Using Local Public Health Service Data for Generating Evidence and Improving Practice

Betty Bekemeier, Greg Whitman,
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PHAST
Public Health Activities & Services Tracking

WASHINGTON STATE
PUBLIC HEALTH ASSOCIATION

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Presentation Disclosure

No off label, experimental or investigational use of medications are discussed during this presentation.

We have no interests of commercial services, products or support that requires disclosure

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Health Outcomes for Women & Children

Research Question:

Are LHD expenditures on MCH services impacting health outcomes for populations at risk?

Answer YES!

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Environmental Health

Research Question:

Are LHD expenditures on food safety & sanitation impacting enteric disease morbidity?

Answer YES!

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Communicable Disease

Research Question:

Are LHD expenditures on immunizations, STIs, TB, and/or general CD control impacting related disease morbidity?

Answer Need better data!

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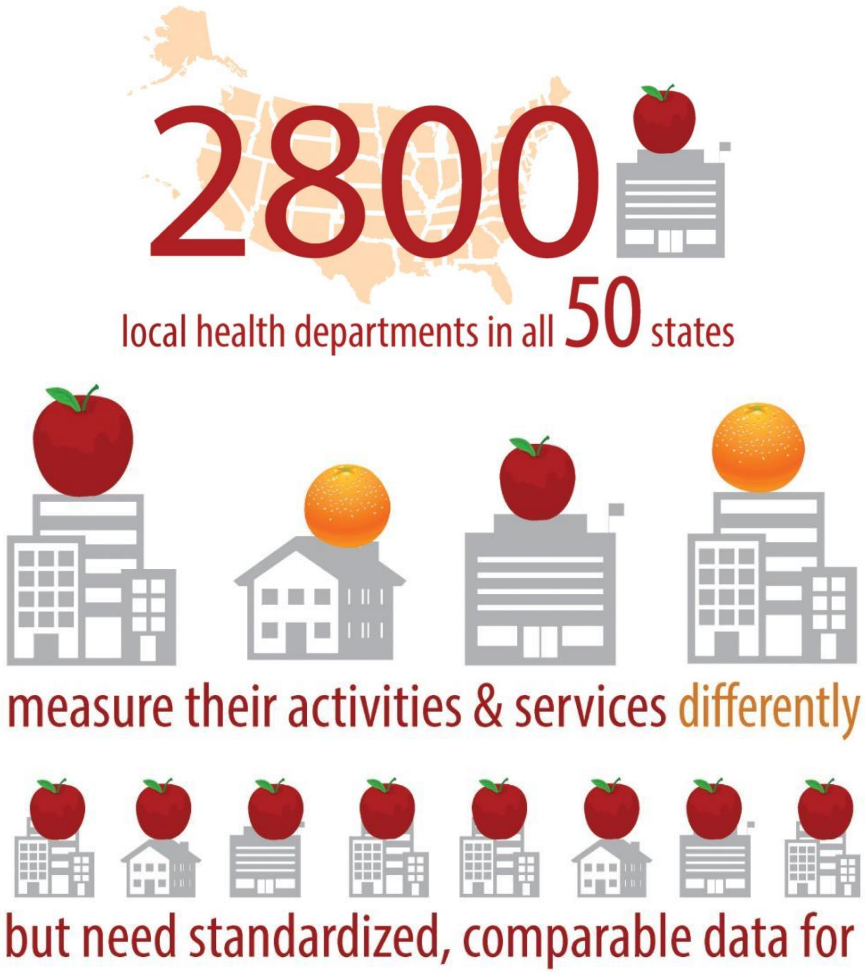
Problem:


2800
local health departments in all 50 states
measure their activities & services differently
but need standardized, comparable data for

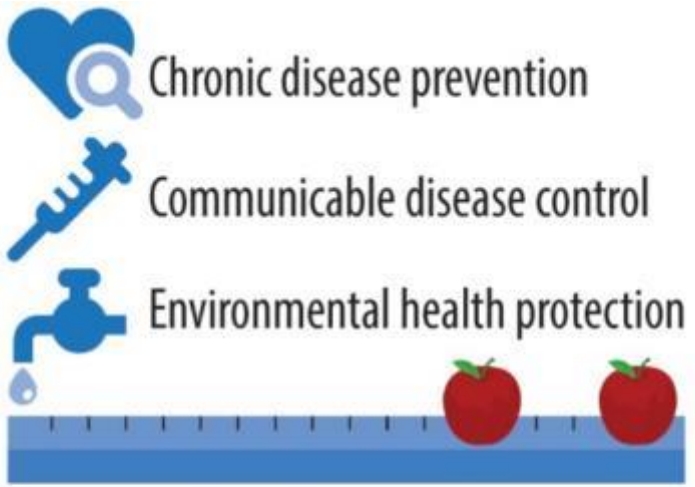

RESEARCH
GAPS
QUALITY IMPROVEMENT
ACCREDITATION
DECISIONS
FUNDING
PREPAREDNESS
EVALUATION
PLANNING
FOUNDATIONAL SERVICES

PROCESS

315

HEALTH DEPARTMENTS

participated in developing the project



STANDARDIZED MEASURES

developed for public health activities & services

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Partners:

- **Who?**

  Public Health Activities and Services Tracking (PHAST) is working with state and local public health leaders

