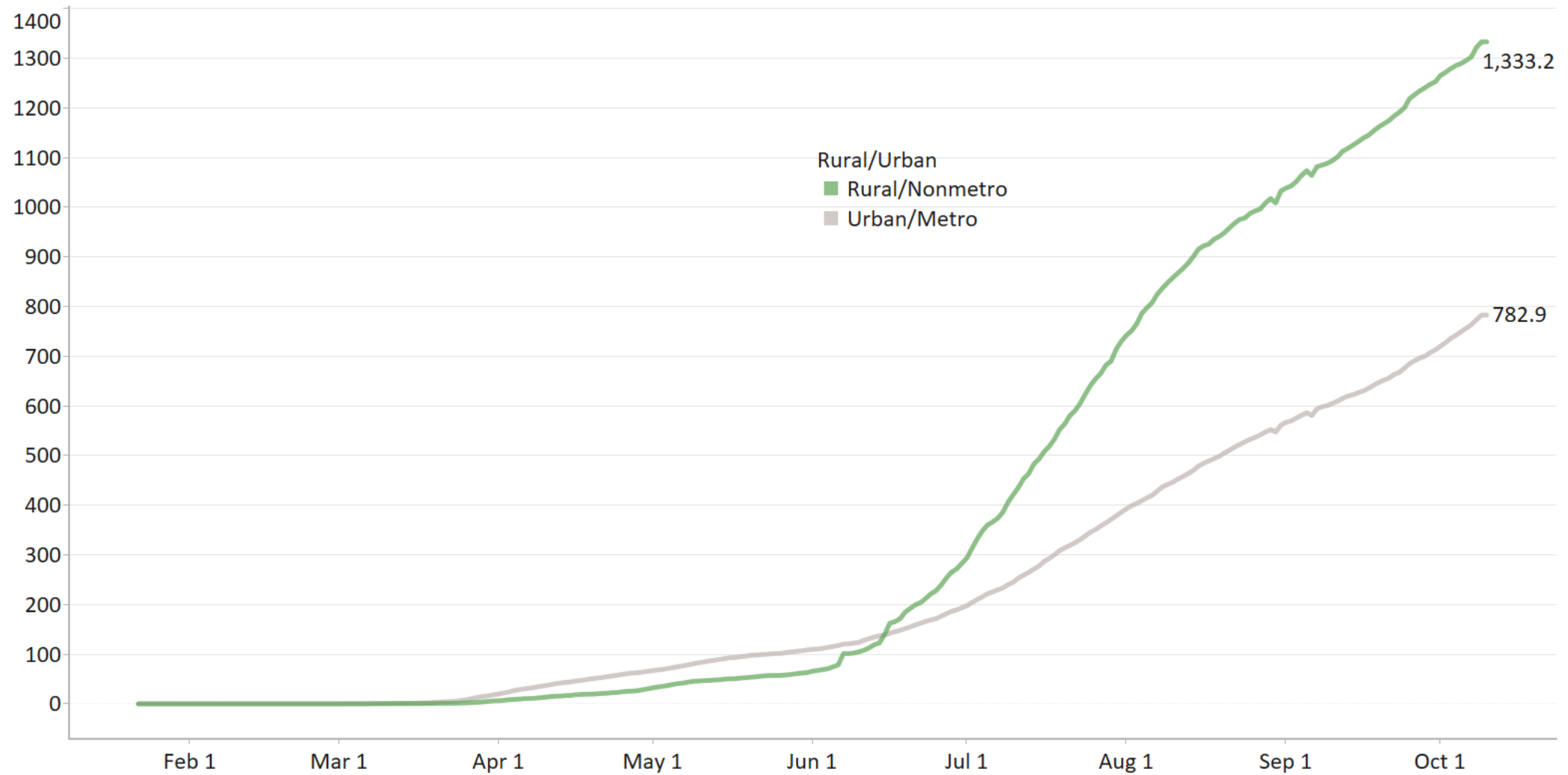
A view of COVID-19 in Oregon

COVID-19 Cases in Oregon: per 100,000 people



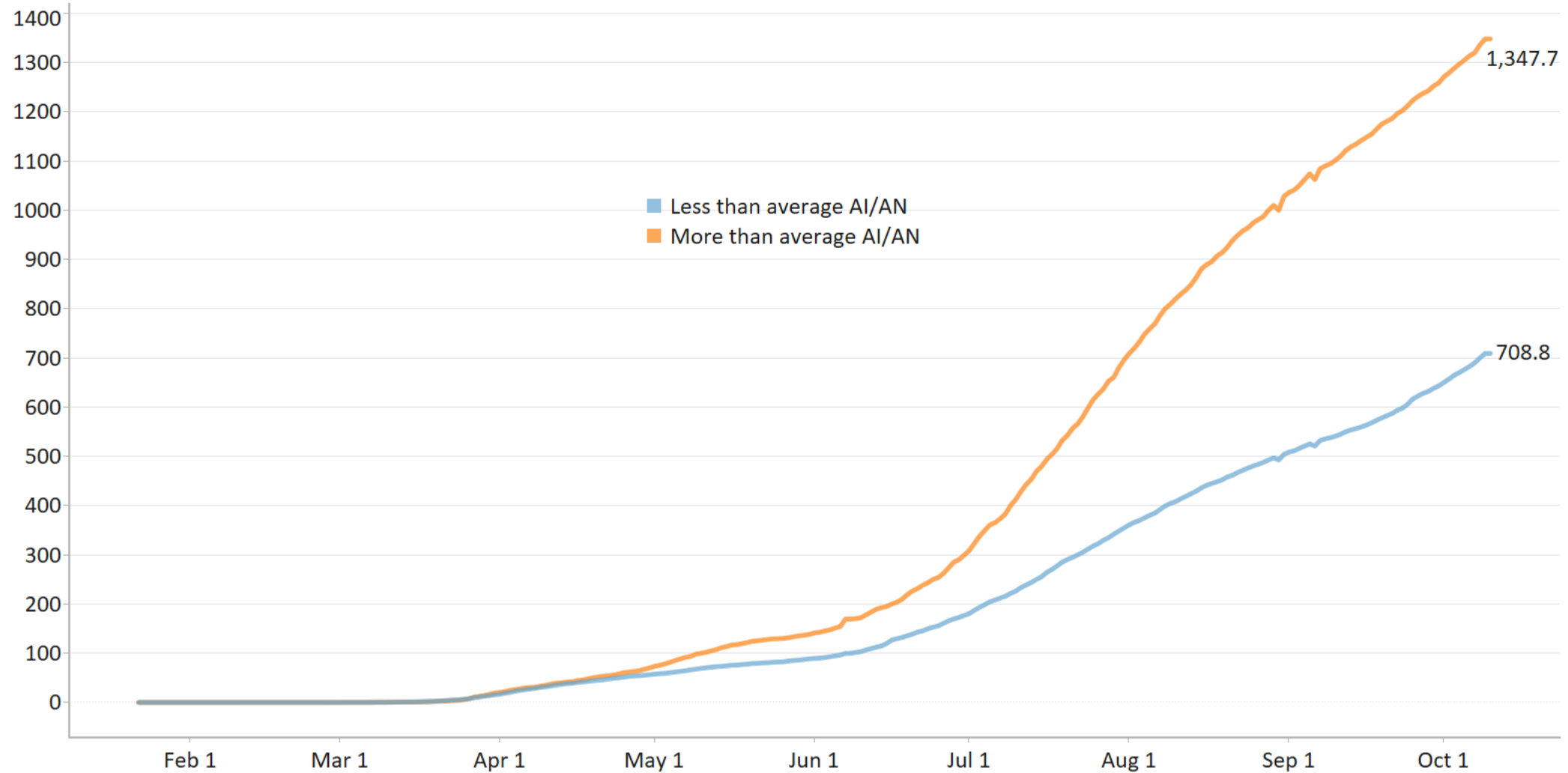
COVID-19 Cases in Oregon: per 100,000 people

