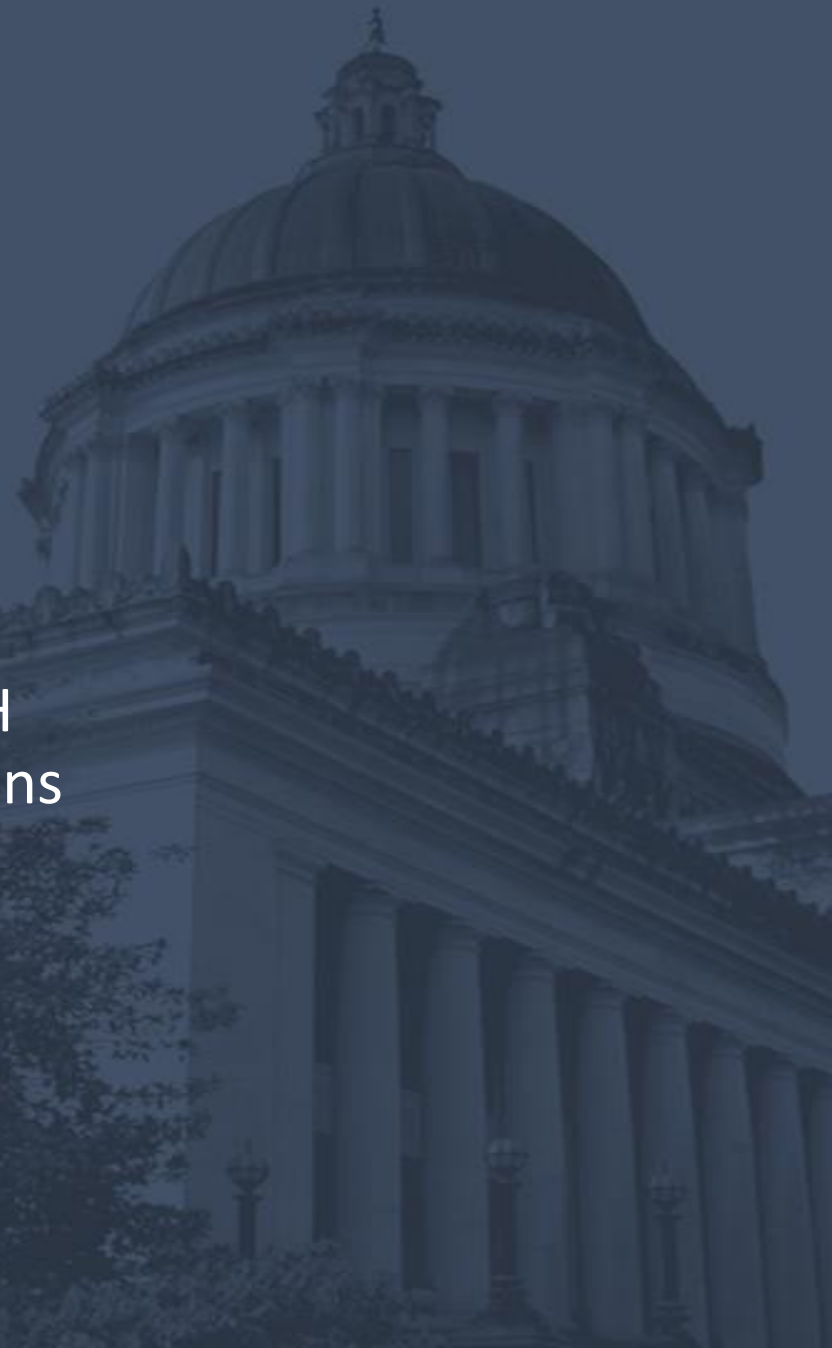
October 30, 2018

Rural Health and the Role of Critical Access Hospitals

An assessment of need, access and utilization of CAH services in small town, rural and isolated RUCA regions



