Public Health Accountability Metrics
Environmental Health

April 6, 2023

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Today's agenda

1. Accountability metrics overview
2. Environmental health disease priorities and indicators
   - Summer heat-related morbidity and mortality
   - Air quality-related morbidity
   - Water security
   - Built environment
   - Developmental: mental health effects of climate change
3. Discussion

Public health accountability metrics overview

Oregon Revised Statutes and Administrative Rule

- ORS 431.123: Establish accountability metrics for the purpose of evaluating the progress of OHA and LPHAs in achieving statewide public health goals.

- OAR 333-014-0540: OHA will consult with LPHAs through CLHO on proposed changes to accountability metrics. LPHAs will be notified of changes and updates when finalized by the Public Health Advisory Board.

Insert Framework

- Emphasize that we are only working on indicators

Groups involved in developing and updating metrics

CLHO metrics workgroups

- Work with OHA staff to develop recommendations

CLHO

- Provide LPHA leadership perspective on metrics

PHAB Accountability Metrics Subcommittee

- Review and synthesize metrics recommendations; develop recommendation for PHAB

PHAB

- Formally adopt public health accountability metrics

Today's consultation

Questions we hope to answer:

- Which 1-2 priority areas and indicators do LPHAs recommend? Why?
- Which priority areas and indicators do LPHAs recommend against? What are the issues, challenges or barriers?

Ways we are collecting feedback:

- Verbal feedback provided today
- Feedback provided in the Chat/Poll today
- LPHA accountability metrics survey

INSERT priorities and indicators summary

Summer heat-related morbidity and mortality

Issue summary:

Why is this a priority now, and which groups are experiencing disproportionate harm?

Exposure to higher temperatures and extreme heat is on the rise because of the frequency, length and intensity of heat events. In Oregon there were a total of 157 heat-related deaths in 2021 and 2022 combined, compared with 1 to 4 heat-related deaths per year in the previous decade.

Environmental threats like extreme heat disproportionately impact communities of color, tribal communities and communities that are lower-income. Racist housing policies relegated these communities to areas with increased heat exposure and less access to protections. natural disaster risks. Systemic educational disinvestment and lack of oversight results in overrepresentation and lack of protections in jobs with greater exposure to environmental hazards.

Recommendations

If summer heat-related morbidity and mortality is selected as a priority area, OHA recommends all of the following indicators:

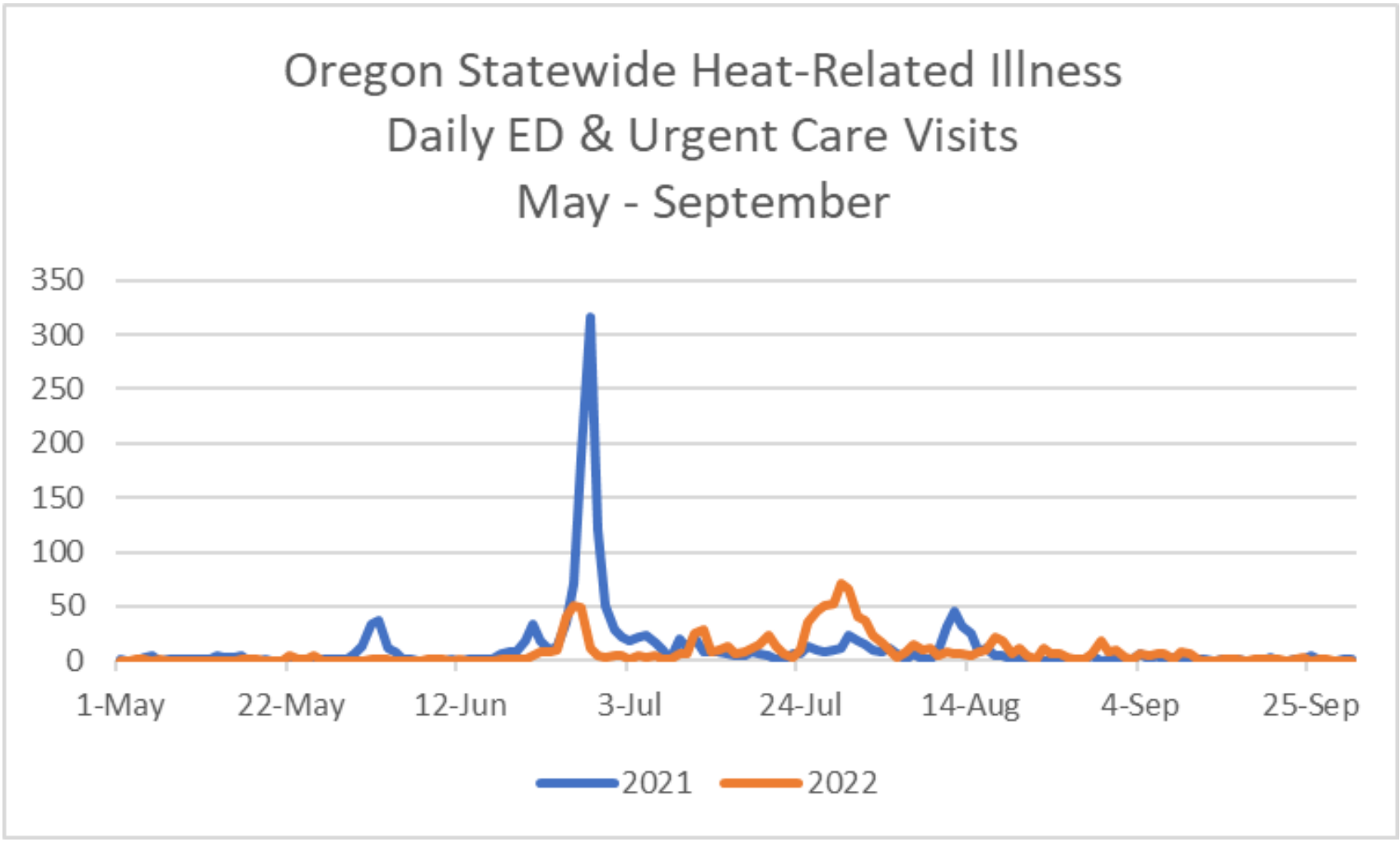
- Emergency department and urgent care visits due to heat
- Hospitalizations due to heat
- Heat deaths

- Rationale:
  - Well-established national measures
  - OHA and some LPHAs regularly access and use these measures
  - The three indicators together provide a more comprehensive understanding of which groups are most affected during summer heat events and areas for intervention.