Urban and rural



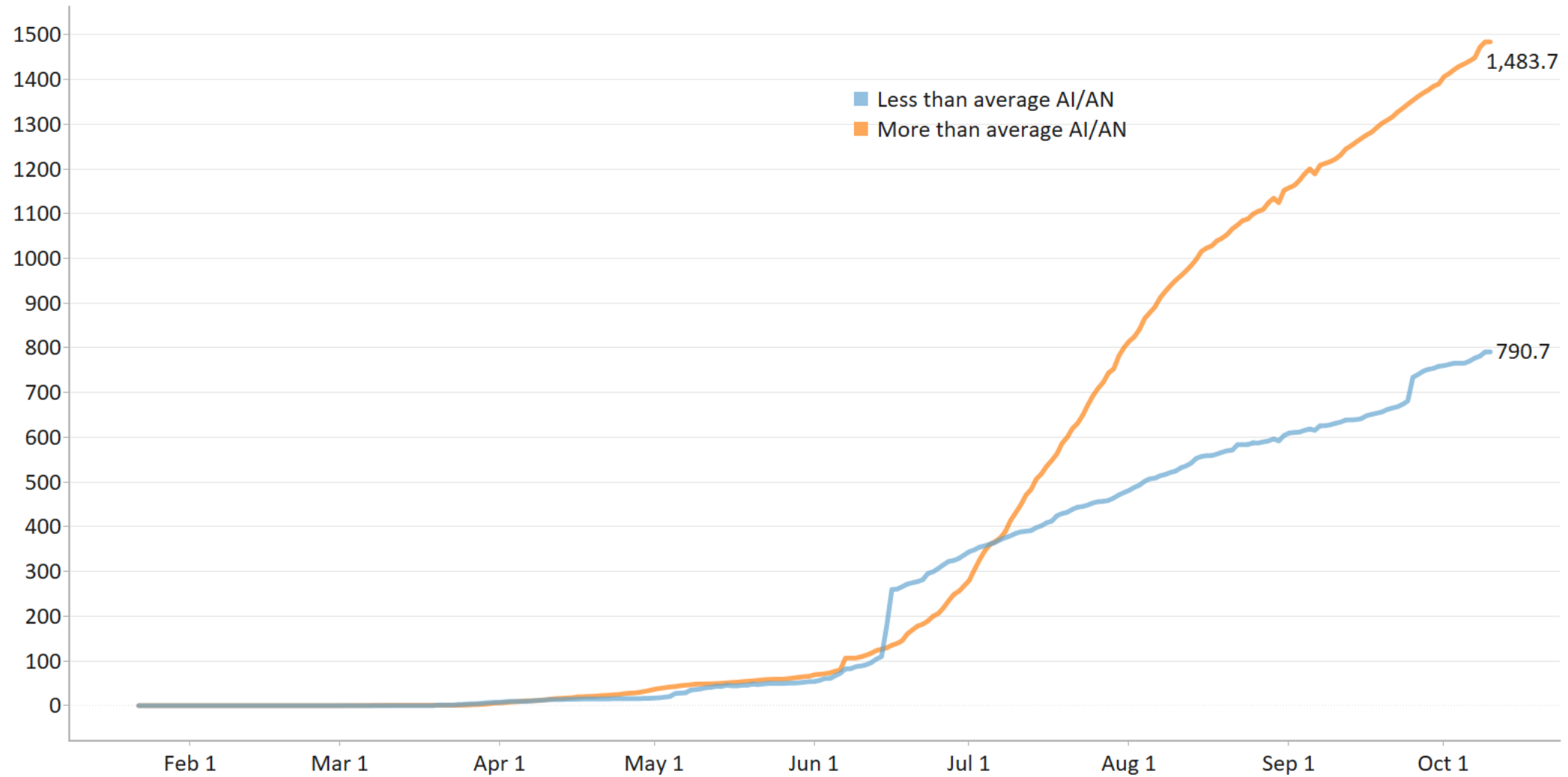
COVID-19 Cases in Oregon: per 100,000 people