- **Why?**

  To generate detailed data for standardized measures that depict timely information about LHJ services

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Evidence:

- Lead Policy Brief
- Obesity Cluster Analysis
- Tobacco Policy Enforcement
- Variation in Unit Costs
- Cross-Jurisdictional Sharing on Immunization Completeness

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Lead Policy Brief

Betty Bekemeier, Seungeun Park, and Michelle Yip

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Lead Policy Brief

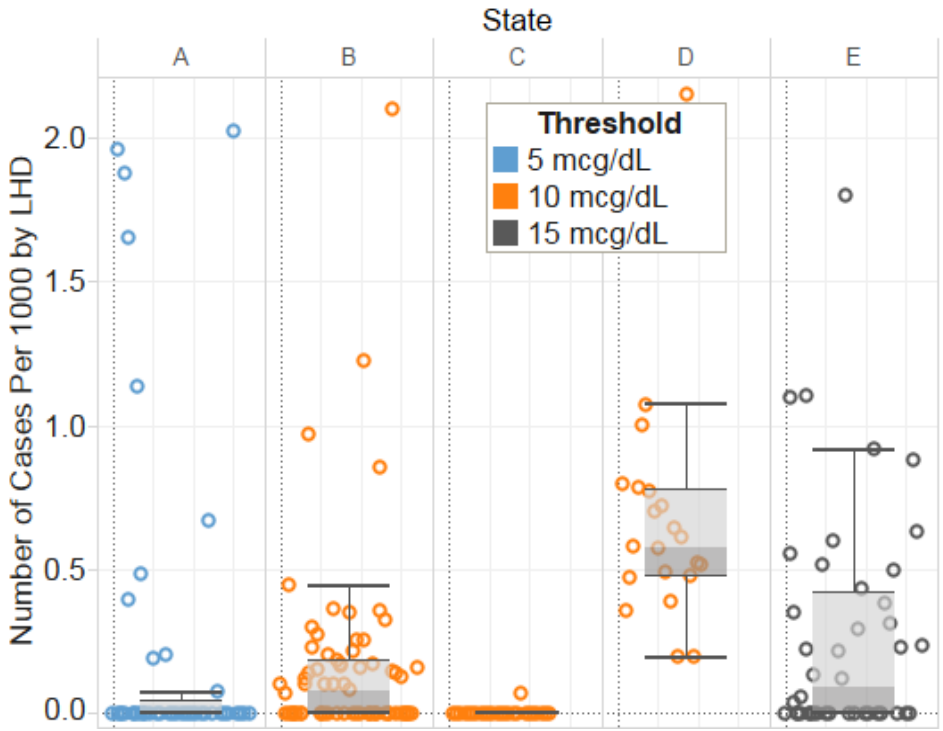
Purpose

- Use an emergent issue – lead crisis – to highlight need for standardized measures
- Demonstrate value of incorporating & collecting these measures

Examined status of lead poisoning data in LHDs across 5 out of 6 States in MPROVE study

Compared number of cases among children age 0-6 with elevated blood lead levels per 1,000 children age 0-5 by LHDs across 5 States

Local Rates of Children with Elevated Blood Levels in Five States, US (2012)



Number of cases (ages 0–6) with elevated blood lead level per 1000 children (ages 0–5) per LHD

Note: After removing missing values and an outlier, the number of LHDs included in this graph are: A=43, B=67, C=25, and E=42.

Data sources: MPROVE Study (2012) and American Community Survey 5-year population estimates (2010–2014)

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Obesity Cluster Analysis

Betty Bekemeier, Michelle Yip, Abraham Flaxman, and Wendy Barrington

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Overview

Used cluster analysis to group local health departments (LHDs) according to Physical Activity (PA) interventions

Five categories:

1. “Comprehensive”
2. “Built-environment”
3. “Personal-health”
4. “School-based interventions”
5. “No apparent activities”

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Mean and standard deviation of the five PA intervention clusters based on their availability in the corresponding local health jurisdictions

	LHD Clusters					
Physical Activity Interventions	No Apparent Activity	Built-Environment	Personal Health	Comprehensive	School-Based	Total (of 5 Clusters)
Community-Wide Health Education Campaigns	0	0.26(0.45)	0.08(0.28)	0.75(0.43)	0.25(0.44)	0.44(0.50)
Community-Wide Stair Use Campaigns	0	0.07(0.27)	0	0.21(0.41)	0.05(0.22)	0.12(0.32)
School-Based PE Program	0	0.11(0.32)	0	0.47(0.50)	0.95(0.22)	0.34(0.47)
Social Support Interventions	0	0	0.38(0.51)	0.84(0.37)	0.25(0.44)	0.47(0.50)
Individually Adapted Health Behavior Change Programs	0	0	0.77(0.44)	0.74(0.44)	0.20(0.41)	0.43(0.50)
Initiatives to Create or Enhance Access to Places for Physical Activity	0	0.85(0.36)	0	0.86(0.35)	0.45(0.51)	0.58(0.49)
Community-Level Urban Design Initiatives	0	0.67(0.48)	0.08(0.28)	0.61(0.49)	0.10(0.31)	0.41(0.49)