Data for indicators

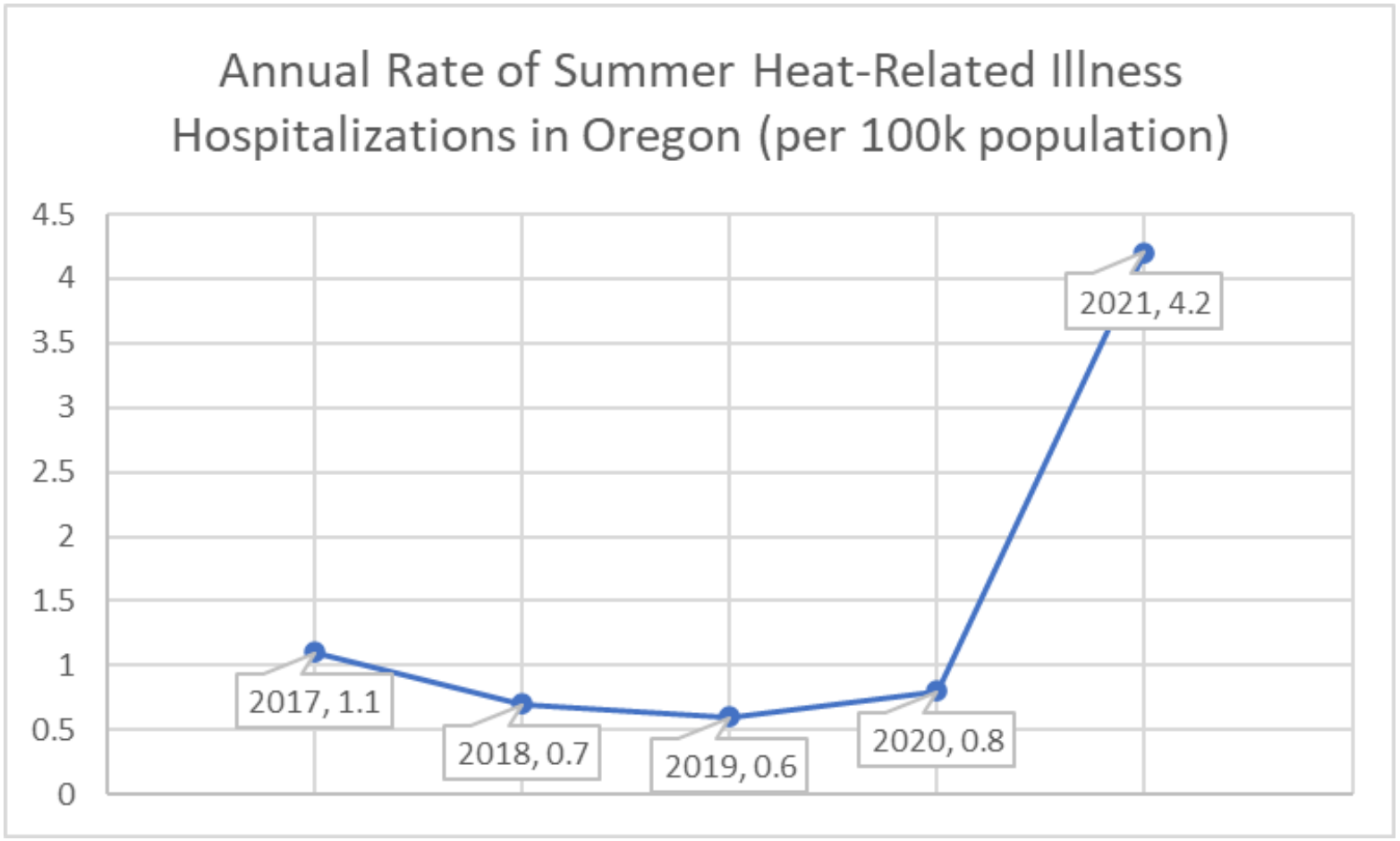
Proposed indicators	Data source	Other Oregon plans that use these measures	Populations that experience a disproportionate burden of illness, death or risks	Data are reportable at a county level or other geographic breakdowns	Data can be stratified*
Summer heat-related morbidity and mortality					
Emergency department visits due to heat	OHA electronic surveillance system, ESSENCE. Also includes urgent care	Portland Regional Climate and Health Monitoring Report	Incomplete race and ethnicity data	LPHA can acquire access and state level dashboards are set up in Summer Hazards.	REALD is not available. Data for race, gender, age, occupation, and chronic disease are available.
Hospitalizations due to heat	Oregon inpatient hospital discharge data from Healthcare Cost and Utilization Project (HCUP).	Portland Regional Climate and Health Monitoring Report, Oregon Environmental Public Health Tracking Program	Inequities by housing status, occupation, race, sex, and age have been identified in existing studies.	Will require OHA and LPHA partnership to ensure LPHAs have access	Same as above. Aggregation by larger regions or multiple years may be necessary.
Heat deaths	Oregon Vital Records, OHA Oregon death certificates.	Portland Regional Climate and Health Monitoring Report	SES, housing status, age	Oregon vital statistics data has an approximate 1 year lag. Large population counties have access to Vital Records, however many counties in Oregon do not. Small numbers may require aggregation across larger regions or years.	Same as above

Extreme Heat



Data from Oregon ESSENCE syndromic surveillance program.