Greater or lesser percentage AI/AN population



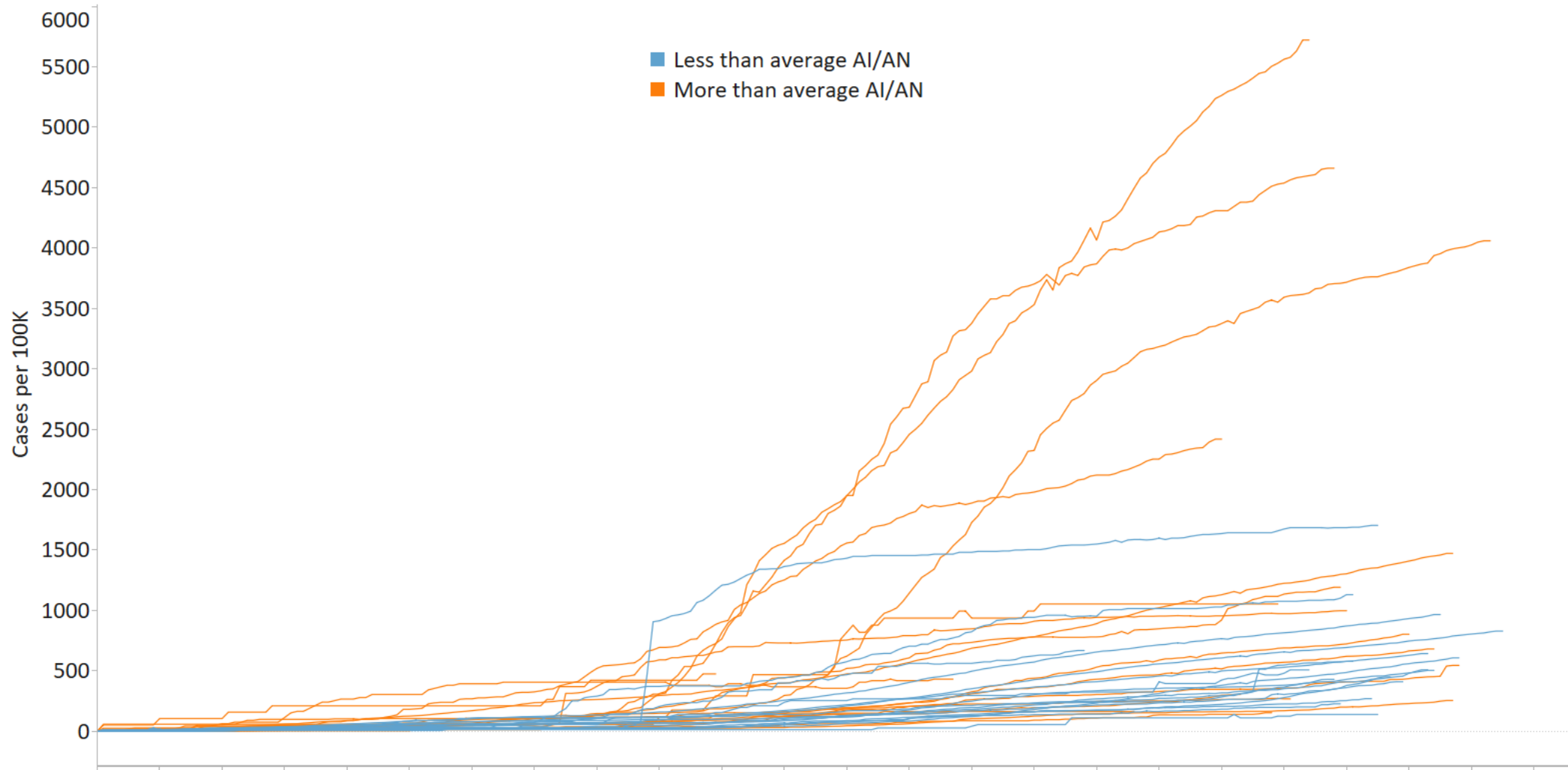
COVID-19 Cases in Rural Oregon: per 100,000 people