OFM

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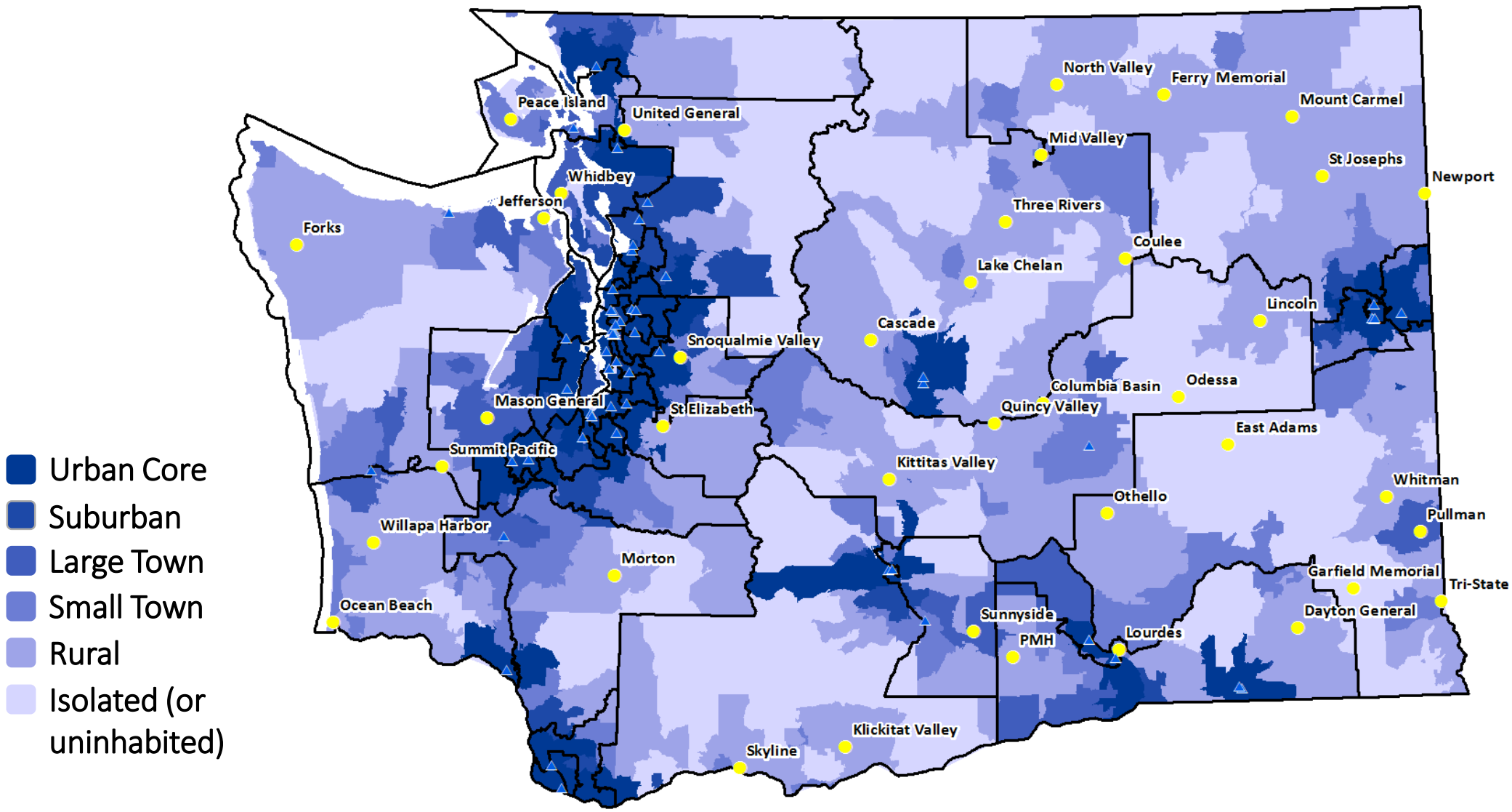
FOR TODAY…

- Identify at-risk communities – from isolated rural to urban core regions
- Assess the evolution of communities' dependence on CAHs for inpatient and emergency department services
- Highlight the potential geographic versus economic access conflicts due to Medicare reimbursement policies
- Examine the variance in location requirements and the resultant completion among some CAHs

RUCA with Acute and Critical Access Hospitals

Source: Rural Health Research Center (UW)



Health Care Research Center
Forecasting & Research, OFM
October 30, 2018

AT-RISK COMMUNITIES

Isolated Rural to Urban Core

AT THE INTERSECTION OF HEALTH, HEALTH CARE, AND POLICY

Health Affairs

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WEB FIRST

DOI: 10.1377/hlthaff.2011.0851
HEALTH AFFAIRS 31,
NO. 9 (2012): 2114–2122

By Ellen Nolte and C. Martin McKee

In Amenable Mortality—Deaths Avoidable Through Health Care—Progress In The US Lags That Of Three European Countries

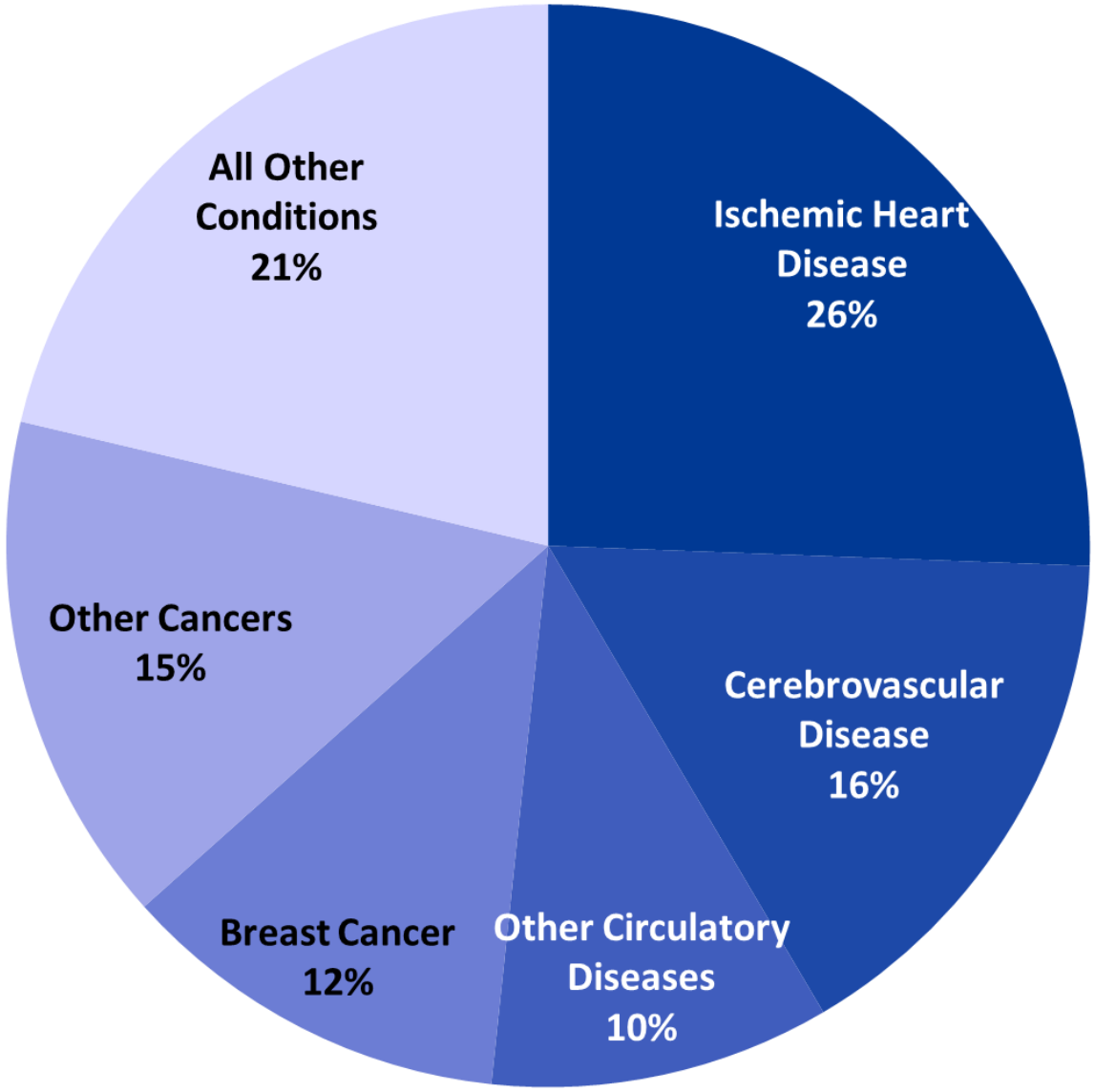
Ellen Nolte (Ellen_Nolte@rand.org) is director of the Health and Healthcare policy program at RAND Europe, in Cambridge, England.