Extreme Heat



Date source: Centers for Disease Control and Prevention. National Environmental Public Health Tracking Network. Web. Accessed: 3/27/23. www.cdc.gov/ephtracking

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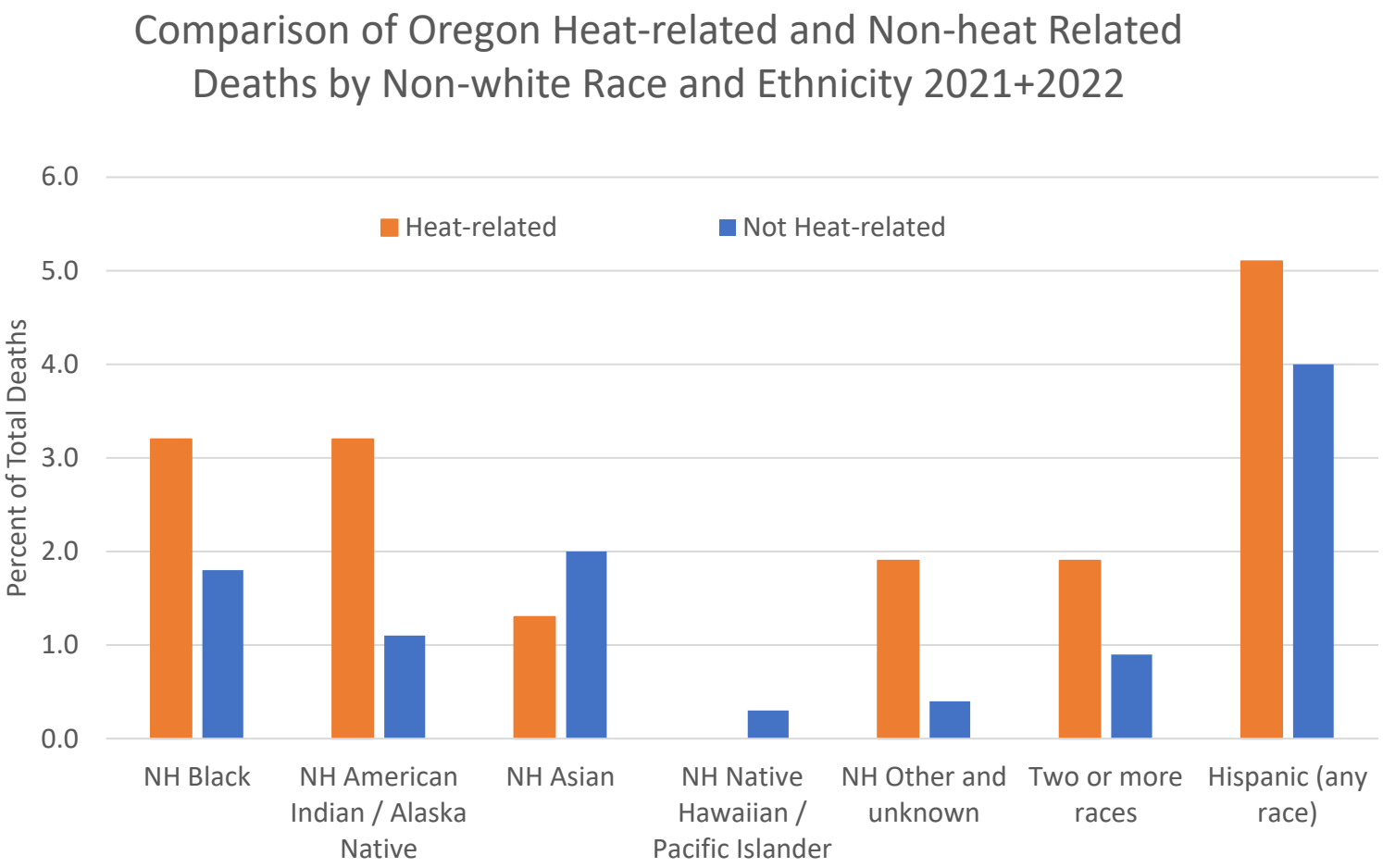
Extreme Heat



*Data from 2022 are preliminary and subject to change.
Source: OHA - Public Health Division - Center for Health Statistics, Produced on March 2, 2023

Air quality-related morbidity

Issue summary: Air Quality

Why is this a priority now, and which groups are experiencing disproportionate harm?

- Wildfires are the primary contributor to summer air pollution across Oregon
- The frequency and intensity of wildfires in Oregon and many western US states have been increasing
- Many areas in Oregon experience cumulative wildfire smoke impacts and are exposed to hazardous air pollution year after year
- Disproportionate wildfire smoke impacts measured by respiratory ED & Urgent Care visits in Oregon have been experienced by persons of color and Hispanic populations

Who is most likely to have health effects from wildfire smoke exposure?