Greater or lesser percentage AI/AN population



COVID-19 Cases in Oregon Counties: per 100,000 people

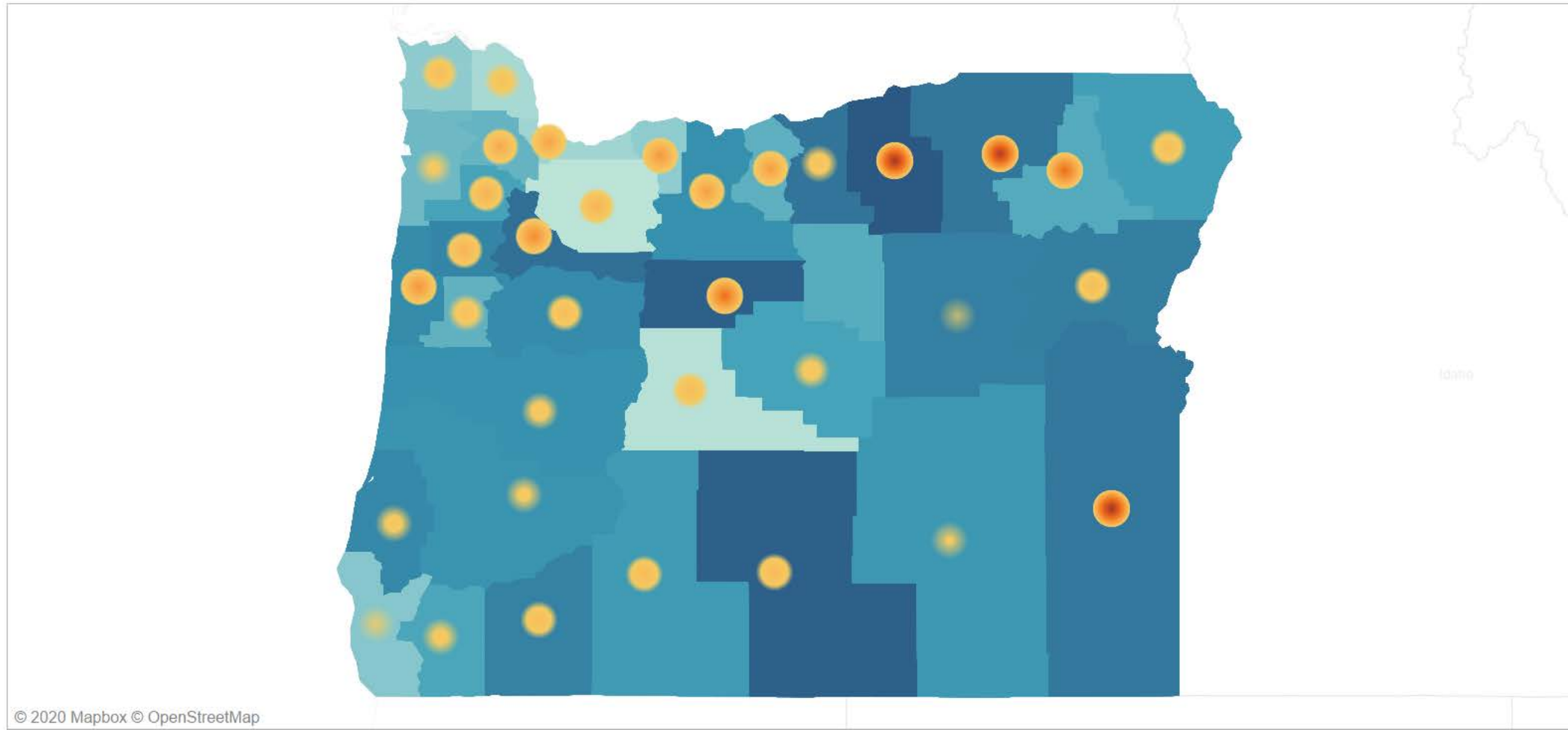
Days since Case 1. Greater or lesser percentage AI/AN population