C. Martin McKee is a professor of European public health at the London School of Hygiene and Tropical Medicine, in England.

ABSTRACT We examined trends and patterns of amenable mortality—deaths that should not occur in the presence of timely and effective health care—in the United States compared to those in France, Germany, and the United Kingdom between 1999 and 2007. Americans under age sixty-five during this period had elevated rates of amenable mortality compared to their peers in Europe. For Americans over age sixty-five, declines in amenable mortality slowed relative to their peers in Europe. Overall, amenable mortality rates among men from 1999 to 2007 fell by only 18.5 percent in the United States compared to 36.9 percent in the United Kingdom. Among women, the rates fell by 17.5 percent and 31.9 percent, respectively. Although US men and women had the lowest mortality from treatable cancers among the four countries, deaths from circulatory conditions—chiefly cerebrovascular disease and hypertension—were the main reason amenable death rates remained relatively high in the United States. These findings strengthen the case for reforms that will enable all Americans to receive timely and effective health care.

Health Care Amenable Deaths by Category, Ages 0-75, 2015-16

Source: Washington State Vital Statistics



Health Care Amenable Deaths

Cause of death considered amenable to health care	Age	ICD-10
Infectious diseases		
Intestinal infections	0-14	A00-9
Tuberculosis	0-74	A15-9, B90
Other infections (diphtheria, tetanus, septicemia, poliomyelitis)	0-74	A36, A35, A80
Whooping cough	0-14	A37
Measles	1-14	B05
Cancers		
Malignant neoplasm of colon and rectum	0-74	C18-21
Malignant neoplasm of skin	0-74	C44
Malignant neoplasm of breast	0-74	C50
Malignant neoplasm of cervix uteri	0-74	C53
Malignant neoplasm of corpus uteri and body of uterus	0-44	C54, C55
Malignant neoplasm of testis	0-74	C62
Hodgkin's disease	0-74	C81
Leukemia	0-44	C91-5
Diabetes	0-49	E10-4
Ischemic heart disease: 50% of deaths	0-74	I20-5
Other circulatory disease		
Chronic rheumatic heart disease	0-74	I05-9
Hypertensive disease	0-74	I10-3, I15
Cerebrovascular disease	0-74	I60-9

Health Care Amenable Deaths (continued)

Cause of death considered amenable to health care	Age	ICD-10
Respiratory disease		
All respiratory diseases (excl. pneumonia, influenza)	1-14	J00-9, J20-99
Influenza	0-74	J10-1
Pneumonia	0-74	J12-8
Surgical conditions		
Peptic ulcer	0-74	K25-7
Appendicitis	0-74	K35-8
Abdominal hernia	0-74	K40-6
Cholelithiasis and cholecystitis	0-74	K80-1
Nephritis and nephrosis	0-74	N00-7, N17-9, N25-7
Benign prostatic hyperplasia	0-74	N40
Misadventures to patients	0-74	E870-6, E878-9, Y60-9, Y83-4
Maternal, congenital and perinatal conditions		
Maternal death	0-74	O00-99
Congenital cardiovascular anomalies	0-74	Q20-8
Perinatal deaths, all causes, excluding stillbirths	0-74	P00-96, A33
Other conditions		
Diseases of the thyroid	0-74	E00-7
Epilepsy	0-74	G40-1

