2020 Cindy Ferrell Lecture

Children's Health and the COVID-19 Pandemic: Impact, Recovery and Reflections

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Oregon Health Authority

Honoring Cindy Ferrell

- *Pediatrician, advocate, educator, mentor, colleague, friend, wife, mother, sister, daughter*
- *Enormous contributions to medicine and medical education in Oregon and beyond*
- *Twenty-seven-year career at Oregon Health & Science University and Doernbecher Children's Hospital*

Disclosure

I have no financial relationships to disclose.

Objectives

- Understand the primary and secondary impacts of the COVID-19 pandemic on children and families
- Review trends in health care utilization, access to care and health system financial impacts
- Highlight the pandemic's exposure of health inequities and its drivers
- Reflect on the necessary steps towards recovery

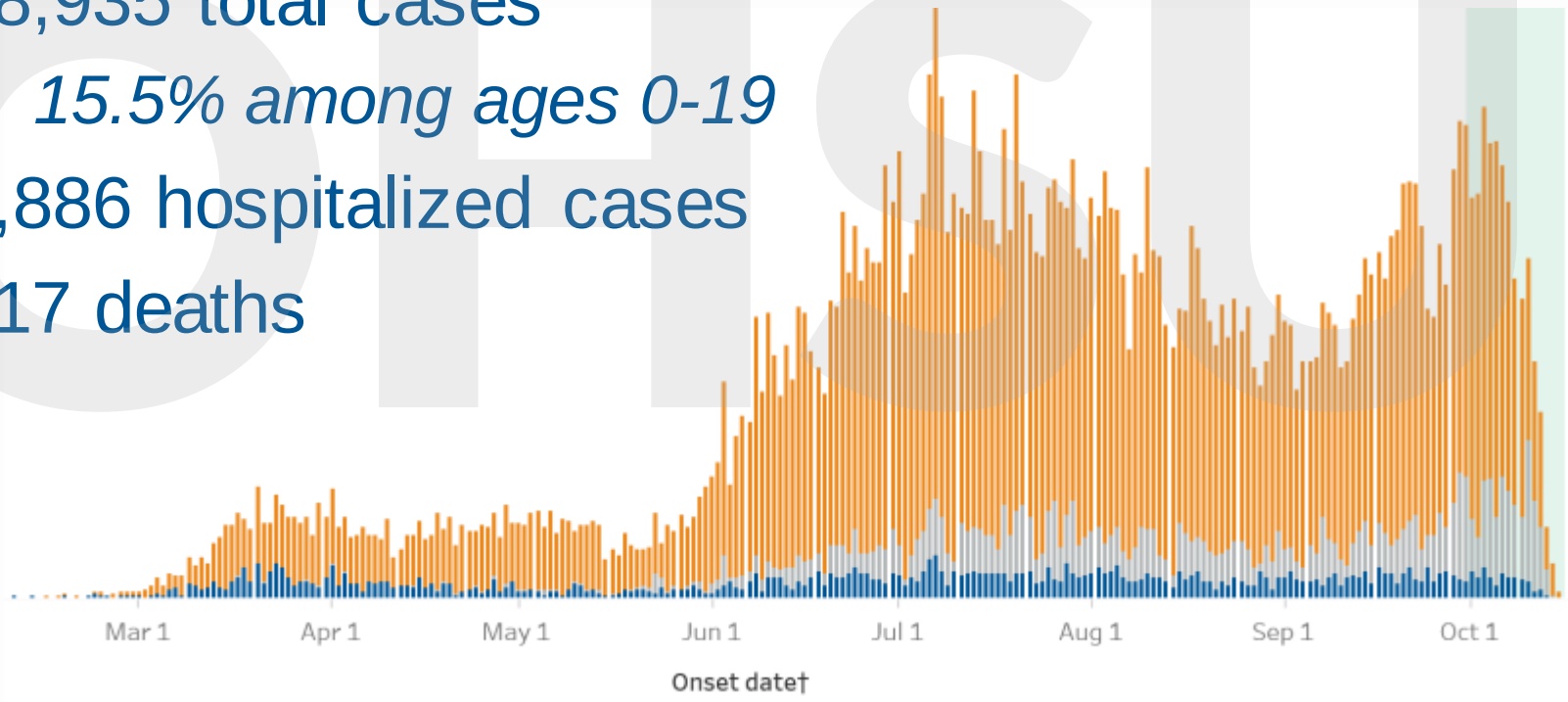
COVID-19 Impact on Children

an epidemiological overview

Overall COVID-19 Pandemic in Oregon

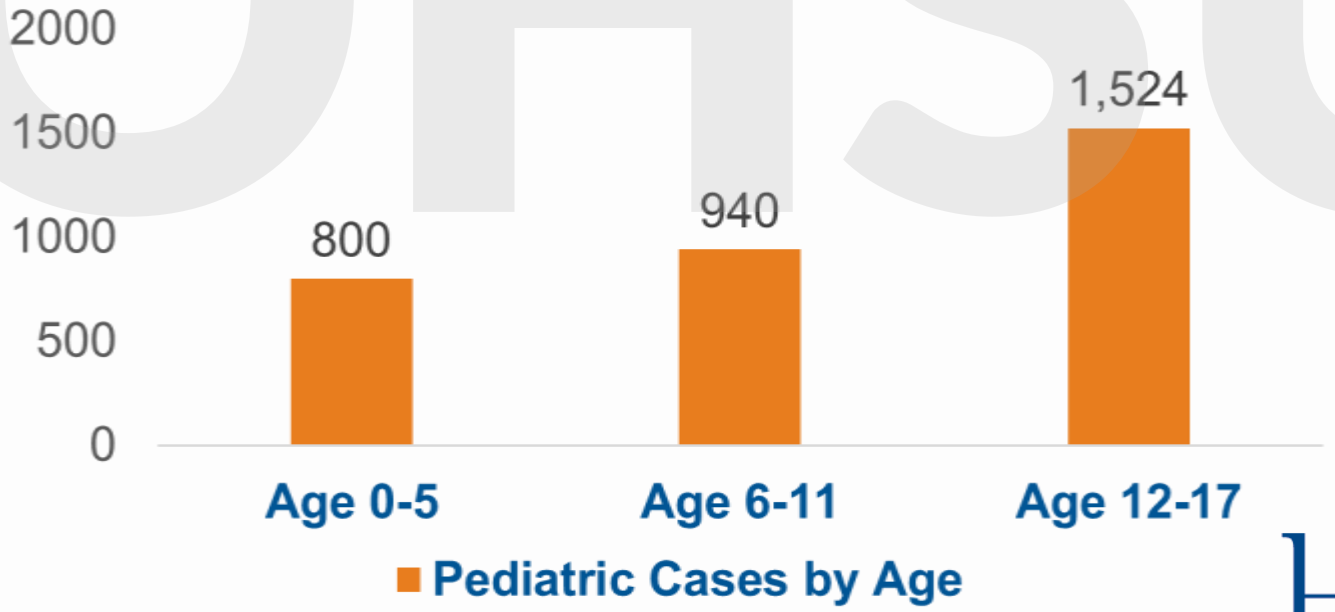
As of October 16:

- 38,935 total cases
  - *15.5% among ages 0-19*
- 2,886 hospitalized cases
- 617 deaths



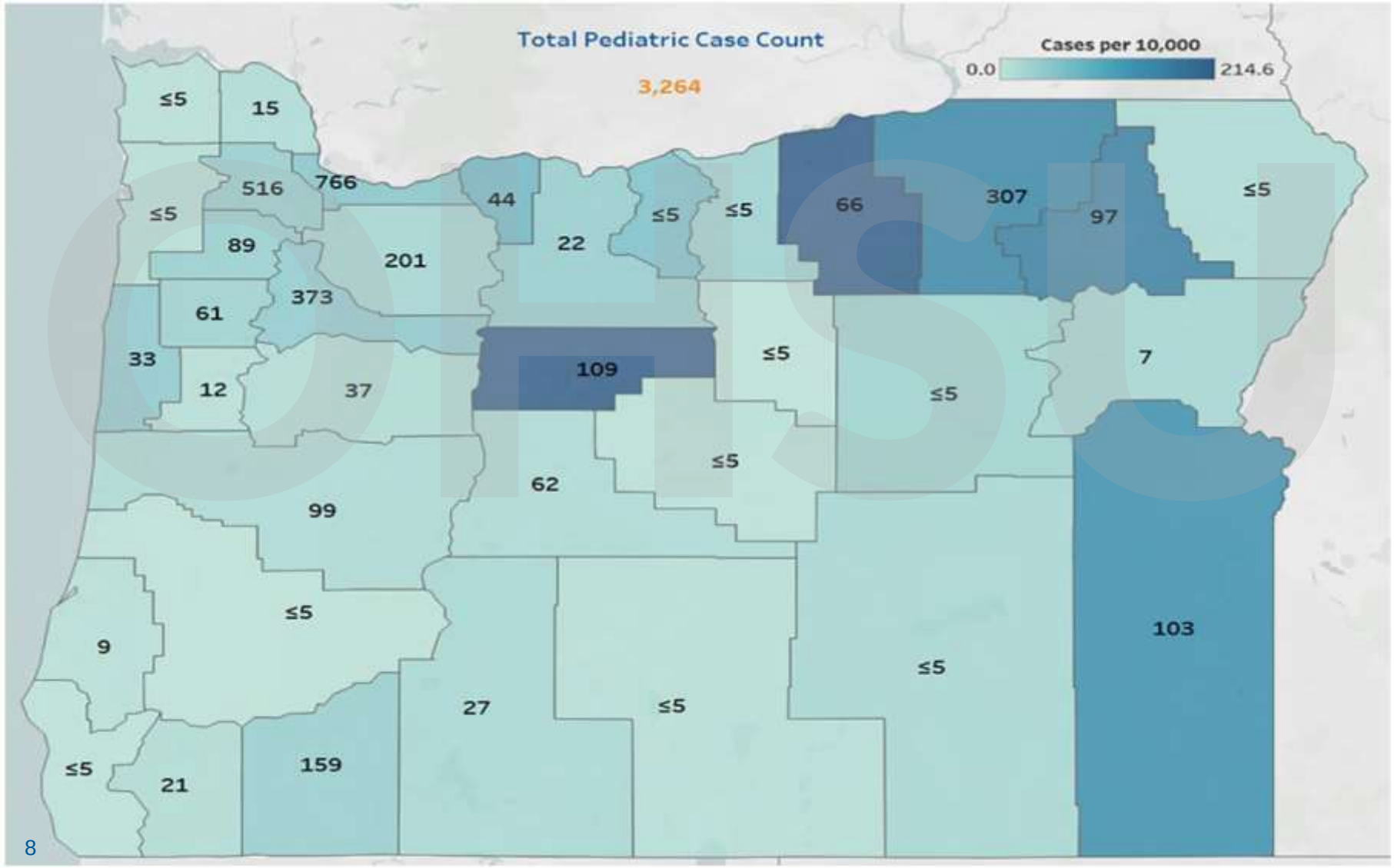
COVID-19 Pediatric Cases in Oregon

- The Oregon Health Authority last published its pediatric report on September 15th
- At that time, there were 29,662 COVID-19 OR cases
- Of these, 3,264 (11%) were in pediatric patients <18 years



Pediatric Case Counts and Per Capita Rates

Oregon data as of September 15, 2020



All COVID-19 Cases by Race, Ethnicity- OR

Race	Cases	% of total cases	Cases per 100,000[b]
White	16,037	42.8%	448.4
Black	1,261	3.4%	1562.0
Asian	1,068	2.9%	589.7
American Indian/Alaska Native	920	2.5%	1887.6
Pacific Islander	627	1.7%	3774.4
Other	12,308	32.9%	n/a
>1 race	728	1.9%	362.2
Not available	4,518	12.1%	n/a
Total	37,467	100.0%	884.4

Ethnicity	Case count	% of total cases	Cases per 100,000[a]
Hispanic	14,060	37.5%	2585.6
Non-Hispanic	18,865	50.4%	510.9
Not available	4,542	12.1%	n/a
Total	37,467	100.0%	884.4