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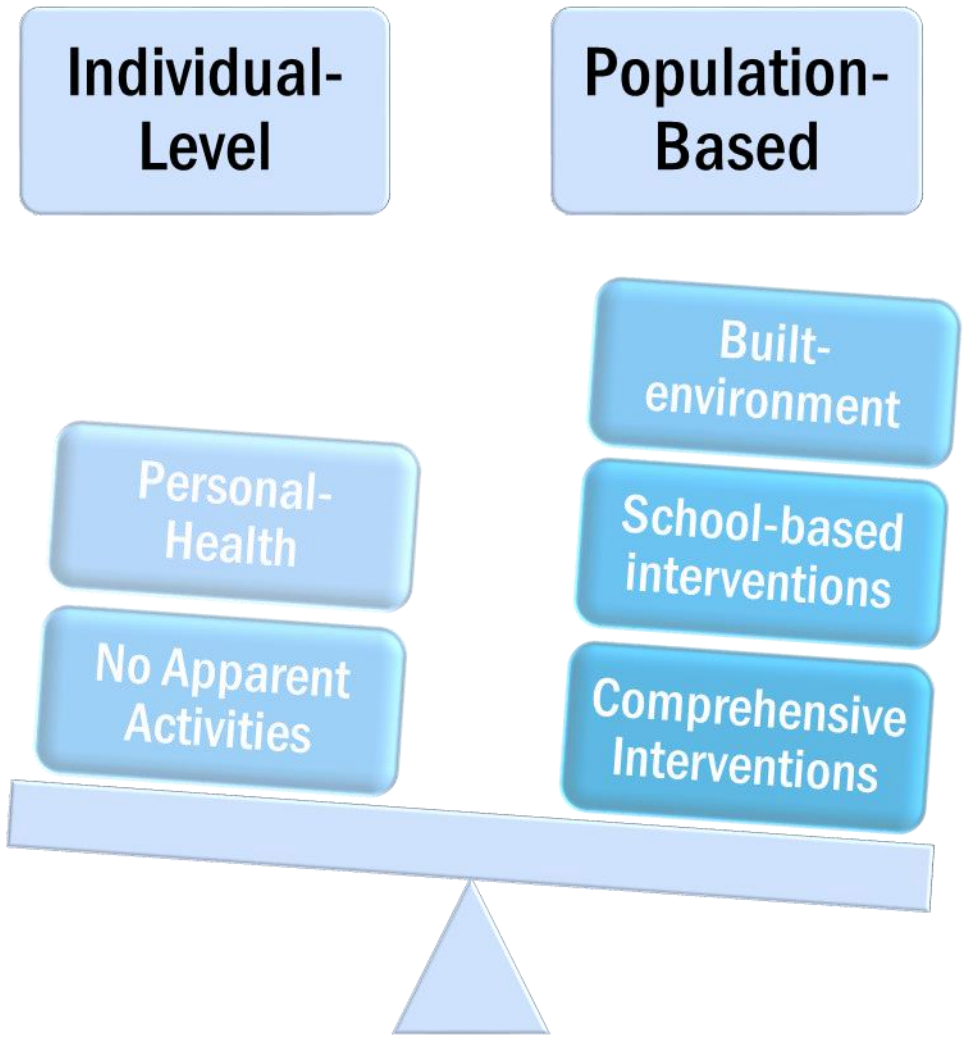
Results

- **Prevalence of obesity is lower and physical activity is higher** in all LHD groups with population-based interventions compared to LHDs with “No Apparent Activities.”
- **Population-based interventions are more strongly linked to positive outcomes** in the literature when compared to individual-level interventions.
- LHDs with individual-level interventions were not significantly different from those with “No Apparent Activities.”



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The Effect of County-Level Enforcement of a WA State Smoke-Free Workplace Law on Work-Exacerbated Asthma (WEA)

J. Snider, B. Bekemeier, J. Kaufman

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Overview

Compared 28 WA LHJ responses on smoke-free inspections conducted and violations reported

Examined BRFSS and Asthma Call-Back Survey (ACBS) Data by LHJ jurisdiction for Work-Exacerbated Asthma (WEA) history

- Potential marker of Environmental Tobacco Smoke (ETS) exposure in certain industries