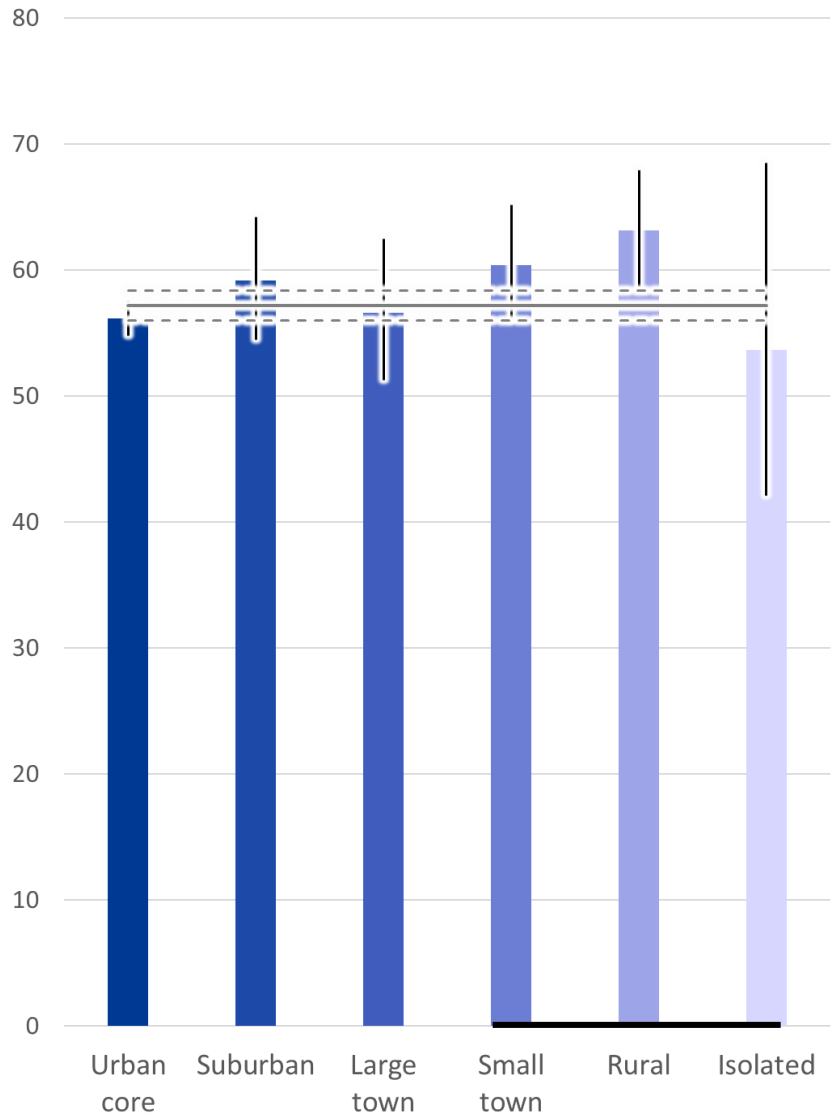
Source: Nolte E, McKee CM. In amenable mortality — deaths avoidable through health care — progress: the US lags that of three European countries. Health Aff (Millwood). 2012;31(9).
Published online Aug. 29, 2012

Preventable, screenable, treatable

Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

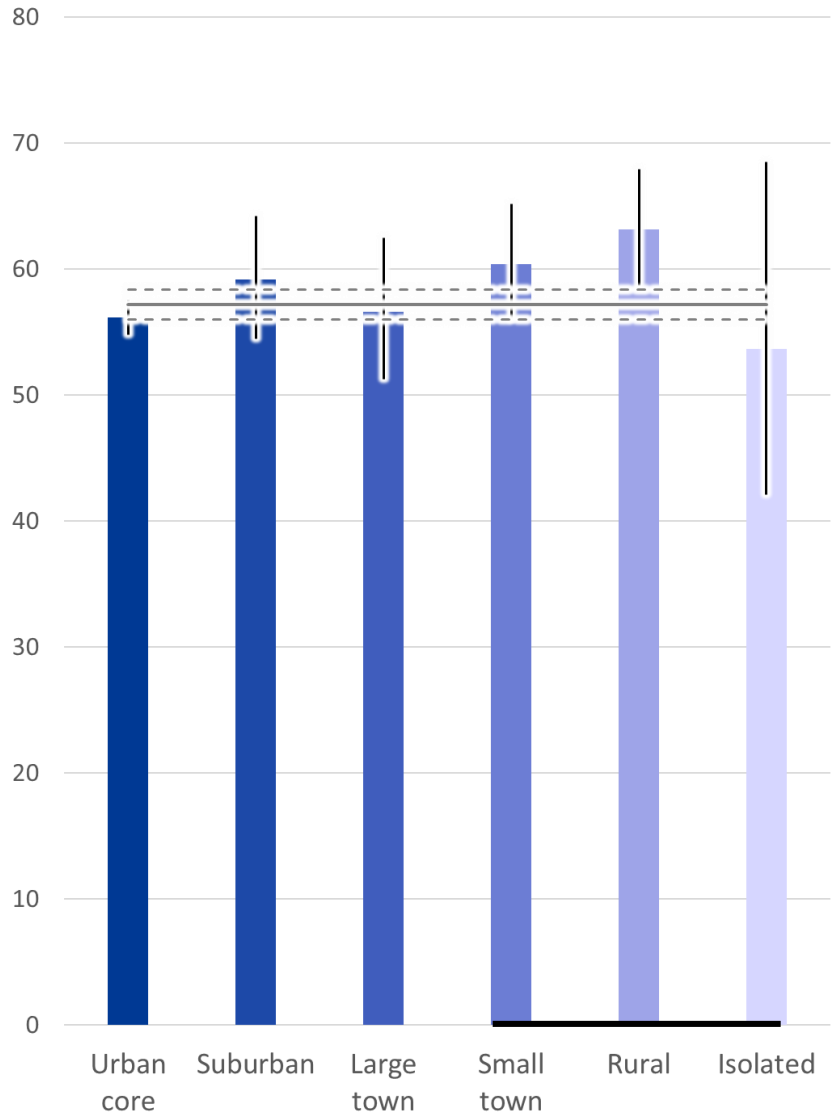
Age-adjusted to account for differences in the age distribution of the various RUCA population groups.



Limited to those ages 0 to 75 – not because those over age 75 aren't important, but because it is difficult to differentiate health care amenable deaths from naturally occurring ones among those in the older old populations.

Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

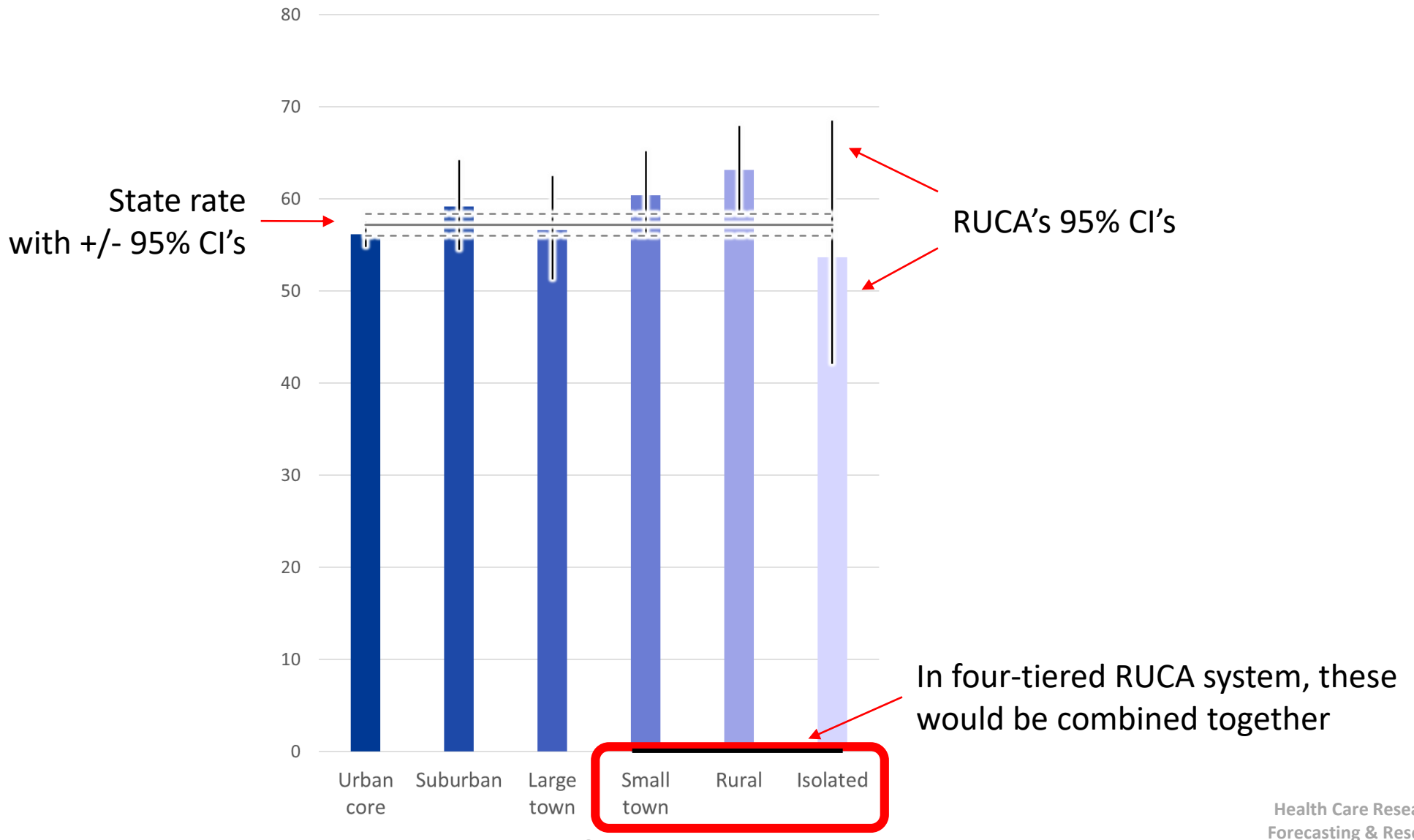


"Equity is the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically."

– World Health Organization

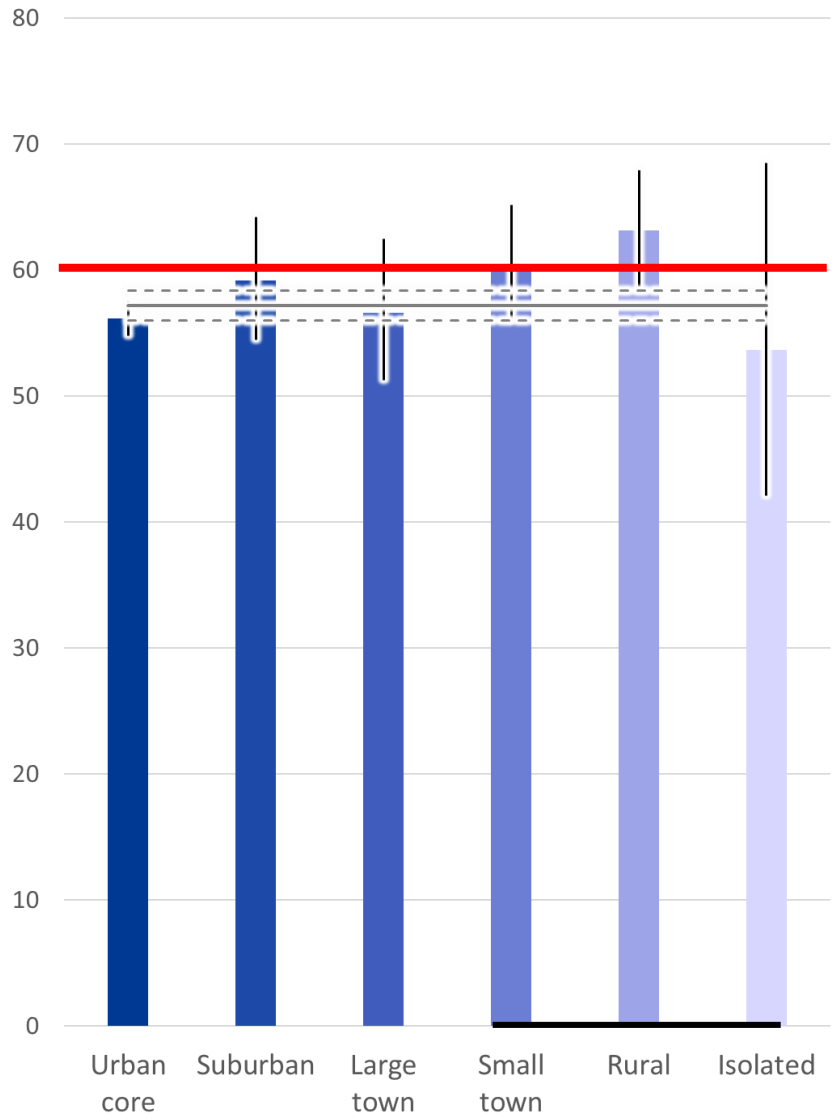
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics



Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics



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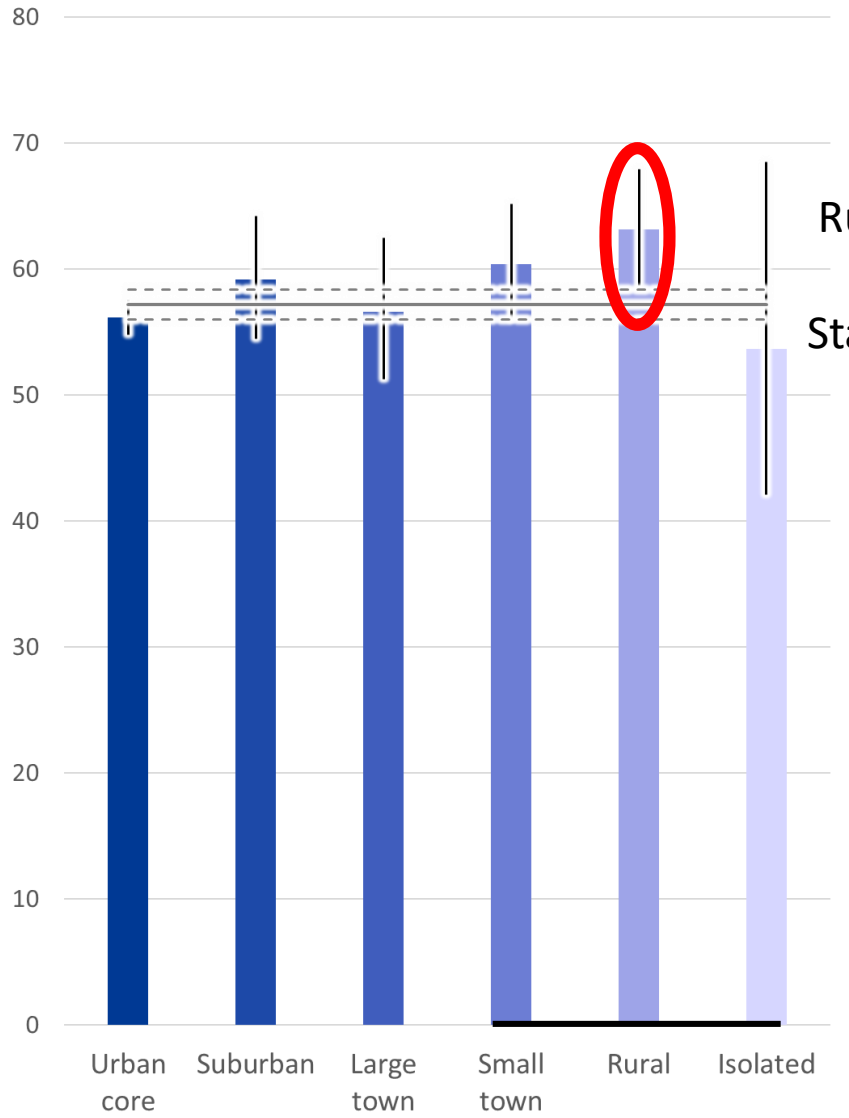
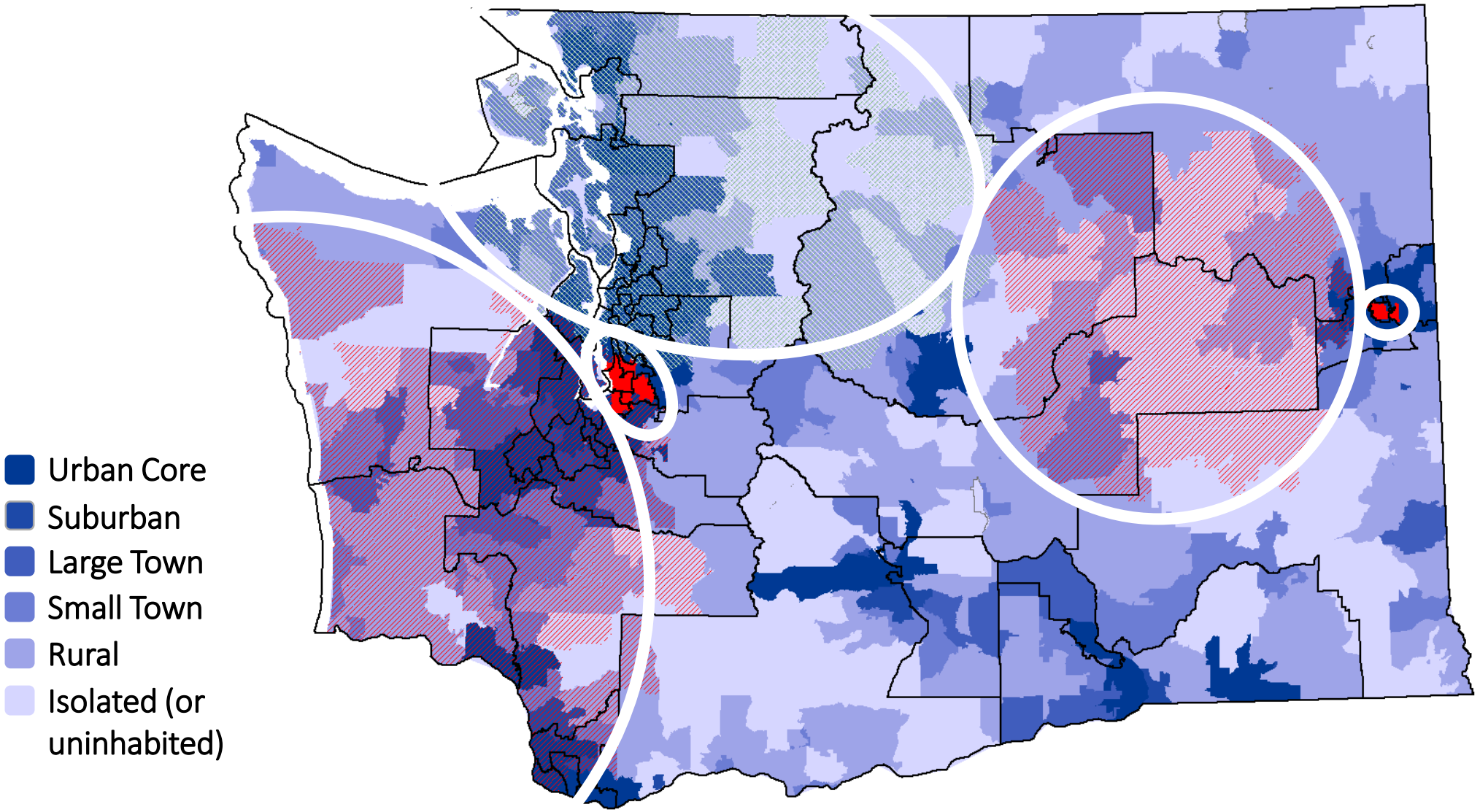