Sensitive groups:

- Persons with chronic respiratory, cardiovascular and other chronic conditions
- Persons >64 years of age
- Infants and children
- Pregnant people (& fetus)
- People who smoke tobacco

Vulnerable groups:

- People working outdoors, e.g., migrant and seasonal agricultural workers
- Persons exercising or working at a level that increases breathing rate
- Persons experiencing houselessness
- Persons living in poverty or with low incomes

Recommendations

If air quality-related morbidity is selected as a priority area, OHA recommends the following indicator:

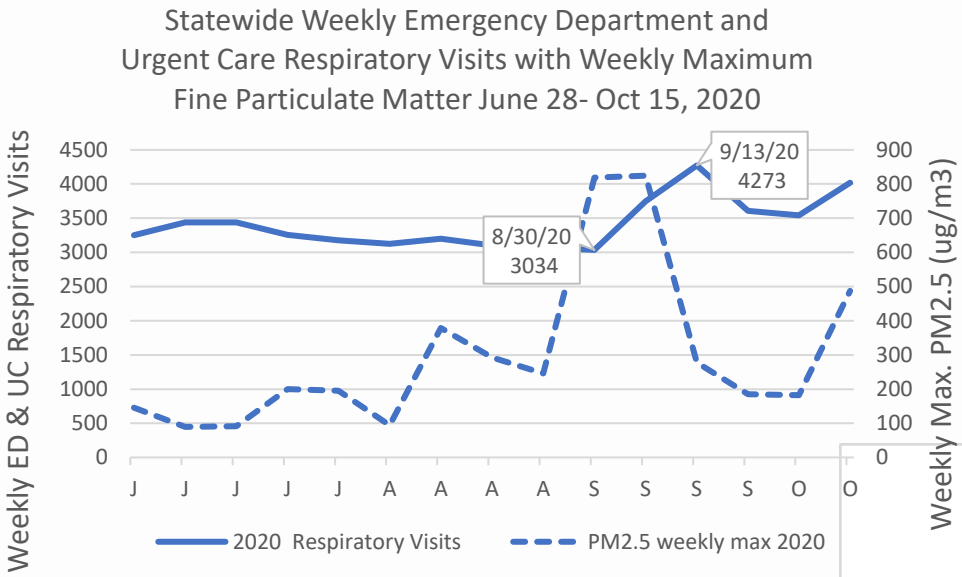
- Respiratory (non-infectious) emergency department and urgent care visits
- Asthma and allergic disease-related emergency department and urgent care visits

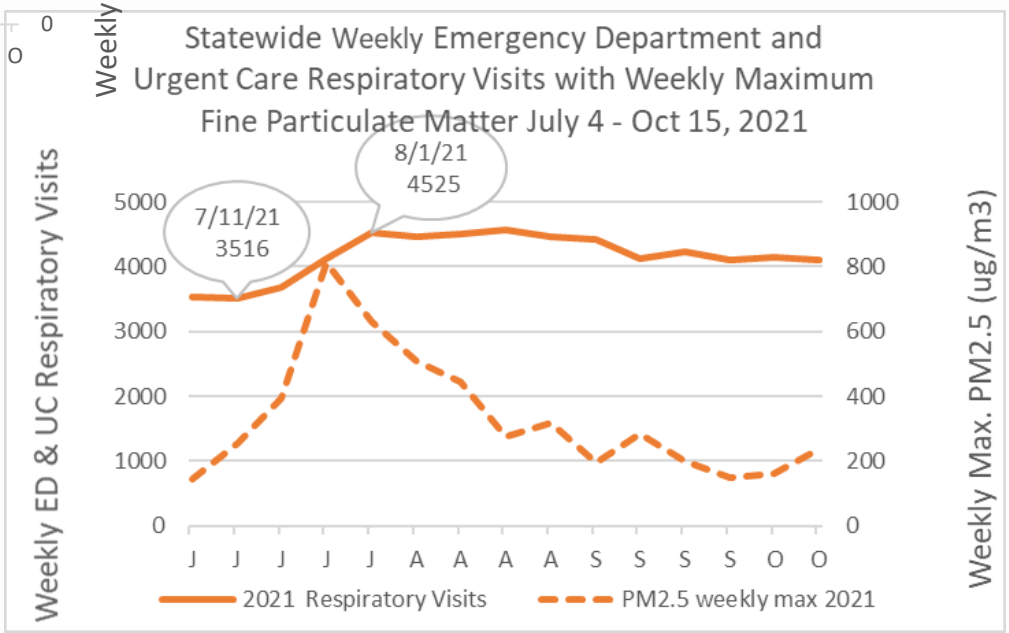
- Rationale:
  - Well-established national measure
  - OHA and some LPHAs regularly access and use this measure

Data for indicators

Proposed indicators	Data source	Other Oregon plans that use these measures	Populations that experience a disproportionate burden of illness, death or risks	Data are reportable at a county level or other geographic breakdowns	Data can be stratified*
Air quality-related morbidity					
Respiratory (non-infectious) emergency department and urgent care visits	OHA electronic surveillance system, Oregon ESSENCE. Also includes urgent care	Portland Regional Climate and Health Monitoring Report (uses Asthma & Allergic Disease)	Inequities by housing status, occupation, race/ethnicity, sex, and/or age have been identified.	LPHA can acquire access and state level dashboards are set up in Summer Hazards.	Reportability depends on numbers. Aggregation by larger regions or multiple years may be necessary.
Asthma and allergic disease related hospital admissions	Oregon inpatient hospital discharge data	Portland Regional Climate and Health Monitoring Report	Same as above	Same as above	Same as above

Oregon statewide wildfire smoke health impacts, 2020-21





Water security

Issue summary:

Why is this a priority now, and which groups are experiencing disproportionate harm?

Equitable access to adequate supplies of clean, safe and affordable water for drinking, food preparation, sanitation and hygiene, and cultural and spiritual uses is essential to human health and wellness.

Oregon's changing climate, aging water infrastructure, socioeconomic conditions and community design have a negative impact on access to safe, safe and affordable water.

Populations experiencing houselessness, lower income and rural communities, communities of color, Tribal communities, migrant communities and communities served by private wells, private surface water intakes or very small water systems are more likely to experience threats to water access and quality.

Recommendations

If water security is selected as a priority area, OHA does not have a recommendation for which indicators should be selected.

