

# OREGON AREAS OF UNMET HEALTH CARE NEED REPORT

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August 2017



The Oregon Office of Rural Health, in response to a mandate from the Oregon Legislature, developed the AUHCN report in 1998 to measure medical underservice in rural areas. The report is published annually and is used:

- To grant exceptions for medical staff eligibility for Oregon's rural practitioner income tax credit program,
- As part of a risk assessment formula for rural hospitals to receive cost-based Medicaid reimbursement (SB 607, passed in 1991; HB 3650, passed in 2011);
- As part of the determination of "medically underserved" geographic areas for the Oregon Governor's Health Care Shortage Area Designation.

The report methodology was revised this year to better align with an integrated health care model. It now includes nine variables that measure access to primary physical, mental and oral health care. This report can be used by state partners to prioritize financial and technical assistance, and by community health care stakeholders to advocate for their unmet needs.

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We welcome your feedback. If you have any questions or suggestions on this report, please contact Emerson Ong at [ong@ohsu.edu](mailto:ong@ohsu.edu).





# SUMMARY RESULTS

## Overview

Nine variables are used to calculate Unmet Need scores for each of Oregon’s 130 primary care service areas. The lowest and worst score possible is 0. The highest and best score possible is 90. A low score means high unmet need. For 2017, scores in Oregon ranged from 19 (worst) to 68 (best).

Rural and frontier service areas have greater unmet need than urban areas:

### **Mean (Average) Score by Geographic Area**

Oregon	41.1
Urban	52
Rural (without Frontier)	37.9
Rural (including Frontier)	38.3
Frontier	40.4

The mean (average) score for Oregon overall is 41.1. The number of service areas by geographic type with scores below the Oregon average include:

Urban:	4 out of 26 (15%)
Rural (without Frontier):	60 out of 86 (70%)
Rural (including Frontier):	69 out of 104 (66%)
Frontier:	9 out of 18 (50%)

The areas with the highest and lowest unmet need:

### **Highest Unmet Need Areas**

### **Lowest Unmet Need Areas**

Drain/Yoncalla	19	Portland West	68
Cascade Locks	20	Portland Inner S.	66
North Lake	22	Portland Downtown	66
Oakridge	23	Hood River	66
Cottage Grove	26	Lake Oswego	65
Glendale	26	Tigard	64
Glide	27	Corvallis/Philomath	61
Clatskanie	28	Bend	61
Waldport	28	Eugene/University	59
Warm Springs	28	Sisters	59
Yachats	28	Portland Middle S.	58

## Highlights

- Pages 12 and 13** The average travel time in Oregon to the nearest Patient Centered Primary Care Home (PCPCH) is 13.6 minutes. In urban areas, the travel time is 10 minutes; in rural areas it is 13.1 minutes and in frontier areas it is 18.8 minutes. **Twenty-six rural and frontier service areas do not have a PCPCH and the drive times for these areas can be as long as 81 minutes (Jordan Valley.)**
- Pages 14 and 16** The estimated ratio of primary care visits able to be met in Oregon is 1.80. Rural and frontier service areas have lower ratios, meaning there is greater demand than supply. **Twelve rural primary care service areas have 0 primary care providers.**
- Pages 17 and 18** There are 1.9 mental health care providers per 1,000 people in Oregon. **Thirty-three rural and frontier service areas have less than 0.5 mental health providers and 25 service areas have 0 mental health providers.**
- Pages 19 and 20** Oregon has 0.42 dentist patient care FTE per 1,000 people. **Twenty-four rural and frontier primary care service areas have 0 dentists.**
- Pages 21 and 22** The percentage of the population that is above the Medicaid cut off of 138% Federal Poverty Level (FPL) but still below 200% of the FPL (and therefore unlikely able to afford health insurance unless provided by an employer) is 12.3% in Oregon. **Rural and frontier service areas have higher percentages (13.8% and 15.3% respectively.) Cascade Locks, North Lake and Canyonville have percentages as high as 25-27%.**
- Pages 23 and 24** Oregon has a preventable hospitalization rate of 9.1 per 1,000 people. **Rural and frontier service area rates are 11.0 or greater. Port Orford, Coos Bay, Reedsport, Wallowa/Enterprise and Warm Springs have the highest rates, ranging from 18.0 to 22.9.**
- Pages 25 and 26** Oregon has an average inadequate prenatal care rate of 54.7 per 1,000 births. **The average rate in frontier service areas is 93.6. Port Orford, Irrigon and Alsea have rates greater than 150.0.**
- Pages 27 and 28** Oregon has an average non-traumatic dental Emergency Department (ED) visit rate of 4.8 per 1,000 people per year. **The rate in rural Oregon is 6.0. Cottage Grove and Warm Springs have rates more than double the rural average (12.9 and 19.1 respectively).**
- Pages 29 and 30** Oregon has an average mental health/substance abuse ED visit rate of 15.6 per 1,000 people per year. **This is the only variable where rural and frontier, on average, do better than urban areas (14.3 and 10.9 respectively.) However Coos Bay, Seaside and Warm Springs have very high rates (25.5 to 43.1.)**



**Figure 2. Ranked Service Area Scores (Highest Unmet Need to Lowest)**  
 The worst score in each column is darkest red and the best score is darkest green with graduated shading for the numbers in between the best and worst.

Service Area	Designation	Total Score	Travel Time to Nearest PCPCH	Primary Care Capacity Ratio	Mental Health Providers per 1,000	Dentists per 1,000	138-200% of Federal Poverty Level	Preventable Hospitalizations per 1,000	Inadequate Prenatal Care Rate	Emergency Department Dental Visits per 1,000	Emergency Department Mental Visits per 1,000
Drain/Yoncalla	Rural	19	28	0.09	0.00	0.00	19%	15.5	80.2	9.7	12.4
Cascade Locks	Rural	20	23	0.00	0.00	0.00	25%	12.3	109.8	4.9	9.8
North Lake	Frontier	22	70	0.38	0.00	0.00	27%	13.2	125.0	1.6	7.3
Oakridge	Rural	23	48	0.85	0.22	0.00	11%	15.4	81.1	6.3	16.2
Cottage Grove	Rural	26	24	0.91	0.99	0.23	16%	15.6	58.8	12.9	20.2
Glendale	Rural	26	24	0.00	0.00	0.00	14%	12.2	71.1	5.7	11.5
Glide	Rural	27	19	0.12	0.32	0.00	10%	9.7	78.3	8.0	12.2
Clatskanie	Rural	28	17	0.19	0.08	0.28	17%	11.1	79.6	5.0	11.9
Waldport	Rural	28	10	0.61	0.29	0.08	16%	13.6	84.8	6.9	16.5
Warm Springs	Rural	28	10	2.27	0.60	0.57	14%	22.9	144.4	19.1	43.1
Yachats	Rural	28	13	0.00	0.57	0.12	12%	8.7	133.3	6.6	18.0
Cave Junction	Rural	29	10	0.55	0.46	0.09	15%	16.5	100.6	5.4	17.8
East Klamath	Rural	29	37	0.00	0.00	0.00	12%	14.0	41.4	5.2	11.6
Shady Cove	Rural	29	10	0.34	0.08	0.14	14%	17.1	91.3	5.1	15.6
Veneta	Rural	29	29	0.57	0.23	0.13	13%	10.5	60.1	4.2	12.6
Port Orford	Rural	30	10	0.61	0.00	0.00	5%	18.0	153.8	7.1	17.5
Swisshome/Triangle Lake	Rural	30	28	0.00	0.00	0.00	14%	9.1	60.6	3.3	14.0
Chiloquin	Rural	31	33	0.85	0.00	0.41	17%	11.4	120.9	3.2	12.4
Myrtle Creek	Rural	31	10	0.14	0.15	0.06	17%	14.5	51.1	9.6	13.2
Winston	Rural	31	10	0.47	0.58	0.11	21%	15.8	46.0	11.1	14.4
Coquille/Myrtle Point	Rural	32	10	0.67	0.17	0.34	16%	16.3	67.9	7.6	18.8
Madras	Rural	32	10	1.13	0.73	0.23	18%	10.4	79.0	11.2	16.7
Rogue River	Rural	32	10	0.29	0.08	0.18	15%	13.9	76.1	6.2	14.4
Mill City/Gates	Rural	33	10	0.87	0.00	0.00	14%	11.2	65.1	5.7	15.9
Prineville	Rural	33	10	0.65	0.97	0.24	18%	13.7	44.9	11.3	19.2
Reedsport	Rural	33	10	1.54	0.13	0.22	14%	18.7	73.2	6.2	20.3
Toledo	Rural	33	10	0.48	0.01	0.14	14%	10.0	41.8	11.9	16.8
Arlington	Frontier	34	26	1.12	0.00	0.00	12%	13.5	90.9	4.5	5.1
Alsea	Rural	34	10	0.57	0.88	0.00	17%	7.3	160.0	4.8	11.8
Bandon	Rural	34	10	1.28	1.03	0.35	21%	16.5	80.0	6.5	17.2
Detroit	Rural	34	25	0.00	0.00	0.00	21%	8.5	0.0	2.1	21.4
Lowell/Dexter	Rural	34	24	0.20	1.00	0.18	12%	10.2	36.0	6.9	13.0
McKenzie/Blue River	Rural	34	10	1.13	0.54	0.00	20%	14.3	54.8	5.2	11.9