Rural RUCA=63.1; **ci low=58.7** ci high=67.9

State rate= 57.2; ci low=56.0 **ci high=58.4**

Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

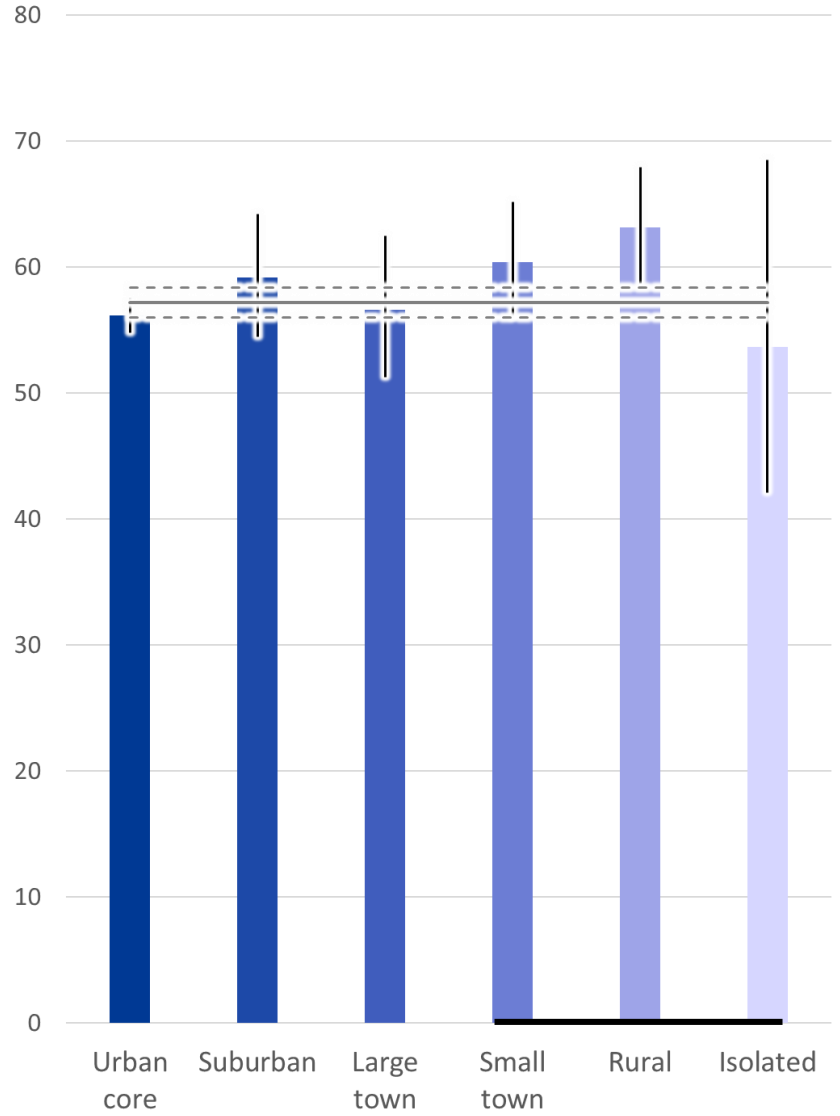
Source: Washington State Vital Statistics