- Number of weeks in drought annually, % of population affected
- Health-based violations and percent of population affected
- Number of/type of advisories and percent of population affected

Data for indicators

Proposed indicators	Data source	Other Oregon plans that use these measures	Populations that experience a disproportionate burden of illness, death or risks	Data are reportable at a county level or other geographic breakdowns	Data can be stratified*
Water security					
# weeks in drought annually, % of population affected	NIDIS https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OR ; see https://droughtmonitor.unl.edu/Data.aspx for data overview Drought affected counties/water systems under stress from drought, including domestic wells (OHA Drinking Water Services and Environmental Public Health data)	OHA Climate & Health Report, OHA Environmental Public Health Water Insecurity Project	Rural residents, domestic well users, farmers	County, State, Region, with statistics available by area, percent area	% of population affected is available on data source. Data can be paired with demographic and socioeconomic data from the American Community Survey
Health-based violations	SDWIS database- health-based violations include Maximum Contaminant Level (MCL) and treatment technique violations. Could also include action level exceedances.		Rural residents, domestic well users, farmers, pregnant people, infants & children, older adults, immunocompromised & other pre-exisiting medical conditions.	% of population affected by at least 1 health-based violation per year- can aggregrate at county level	No, but aggregrated county data could be paired with ACS data. Population-level data (cumulative population percent, cumulative population)
# of & type of advisories/# population affected would inform vulnerability to water outages	DWS in-house database tracks drinking water advisories. Could limit to particular advisory types (do not drink, boil, etc.)	Drinking water services, OHA Environmental Public Health Tracking Program (Community Water Systems dashboard under development)	Age (infants and children, older adults), pregnancy, health status (immunocompromised)	Every public water system is associated with a county. data are reported by public water system.	Vulnerable populations are listed based on system affected; also aggregated county data could be paired with ACS data.

February 21, 2023

(Released Thursday, Feb. 23, 2023)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.93	92.07	77.18	38.84	14.48	1.40
Last Week *02-14-2023*	12.81	87.19	70.46	38.84	14.48	1.40
3 Months Ago *11-22-2022*	5.37	94.63	59.79	46.04	26.18	1.40
Start of Calendar Year *01-03-2023*	13.46	86.54	59.75	46.03	26.18	1.40
Start of Water Year *09-27-2022*	0.42	99.58	68.05	52.42	30.73	1.40
One Year Ago *02-22-2022*	4.18	95.82	90.65	76.38	45.61	16.22

Intensity:

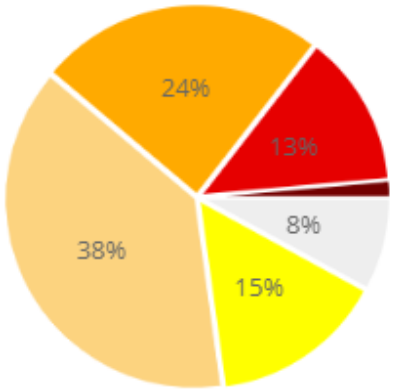
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

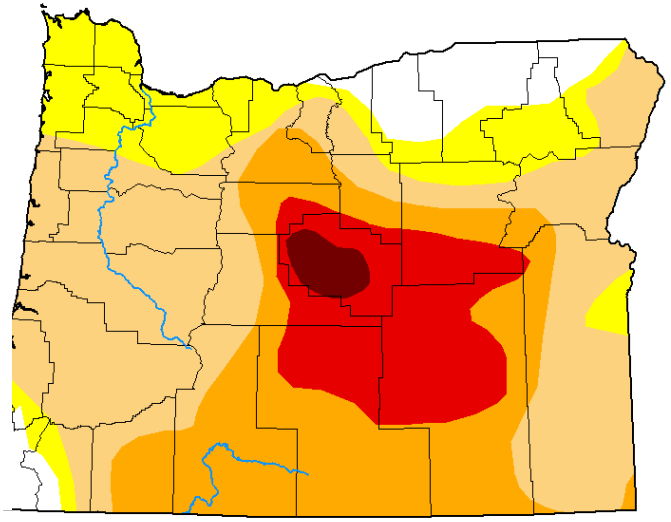
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