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Seaside	Rural	34	10	1.68	0.48	0.31	16%	14.9	73.0	9.5	26.4
Sweet Home	Rural	34	10	0.40	0.20	0.11	15%	14.9	52.1	6.4	13.6
Eugene West	Urban	34	10	0.93	0.63	0.21	14%	11.2	56.9	6.6	24.0
Applegate/Williams	Rural	35	13	0.00	0.43	0.22	11%	10.2	74.5	4.1	9.2
Siletz	Rural	35	14	2.22	0.71	0.66	21%	10.6	116.1	10.2	14.5
Irrigon	Frontier	36	10	0.26	0.00	0.00	13%	6.3	156.8	4.3	7.0
Canyonville	Rural	36	10	0.95	0.56	0.39	27%	16.0	51.5	7.6	10.7
Estacada	Rural	36	10	0.32	0.09	0.14	14%	8.6	68.1	5.1	10.9
Gold Beach	Rural	36	10	2.18	1.63	0.18	17%	16.7	85.7	9.5	23.4
Powers	Rural	36	10	0.00	0.00	0.00	10%	14.6	90.9	3.4	14.0
Condon	Frontier	37	22	0.85	1.04	0.00	24%	14.5	23.3	2.6	5.2
Blodgett-Eddyville	Rural	37	14	0.00	0.83	0.00	8%	3.6	67.8	5.4	15.4
Florence	Rural	37	10	1.45	0.53	0.19	16%	11.7	93.1	5.2	13.3
Merrill	Rural	37	27	0.44	0.00	0.00	18%	8.9	34.5	2.5	7.5
Sutherlin	Rural	37	10	0.24	0.07	0.28	15%	14.5	36.8	6.6	13.9
Willamina	Rural	37	10	0.65	0.52	0.35	16%	11.4	68.7	7.8	13.9
Portland Outer S.	Urban	37	10	1.37	1.01	0.40	16%	10.0	98.5	7.2	24.1
Springfield	Urban	37	10	2.61	0.72	0.25	14%	12.9	59.9	11.2	20.9
Heppner	Frontier	38	10	1.22	0.66	0.00	20%	9.6	77.4	3.3	7.1
Jordan Valley	Frontier	38	81	0.00	0.00	0.00	23%	0.0	32.3	0.0	4.1
Lakeview	Frontier	38	10	1.39	0.70	0.32	18%	17.3	63.3	7.6	12.5
La Pine	Rural	38	10	0.59	0.36	0.28	14%	12.2	60.6	4.0	9.8
Lincoln City	Rural	38	10	1.47	0.79	0.34	13%	12.9	71.2	10.0	19.0
Maupin	Rural	38	10	0.30	0.31	0.31	16%	10.4	61.4	4.7	8.3
Scio	Rural	38	12	0.00	0.19	0.00	14%	8.8	47.4	3.5	8.0
Union	Rural	38	10	0.05	0.37	0.08	14%	11.7	49.4	4.8	6.2
Vernonia	Rural	38	10	0.35	0.00	0.19	13%	8.5	63.8	8.0	11.3
Boardman	Frontier	39	10	0.76	0.23	0.09	22%	3.5	120.1	2.0	9.7
Coos Bay	Rural	39	10	1.63	1.53	0.34	12%	18.3	72.1	9.7	25.5
Eagle Point	Rural	39	10	0.49	0.40	0.07	15%	12.3	50.2	3.8	11.9
Elgin	Rural	39	10	0.66	0.00	0.13	12%	16.4	31.5	9.8	6.8
John Day	Frontier	40	10	0.91	0.40	0.43	16%	12.0	110.4	3.1	10.4
Dallas	Rural	40	10	0.69	0.63	0.15	13%	8.7	54.3	6.3	12.8
Stayton	Rural	40	10	0.97	0.18	0.26	12%	12.3	40.6	6.7	13.1
Tillamook	Rural	40	10	1.50	1.31	0.35	15%	11.6	58.0	8.3	21.1
Phoenix/Talent	Urban	40	10	0.63	0.91	0.10	9%	11.7	48.0	6.1	15.2
Cloverdale	Rural	41	10	0.58	0.22	0.14	16%	10.9	18.6	4.8	9.3
Junction City	Rural	41	10	0.43	0.56	0.22	12%	9.4	64.6	3.9	12.0
Lebanon	Rural	41	10	1.32	0.30	0.28	12%	14.0	39.5	5.9	14.2



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Monroe	Rural	41	10	0.00	0.67	0.00	11%	9.6	39.4	4.2	11.8
<b>Oregon</b>		<b>41.1</b>	<b>13.3</b>	<b>1.80</b>	<b>1.90</b>	<b>0.42</b>	<b>12%</b>	<b>9.1</b>	<b>54.7</b>	<b>4.8</b>	<b>15.6</b>
Baker City	Frontier	42	10	1.57	1.44	0.23	15%	11.0	52.3	10.7	11.1
Moro/Grass Valley	Frontier	42	10	1.51	0.00	0.00	18%	13.6	0.0	5.1	8.5
Ontario	Frontier	42	10	3.47	0.97	0.50	12%	9.9	123.6	6.7	16.0
Astoria	Rural	42	10	2.11	1.83	0.28	14%	12.8	56.8	7.0	20.4
Grants Pass	Rural	42	10	1.81	1.34	0.41	16%	14.7	66.3	5.3	18.5
Wemme	Rural	42	10	0.15	0.37	0.13	11%	6.9	58.8	4.2	10.3
Gresham	Urban	42	10	1.28	0.96	0.38	12%	9.1	62.4	4.9	16.8
St. Johns	Urban	42	10	0.60	1.06	0.16	11%	9.2	50.2	4.4	15.1
Burns	Frontier	43	10	1.36	0.82	0.20	16%	11.4	40.3	4.3	12.6
Nyssa	Frontier	43	10	0.46	0.00	0.40	13%	6.9	128.6	2.5	10.4
Harrisburg	Rural	43	10	0.22	0.19	0.00	11%	5.9	44.9	3.1	11.4
Klamath Falls	Rural	43	10	1.80	1.16	0.44	14%	11.5	57.0	6.4	16.4
Milwaukie	Urban	43	10	0.78	1.65	0.39	13%	9.8	50.8	6.5	18.1
Vale	Frontier	44	10	0.83	0.00	0.11	15%	7.8	74.9	2.5	6.2
Brownsville	Rural	44	10	0.50	0.00	0.19	15%	8.3	48.9	3.3	7.7
Milton-Freewater	Rural	44	18	0.25	0.31	0.29	17%	0.4	69.8	0.2	0.5
McMinnville	Rural	45	10	1.29	1.37	0.30	13%	9.7	31.8	7.6	15.1
Pendleton	Rural	45	10	1.65	1.25	0.38	14%	7.6	74.3	7.3	12.9
St. Helens	Rural	45	10	0.72	0.72	0.21	11%	10.8	53.1	2.2	12.3
The Dalles	Rural	45	10	1.57	1.43	0.40	13%	14.4	42.8	10.0	14.1
Woodburn	Rural	45	10	0.91	0.43	0.20	16%	7.7	57.9	2.1	8.1
Portland Outer N.	Urban	45	10	1.81	1.42	0.63	13%	10.8	81.4	5.2	18.3
Canby	Rural	46	10	0.56	0.27	0.31	12%	7.9	49.5	2.9	10.1
Hermiston	Rural	46	10	1.54	0.45	0.32	14%	5.2	87.0	4.2	10.5
Redmond	Rural	46	10	0.98	0.63	0.35	12%	8.2	35.3	5.2	13.8
Roseburg	Rural	46	10	2.54	1.84	0.46	15%	13.5	40.6	9.7	20.6
Medford	Urban	46	10	2.79	1.97	0.52	16%	14.0	55.9	6.6	21.3
Salem North	Urban	46	10	0.91	0.79	0.31	15%	8.2	51.9	3.9	11.2
Wallowa/Enterprise	Frontier	47	10	2.01	1.37	0.40	13%	19.7	61.0	4.3	8.7
Nehalem	Rural	47	10	0.97	1.49	0.17	12%	12.5	33.1	1.4	12.6
Sandy	Rural	47	10	0.45	0.49	0.19	11%	7.8	41.1	3.1	11.2
Albany	Urban	48	10	1.19	1.27	0.37	13%	7.6	33.7	7.3	14.3
Halfway	Frontier	49	10	1.77	0.00	0.37	15%	8.7	102.6	1.2	4.7
Brookings	Rural	49	10	1.30	0.98	0.43	20%	6.8	67.0	1.2	10.1
La Grande	Rural	49	10	2.45	1.46	0.42	13%	10.9	51.4	9.1	9.5
Eugene South	Urban	50	10	0.46	1.77	0.44	11%	7.4	65.1	3.1	11.7
Salem South	Urban	50	10	2.36	2.71	0.61	14%	8.8	58.0	5.2	18.2

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Newport	Rural	51	10	2.27	3.41	0.57	11%	10.5	51.5	8.8	20.3
Silverton/Mt. Angel	Rural	51	10	1.74	0.69	0.20	13%	8.2	41.7	2.7	7.8
Fossil Hillsboro/Forest Grove	Frontier	54	10	0.85	0.00	0.33	9%	10.5	43.5	0.7	3.2
Ashland	Urban	55	10	1.70	1.41	0.40	11%	6.0	45.6	4.2	11.8
Newberg	Rural	56	10	1.97	4.76	0.46	11%	6.0	71.5	4.1	13.2
Albina	Rural	56	10	1.67	1.70	0.34	10%	8.2	25.2	4.2	10.4
Beaverton	Urban	56	10	3.92	4.24	0.21	9%	8.9	40.4	3.8	18.3
Oregon City	Urban	56	10	0.81	1.16	0.53	11%	6.1	42.3	2.2	10.5
Portland Middle S.	Urban	57	10	3.37	2.34	0.57	10%	7.6	66.0	4.3	14.0
Sisters	Urban	58	10	2.30	3.20	0.44	10%	7.9	41.2	3.4	17.7
Eugene/University	Rural	59	10	0.72	0.81	0.34	9%	6.4	21.5	1.0	7.4
Bend	Urban	59	10	3.94	7.05	0.92	9%	8.3	62.9	4.0	22.3
Corvallis/Philomath	Urban	61	10	2.74	2.70	0.48	12%	6.7	32.0	2.9	13.1
Tigard	Urban	61	10	2.60	2.64	0.40	10%	4.4	49.6	2.1	14.4
Lake Oswego	Urban	64	10	1.96	1.73	0.62	8%	6.4	36.0	1.8	10.3
Hood River	Urban	65	10	1.03	2.02	0.60	7%	6.0	34.8	1.3	8.8
Portland Downtown	Rural	66	10	2.60	1.95	0.63	9%	5.9	28.3	2.6	8.0
Portland Inner S.	Urban	66	10	10.93	15.89	1.33	7%	10.0	44.4	3.6	52.4
Portland West	Urban	66	10	2.04	7.77	0.69	10%	5.2	46.1	1.7	15.3
	Urban	68	10	2.45	2.51	0.44	7%	4.9	31.7	1.0	9.2

# METHODOLOGY

## Primary Care Service Areas

County geographies in most of the United States are relatively small and homogenous, so county-level data is widely used to analyze information. Oregon's 36 counties, however, vary greatly in size, geography, and population. As a result, sub-county geographies needed to be developed to more accurately represent community use of health care services.