COVID-19 Cases in Oregon: per 100,000 people

CCVI (vulnerability) and hotspot counties

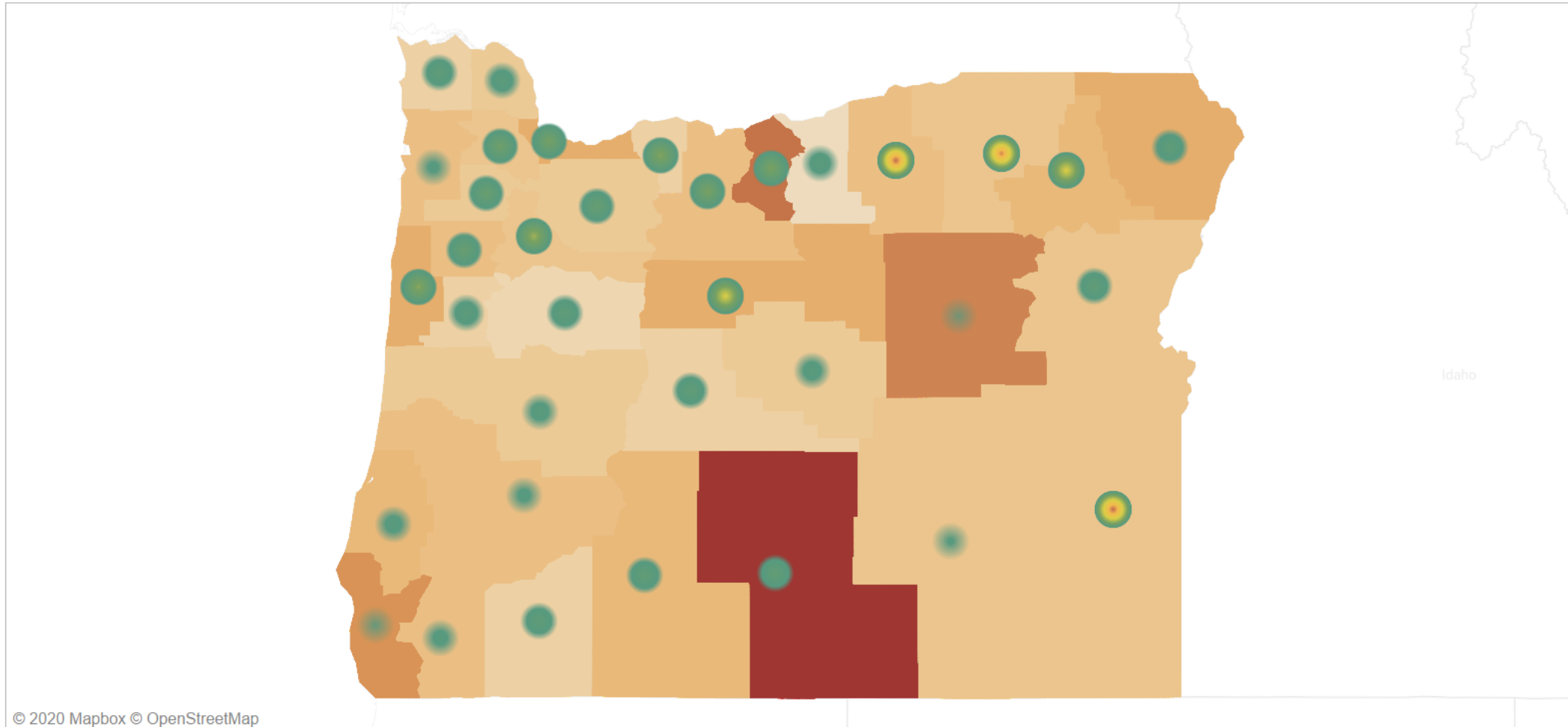
Deeper color = more vulnerable



COVID-19 Cases in Oregon: per 100,000 people

Percentage of homes lacking complete plumbing and hotspot counties

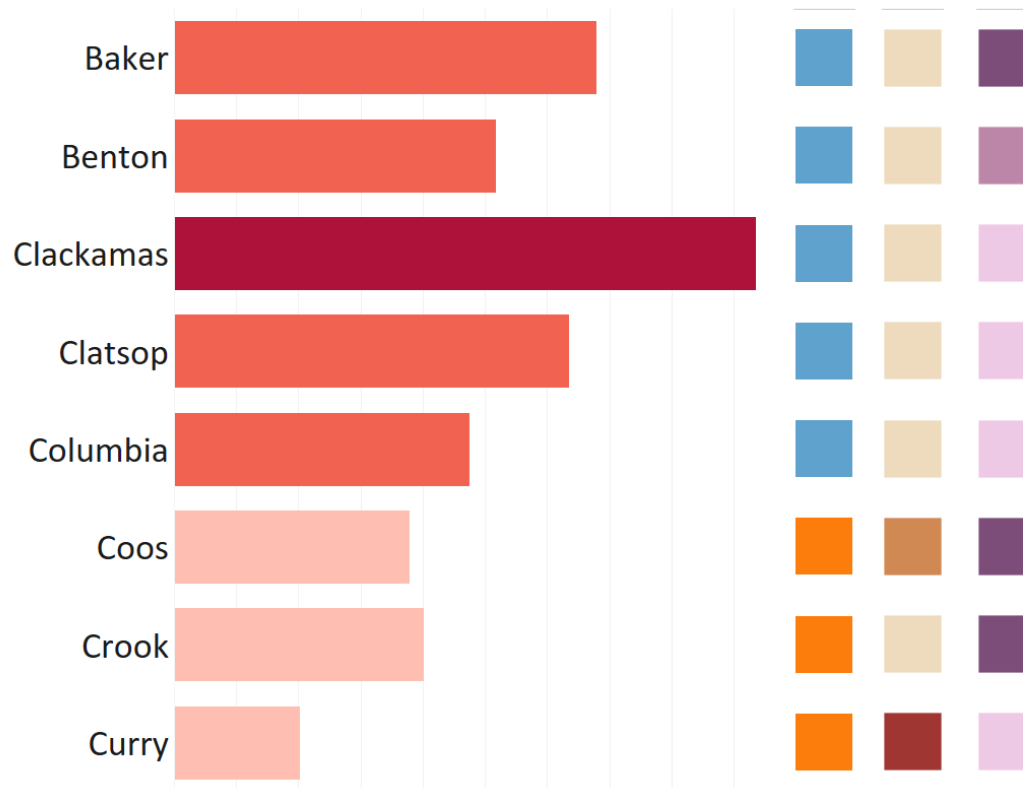
Deeper color = more vulnerable



Actionable Insights

Tell the story in the data

COVID-19 Incidence and Vulnerability



Updates



PATH

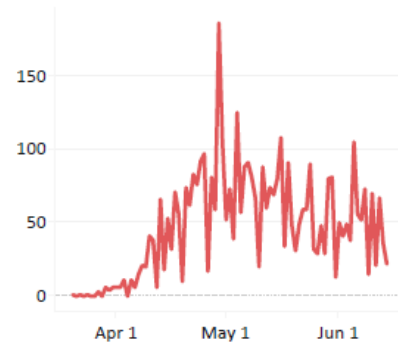
partnership to advance tribal health

Weekly Report on COVID-19 in PATH States June 17, 2020

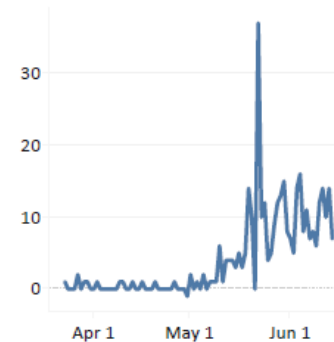
In this weekly report you will find analysis of COVID-19 data for areas in the PATH project. The purpose of this report is to give detailed information on slower-changing data than is seen in the daily report.

- Disparities in incidence and mortality by county and state, overall and by urban and rural Trends by Area Office
- CDC Vulnerability Index (6 themes); pandemic response factors; homes lacking complete plumbing facilities.
- COVID-19 case prevalence by county. Time series grouped by prevalence.

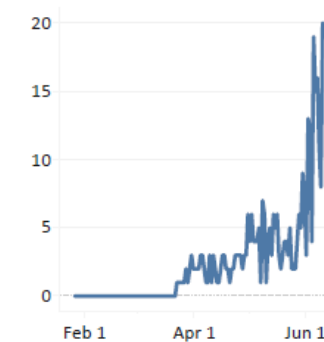
McKinley County, NM



Pennington County, SD



Maricopa County, AZ



Changes in Hot Spots

Thankfully, the rates in Navajo Nation seem to be leveling off or even slightly reducing, as shown in McKinley County, NM.