Examined whether more vigorous LHJ response associated with improved WEA outcome

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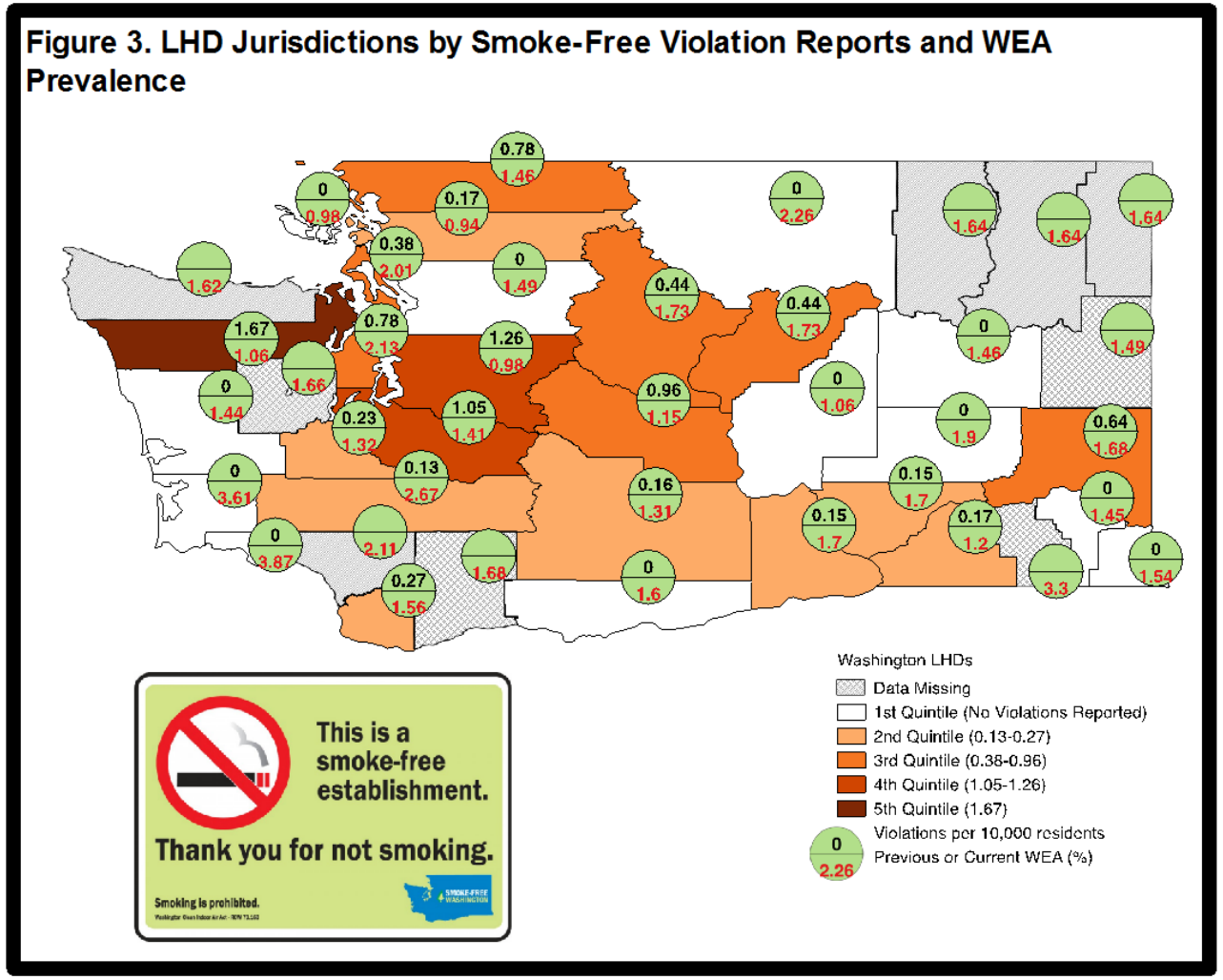
MPROVE Data on smoke-free violations



- **Substantial variation** in enforcement practices
- **At least 10** LHDs **did not respond to violations** or conduct **inspections**, despite mandate
- **Significant effect of higher inspection and violation response volume** on **lower WEA prevalence in office/service industry**

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Variation in Unit Costs

Public Health Delivery and Cost Study (DACS)