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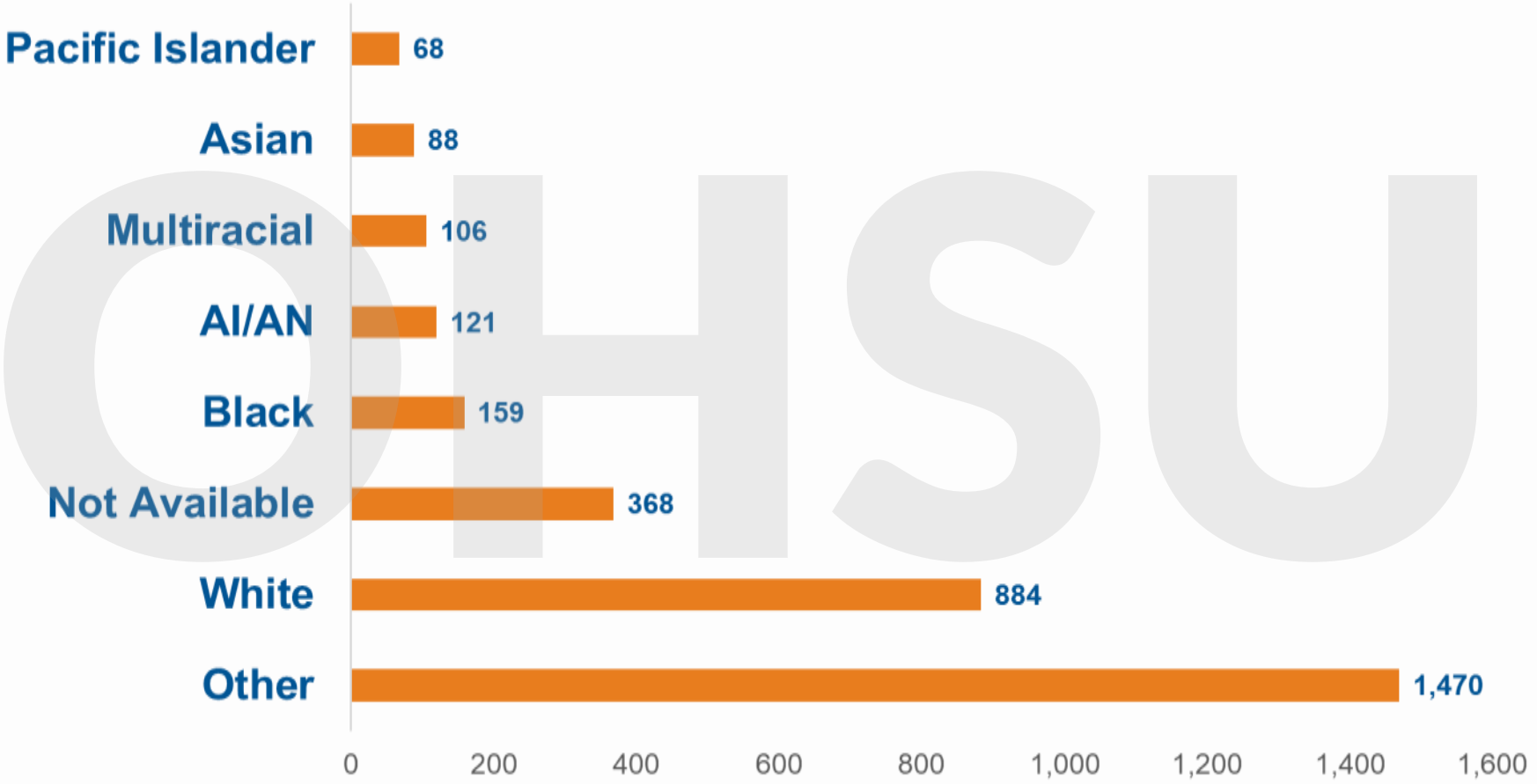
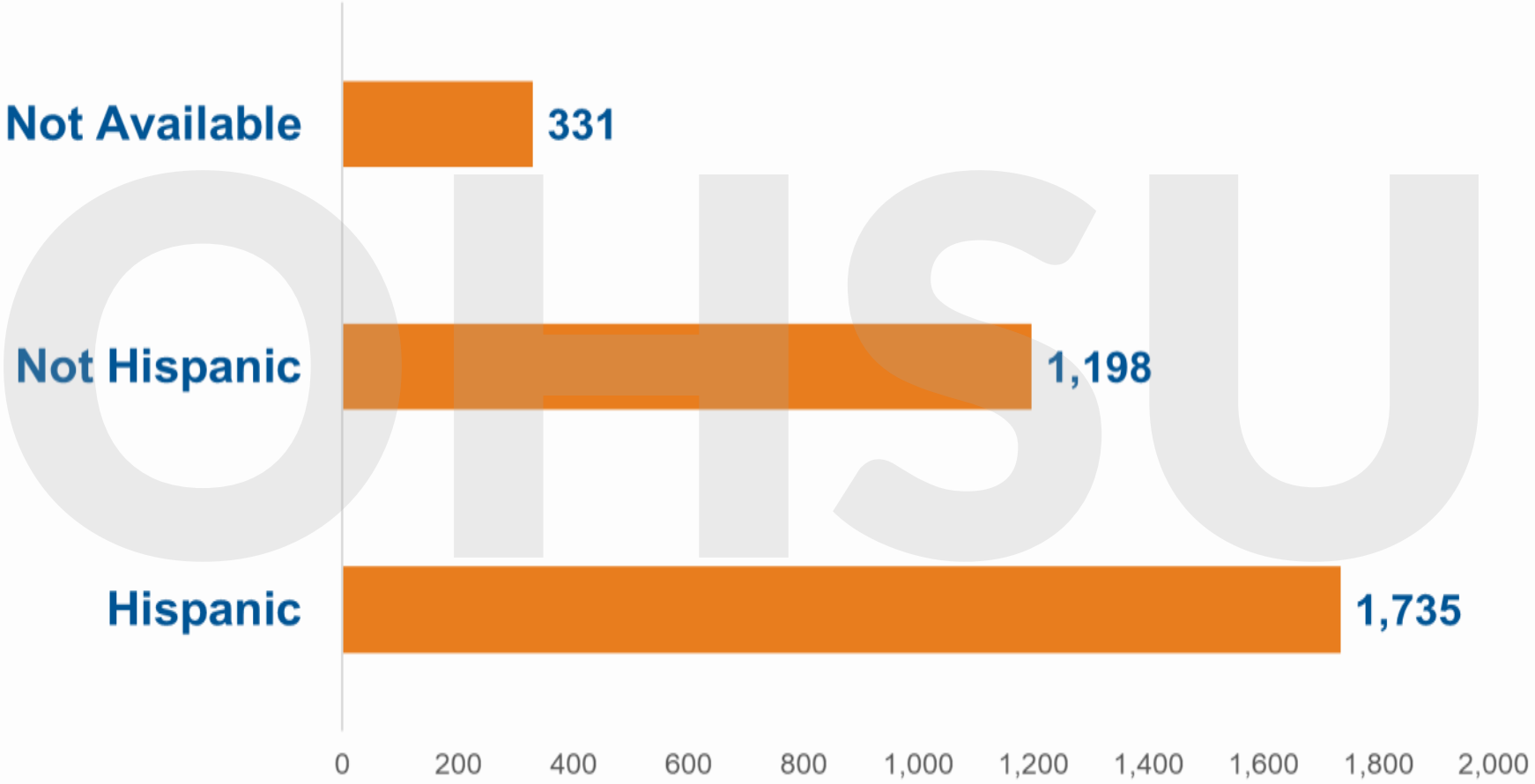
Pediatric COVID-19 Cases by Race



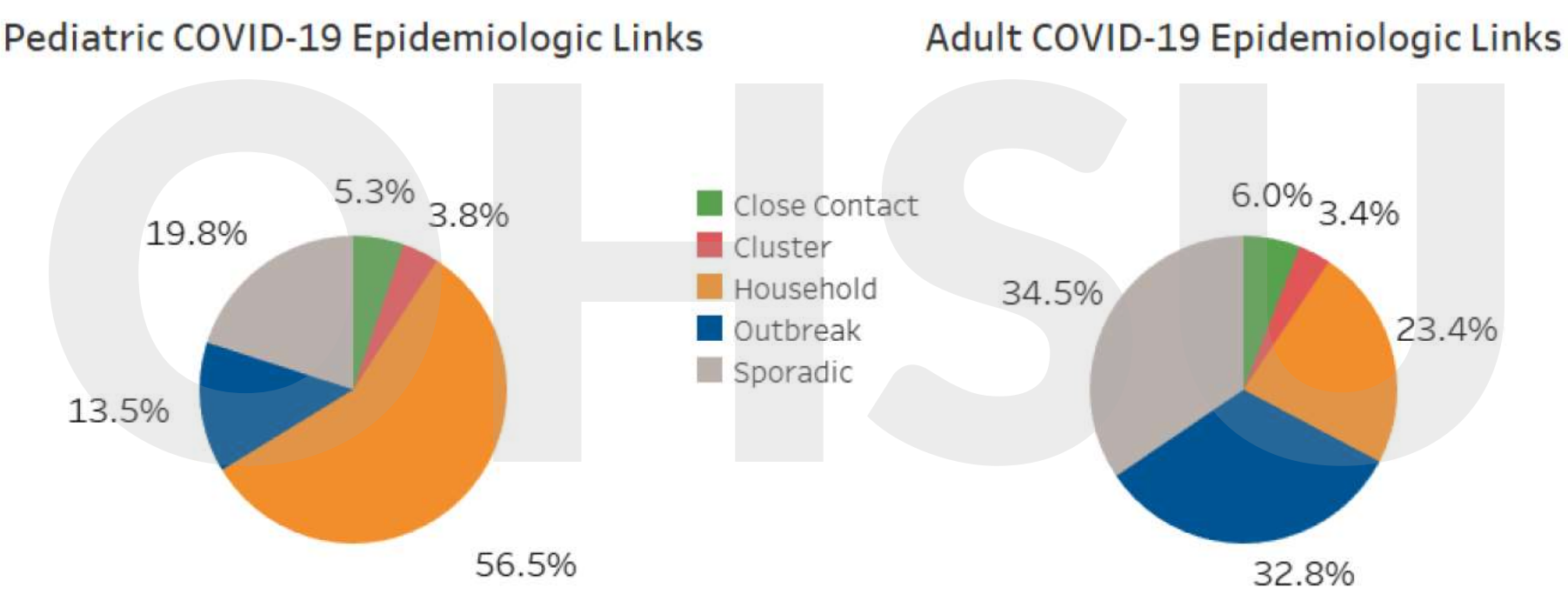
Oregon data as of September 15, 2020

Pediatric COVID-19 Cases by Ethnicity



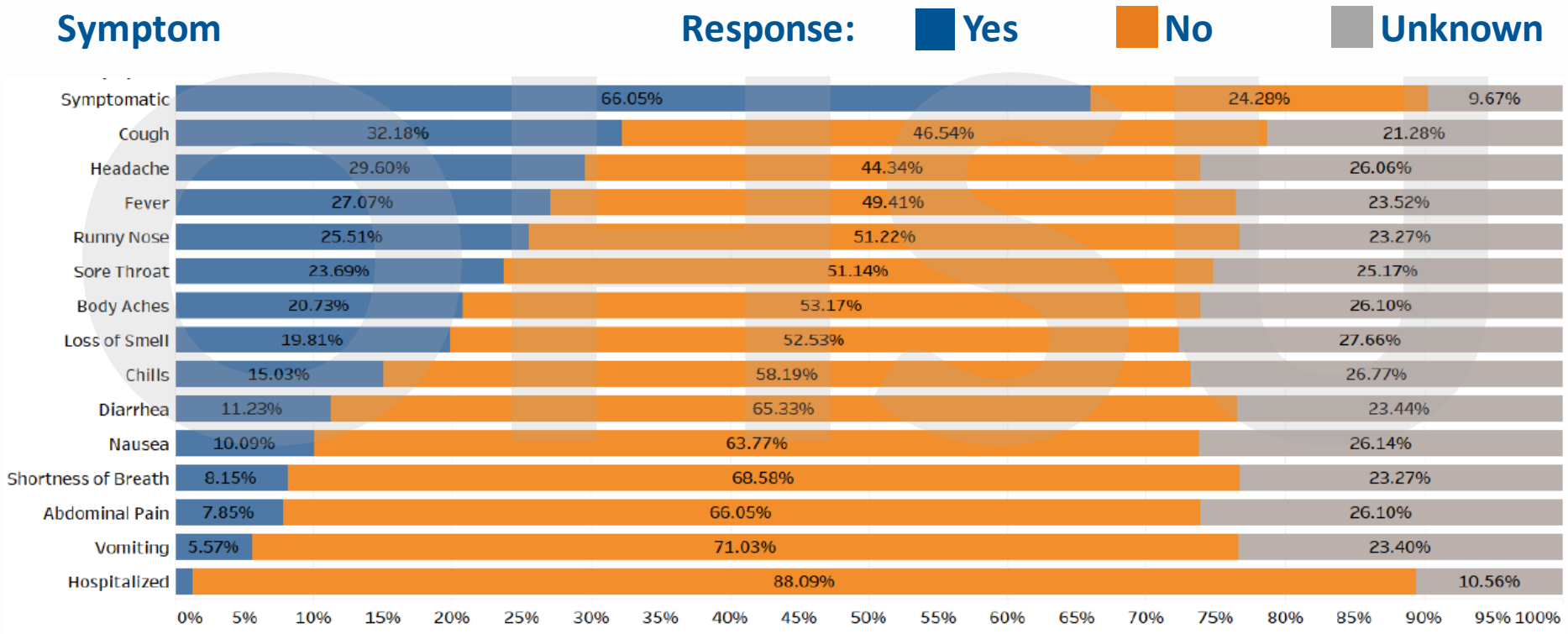
Oregon data as of September 15, 2020

Epidemiologic Links: Pediatric and Adult COVID-19 Cases



Oregon data as of September 15, 2020

Reported Signs and Symptoms among Oregon's Pediatric COVID-19 Cases



Oregon data as of September 15, 2020

Impact of COVID-19 on Children and Families

COVID-19 and Pregnancy

- Nationally, among reproductive age women with SARS-CoV-2 infection, ***pregnancy has been associated with*** hospitalization, increased risk for ICU admission and need for mechanical ventilation, but not with death.
- Hispanic and non-Hispanic black pregnant women are disproportionately affected with coronavirus infection
- Increased stressors during pregnancy
  - Increased financial instability, lack of in-person social support, virtual prenatal care visits, impact on pandemic labor and delivery practices
  - For infected women, worries about impact of infection on pregnancy, protection of infant from infection after birth.