Among the established small geographic boundaries, only postal ZIP Code areas follow transportation and market patterns. ZIP Codes are also linked to a large amount of demographic, socioeconomic and health status information. In 1985, the Oregon Office of Rural Health, with the help of other state and local agencies, chose ZIP Codes to be the building blocks of sub-county service areas and grouped all of Oregon's 470+ ZIP Codes into Oregon "Primary Care Service Areas" using the following criteria:<sup>1</sup>

- 1) Health resources are generally located within 30 to 40 minutes travel time.
- 2) Defined areas are not smaller than a single ZIP Code and ZIP Codes used are geographically contiguous and/or follow main roads.
- 3) Defined areas contain a population of at least 800 to 1,000 or more people.
- 4) Defined areas constitute a "rational" medical trade or market area considering topography, social and political boundaries, and travel patterns.
- 5) Additional considerations for service areas are boundaries that:
  - a) Are congruent with existing special taxing districts (e.g., health or hospital districts); and
  - b) Include a population which has a local perception that it constitutes a "community of need" for primary health care services, or demonstrates demographic or socioeconomic homogeneity. The population should be large enough (800-1000 or more) to be financially capable of supporting at least a single midlevel health care provider.

The criteria remain the same, but the areas are updated when necessary according to changes in population and health utilization. The last change was made to Lakeview in 2013.

### **There are 130 Oregon Primary Care Service Areas:**

**Urban: 26 | Rural + Frontier<sup>2</sup>: 104 | Rural Only: 86 | Frontier Only: 18**

Six-page demographic, socioeconomic, and health status profiles for each of the rural and frontier service areas are updated continuously and available for free. A sample profile, and more information, are available [here](#).

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<sup>1</sup> Van Eck, Ethan; Bennett, Marge et. al. *Strategic Plan for Primary Health Care in Rural Oregon, 1985-1990*. September 30, 1985. (Available through the Office of Rural Health)

<sup>2</sup> Using the Oregon Office of Rural Health's definition —Rural is a geographic area 10 or more miles from the centroid of a city of 40,000 or more. Frontier areas are those in counties with 6 or fewer people per square mile.

## The Variables Used in the AUHCN Calculation

The Oregon Office of Rural Health researched academic publications and collected studies from other State Offices of Rural Health to determine the measures that would be used for the new report. This data was brought to a stakeholder group with knowledge of health utilization, hospital data, primary care, dental, and mental health services (list of individuals and members below).

### Data Limitations:

- Data points must be available at the ZIP Code geographic level.
- Data must be updated annually, at minimum.
- Data must be available to the Oregon Office of Rural Health.

The following 9 variables were identified as the best currently available to measure access to primary care, dental and mental health services. More detail on the sources and methodology for each variable is included in the following pages.

### Category One: Availability of Providers *Are needed providers available locally?*

- 1) Travel Time to Nearest Patient Centered Primary Care Home (PCPCH)
- 2) Primary Care Capacity (Percent of Primary Care Visits Able to Be Met)
- 3) Mental Health Providers per 1,000 Population
- 4) Dentists per 1,000 Population

### Category Two: Ability to Afford Care *Is it affordable to see these providers?*

- 5) Percent of Population Between 138% and 200% of Federal Poverty Level (FPL)

### Category Three: Utilization *Is primary physical, mental and oral health care being used?*

- 6) Ambulatory Care Sensitive Conditions (ACSC)/ Preventable Hospitalizations per 1,000 Population
- 7) Inadequate Prenatal Care Rate per 1,000 Births
- 8) Emergency Department Non-Traumatic Dental Visits per 1,000 Population
- 9) Emergency Department Mental Health/Substance Abuse Visits per 1,000 Population

The Oregon Office of Rural Health would like to thank the stakeholder group for their participation:

Greater Oregon Behavioral Health Inc.  
Paul McGinnis, CCO Integration Director

Oregon Association of Hospitals & Health Systems  
Katie Harris, Director of Program Management  
Andy Van Pelt, Executive Vice President

Oregon Health Authority  
Jackie Fabrick, Behavioral Health Policy Analyst  
Marc Overbeck, Primary Care Office Director  
Amanda Peden, Health Policy Analyst  
Jeffery Scroggin, Policy Analyst

Oregon Health & Science University  
Eli Schwarz, Chair of Department of Community  
Dentistry

## CATEGORY ONE: AVAILABILITY OF PROVIDERS

### 1) TRAVEL TIME TO NEAREST PATIENT CENTERED PRIMARY CARE HOME (PCPCH)

#### Description:

PCPCHs are health care clinics that have been officially recognized by the Oregon Health Authority (OHA) for providing high quality, patient-centered care. All PCPCHs have to pass a minimum set of 11 criteria. For this report, three criteria were considered good indicators of community access to primary care and in preventing misuse of the emergency room. These include: screening and referral for mental health and substance abuse, 24/7 access to live clinical advice by telephone, and ongoing management of chronic diseases.

#### Data Source:

Patient-Centered Primary Care Home Program, Oregon Health Authority (May 2017)

#### Methodology:

Google Maps to determine driving times from the largest town in the Primary Care Service Area to the town where the nearest PCPCH is located. Locations that already have a PCPCH in the largest town are defaulted to a drive time of 10 minutes.

$V_1$  = Drive time in minutes

#### Results:

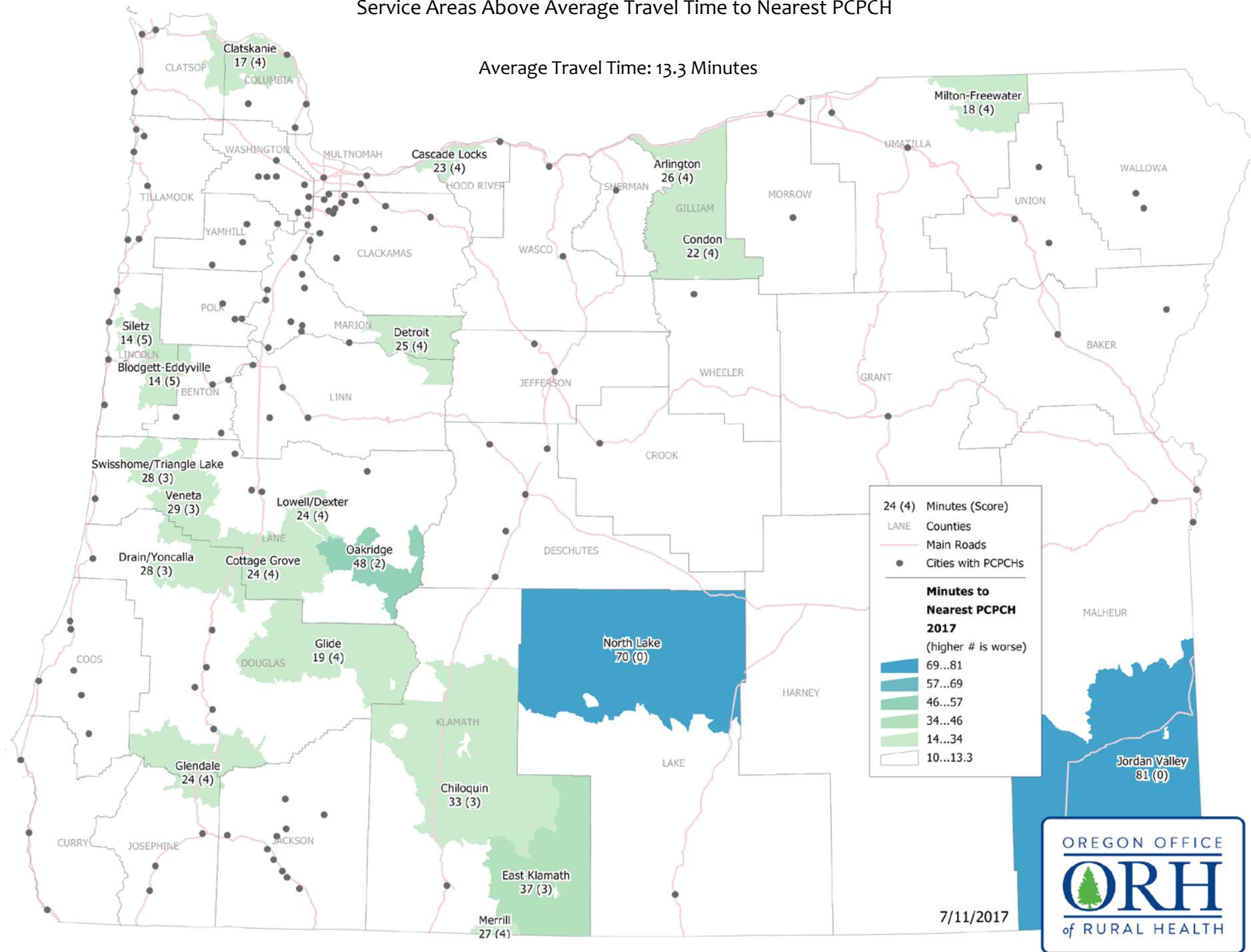
Average drive time to the nearest PCPCH for all 130 Primary Care Service Areas in Oregon is 13.6 minutes. Twenty-six service areas do not have a PCPCH, and the drive times for these areas range from 12 (Scio) to 81 minutes (Jordan Valley).