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Variation in Unit Costs

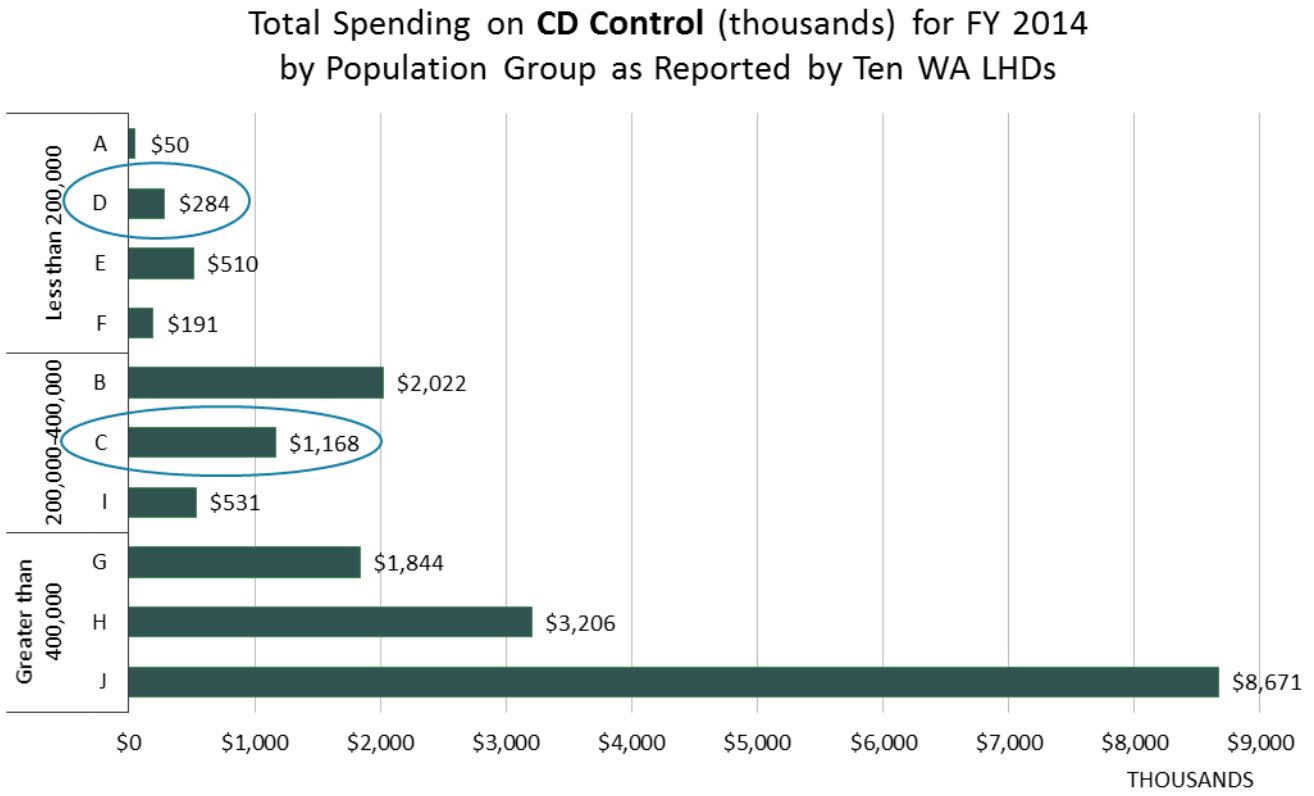
Unit costs are **measurable**

Unit costs **vary substantially** across LHDs

Economies of scale?

- YES for population-based
- NO for individual-level

Calculating Unit Costs	LHD C	LHD D
FPHS Element II.A.4 Costs (CD - STI)	$119,058	$15,703
STI Contacts Followed, 2012	663	29
Cost/Case Followed	**$180**	**$541**



Cross-Jurisdictional Sharing on Immunization Completeness

Justin Marlowe, Betty Bekemeier

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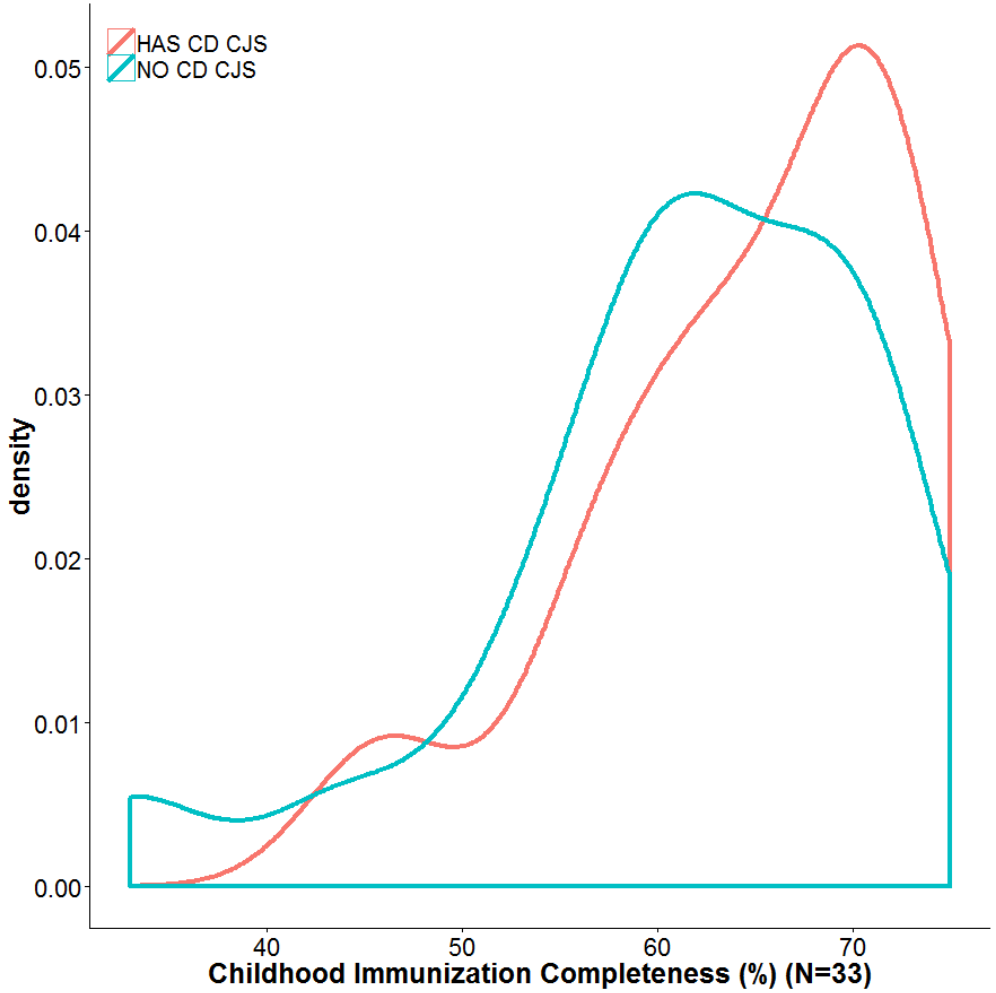
Measuring the Impact of CD Control CJS

Research question: Does Cross-jurisdictional sharing improve service delivery?