Ellington S, et al. Characteristics of Women of Reproductive Age with Laboratory-Confirmed SARS-CoV-2 Infection by Pregnancy Status — United States, January 22–June 7, 2020. MMWR Morb Mortal Wkly Rep 2020;69:769–775.

COVID-19: Maternal and Perinatal Outcomes

- Living systematic review and meta-analysis
  - N=77 studies (11,432 women)
- Pregnant women with COVID-19 are more likely to require ICU admission or mechanical ventilation than pregnant women without COVID-19
- 73 pregnant women (0.1%) with confirmed COVID-19 died from any cause.
- Increased maternal age, high body mass index, chronic hypertension and pre-existing diabetes were associated with severe COVID-19 in pregnancy

Allotey et al. Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis. BMJ 2020;370:m3320

Maternal and Perinatal Outcomes (con'd)

- The odds of any preterm birth (3.01, 95% confidence interval 1.16 to 7.85) was high in pregnant women with COVID-19 compared with those without the disease
- A quarter of all neonates born to mothers with COVID-19 were admitted to the neonatal unit (25%) and were at increased risk of admission (odds ratio 3.13, 95% confidence interval 2.05 to 4.78) than those born to mothers without COVID-19
- Conclusion: Pre-existing comorbidities, high maternal age, and high body mass index seem to be risk factors for severe COVID-19 in pregnant women. Preterm birth rates are higher in pregnant women with COVID-19 than in pregnant women without the disease.

Allotey et al. Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis. BMJ 2020;370:m3320

COVID-19 Among School-Aged Children

- There were 277,474 school aged children in the US aged 5-17 with positive test results for SARS-CoV-2
  - Average weekly incidence (cases per 100,000 children) among adolescents aged 12-17 years (37.4) was approximately twice that of children aged 5-11 years (19.0)
  - Likely underestimates actual incidence of disease
- Among 161,387 (58%) with complete information on race/ethnicity, 42% were Hispanic/Latino, 32% were non-Hispanic White, 17% were non-Hispanic Black
- A total of 3,240 (1.2%) school aged children hospitalized, 404 (0.1%) required ICU admission, and 51 died (<0.1%)
  - Underlying conditions were more common among those with severe outcomes related to COVID-19

Leeb RT, et al. COVID-19 Trends Among School-Aged Children — United States, March 1–September 19, 2020. MMWR Morb Mortal Wkly Rep 2020;69:1410–1415.

COVID-19: Secondary Impacts on Children and Families

- In general, SARS-CoV-2 infection is not affecting the youngest Oregonians in the same way it affects adults.

- Children and adolescents are more likely impacted by the secondary effects of the pandemic:
  - Household income
  - Food and housing insecurity
  - Stress
  - Family Violence
  - Education and childcare

- Disproportionate impact of COVID-19 on Black, Indigenous, People of Color and tribal communities

Impacts on Social Emotional Development for Youngest Children

- Social and emotional development refers to a child's emerging ability to:
  - Experience, manage, and express the full range of positive and negative emotions;
  - Develop close, satisfying relationships with other children and adults; and
  - Actively explore their environment and learn.

- Opportunities for social emotional learning are likely stressed for many children and families during COVID-19, causing potential long-term effects on children's health and educational outcomes.

Center for American Progress

ISSUES EXPERTS EVENTS PRESS ABOUT

TRENDING: SOLUTIONS WE NEED TAXES SUPREME COURT

RACE AND ETHNICITY

The Economic Fallout of the Coronavirus for People of Color

By Connor Maxwell and Danyelle Solomon | April 14, 2020, 9:20 am

by Philip Fisher, Joan Lombardi, & Nathaniel Kendall-Taylor

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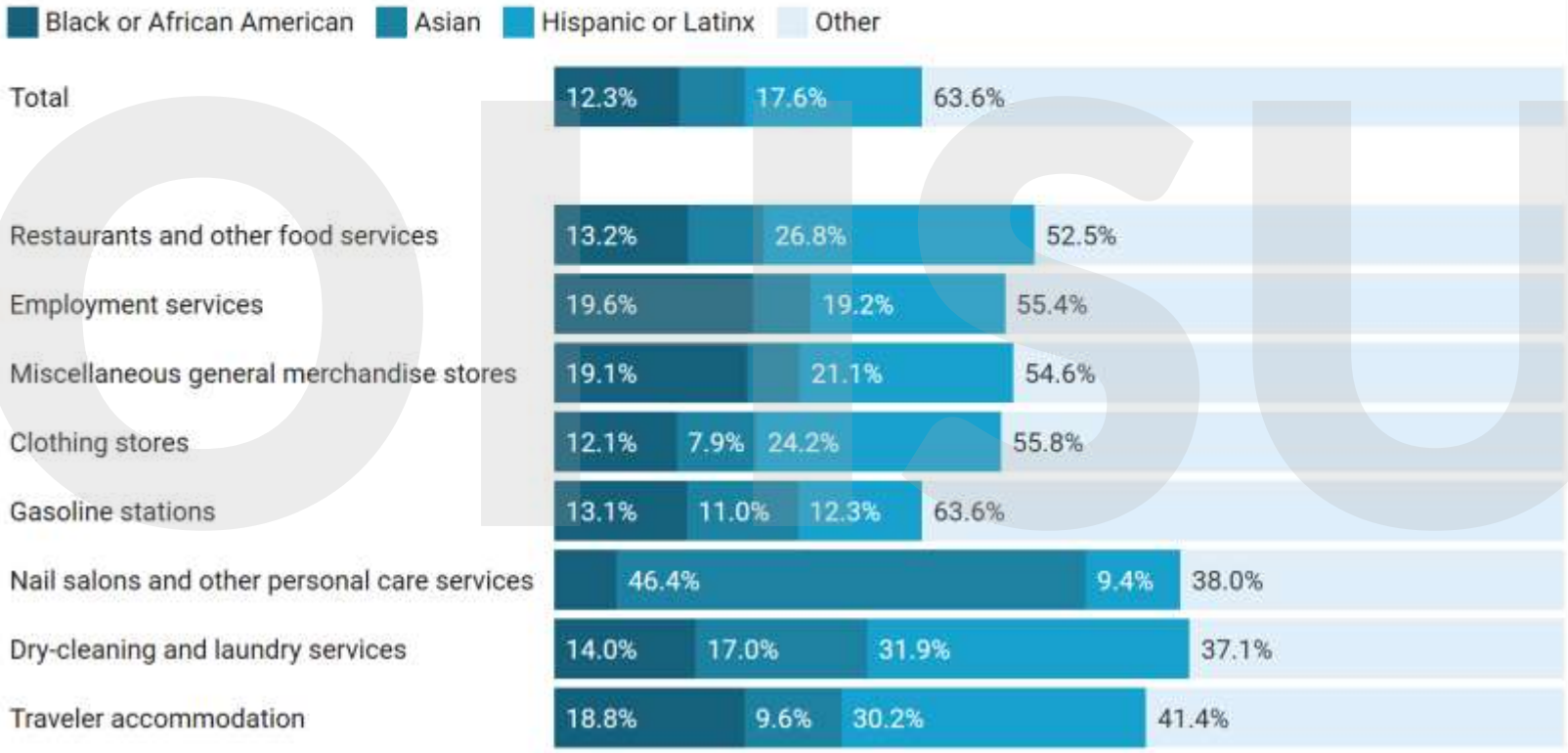
Workers of color are overrepresented in many of the low-wage jobs that are most vulnerable to potential layoffs during the coronavirus pandemic

Share of total employed people over 16 years old by detailed industry, race, and ethnicity, 2019



Maxwell C and Solomon D. The Economic Fallout of the Coronavirus for People of Color. Center for American Progress, April14, 2020.

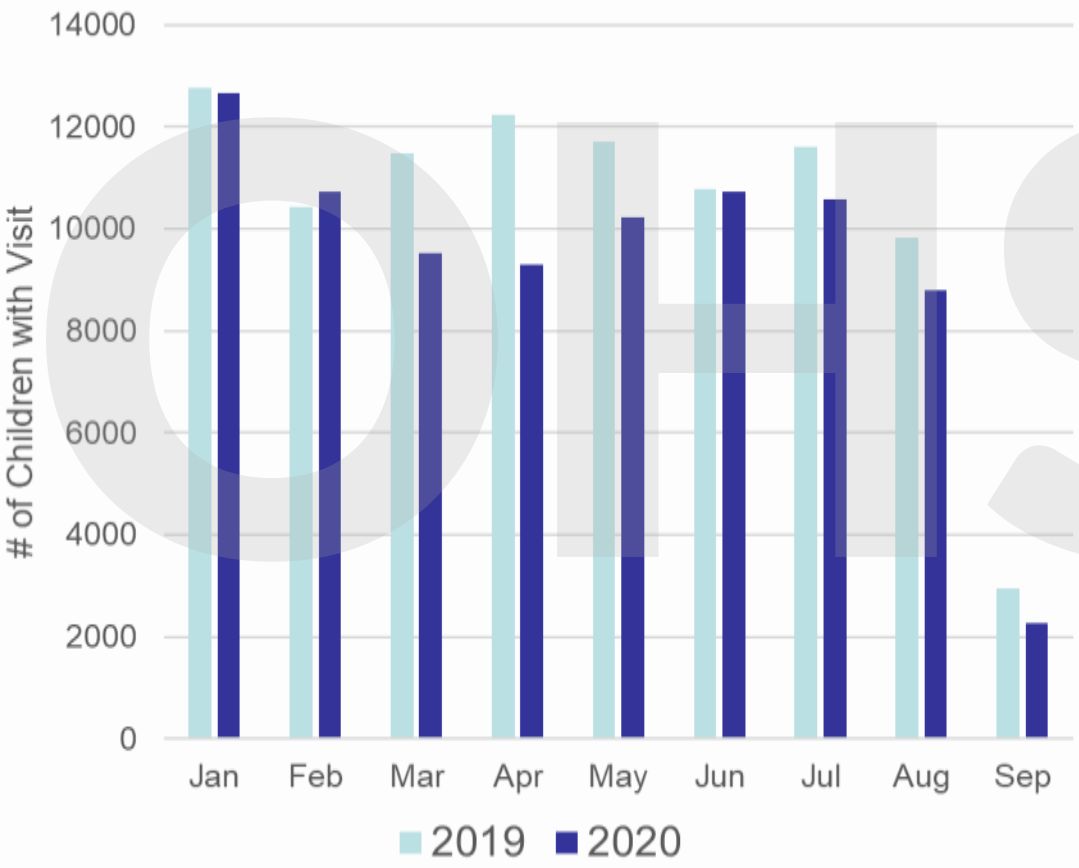
COVID-19: Health Care Utilization, Access to Care

COVID-19 Impact: Access to Care

- An unintended consequence of controlling the COVID-19 pandemic is a reduction in access to care and health care utilization
- Survey of Oregon Vaccines for Children (VFC) providers in April found:
  - Most practices initially limited access to routine care but continued to see infants
  - Some practices shut down initially during the pandemic
  - Some practices stopped immunizing
- Parents may be reluctant to bring children for non-urgent reasons back to a clinic

Closer look: well child visits, developmental screening, immunizations

Well-child visits in the first 15 months of life



- # of Children with at least one visit in each month
- Claims processed through September in each year to remove impact of claims lag