<b>Overall Results</b>	<b>In Minutes</b>
Oregon	13.6
Urban	10
Rural (without Frontier)	13.1
Rural (including Frontier)	14.5
Frontier	18.8

<b>5 Longest Travel Times to PCPCH</b>	
Jordan Valley	81
North Lake	70
Oakridge	48
East Klamath	37
Chiloquin	33

Figure 3.  
Service Areas Above Average Travel Time to Nearest PCPCH



7/11/2017

## 2) PRIMARY CARE CAPACITY (PERCENT OF PRIMARY CARE VISITS ABLE TO BE MET)

### Description:

This measure compares the estimated visits the primary care providers in the service area should be able to supply, with the estimated primary care visits needed by the local population. Primary care providers include general and family physicians, pediatricians, obstetrician-gynecologists, internists, physician assistants, and nurse practitioners.

### Data Sources:

#### Estimated Primary Care Visits Provided:

Physician and physician assistant patient care FTE: Oregon Medical Board licensure survey (2016)

Nurse practitioner patient care FTE: Oregon Health Authority's Health Care Workforce Reporting Program Database: licensure survey (2016)<sup>3</sup>

#### Primary Care Visits Needed:

Annually adjusted rates from the National Ambulatory Medical Care Survey: State and National Summary Tables, National Center for Health Statistics (2013)<sup>4</sup>

Local population data: Claritas (2017)

### Methodology:

- a) Estimated primary care visits provided:

Specialty	Estimated Number of Visits Provided Per Year
General and family physicians	2753 <sup>5</sup>
Pediatricians	2991 <sup>6</sup>
Obstetrician-gynecologists	2702 <sup>7</sup>
Internists	2421 <sup>8</sup>
Physician assistants	2714 <sup>9</sup>
Nurse practitioners	2883 <sup>10</sup>

Total Visits Provided =  $p_1(2753) + p_2(2991) + p_3(2702) + p_4(2421) + p_5(2714) + p_6(2883)$  where:

$p_1$  = FTE of General and family physicians

$p_2$  = FTE of pediatricians

$p_3$  = FTE of Obstetrician-gynecologists

$p_4$  = FTE of internists

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<sup>3</sup> Data from the Oregon Health Authority's Health Care Workforce Reporting Program Database was used to produce this product. Statements contained herein are solely those of the OHA authors and the OHA author assumes responsibility for the accuracy and completeness of the analyses contained in the product.

<sup>4</sup> [http://www.cdc.gov/nchs/data/ahcd/namcs\\_summary/2013\\_namcs\\_web\\_tables.pdf](http://www.cdc.gov/nchs/data/ahcd/namcs_summary/2013_namcs_web_tables.pdf)

<sup>5</sup> Estimate based on: Hing E, Burt CW. *Characteristics of office-based physicians and their practices: United States, 2005-06*. National Center for Health Statistics. Vital Health Stat 13(166) 2008: 14, 15.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Estimate based on: Young, S, Valley, J, Soenen T, et al. *Oregon Federally Certified Rural Health Clinics, 2011 Report*. Oregon Office of Rural Health. (2011): 41

<sup>10</sup> Ibid.

p<sub>5</sub> = FTE of Physician assistants  
 p<sub>6</sub> = FTE of Nurse practitioners

b) Primary care visits needed:

$$\begin{aligned} \text{Total \# of Primary Care Visits Needed} = & 0.8^{11} \times \\ & (([\text{Female Population 0-14}] \times 2.1) + \\ & ([\text{Female Population 15-24}] \times 1.9) + \\ & ([\text{Female Population 25-44}] \times 2.9) + \\ & ([\text{Female Population 45-64}] \times 3.8) + \\ & ([\text{Female Population 65-74}] \times 6) + \\ & ([\text{Female Population 75+}] \times 6.7) + \\ & ([\text{Male Population 0-14}] \times 2.2) + \\ & ([\text{Male Population 15-24}] \times 1.2) + \\ & ([\text{Male Population 25-44}] \times 1.5) + \\ & ([\text{Male Population 45-64}] \times 3.1) + \\ & ([\text{Male Population 65-74}] \times 5.3) + \\ & ([\text{Male Population 75+}] \times 6.8)) \end{aligned}$$

c) Total visits provided is divided by the total number of primary care visits needed. The final variable is a ratio of need being met, using the following formula:

$$V_2 = \frac{\text{Total Visits Provided}}{\text{Total \# of Primary Care Visits Needed}}$$

**Results:**

The estimated ratio of primary care visits being met for the state of Oregon is 1.80. A ratio of 1 means that supply should be equal to demand, if access and affordability were equal for everyone. A lower ratio means more demand. A higher ratio means more supply. There are 12 service areas (all rural) that don't have any primary care providers, with the highest ratios located in urban areas: Portland Downtown (10.93), and Eugene/University (3.94).

Primary Care Service Areas with no primary care providers:

Applegate/Williams, Blodgett-Eddyville, Cascade Locks, Detroit, East Klamath, Glendale, Jordan Valley, Monroe, Powers, Scio, Swisshome/Triangle Lake, Yachats

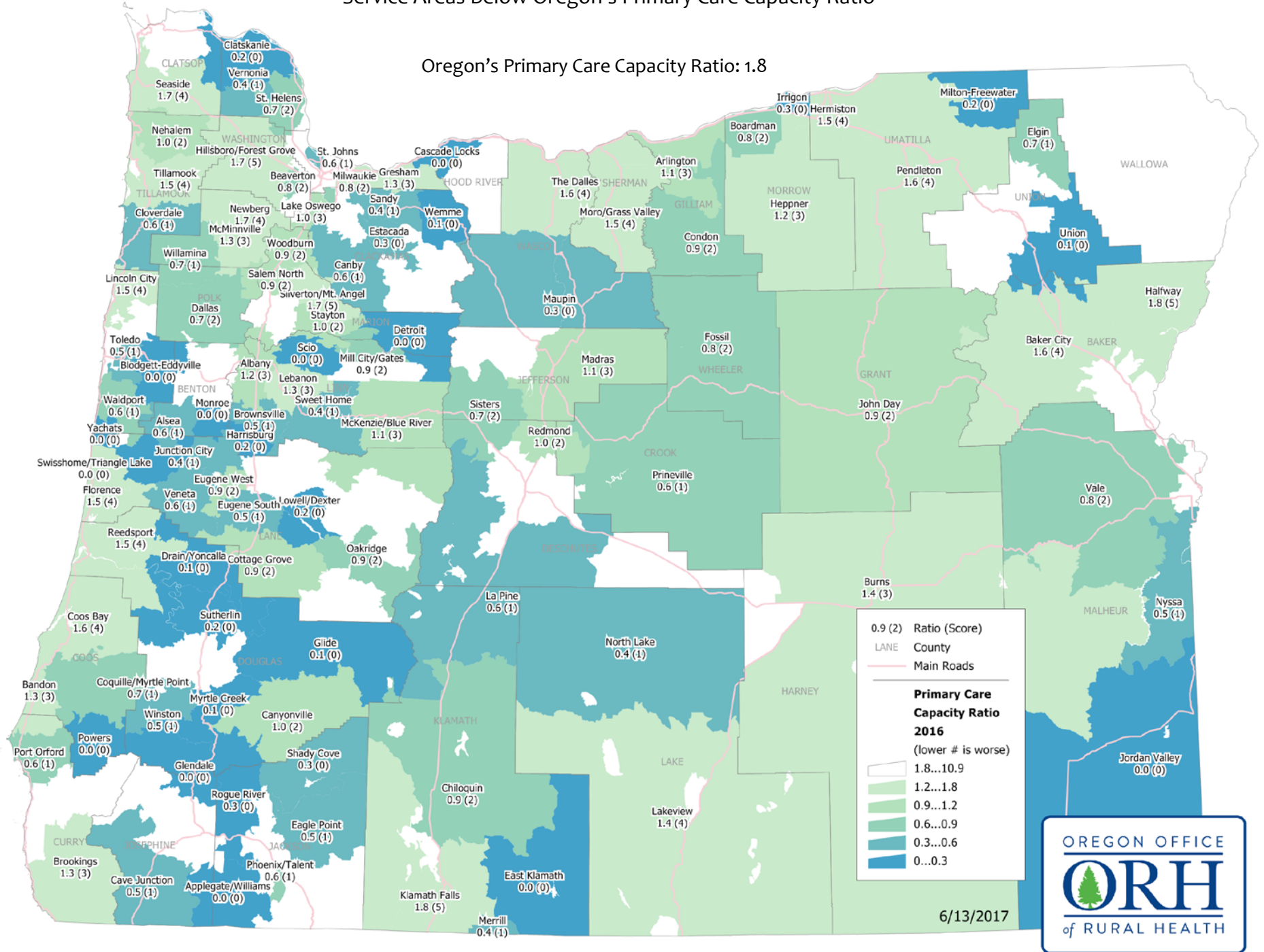
**Overall Results**

Oregon	1.80
Urban	2.14
Rural (without Frontier)	1.18
Rural (including Frontier)	1.20
Frontier	1.62

<sup>11</sup> All multipliers are from the National Ambulatory Medical Care Survey; which estimates visits to ALL types of physicians. Since primary care in rural areas accounts for 80% of those visits, the calculation here is multiplied by 0.8.