Evidence from childhood immunization completeness data, using revised PHAST/MPROVE measure, suggests that it does.



Use of **Evidence** from Standardized Data for Practice

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Creating Usable Data

The Process

PUBLIC HEALTH LEADERS

interviewed about data use, needs, and vision

TESTING & INPUT

with local and state health departments

helps refine dashboard usability and design

INTERACTIVE DASHBOARD

PUBLIC HEALTH LEADERS
interviewed about data use, needs, and vision

Presenting data

- Policy makers respond to visual things
- Interactive visualization makes it possible to “dive down” for detail
- Comparisons are critical

Using data

- For story telling – “data is a foundation for telling a story”
- Advocate for additional resources based on needs

Challenges

- Existing data systems are old and fragmented
- Navigation
- Lack of standardization

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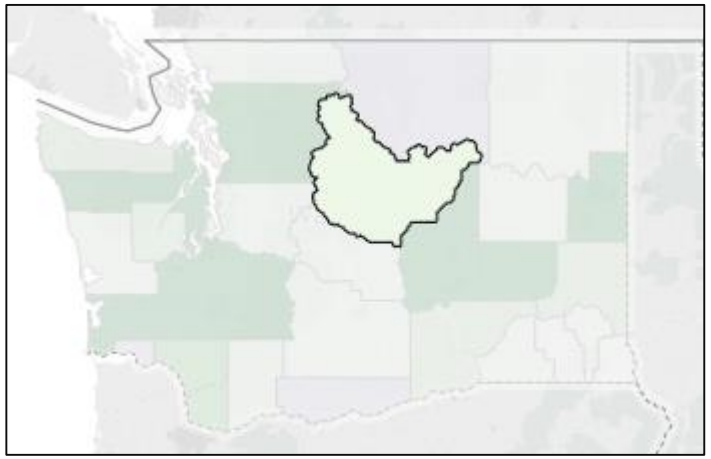
Early Prototype of Interactive Visualization

Food/water borne cases, reported & confirmed

CHRONIC DISEASE PREVENTION (Click each name below to view measures for that bundle)
Tobacco Prevention & Control
Obesity Prevention
Oral Health

COMMUNICABLE DISEASE CONTROL (Click each name below to view measures for that bundle)
Immunization
Enteric Disease
M167 Foodborne/Waterborne **reported** case volume (community) Read More↓
M165 Foodborne/Waterborne **confirmed** case volume (community) Read More↓
M162x Foodborne enteric investigation (responsibility) Read More↓
M162 Foodborne enteric disease investigation volume (agency) Read More↓
M164 Foodborne enteric disease investigation completion time (agency) Read More↓
Sexually Transmitted Infections
Tuberculosis Control

ENVIRONMENTAL HEALTH PROTECTION (Click each name below to view measures for that bundle)
Lead Protection
Food Protection
Water Protection



Chelan-Douglas Health District
2014 Enteric Disease
Responsibility: **LHD**
Reported Cases: **34**
Confirmed Cases: **33**
Foodborne disease investigations: **60**
Investigation completion time: **--**

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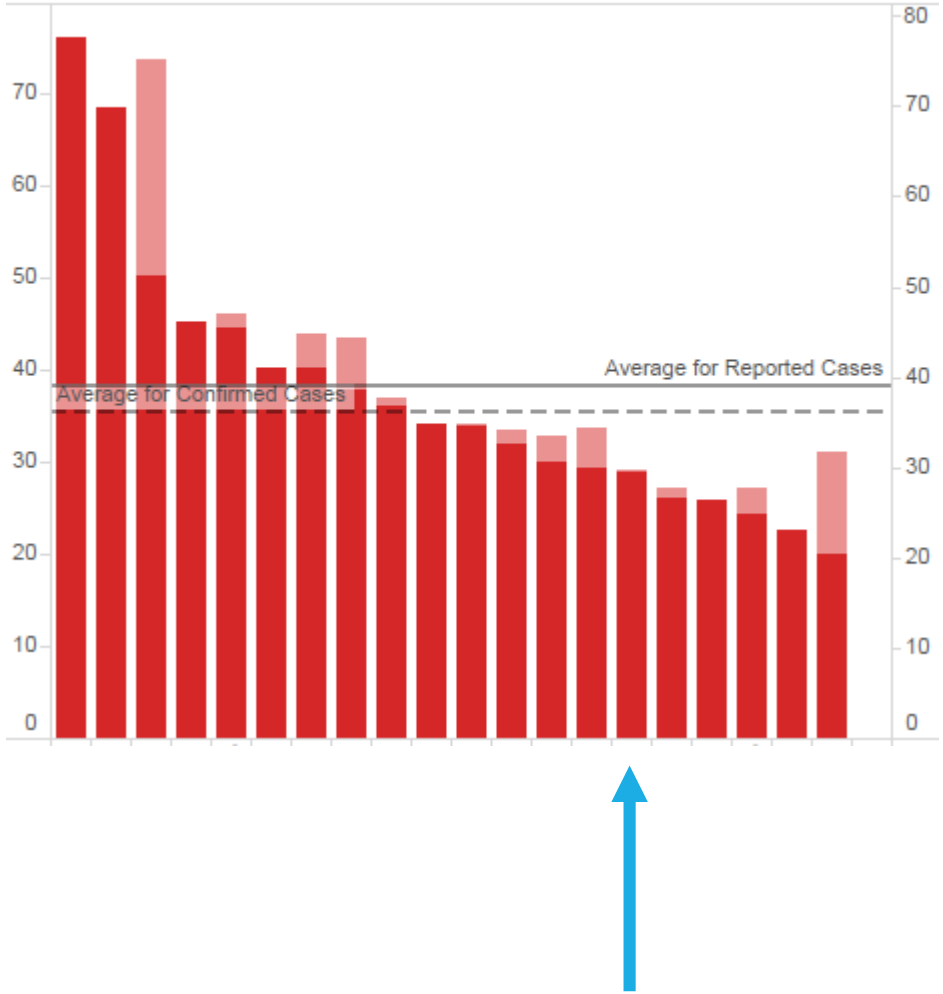