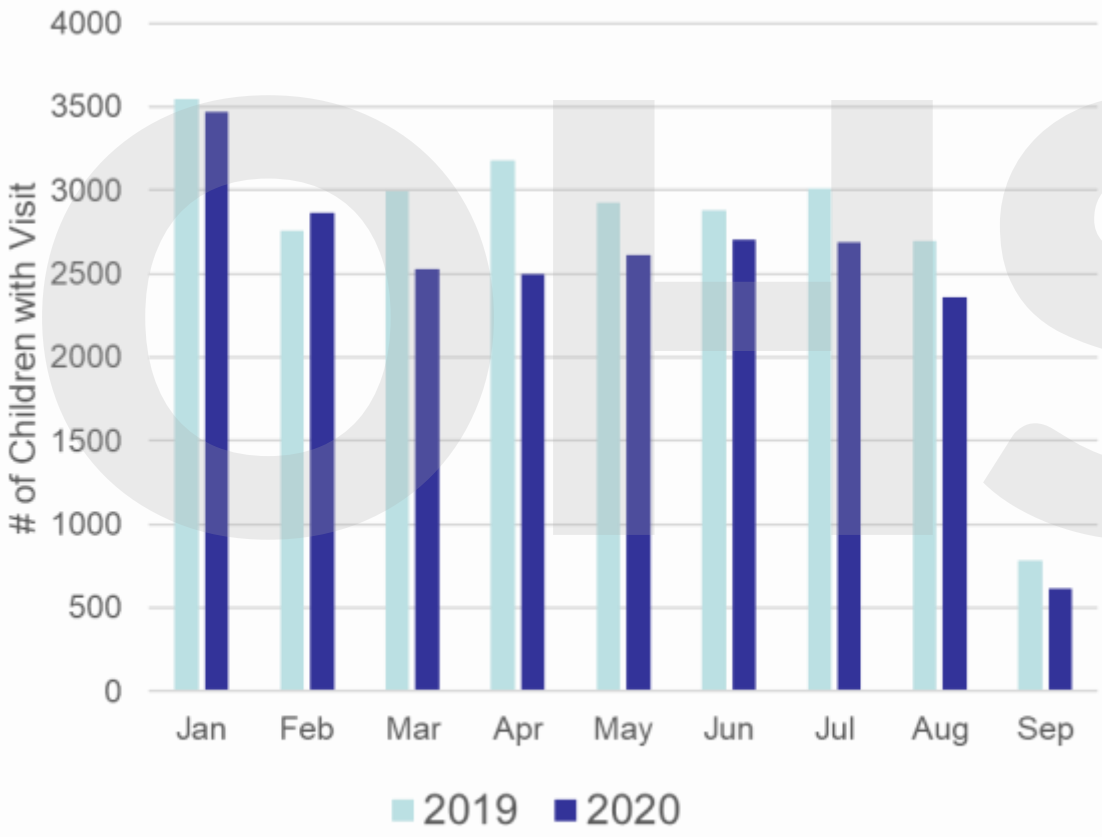
Overall

2019 = 93,810 Children

2020 = 84,821 Children

% Change = -9.6%

Well-child visits in the 3rd, 4th, 5th, and 6th year of life



- # of Children with at least one visit in each month
- Claims processed through September in each year to remove impact of claims lag

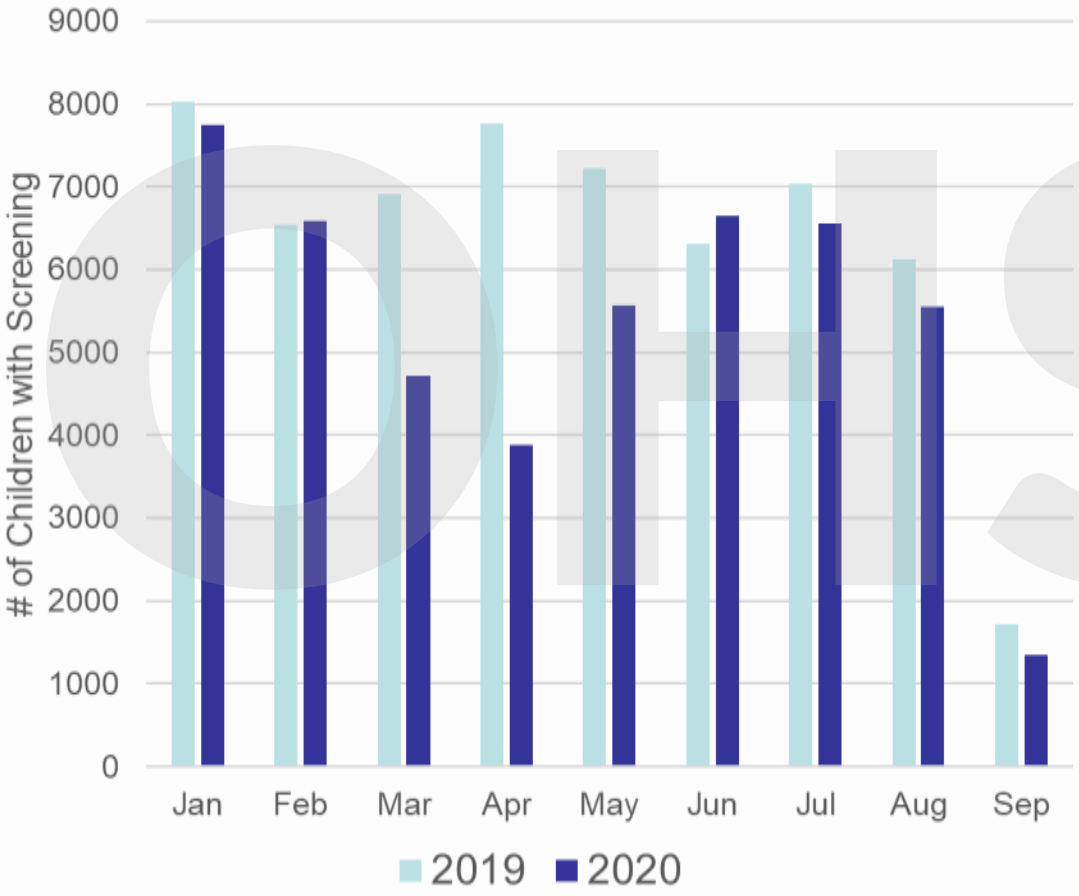
Overall

2019 = 24,785 Children

2020 = 22,333 Children

% Change = -9.9%

Developmental Screening by the first 36 months of life



- # of Children with at least one screen in each month
- Claims processed through September in each year to remove impact of claims lag

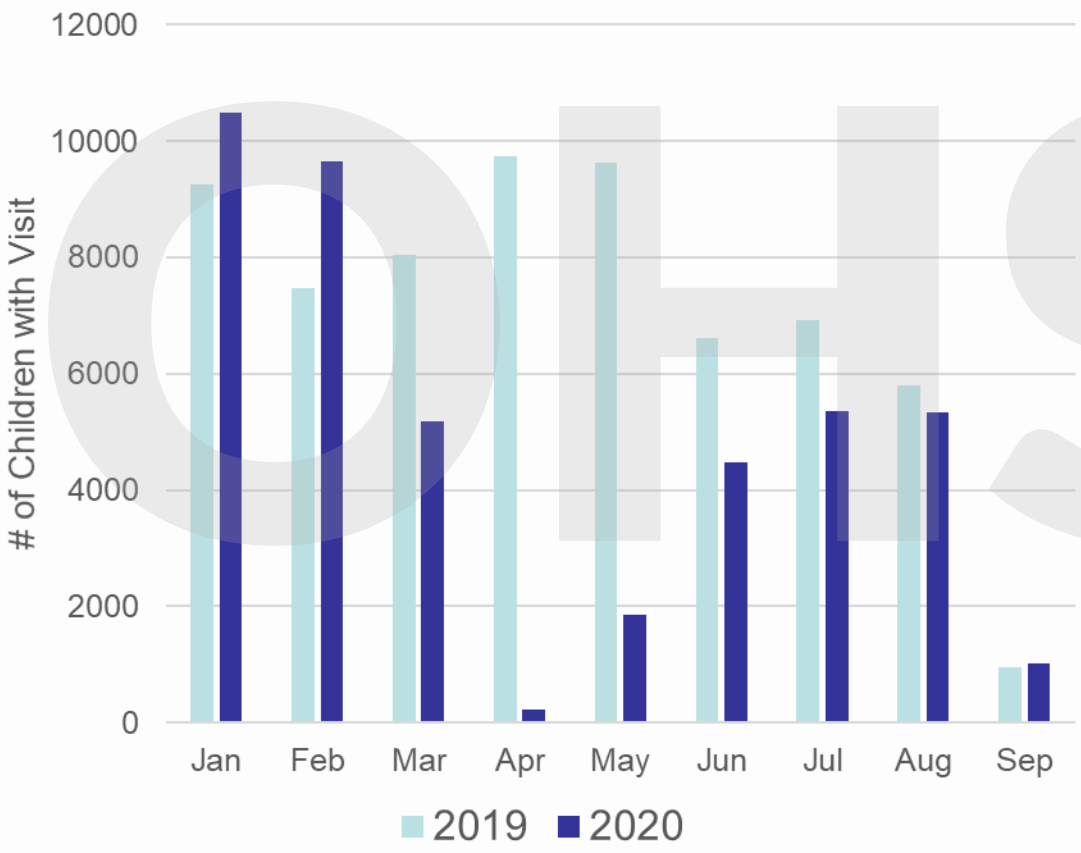
Overall

2019 = 57,613 Children

2020 = 48,606 Children

% Change = -15.6%

Preventive Oral Health Visits Ages 0 to 5



- # of Children with at least one visit in each month
- Claims processed through September in each year to remove impact of claims lag

Overall

2019 = 64,406 Children

2020 = 43,585 Children

% Change = -32.3%

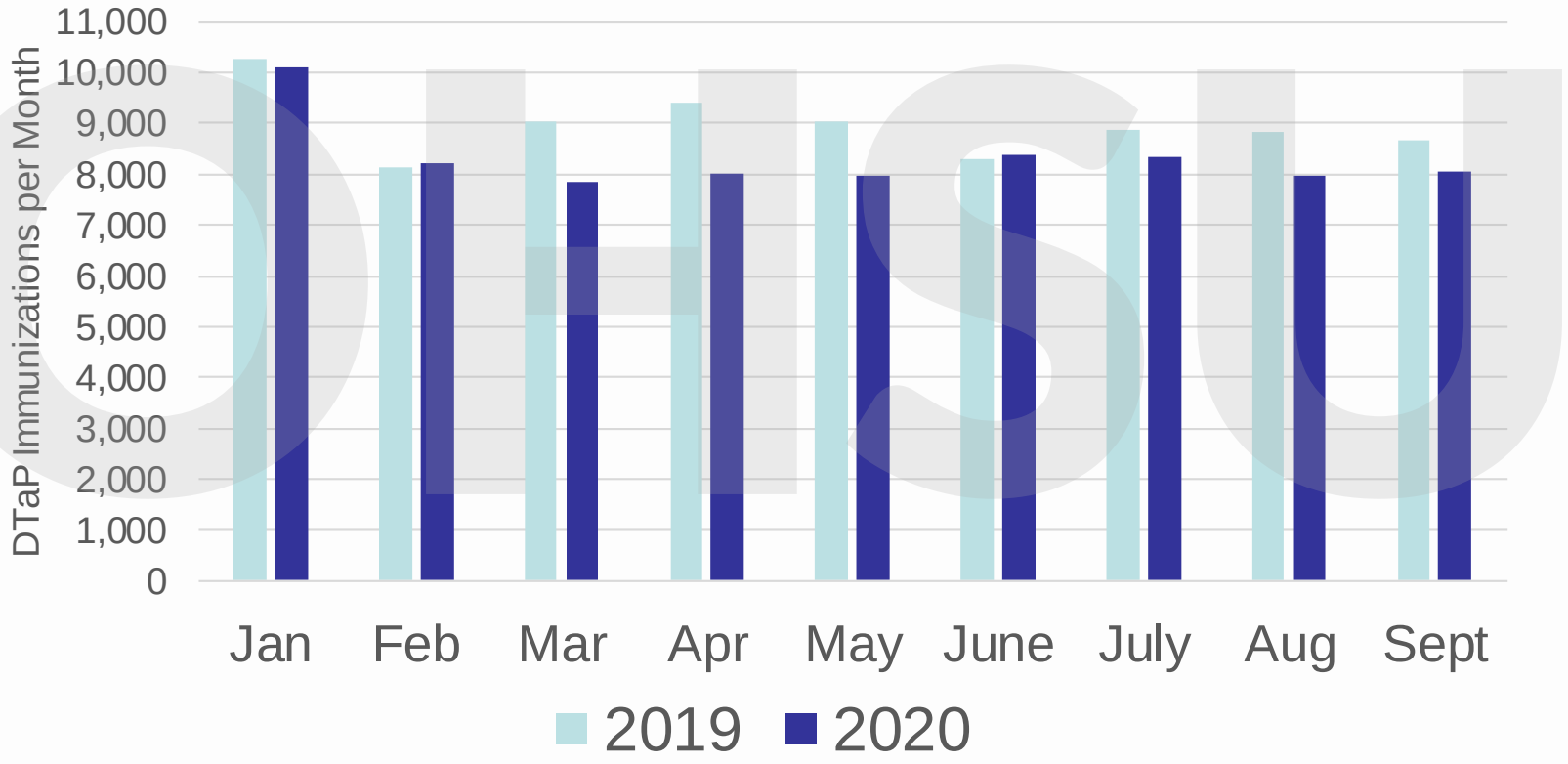
COVID-19 and Immunizations

- The Oregon Immunization Program is tracking 7 childhood and 2 adult measures to assess the impact of the pandemic on routine immunizations
- Data is updated monthly
  - Information presented is as of October 2, 2020
- Moving to interactive platform for data dissemination and sharing

Monitoring the impact of the pandemic on routine immunizations

- 9 measures tracked on monthly basis:
  - Rotavirus at 2 to 7 months of age
  - DTaP at 2 to 9 months of age
  - MMR at 12 months of age
  - Immunization Visits (non-flu) at 2 to 19 months of age
  - MMR at 2 to 9 years of age
  - Tdap at 9 to 13 years of age
  - HPV at 9 to 13 years of age
  - Tdap among adult women of childbearing age
  - PPSV23 (Pneumococcal) among adults age 18+