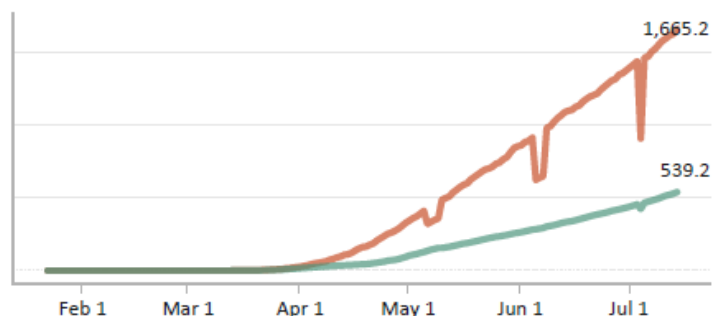
However, we continue to see increases in rural counties such as Pennington and Oglala Lakota counties, SD, as well as several counties in PATH areas in Arizona. Some of these counties are very vulnerable and may be good candidates for extra support and proactive testing. Others have a higher than average percentage of homes without complete plumbing and may need bottled water and supplies of hand sanitizer.

Disparities



Disparities in COVID-19 Incidence and Mortality in the AI/AN Population

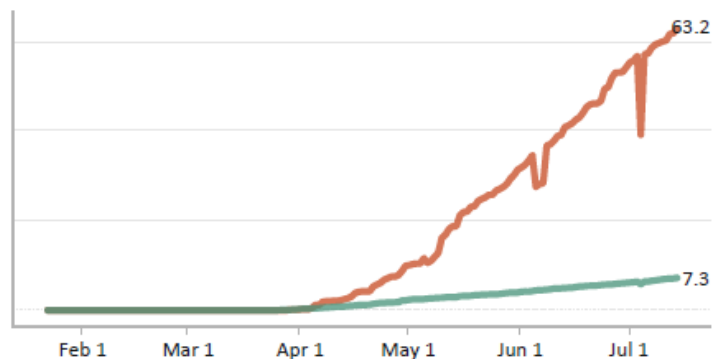
Rural Counties: Cumulative Cases per 100,000 People



This graph shows the cumulative count of COVID-19 cases per 100,000 population in PATH project and adjacent states, over time, for rural counties with >20% (orange line) and <20% (blue-green line) AI/AN population.

This case rate disparity is still dramatic but has remained relatively stable over the past week. The per capita case rate in rural counties with higher proportion of AI/AN people is more than three times the rate for rural counties with a lower proportion of AI/AN people, even though higher AI/AN counties show a later onset of the disease.

Rural Counties: Cumulative Deaths per 100,000 People



This graph shows the cumulative count of COVID-19 deaths per 100,000 population in PATH project and adjacent states, over time, for rural counties with >20% (orange line) and <20% (blue-green line) AI/AN population.

This gross disparity in death rate has somewhat improved over the last week, from 890% down to 865%. However, it is still much worse than the 735% we saw at the beginning of June.

It is over eight times the rate for rural counties with a lower proportion of AI/AN people.

Context

PARTNERSHIP TO ADVANCE TRIBAL HEALTH



COVID-19 by County: Incidence, Community Vulnerability and Pandemic Response - Albuquerque Area Office

| State | County | >20% Rural | AI/AN | Cum. / 100,000 | New Cases per Day per 100,000 People Daily 3/1 through 07/05 | Weekly Average | | Trend | CCVI Theme | | | | | | Pandemic Response | | | Essential Workers | Lacking Plumbing |
|-------|------------|------------|-------|----------------|--|----------------|----------|-------|------------|---|---|---|---|---|-------------------|---|---|-------------------|------------------|
| | | | | | | to 06/28 | to 07/05 | | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | | |
| NM | McKinley | Y | Y | 4,907 | | 53 | 33 | ↓ | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | Essential Workers | Lacking Plumbing |
| | Otero | Y | N | 1,362 | | 16 | 7 | ↓ | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | Essential Workers | Lacking Plumbing |
| | Cibola | Y | Y | 885 | | 8 | 12 | ↑ | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | Essential Workers | Lacking Plumbing |
| | Sandoval | N | N | 519 | | 4 | 4 | → | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | Essential Workers | Lacking Plumbing |
| | Bernalillo | N | N | 364 | | 5 | 9 | ↑ | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | Essential Workers | Lacking Plumbing |
| | Santa Fe | N | N | 178 | | 3 | 4 | ↑ | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | Essential Workers | Lacking Plumbing |