Foodborne / waterborne disease cases reported and confirmed

Per 10,000 people

Year

2014

Population Group

Counties within Metropolitan Statistical Areas of 50,000 to 249,999 population

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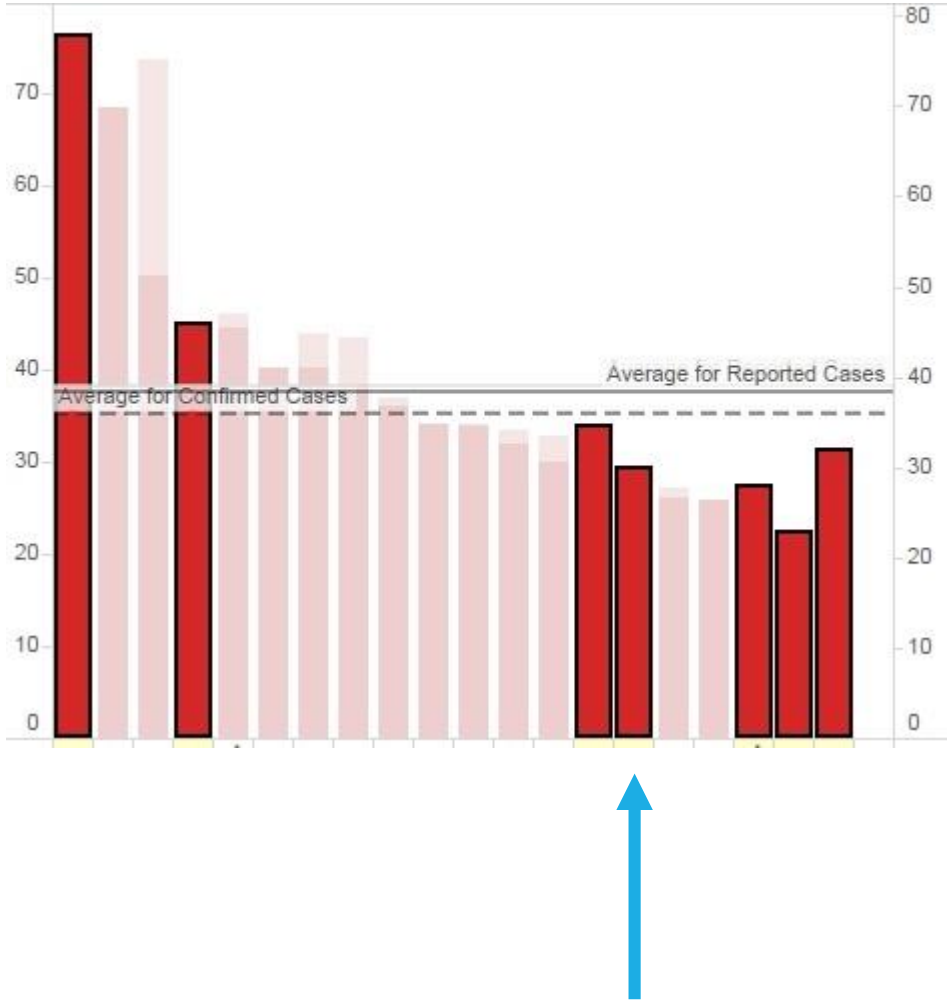