Oregon Infant DTaP Immunizations at 2 to 9 Months of Age, 2020 vs 2019



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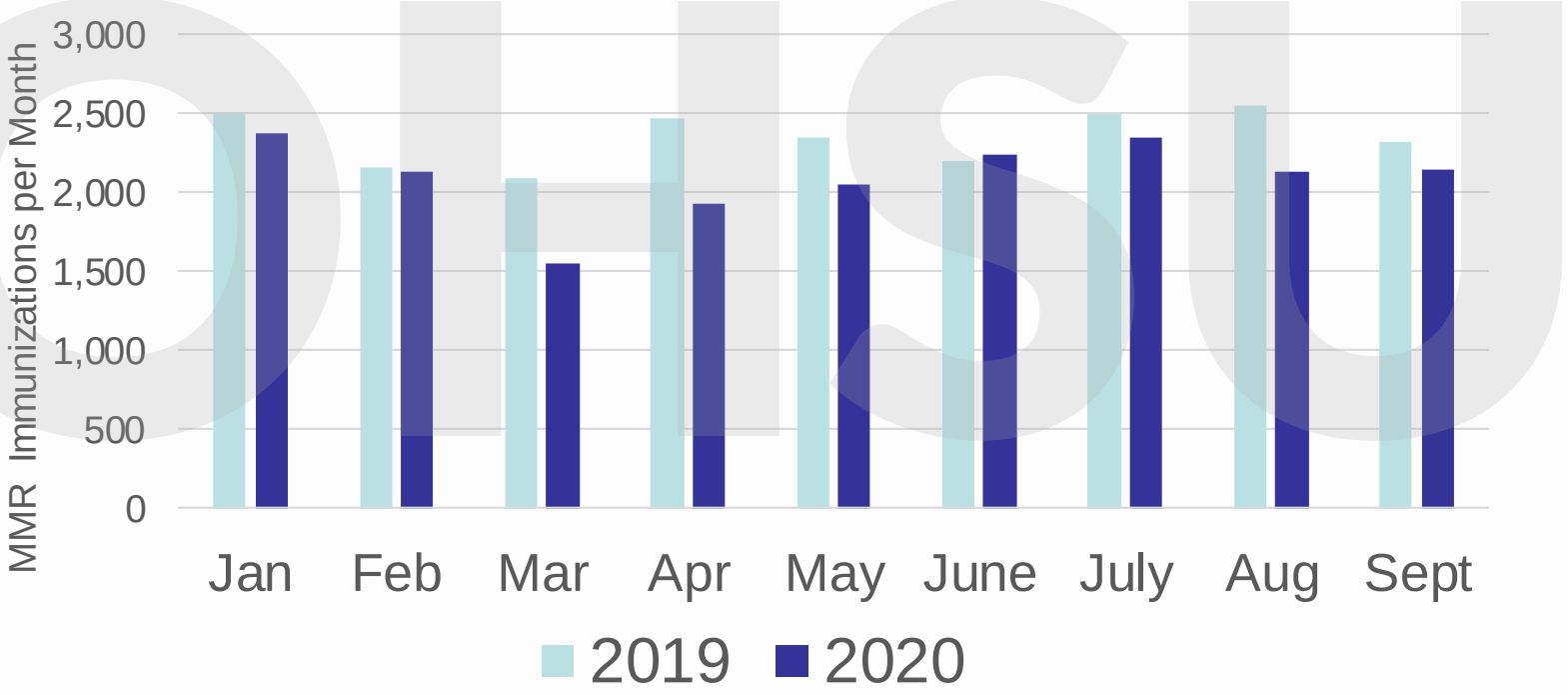
Oregon Infant Measles-containing Immunizations (MMR) at 12 Months of Age, 2020 vs 2019



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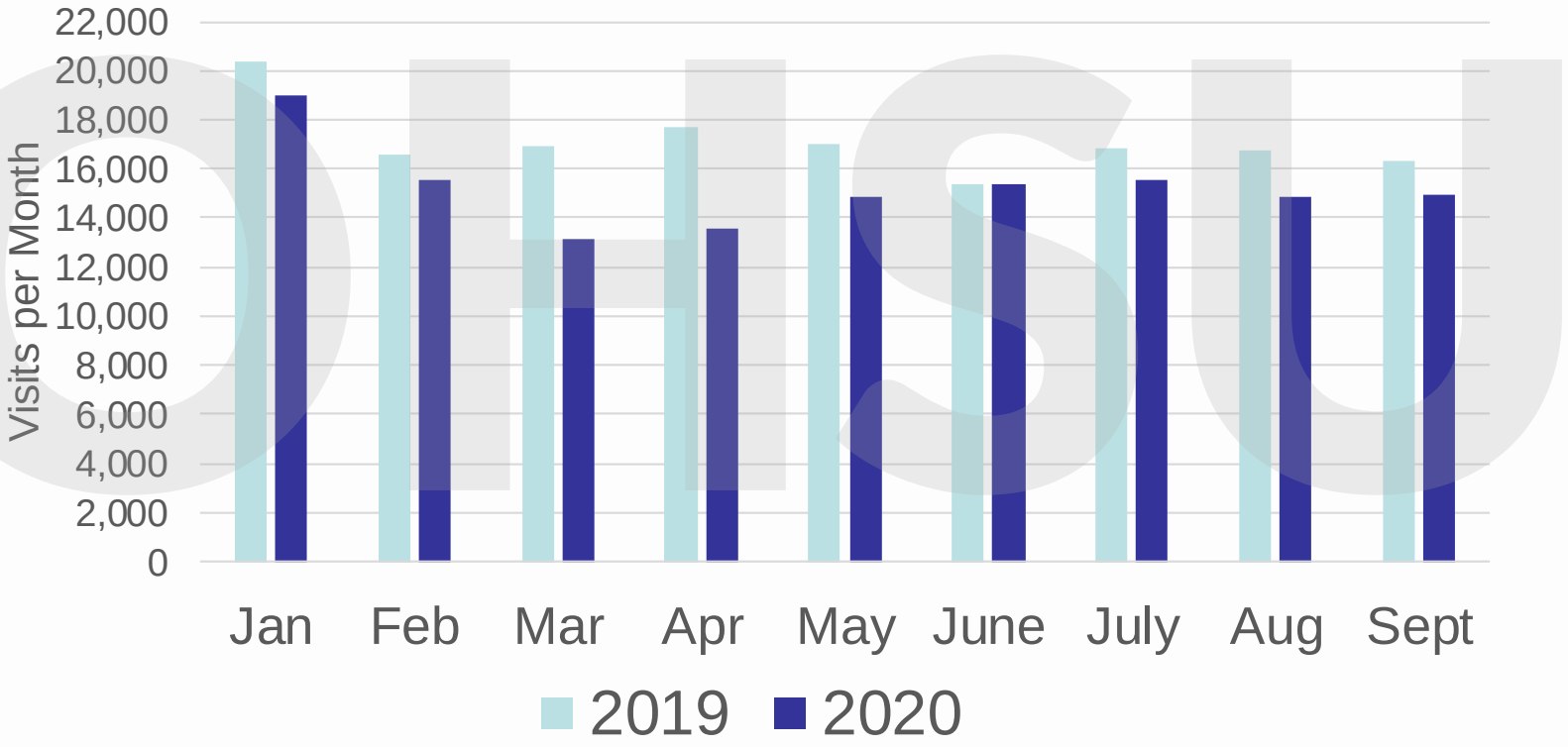
Immunization Visits Among Oregon Infants Age 2 to 19 Months, 2020 vs 2019



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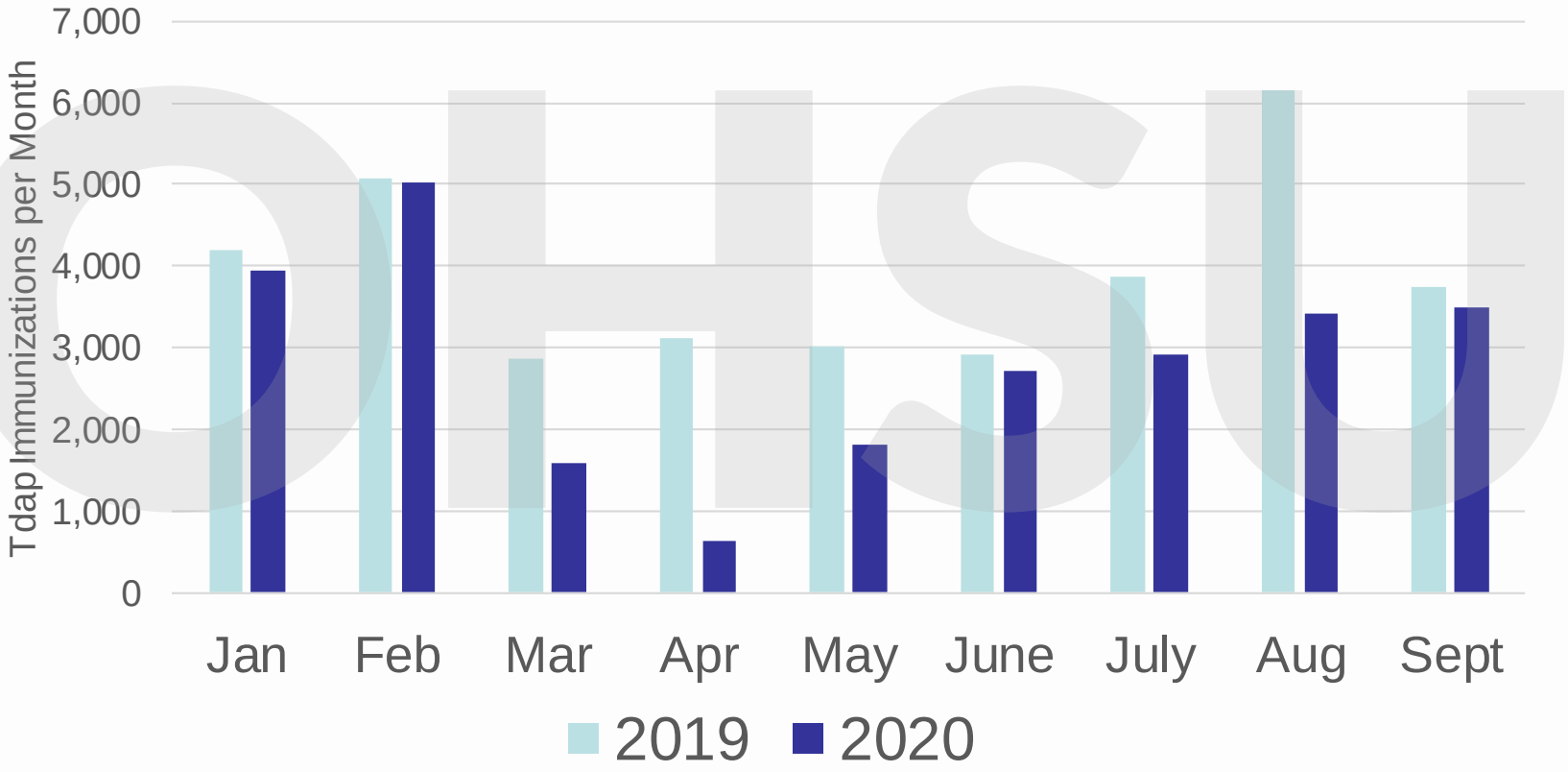
Oregon Adolescent Tdap Immunization at 9 to 13 Years, 2020 vs 2019



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Impact of COVID-19 Pandemic on Routine Immunization (to date)

Measures	Population category	2019	2020	% Change, 2020 vs 2019
Rotavirus at 2 to 7 Months	Infant	67,288	62,612	-6.9%
DTaP at 2 to 9 Months		80,609	74,898	-7.1%
MMR at 12 Months		21,130	18,901	-10.5%
Immunization Visits 2-19 Months		153,867	136,967	-11.0%
MMR at 2 to 9 Years	Child/Adolescent	45,164	28,127	-37.7%
Tdap at 9 to 13 Years		34,971	25,538	-27.0%
HPV at 9 to 13 Years		41,505	32,250	-22.3%
Tdap among Women of Child-bearing Age	Adult	51,697	41,325	-20.1%
PPSV23 among Adults (18+ Years)		60,579	55,412	-8.5%