Figure 4.  
Service Areas Below Oregon's Primary Care Capacity Ratio



### 3) MENTAL HEALTH PROVIDERS PER 1,000 POPULATION

**Description:**

Count of Psychiatrists, Psychiatric Nurse Practitioners, Psychologists, Marriage and Family Therapists, and Clinical Social Workers compared to local population.

**Data Sources:**

Psychiatrist patient care FTE: Oregon Medical Board licensure survey (2016)

Psychiatric nurse practitioner patient care FTE: Oregon Health Authority’s Health Care Workforce Reporting Program: licensure survey (2016)

Psychologist active licensure count: Oregon Board of Psychologist Examiners (2016)

Marriage and family therapist active licensure count: Oregon Board of Licensed Professional Counselors and Therapists (2016)

Clinical social worker active licensure count: Oregon Board of Clinical Social Workers (2016)

Local population data: Claritas (2017)

**Methodology:**

$$V_3 = \frac{\text{Sum of 5 mental health providers} \times 1000}{\text{Local population}}$$

**Results:**

There are 1.9 mental health providers per 1,000 people in Oregon. Twenty-four of 130 service areas (all rural) had no mental health providers. An additional 33 service areas (all rural) have 0.5 or fewer mental health providers per 1,000 people. The highest numbers per 1,000 are in the urban areas of Portland Downtown (15.9), Portland Inner South (7.8) and Eugene/University (7.1).

Primary Care Service Areas with no mental health providers:

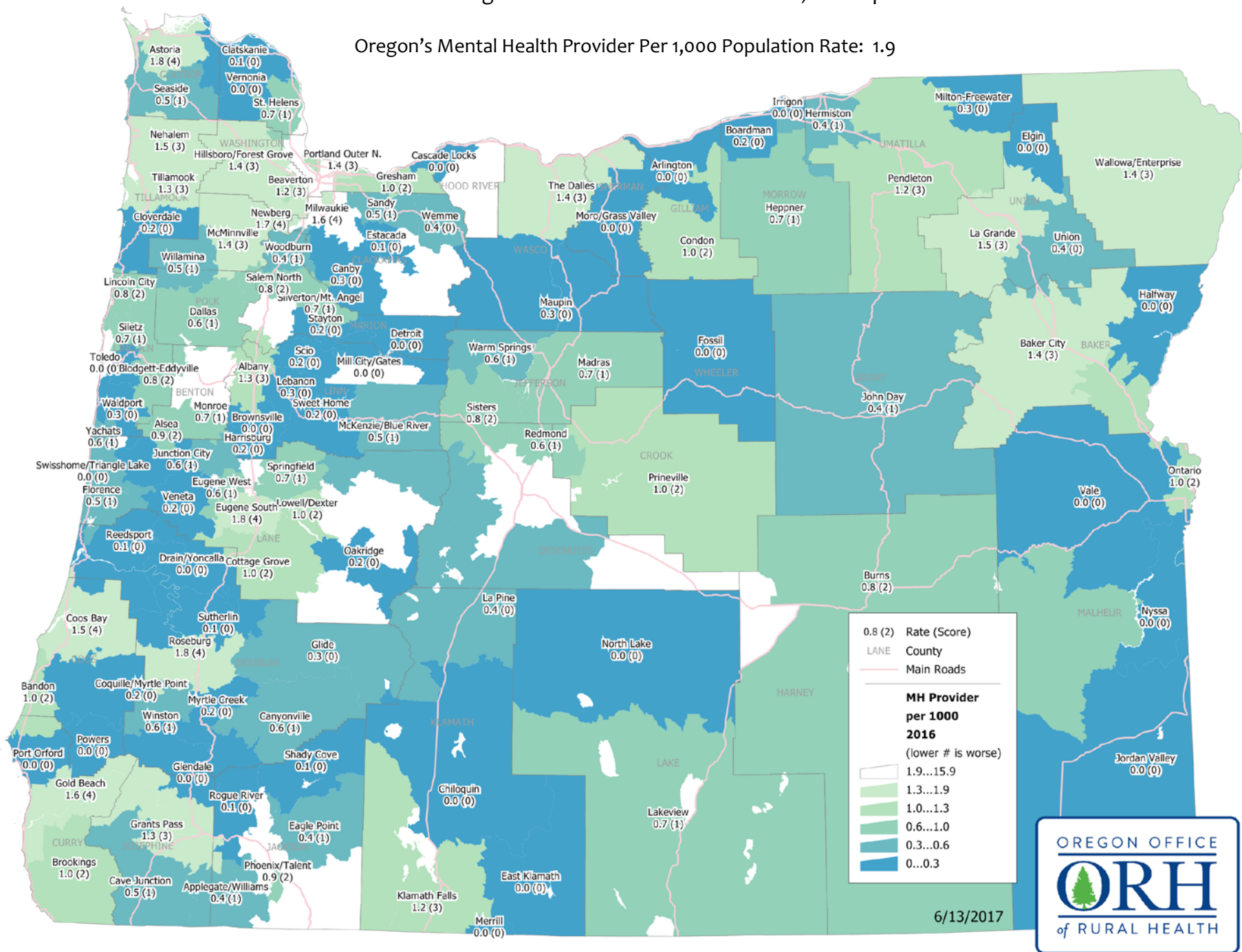
Alesa, Arlington, Blodgett-Eddyville, Cascade Locks, Condon, Detroit, Drain/Yoncalla, East Klamath, Glendale, Glide, Harrisburg, Heppner, Irrigon, Jordan Valley, McKenzie/Blue River, Merrill, Mill City/Gates, Monroe, Moro/Grass Valley, North Lake, Oakridge, Port Orford, Powers, Scio, Swisshome/Triangle Lake

	<b>Overall Results</b>	<b>Per 1,000 Population</b>
	Oregon	1.9
	Urban	2.5
	Rural (without Frontier)	0.9
	Rural (including Frontier)	0.9
	Frontier	0.7

Figure 5.

Service Areas Below Oregon's Mental Health Provider Per 1,000 Population Rate

Oregon's Mental Health Provider Per 1,000 Population Rate: 1.9



#### 4) DENTISTS PER 1,000 POPULATION

**Description:**

Patient care FTE of local dentists compared to local population.

**Data Sources:**

Dentist patient care FTE: Oregon Health Authority’s Health Care Workforce Reporting Program: licensure survey (2016)

Local population: Claritas (2017)

**Methodology:**

$$V_4 = \frac{\text{Dentist patient care FTE}}{\text{Local population}} \times 1,000$$

**Results:**

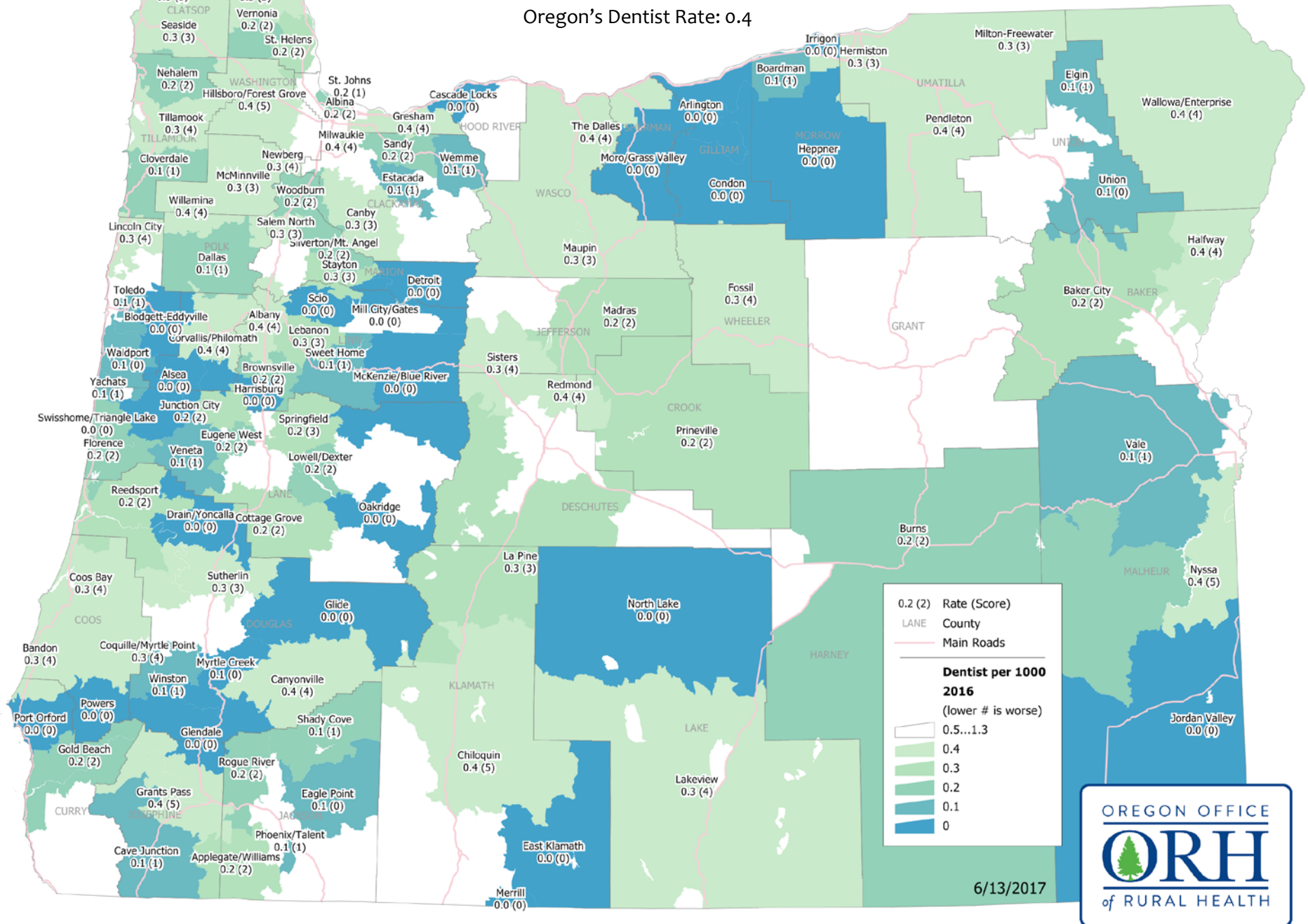
Oregon has 0.42 dentist patient care FTE per 1,000 people. Twenty-four primary care service areas (all rural) have no dentists. The urban areas of Portland Downtown (1.3) and Eugene/University (0.92) have the highest numbers of dentists per 1000 people.