7 “like” LHDs in Washington

20 “like” LHDs in WA, OR, and NY

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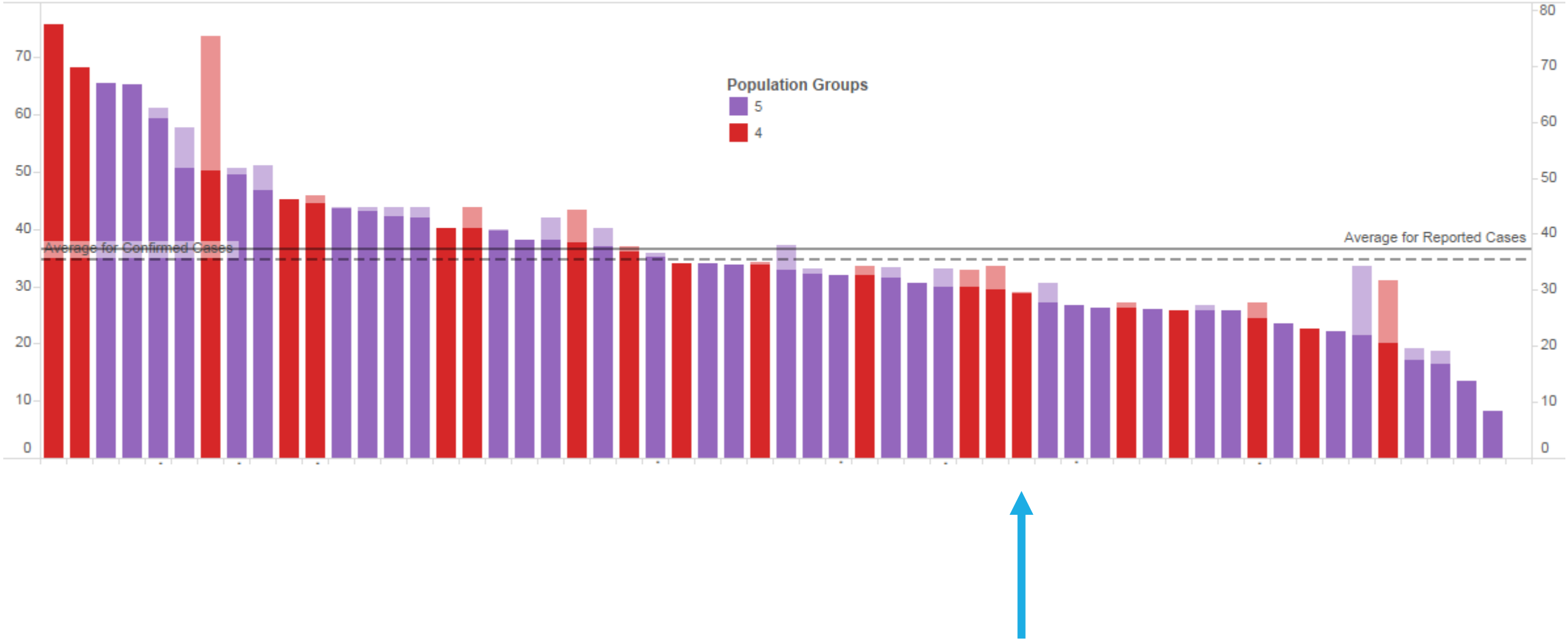
Foodborne / waterborne disease cases reported and confirmed

Per 10,000 people

Population Groups

5 = Micropolitan 10-49k

4 = Metropolitan 50-250k



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Foodborne / waterborne disease cases reported and confirmed

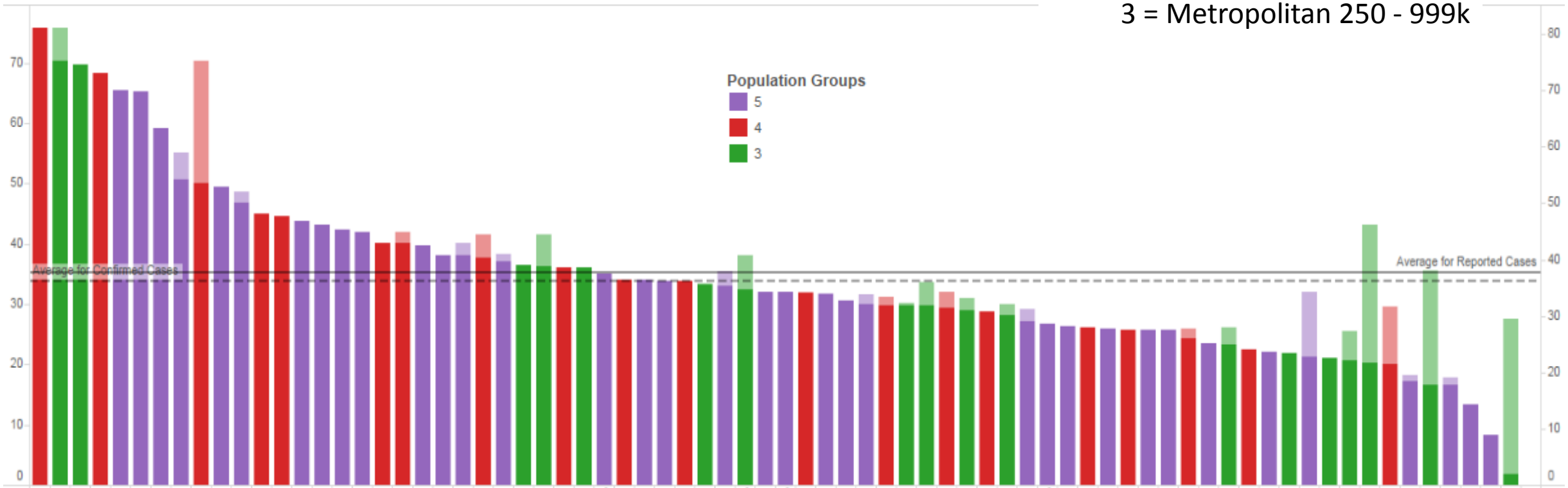
Per 10,000 people

Population Groups

5 = Micropolitan 10 - 49k

4 = Metropolitan 50 - 249k

3 = Metropolitan 250 - 999k



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Use of **Standardized Data** for Practice

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Questions

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