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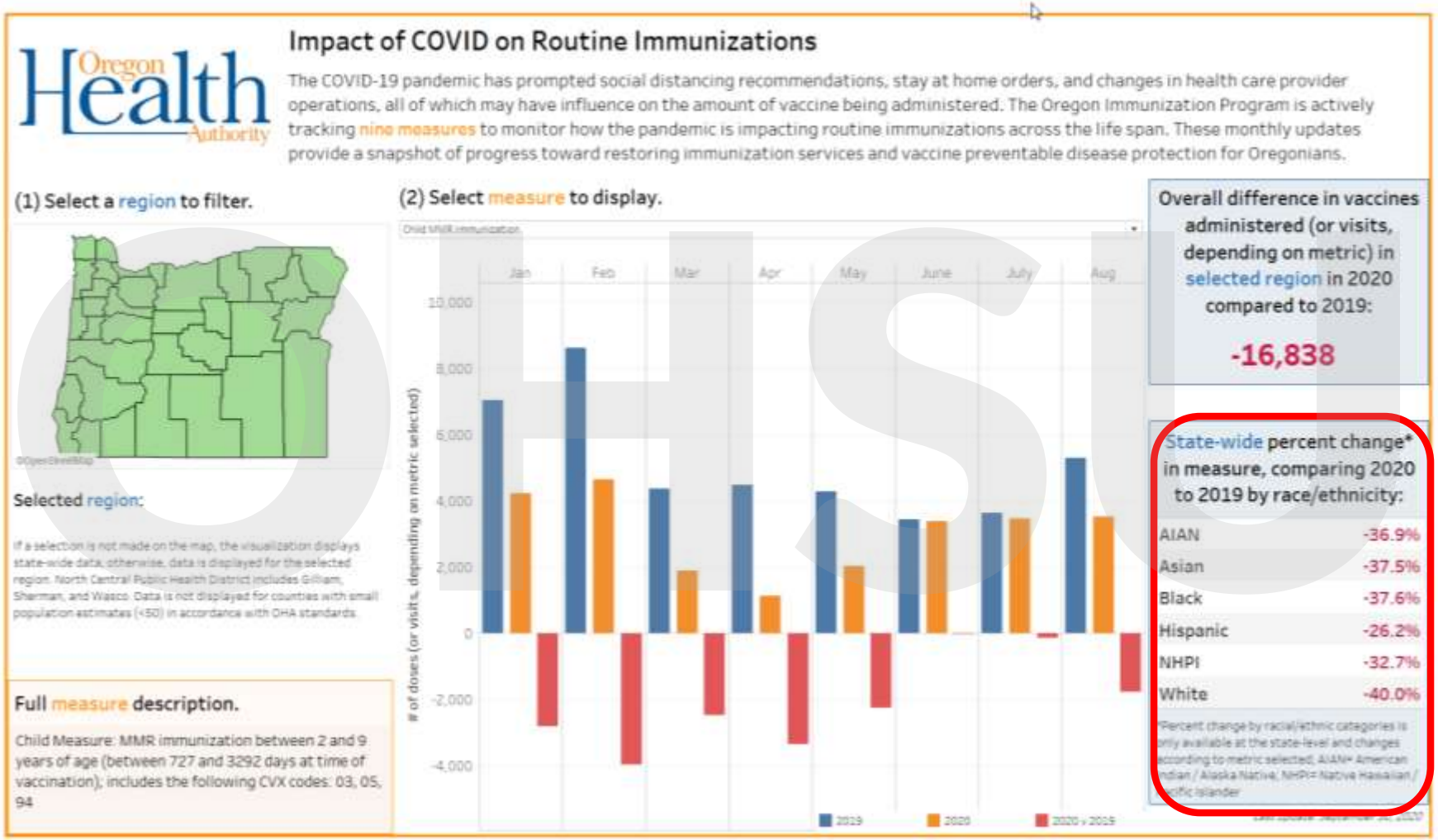
Interactive Data Dashboard (Statewide)



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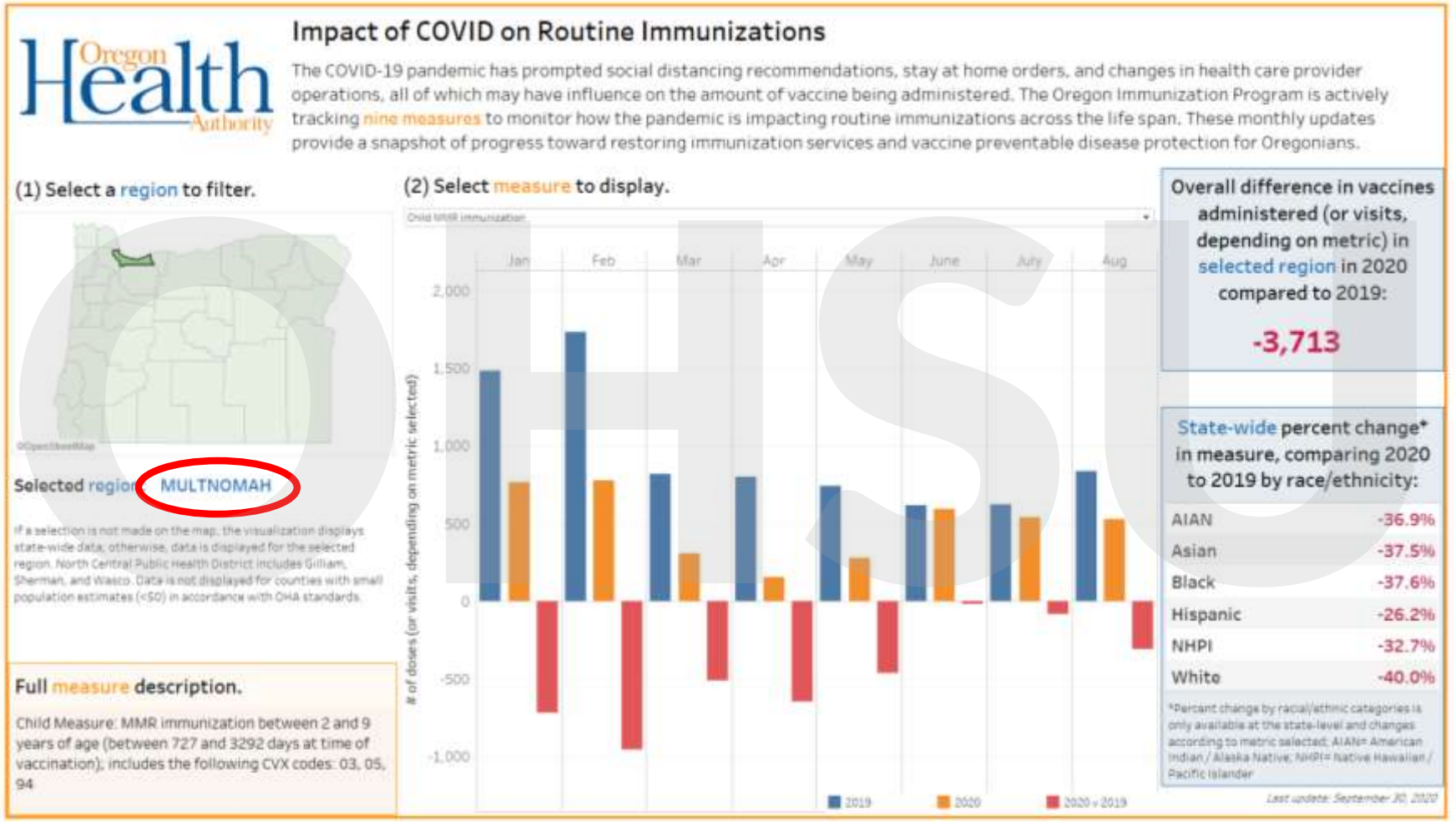
Interactive Data Dashboard (County)



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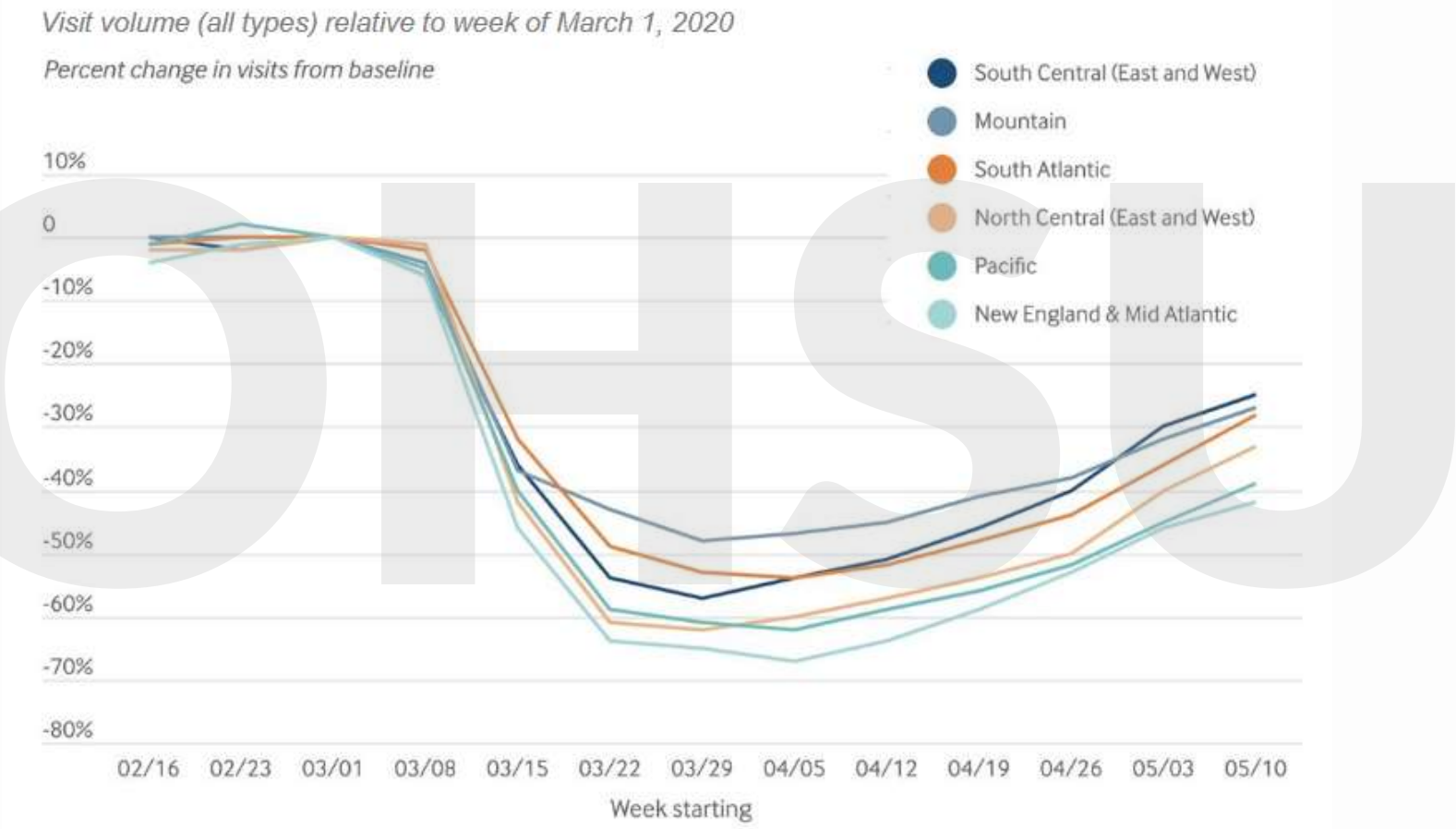
COVID-19 Impacts on Outpatient Volumes, Finances

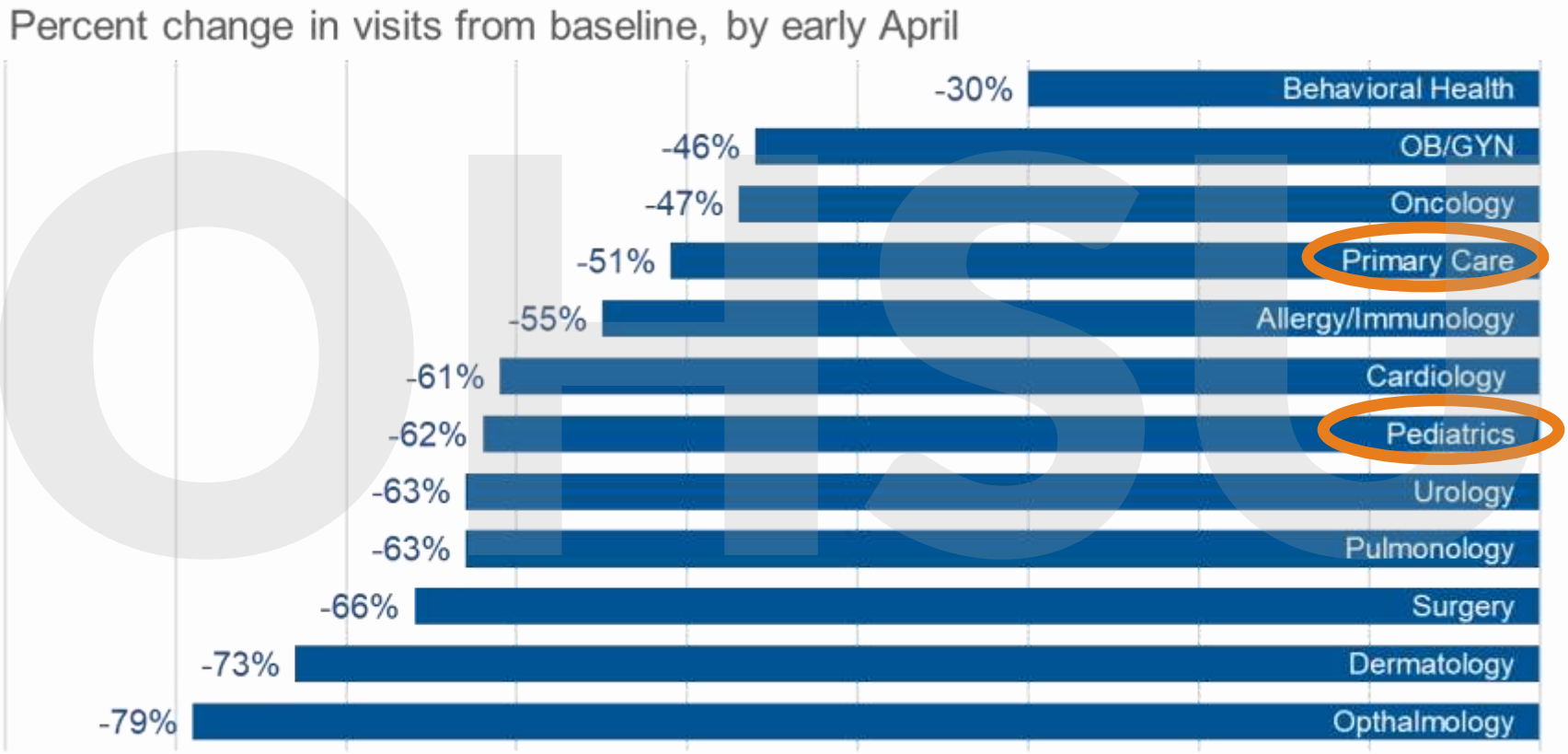
Outpatient utilization plummeted by ~60% by early April



https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits

Sources: Ateeva Mehrotra, Michael Chernew, David Linetsky, Hilary Hatch,and David Cutler, "The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges," The Commonwealth Fund and Phreesia.