Primary Care Service Areas with no dentists:

Alea, Arlington, Blodgett-Eddyville, Cascade Locks, Condon, Detroit, Drain/Yoncalla, East Klamath, Glendale, Glide, Harrisburg, Heppner, Irrigon, Jordan Valley, McKenzie/Blue River, Merrill, Mill City/Gates, Monroe, Moro/Grass Valley, North Lake, Oakridge, Port Orford, Powers, Scio, Swisshome/Triangle Lake

<b>Overall Results</b>	<b>Per 1,000 Population</b>
Oregon	0.42
Urban	0.49
Rural (without Frontier)	0.29
Rural (including Frontier)	0.29
Frontier	0.29

Figure 6.  
Service Area's Below Oregon's Dentist Per 1,000 Population Rate



## CATEGORY TWO: ABILITY TO AFFORD CARE

### 5) PERCENT OF POPULATION BETWEEN 138% AND 200% OF THE FEDERAL POVERTY LEVEL

**Description:**

The percentage of the local population that is above the Medicaid cutoff of 138% of Federal Poverty Level (FPL), but still too poor to get health insurance on their own (unless they have jobs that provide health insurance).

**Data Source:**

American Community Survey (2011-2015)

**Methodology:**

$V_5 = 200\% \text{ FPL} - 138\% \text{ FPL}$

**Results:**

12.3% of the population in Oregon are between 138% and 200% of the Federal Poverty Level. The rate ranges from 5% in Port Orford and 7% in Portland West, Lake Oswego, and Portland Downtown, to a high of 27% in North Lake and Canyonville.

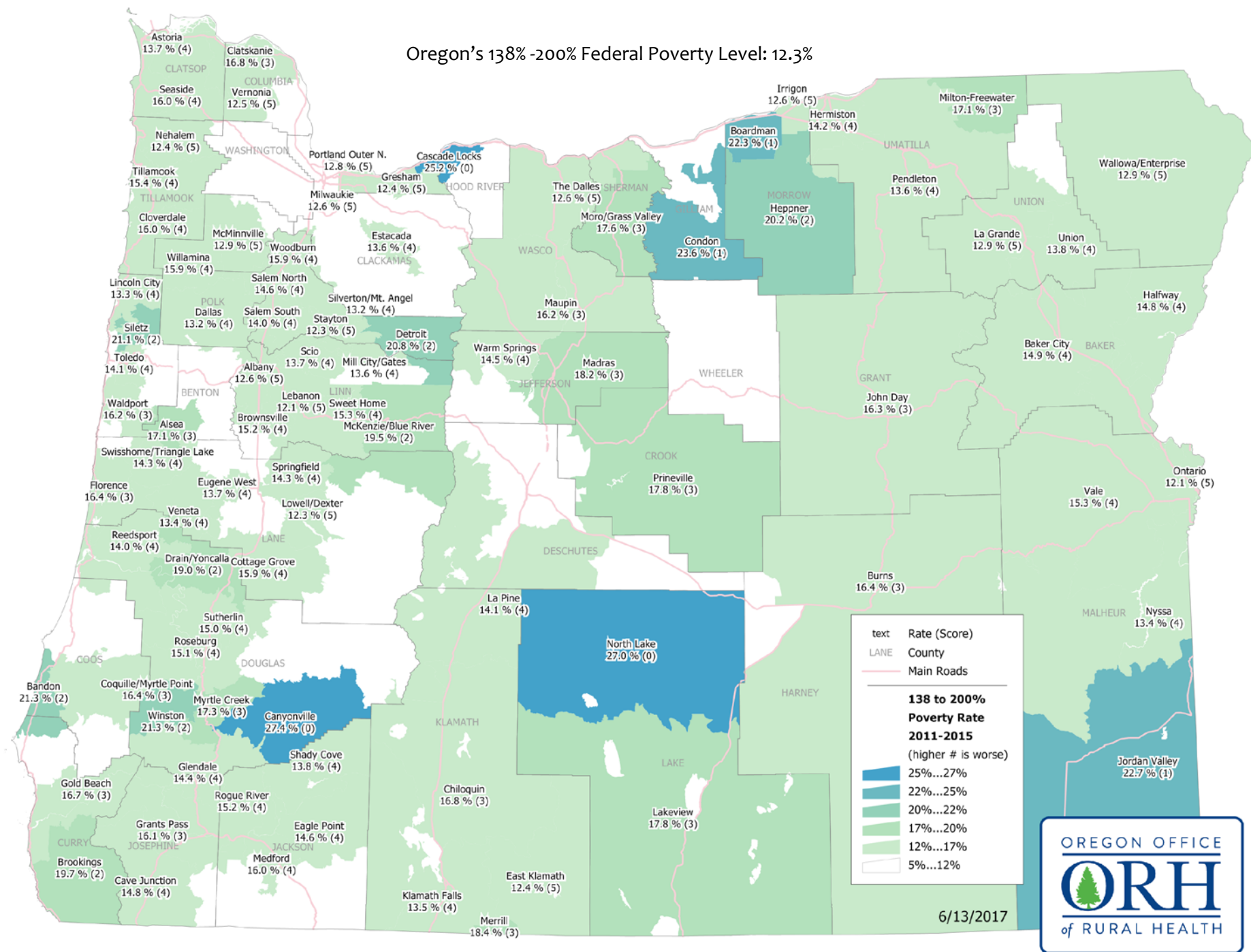
**Overall Results**

Oregon	12.3%
Urban	11.4%
Rural (without Frontier)	13.8%
Rural (including Frontier)	13.9%
Frontier	15.3%

**5 Highest 138-200% Federal Poverty Level Rates**

Canyonville	27%
North Lake	27%
Cascade Locks	25%
Condon	24%
Jordan Valley	23%

Figure 7.  
Service Areas Above Oregon's 138% - 200% Federal Poverty Level Rate



## CATEGORY THREE: UTILIZATION

### 6) AMBULATORY CARE SENSITIVE CONDITIONS/PREVENTABLE HOSPITALIZATIONS PER 1,000 POPULATION

#### Description:

Ambulatory Care Sensitive Conditions (ACSC), also known as preventable hospitalizations, are a set of inpatient discharges that may have been preventable had they been treated with timely and effective primary care. These include common conditions such as asthma, diabetes, hypertension, and pneumonia.

#### Data Sources:

All Oregon hospital inpatient discharges for the latest 3 calendar years (2014-2016) from Apprise Health Insights.

Primary diagnoses filtered using the ACSC ICD-9 and ICD-10 codes introduced and updated by John Billings.<sup>12-13</sup>

Local population: Claritas (2017)

#### Methodology:

$$V_6 = \frac{\text{Average ACSC Discharges per Year} \times 1,000}{\text{Local population}}$$

#### Results:

Oregon has an ACSC rate of 9.1 per 1,000 people. Since only Oregon hospital data is collected, any Oregon residents who go to hospitals in other states are not counted in this calculation. For a few communities near the Oregon border whose closest hospital is in the adjacent state, this means that only part of their hospital usage is captured, and is most likely higher than reported here. This is true for Jordan Valley (0.0), Milton-Freewater (0.4)—the two lowest results—and Brookings (6.8).

<b>Overall Results</b>	<b>Per 1,000 Population</b>
Oregon	9.1
Urban	8.1
Rural (without Frontier)	11.1
Rural (including Frontier)	11.1
Frontier	11.0
<b>5 Highest ACSC Rates</b>	
Warm Springs	22.9
Wallowa/Enterprise	19.7
Reedsport	18.7
Coos Bay	18.3
Port Orford	18.0

<sup>12</sup> Introduced: Billings J., Zeitel L., Lukomnik J., et al. Impact of socioeconomic status on hospital use in New York City. Health Affairs (Spring 1993): 162-173.

<sup>13</sup> Updates available at: <https://wagner.nyu.edu/faculty/billings/acs-algorithm>





## 7) INADEQUATE PRENATAL CARE RATE PER 1,000 BIRTHS

### Description:

Inadequate prenatal care is defined in Oregon as care that began in the third trimester or consisted of less than 5 prenatal visits. In addition to revealing frequency of primary care utilization, low birthweight rates are much higher for women who received inadequate prenatal care.<sup>14</sup>

### Data Sources:

Latest 5 years (2011-2015) of inadequate prenatal care data from Oregon Health Authority Center for Health Statistics.