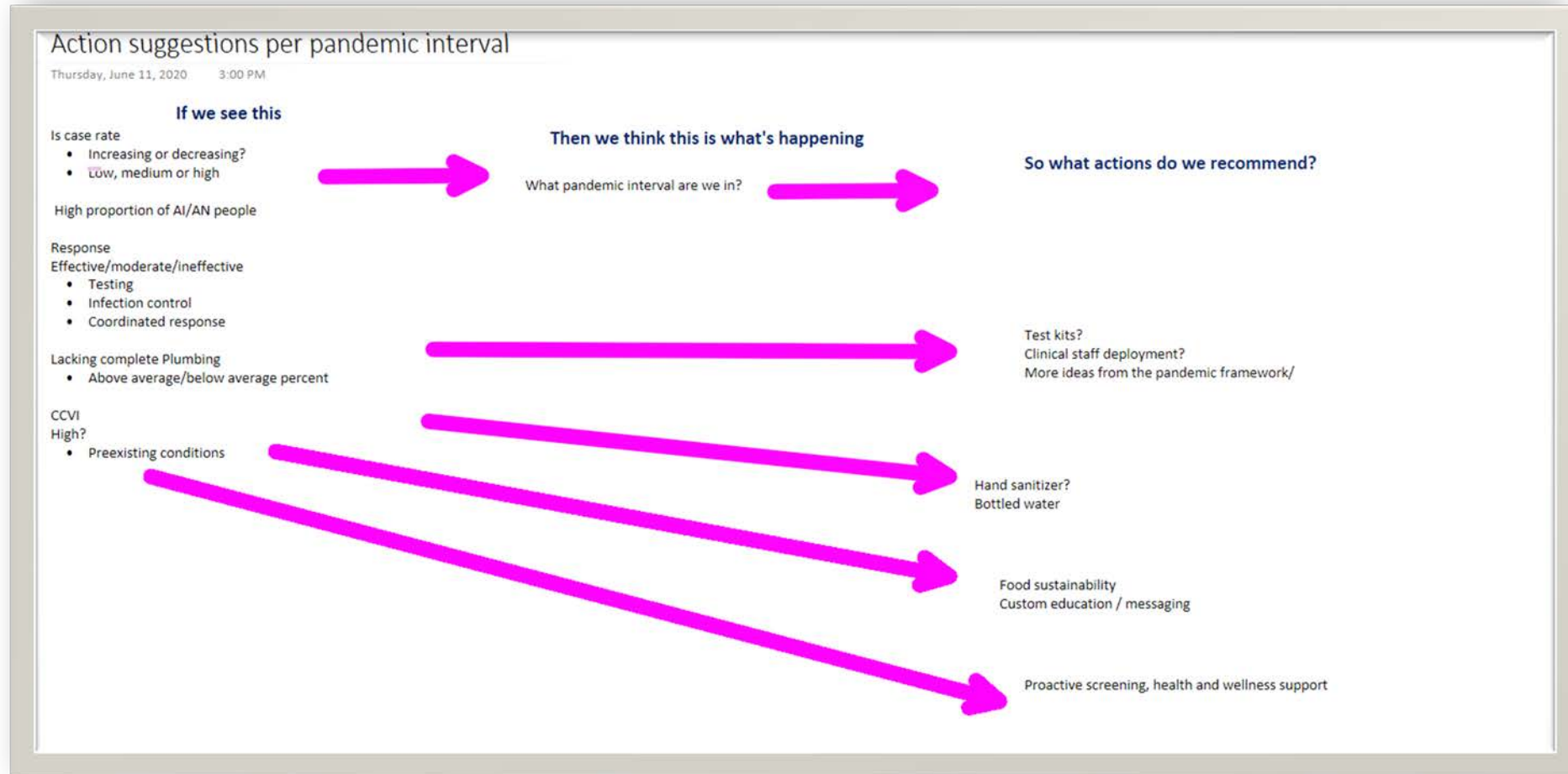
How do you get to “actionable”?

Data

- Incidence
- Response
- Vulnerability

PDSA: Plan Do Study Act/Agile/Prototype and Iterate

Brainstorming action ideas



Successes from this approach

- Tribal partners use incidence and vulnerability data to seek funding allocation
- Hospitals becoming aware of incidence within community
- National headquarters insight to allocate resources

***Accept no substitutes ...**

“If you eliminate us in the data, you have effectively eliminated us for the allocation of resources”

Abigail Echo-Hawk, Director, Urban Indian Health Institute

Recap

- Public datasets and why we chose them
- Combining and slicing data to focus on correlations of interest
- Creating action together

Thank you!

Contact:

Ardis Cochran, Lead Analyst, Partnership to Advance Tribal Health

acochrane@comagine.org

Visit us at <https://comagine.org/covid19/analytics>