U.S. Drought Monitor

Oregon

OR % Area in Drought Categories





Author:
Richard Heim
NCEI/NOAA

droughtmonitor.unl.edu

https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OR

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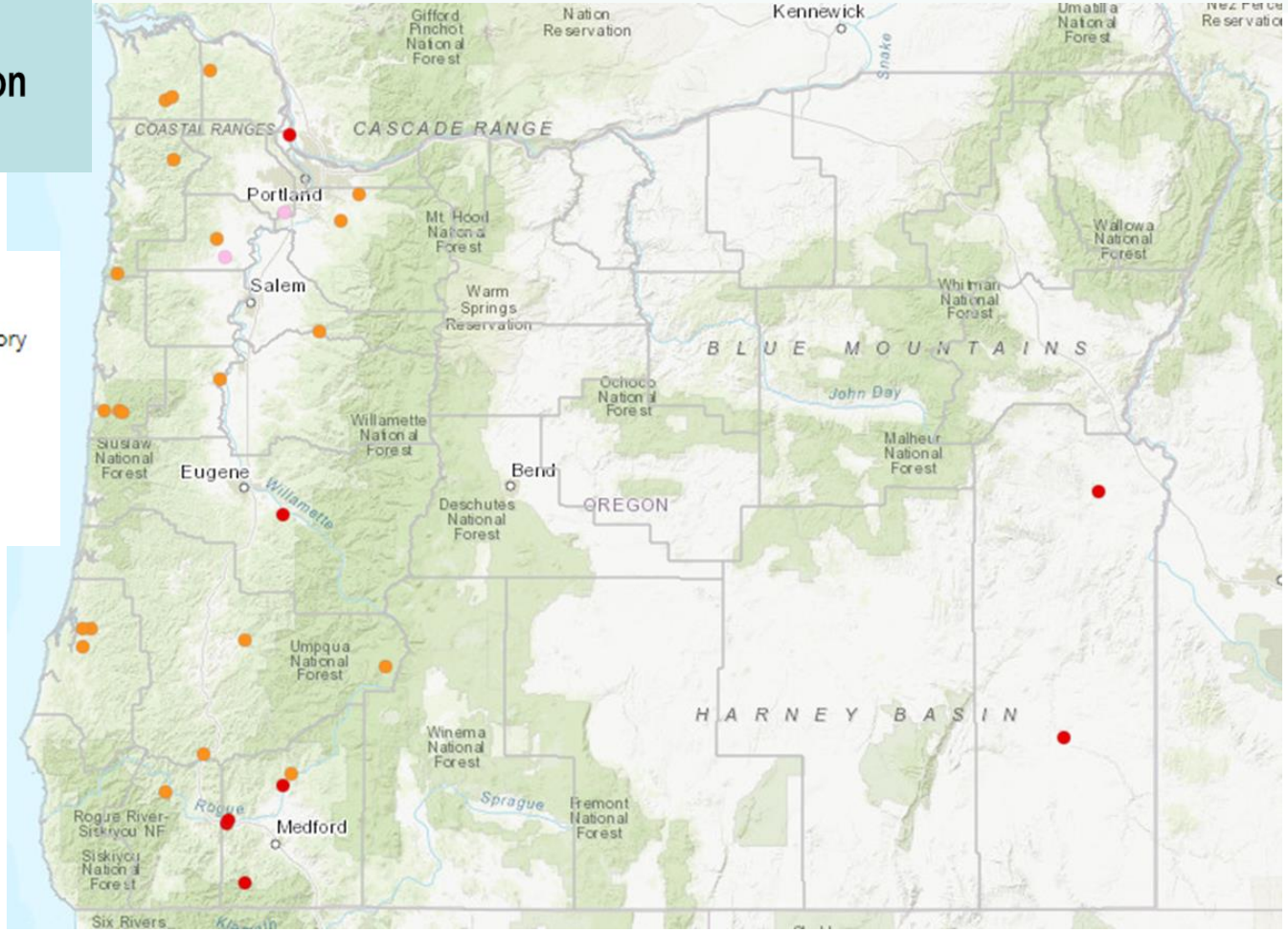
Oregon Drinking Water Advisories by Type and Location



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Drinking Water

Health Outcome Measure

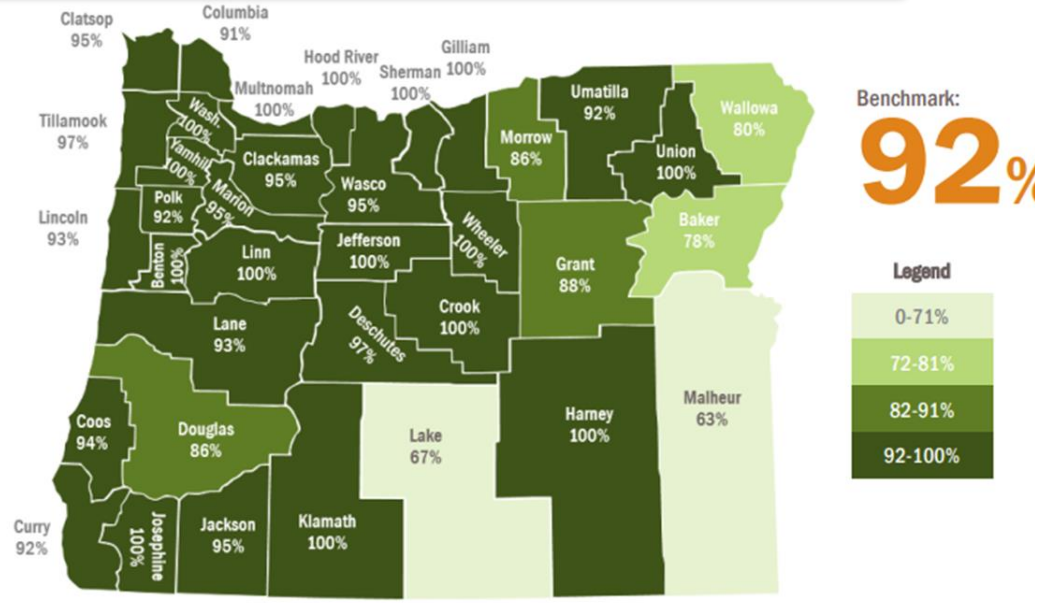
Percent of community water systems meeting health-based standards

2023 Recommendation:
include county level % of population served affected by health-based violations and action level exceedances *(note: population served counts are not unique due to transient systems (e.g., schools))*

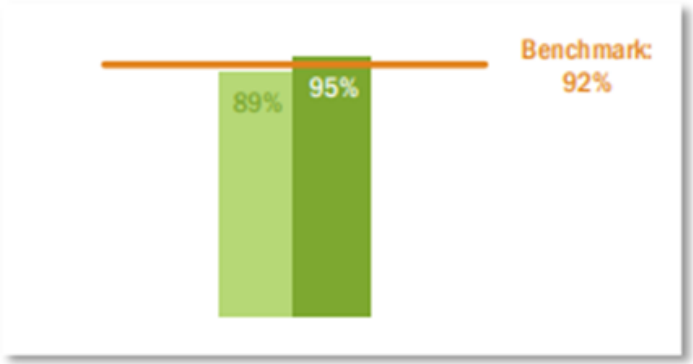
Foundational program area: Environmental Health

Data source: Safe Drinking Water Information System (SDWIS) Federal Reporting Services, the Environmental Protection Agency's (EPA) national regulatory compliance database

Benchmark source: 92%, EPA



Statewide



Notes:
- Unit of analysis is water systems; race/ethnicity data do not apply.
- Percentages are calculated by dividing the number of community water systems that met standards (numerator) by the number of community water systems (denominator). Numerator and denominator data are provided in the Technical Appendix.

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Built environment

Issue summary:

Why is this a priority now, and which groups are experiencing disproportionate harm?