### Methodology:

$$V_7 = \frac{\text{5 years of inadequate prenatal care births}}{\text{5 years of total births}} \times 1000$$

### Results:

Oregon has an average inadequate prenatal care rate of 54.7 per 1,000 births. Detroit and Moro/Grass Valley have no inadequate prenatal care births in the last 5 years, likely because of the few births that occur there (5 per year in Detroit and 9 per year in Moro/Grass Valley).

	<b>Overall Results</b>	<b>Per 1,000 Births</b>
	Oregon	54.7
	Urban	52.5
	Rural (without Frontier)	56.0
	Rural (including Frontier)	58.7
	Frontier	93.6

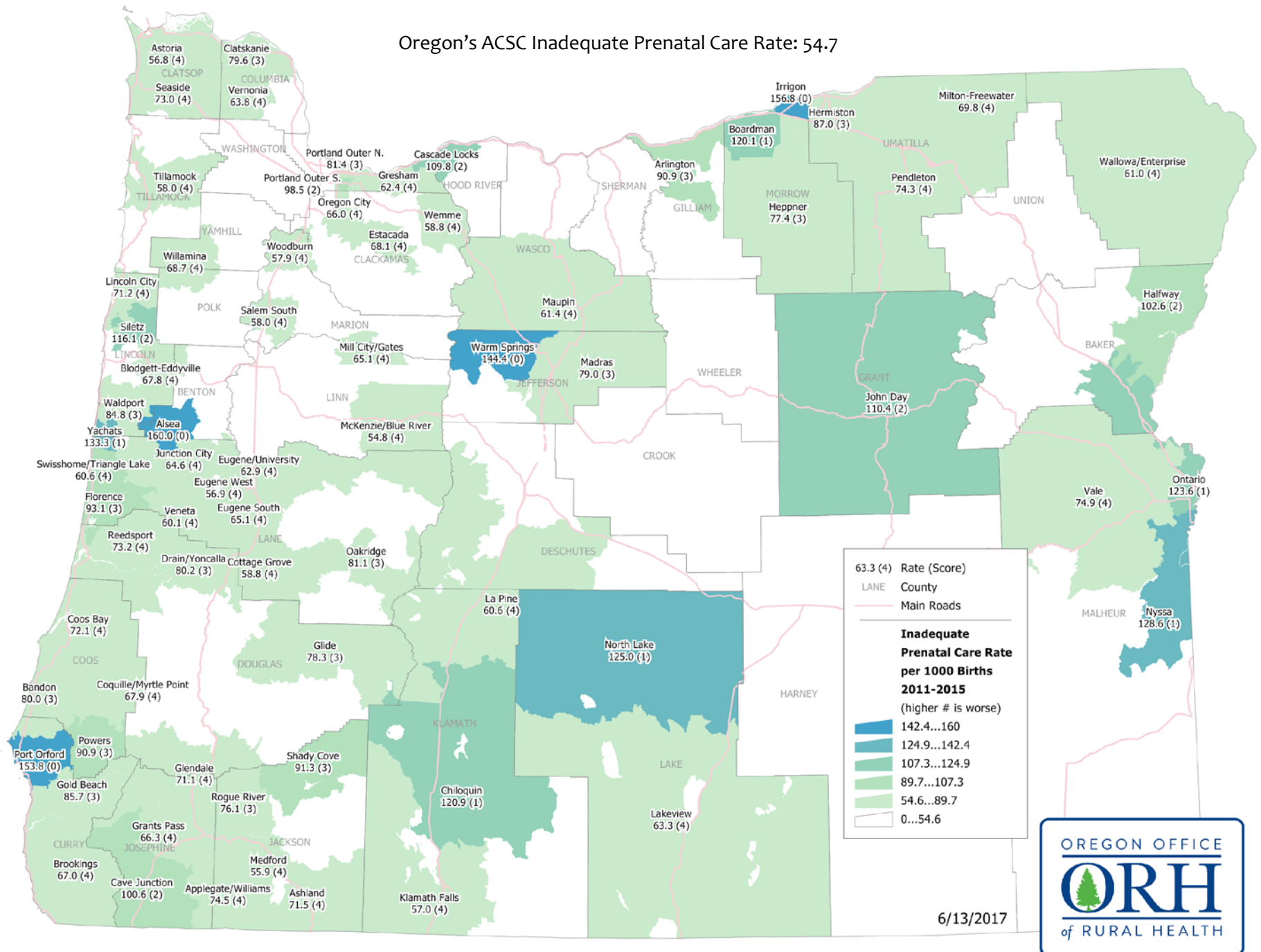
<b>5 Highest Inadequate Prenatal Care Rates</b>		
	Alea	160.0
	Irrigon	156.8
	Port Orford	153.8
	Warm Springs	144.4
	Yachats	133.3

<sup>14</sup> Oregon Vital Statistics Annual Report 2015, Volume 1. Oregon Health Authority, Public Health Division. 2-10

Figure 9.

Service Areas Above Oregon's ACSC Inadequate Prenatal Care Rate Per 1,000 Births

Oregon's ACSC Inadequate Prenatal Care Rate: 54.7



6/13/2017



## 8) EMERGENCY DEPARTMENT NON-TRAUMATIC DENTAL VISITS PER 1,000 POPULATION

### Description:

Visits to the Emergency Department (ED) with a primary diagnosis of dental problems that are not a result of trauma. ED visits for oral health conditions are often a result of limited access to dental care.<sup>15</sup> Most of these visits resulted in opioid and antibiotic prescriptions rather than definitive dental care.<sup>16</sup>

### Data Sources:

All Oregon hospital inpatient and outpatient ED visits for the latest 2 calendar years (2015-2016) from Apprise Health Insights.

Primary diagnoses filtered for non-traumatic dental ICD-9 and ICD-10 codes used in the published article: “Emergency Department Visits for Non traumatic Dental Problems: A Mixed-Methods Study.”<sup>17</sup>

Local population: Claritas (2017)

### Methodology:

$$V_8 = \frac{\text{Per Year Average Non-Traumatic Dental ED Visits} \times 1000}{\text{Local Population}}$$

### Results:

Oregon has an average non-traumatic dental ED visit rate of 4.8 per 1,000 per year. Only Oregon hospital data is collected, so any Oregon residents who go to hospitals in other states are not counted in this calculation. For a few communities near the Oregon border whose closest hospital is in the adjacent state, this means that only part of their hospital usage is captured, and is most likely higher than reported here. This is true for Jordan Valley (0.0), Milton-Freewater (0.2)—the two best results—and Brookings (1.2).

	<b>Overall Results</b>	<b>Per 1,000 Population</b>
	Oregon	4.8
	Urban	4.2
	Rural (without Frontier)	6.0
	Rural (including Frontier)	6.0
	Frontier	5.3
<b>5 Highest ED Dental Visit Rates</b>		
	Warm Springs	19.1
	Cottage Grove	12.9
	Toledo	11.9
	Prineville	11.3
	Madras and Springfield	11.2

<sup>15</sup> Sun BC, Chi DL, Schwarz E, et al. Emergency Department Visits for Non traumatic Dental Problems: A Mixed-Methods Study. *American Journal of Public Health*. 2015;105(5):947-955. doi:10.2105/AJPH.2014.302398.

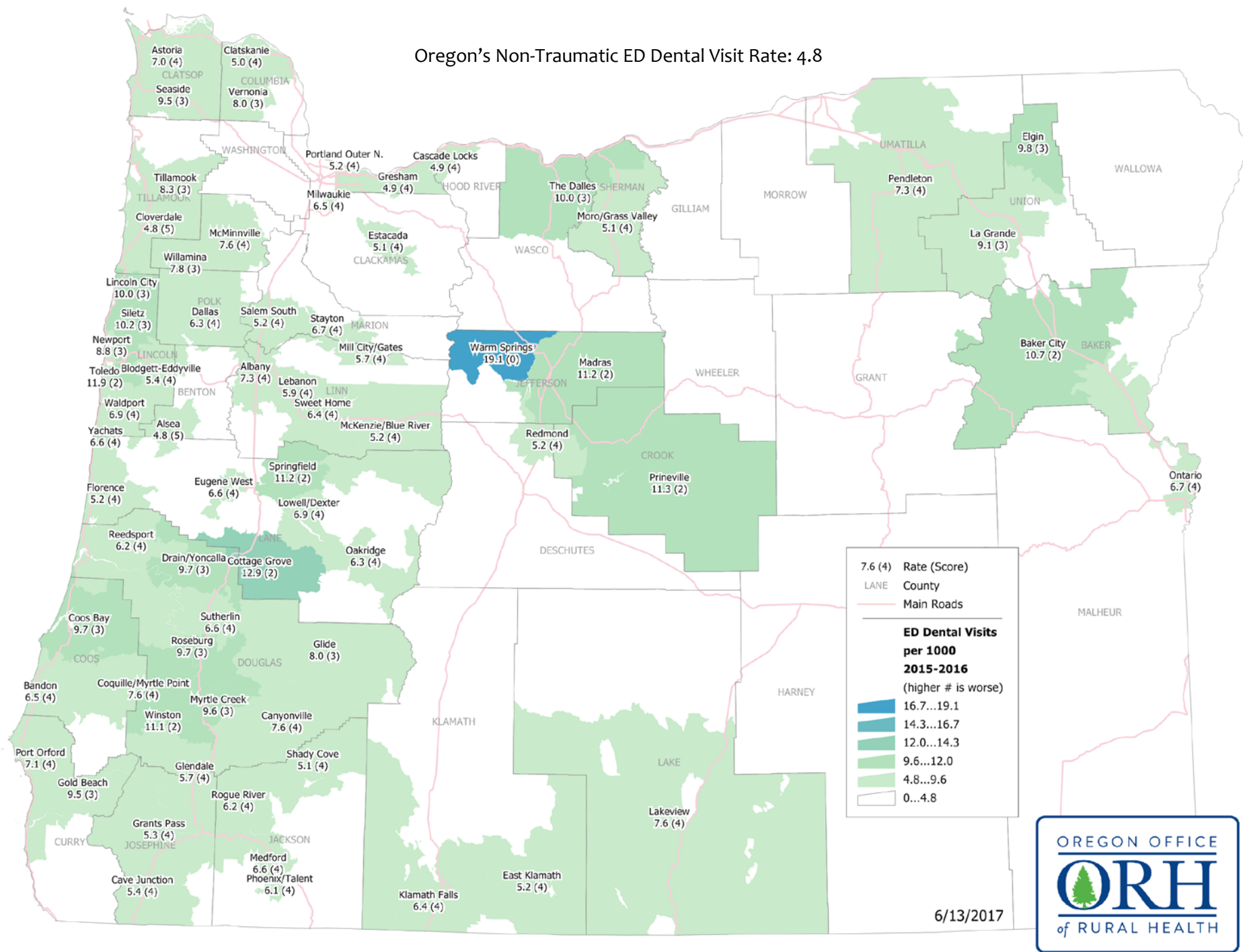
<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

Figure 10.