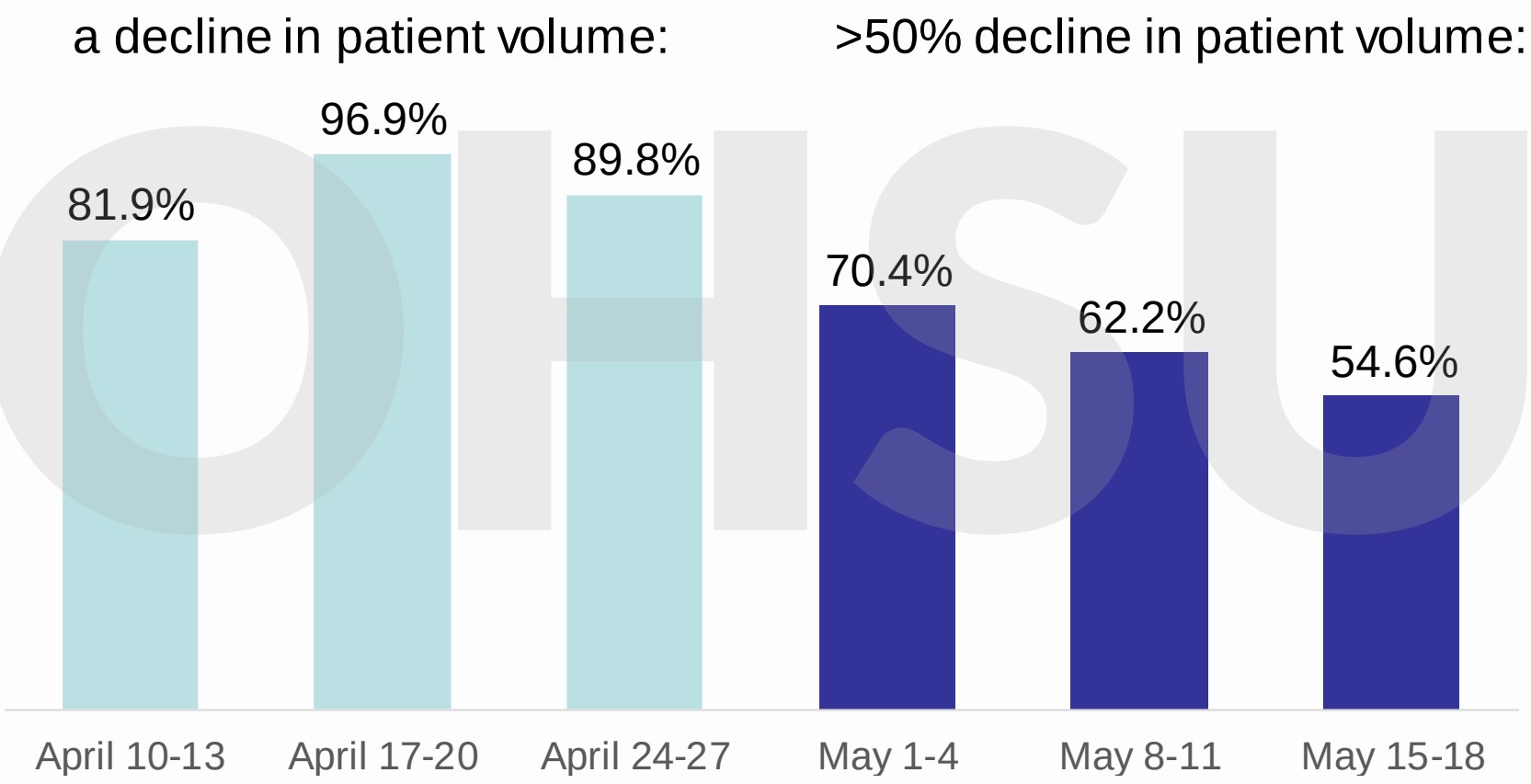
The drop in outpatient visits varied by provider type



https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits

Oregon providers had similar experience

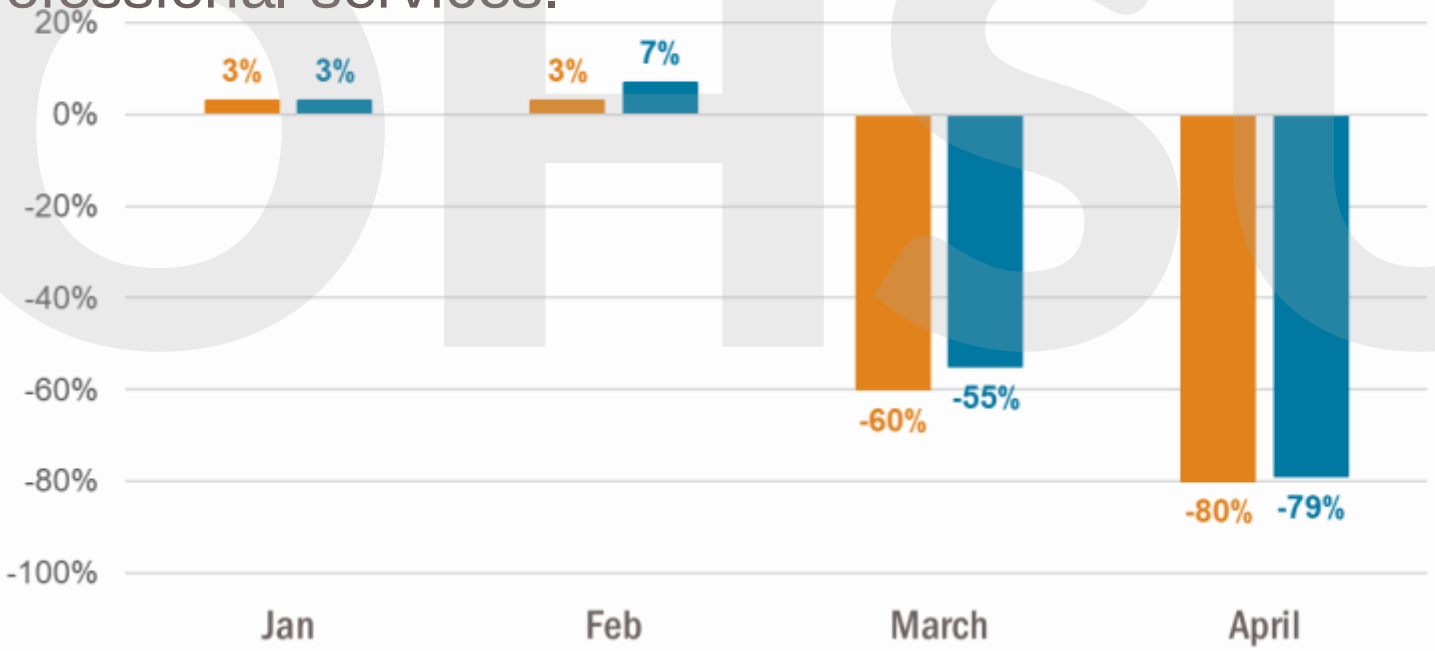
Percent of **Oregon Primary Care Practices** reporting…



https://www.ohsu.edu/oregon-rural-practice-based-research-network/hot-topics

Drops in utilization resulted in decreased revenue for providers

Percent change in commercial utilization and revenue (estimated allowed amounts) from 2019 to 2020 across all professional services.



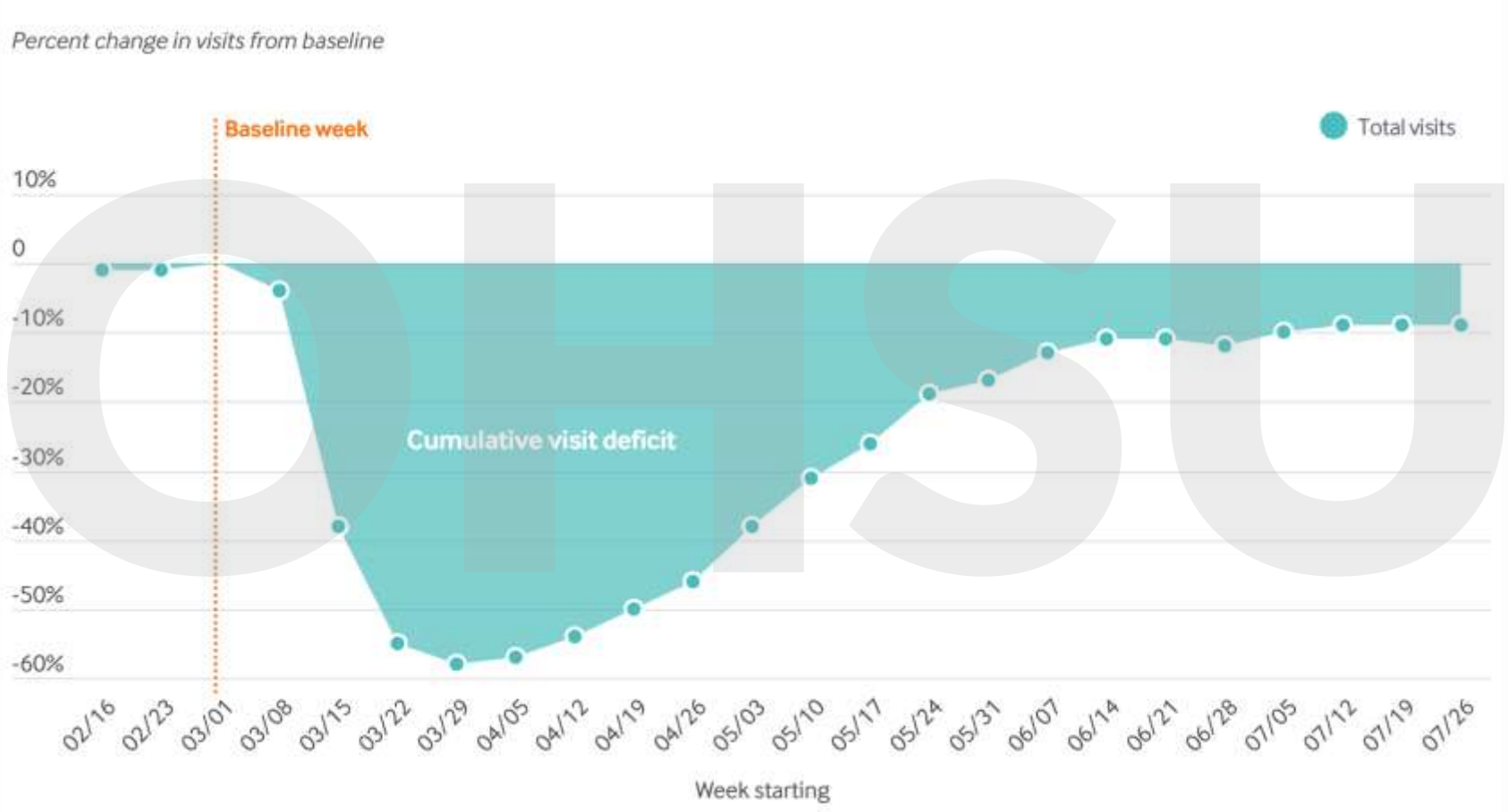
Healthcare Professionals and the Impact of COVID-19: A comparative study of revenue and utilization. FAIR Health. June 2020.