The relationship between health and built environments is well-documented. Transportation options, access to outdoor spaces, and land use and infrastructure decisions all contribute to an individual's ability to attain and maintain health. There are direct connections between the built environment and climate change mitigation.

Lower income communities and communities of color are less likely to have access to neighborhood resources and are more likely to experience increased risks and harmful exposures.

Recommendations

If built environment is selected as a priority area, OHA does not have a recommendation for which indicators should be selected.

- **Active transportation: Percent of commuters who walk, bike or use public transportation to get to work (indicator used in previous years)**
- **Land use, for example % tree canopy, % green spaces, impervious surfaces, parks, natural areas**
- Walkability index

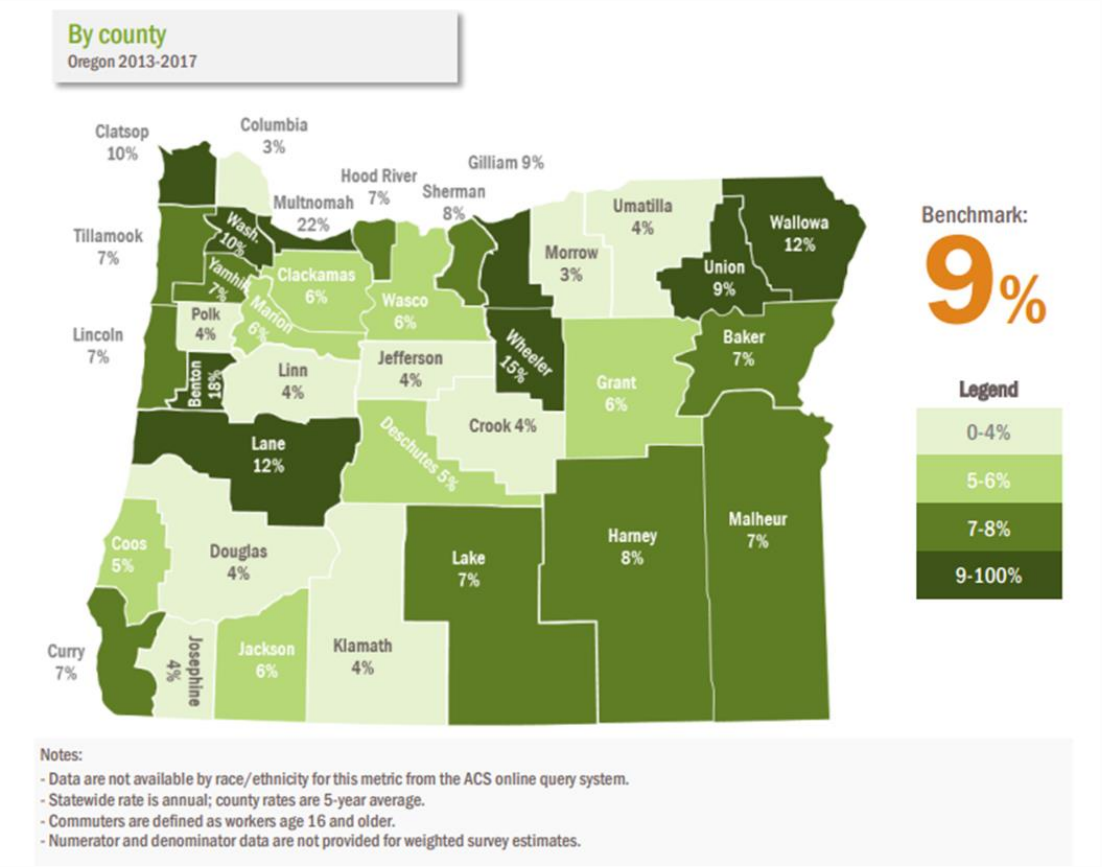
Rationale:

- Strong evidence for policy interventions related to built environment
- Active transportation indicator has been used in previous iteration of accountability metrics
- Well established epidemiological connections between indicators and health outcomes

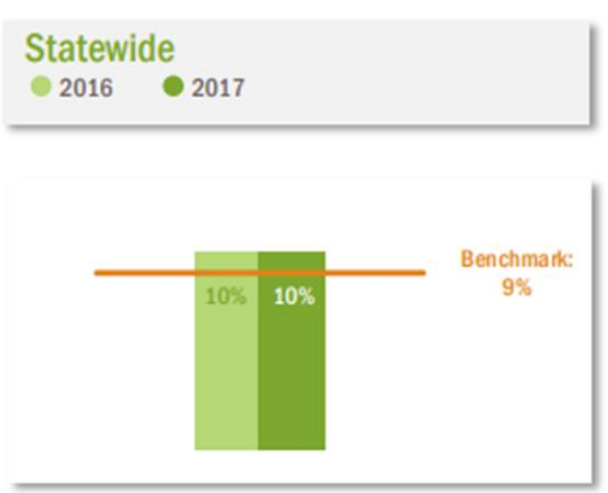
Data for indicators

Proposed indicators	Data source	Other Oregon plans that use these measures	Populations that experience a disproportionate burden of illness, death or risks	Data are reportable at a county level or other geographic breakdowns	Data can be stratified*
Built environment					
Active transportation: Percent of commuters who walk, bike or use public transportation to get to work	American Community Survey 5-year estimates	Previously used as public health accountability metric, CDC Environmental Public Health Tracking Network	Populations in areas with higher rates of commuting by active transportation are at lower risk of health conditions related to physical inactivity.	Available by county	Race, ethncity, language spoken at home and ability to speak english, citizenship, income, poverty levels.
Walkability Index	U.S EPA. Smart Location Database	DLCD's Climate Friendly and Equitable Communities rule, CDC National Public Health Tracking Program	People of color and low-income families have been displaced from walkable neighborhoods by gentrification. Less walkable neighborhoods make pedestrians and cyclists more vulnarble to traffic injuries.	Available at block groups but can be constructed for counties.	Data can be paired with demographic and socioeconomic data from the American Community Survey
Land Use (impervious surfaces, parks, natural areas, open green spaces, tree canopy) % tree canopy, % green spaces	Department of Land Use and Conservation	DLCD zoning maps, Metro Barometer, CDC National Public Health Tracking Program/Oregon Tracking-Community Characteristics-Land Cover		Sub-county geographies (blocks, street level in some cases)	