Service Areas Above Oregon's Non-Traumatic Emergency Department Dental Visit Rate Per 1,000 Population

Oregon's Non-Traumatic ED Dental Visit Rate: 4.8



6/13/2017



## 9) EMERGENCY DEPARTMENT MENTAL HEALTH/SUBSTANCE ABUSE VISITS PER 1,000 POPULATION

### Description:

Visits to the Emergency Department (ED) with a primary diagnosis of mood disorders, anxiety, alcohol, drug use, and schizophrenia and other psychoses. ED visits for Mental Health/Substance Abuse (MHSA) conditions are potentially preventable with adequate primary care.<sup>18</sup> They are twice as likely to result in a hospital admission<sup>19</sup>, and the increasing rate of MHSA ED visits in the past few years is highest among low-income populations.<sup>20</sup>

### Data Sources:

All Oregon hospital inpatient and outpatient ED visits for the latest 2 calendar years (2015-2016) from Apprise Health Insights.

Primary diagnoses filtered for the top 5 mental health diagnosis grouping codes (ICD-9 and ICD-10)<sup>21</sup>

Local population: Claritas (2017)

### Methodology:

$$V_9 = \frac{\text{Per Year Average ED Mental Health/Substance Abuse Visits} \times 1000}{\text{Local Population}}$$

### Results:

Oregon has an average mental health/substance abuse ED visit rate of 15.6 per 1,000 population per year. This is the only variable where urban areas do worse than rural areas. Only Oregon hospital data is collected. For communities near the Oregon border, only part of their hospital usage is captured, and is most likely higher. This is true for Jordan Valley (4.1), Milton-Freewater (0.5), and Brookings (10.1).

Overall Results	Per 1,000 Population
Oregon	15.6
Urban	16.4
Rural (without Frontier)	14.3
Rural (including Frontier)	14.1
Frontier	10.9
<b>5 Highest ED MHSA Rates</b>	
Portland Downtown	52.4
Warm Springs	43.1
Seaside	26.4
Coos Bay	25.5
Portland Outer South	24.1

<sup>18</sup> Rockett IRH, Putnam SL, Jia H, Chang C, Smith GS. Unmet substance abuse treatment need, health services utilization, and cost: a population-based emergency department study. *Annals of Emergency Medicine*. 2005; 45(2):118–27.

<sup>19</sup> Owens PL, Mutter R, Stocks C. Mental Health and Substance Abuse-Related Emergency Department Visits Among Adults, 2007. HCUP Statistical Brief #92. July 2010. Agency for Healthcare Research and Quality, Rockville, MD.

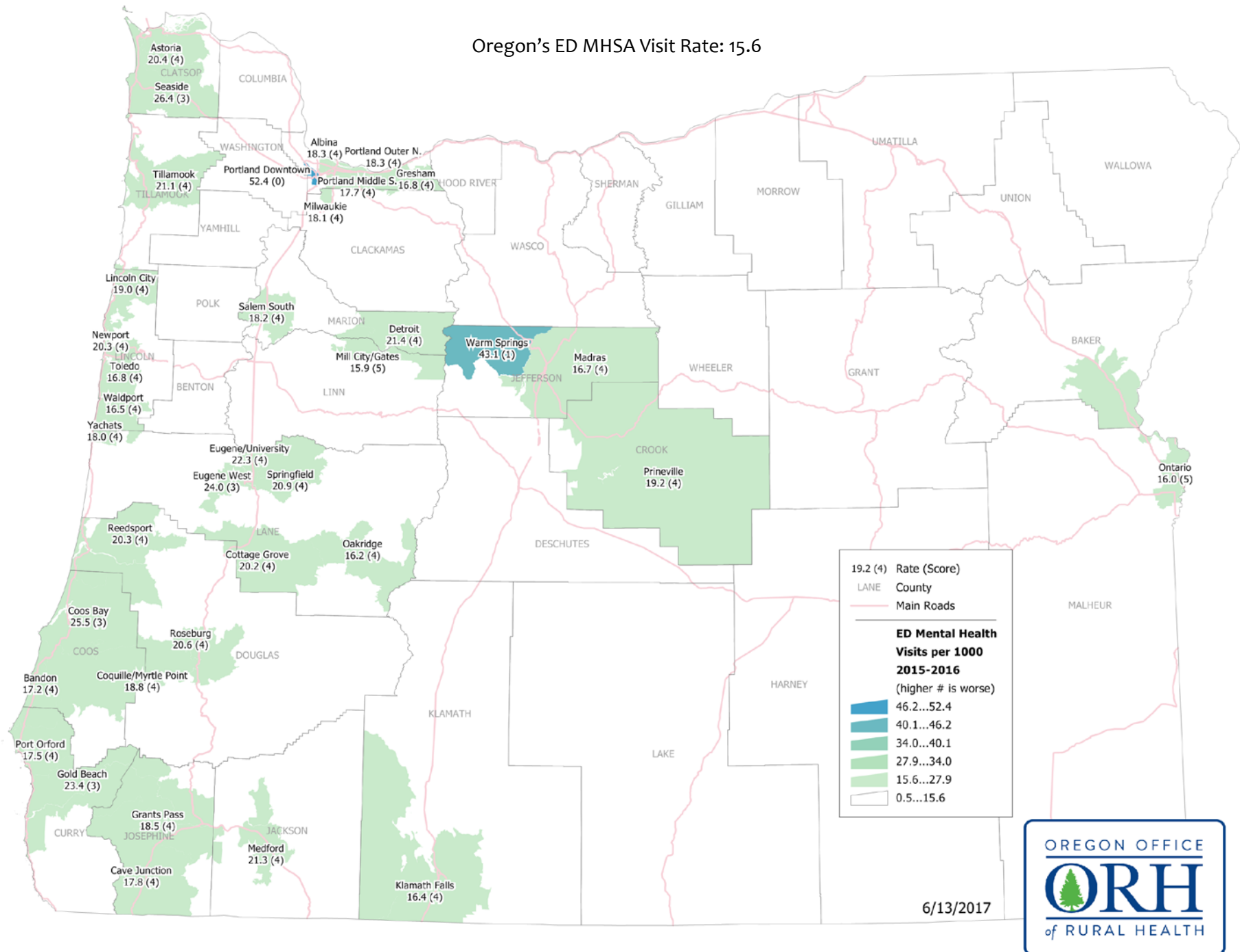
<sup>20</sup> Weiss AJ, Barrett ML, Heslin KC, Stocks C. Trends in Emergency Department Visits Involving Mental and Substance Use Disorders, 2006–2013. HCUP Statistical Brief #216. 2016. Agency for Healthcare Research and Quality, Rockville, MD.

<sup>21</sup> Owens PL, et al. Mental Health and Substance Abuse-Related Emergency Department Visits Among Adults, 2007.

Figure 11.

Service areas Above Oregon's Emergency Department Mental Health/Substance Abuse Visit Rate Per 1,000 Population

Oregon's ED MHSa Visit Rate: 15.6



## TOTAL SCORES

### Methodology:

A score of between 0 (worst) and 10 (best) is calculated for each of the variables, depending on the variances of the lowest and highest numbers from the mean. The scores are then added together to produce a final Unmet Need Total Score:

$$V_1 + V_2 + V_3 + V_4 + V_5 + V_6 + V_7 + V_8 + V_9 = \text{Unmet Need Total Score (0 to 90)}$$

### Results:

The highest scoring primary care service area is Portland West (68 out of 90), and the highest scoring rural service area is Hood River (66). Drain/Yoncalla has the lowest score of 19. Only 4 (15.3%) of the state's 26 urban areas fall below the mean total score of 41.1. The other 69 areas below the mean comprise 66.3% of all (104) rural service areas. Only 3 (20%) of the top 15 performing service areas are rural.

One caveat about the ranking is that 3 of the 9 variables utilize hospital data from Oregon facilities only. Three rural service areas—Brookings, Jordan Valley, and Milton-Freewater—mostly use hospitals that are located in adjacent states, so their visit numbers for these variables are incomplete and give the impression that they are in better shape than reality. Their respective total scores (49, 38, and 44) should be interpreted with this in mind.

#### Mean (Average) Score by Geographic Area

Oregon	41.1
Urban	52
Rural (without Frontier)	37.9
Rural (including Frontier)	38.3
Frontier	40.4

#### Top 10 Areas With the Lowest Total Unmet Need Scores

Drain/Yoncalla	19
Cascade Locks	20
North Lake	22
Oakridge	23
Cottage Grove	26
Glendale	26
Glide	27
Waldport	28
Warm Springs	28
Yachats	28
Clatskanie	28