Estimates of lost revenue for OR providers

	Primary Care	Behavioral Health
Expected Q2 2020 total revenue	$227.7 - $243.9 million	$87.9 - $94.6 million
Estimated drop in revenue	50%	30%
Estimated Q2 2020 $ loss	**$113.9 - $121.9 million**	**$26.4 - $28.4 million**

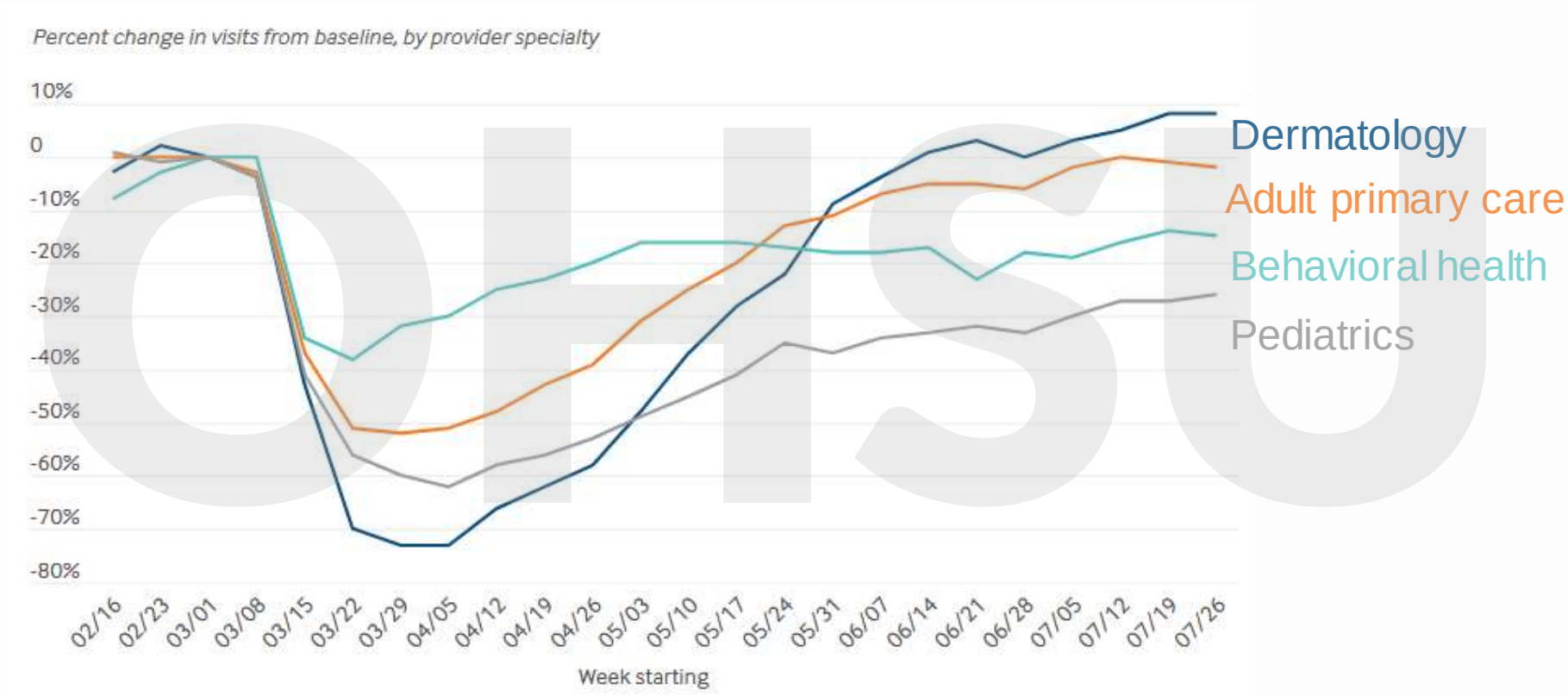
Data source: Oregon's All Payer All Claims data, CY 2018. All revenue calculated using allowed amounts. Primary care providers identified using definitions from Oregon's Primary Care Spending Report, applied to all carriers. Behavioral health providers identified using Actuarial Services categorization. Total revenue adjusted for inflation using CPI-medical. Lower bound not adjusted, upper bound adjusted for 2019. Commercial revenue adjusted to account for self-insured population (ERISA) not in APAC data: 6-12% depending on churn.

A rebound in outpatient visits has started, but visits are still below baseline



Source: Ateev Mehrotra et al., *The Impact of the COVID-19 Pandemic on Outpatient Visits: Changing Patterns of Care in the Newest COVID-19 Hot Spots* (Commonwealth Fund, Aug. 2020). https://doi.org/10.26099/yaqe-q550

The rebound also varies by specialty



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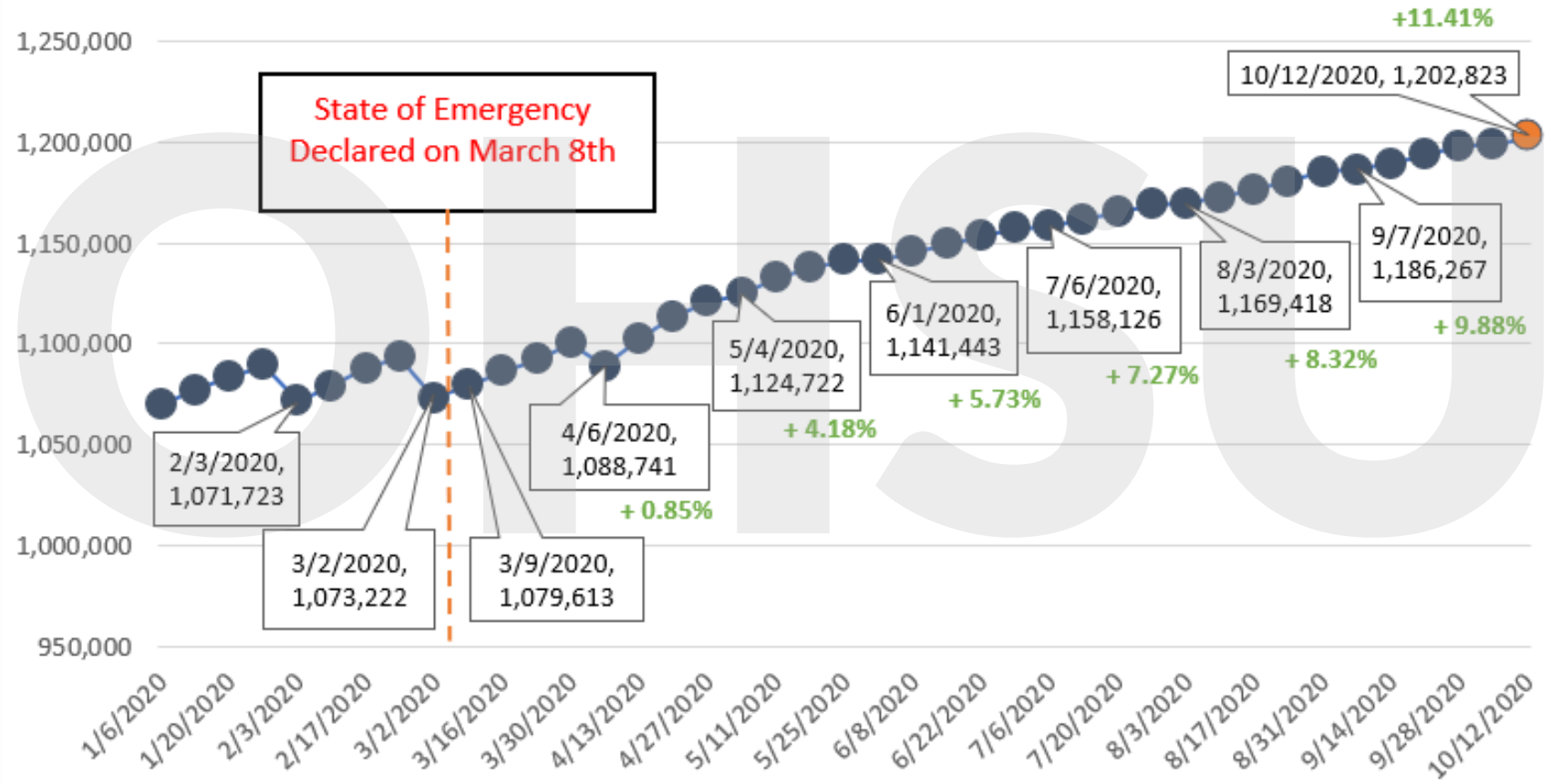
Oregon Health Plan (Medicaid) Enrollment



Exposing Health Inequities

Pre-existing problems in our health system

The COVID-19 pandemic has exposed and intensified pre-existing problems in our health system, including:

- Access to culturally responsive and linguistically appropriate care
- Inadequate safety net
- Insurance coverage
- Implicit bias
- Structural racism
- Underlying health inequities

Distrust and fear of the health care and public health systems have become evident throughout the COVID-19 response.

What is Implicit Bias?

Refers to **the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner**. These biases, which encompass both favorable and unfavorable assessments, are **activated involuntarily and without an individual's awareness** or intentional control. Residing deep in the subconscious, these biases are different from known biases that individuals may choose to conceal for the purposes of social and/or political correctness. Rather, implicit biases are not accessible through introspection.

The implicit association we harbor in our subconscious **cause us to have feelings and attitudes about other people based on characteristics such as race, ethnicity, age and appearance**. These associations develop over the course of a lifetime beginning at a very early age through exposure to direct and indirect messages.

Kirwan Institute for the Study of Race and Ethnicity, Ohio State University
http://kirwaninstitute.osu.edu/research/understanding-implicit-bias/

Implicit Bias in Pediatrics

Commentary

Implicit Bias in Pediatrics: An Emerging Focus in Health Equity Research

Jean L. Raphael and Suzette O. Oyeku

Pediatrics May 2020, 145 (5) e20200512; DOI: https://doi.org/10.1542/peds.2020-0512

Commentary

Intersection of Bias, Structural Racism, and Social Determinants With Health Care Inequities

Tiffani J. Johnson

Pediatrics August 2020, 146 (2) e2020003657; DOI: https://doi.org/10.1542/peds.2020-003657

The Pandemic of Racism

"Achieving decisive public policies, optimized clinical service delivery, and community change with an activated, engaged, and diverse pediatric workforce is critically important to begin untangling the thread of racism sewn through the fabric of society and affecting the health of pediatric populations. **Pediatricians must examine and acknowledge their own biases and embrace and advocate for innovative policies and cross-sector partnerships** designed to improve medical, economic, environmental, housing, judicial, and educational equity for optimal child, adolescent, and emerging adult developmental outcomes."

Trent M, Dooley DG, Douge J, Section on Adolescent Health, Council on Community Pediatrics and Committee on Adolescence. The impact of racism on child and adolescent health. Pediatrics 2019;144(2):e20191765.

OHA Definition: Health Equity

Oregon will have established a health system that creates health equity when all people can reach their full health potential and well-being and are not disadvantaged by their race, ethnicity, language, disability, gender, gender identity, sexual orientation, social class, intersections among these communities or identities, or other socially determined circumstances.

Achieving health equity requires the ongoing collaboration of all regions and sectors of the state, including tribal governments to address:

- The equitable distribution or redistributing of resources and power; and
- Recognizing, reconciling and rectifying historical and contemporary injustices

https://www.oregon.gov/oha/OEI/Pages/Health-Equity-Committee.aspx

Reflections and Recovery

What we have learned from COVID-19

Highlighted health inequities, driven by structural racism and bias.

Ambulatory visits for immunizations and other important prevention, screening and treatment activities are far behind prior year reference.

Fluctuations in **health care utilization and spending** sent shockwaves, threatening some providers. However, the system can adapt quickly (**telehealth** expanded rapidly).

The greatest pandemic impacts on children and adolescents are focused on the social determinants of health and health equity.

Recovery

- Focus on the basics of reducing transmission of SARS-CoV-2:
  - face masks, physical distancing, hand hygiene
- Prioritize the well-being of children and families, with focus on the social determinants of health (SDOH)
- Institute recall approaches and increase access to preventive care:
  - immunizations, health screenings
- Accelerate payment reform to support high value care and economic sustainability for health care providers and health systems
- Propel adaptations in telehealth to ensure it reduces – not worsens- health inequities

Recovery

- As outlined by Cheng TL and Conca-Cheng, AM, **we must simultaneously address the pandemics of racism and COVID-19**:
  - Learn about the history of racism and how it might affect our patients and families, both individually and structurally
  - Learn about and address our own biases, which affect not only patient interactions but also medical training and workplace conditions
  - Lead the way in advocating for more racially just systems

Cheng TL, Conca-Cheng AM. The pandemics of racism and COVID-19: danger and opportunity. Pediatrics. 2020; doi: 10.1542/peds.2020-024836

Lessons from the Grenfell Tower fire, London

"Faced with the catastrophe, the conflagration, everybody- politicians of all stripes- said, 'Oh, gosh, we've got to do something.' But what did they do about the underlying inequalities? They imposed austerity, made them worse, and fanned the flames of injustice."

"We have to do things differently as we emerge from the pandemic."

-Professor Sir Michael Marmot,
Professor of epidemiology at University College London,
and Director of the University College London Institute of Health Equity,
United Kingdom

Weil, AR. Tackling Social Determinants of Health Around The Globe. Health Affairs, 2020: 39(7), pg. 1121.

Thank you.

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OHA COVID-19 Resources:
www.healthoregon.org/coronavirus

OHA Healthcare Provider and Partners Webpage:
www.healthoregon.org/coronavirushcp