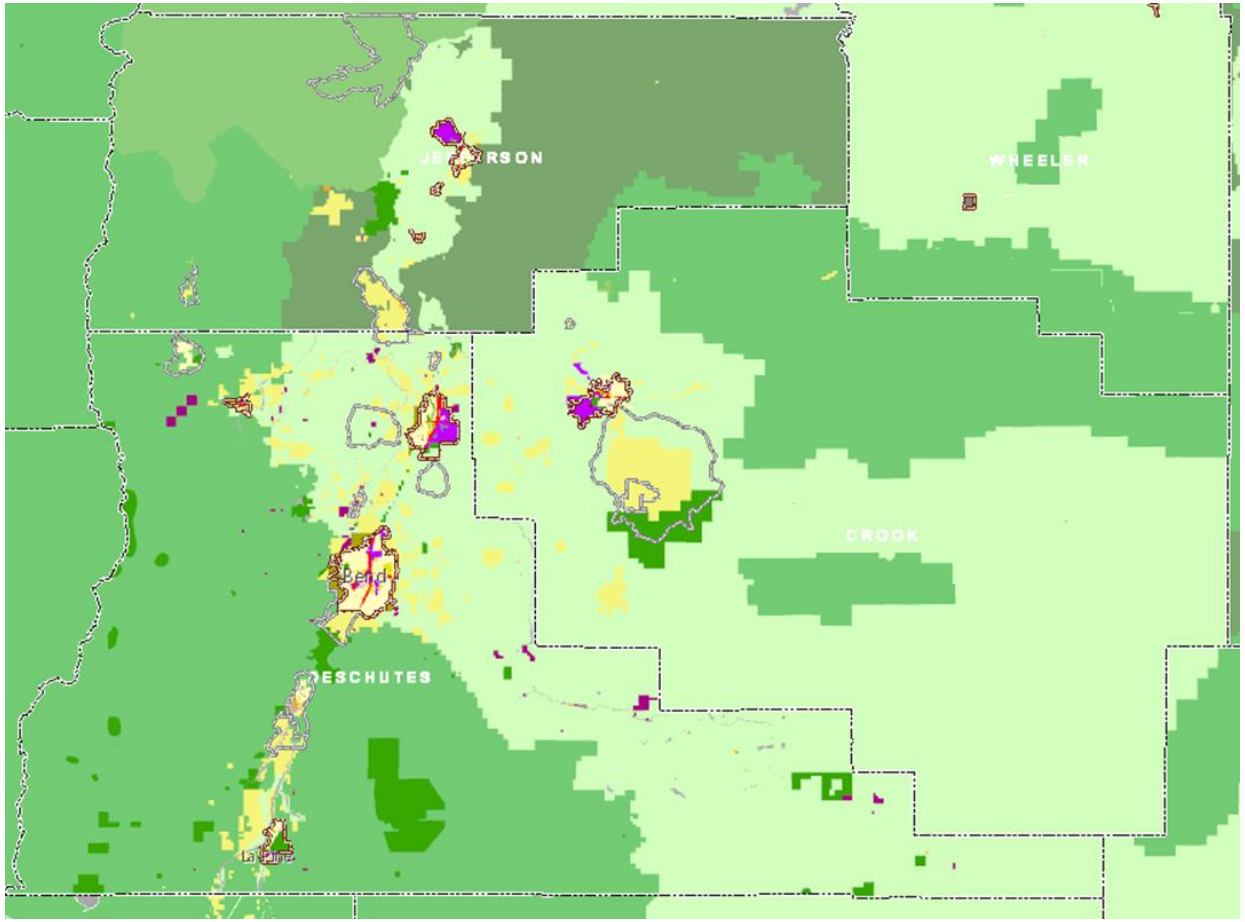
Active Transportation



Percent of commuters who walk, bike, or use public transportation to get to work



Land use - % of green space



- High Density Residential
- Mixed-Use
- Commercial
- Public/Open Space/Conservation
- Industrial
- Future Urban
- Exclusive Farm Use
- Range Land
- Mixed Farm-Forest
- Primary/Secondary Forest
- Rural Residential
- Rural Commercial
- Rural Industrial
- Native American
- Coastal
- Mineral/Aggregate
- Other
- No Data

Developmental: mental health effects of climate change

Issue summary:

Why is this a priority now, and which groups are experiencing disproportionate harm?

The mental health effects of climate change include those directly related to the physical and traumatic consequences of severe weather events, as well as anxiety, fear and distress associated with slower-moving stressors, perceptions and attempts to understand and respond appropriately to climate change and its implications.

The effects of climate change on mental health and well-being are not isolated but interact with other social and environmental determinants of health, including race and income.

Livelihoods and cultural identities are negatively affected by Oregon's changing landscapes and will disproportionately affect farmworkers, fishers, tribal and indigenous people. Youth with depression and anxiety are at increased risk for worsening symptoms.

Recommendations

- Continue to explore opportunities to develop metrics for mental health effects of climate change for youth and other groups.

Discussion

1. Which of the priority areas discussed today should be prioritized as a statewide area of focus for public health accountability metrics? Why would you prioritize this area/these areas?

2. Which of the priority areas discussed today should not be prioritized as a statewide area of focus for public health accountability metrics? Why would you recommend against selecting this area/these areas?

Wrap up and next steps