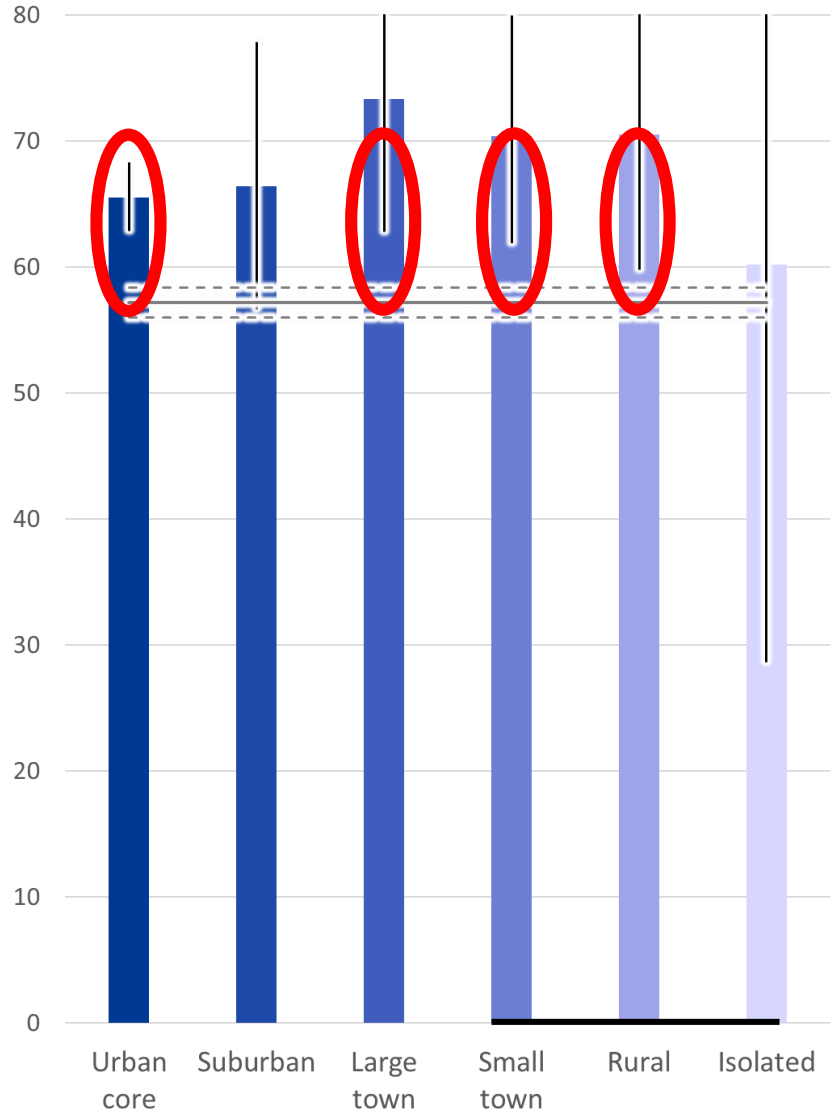
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

Statewide



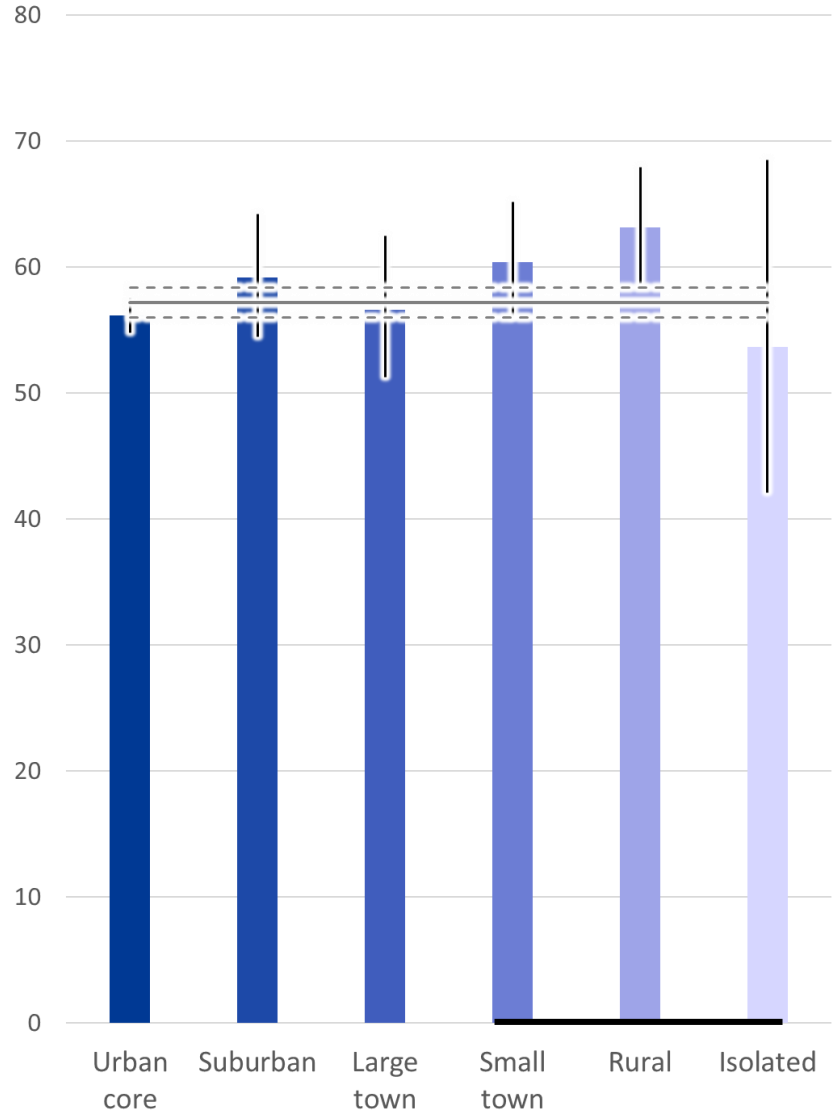
Southwest cluster only



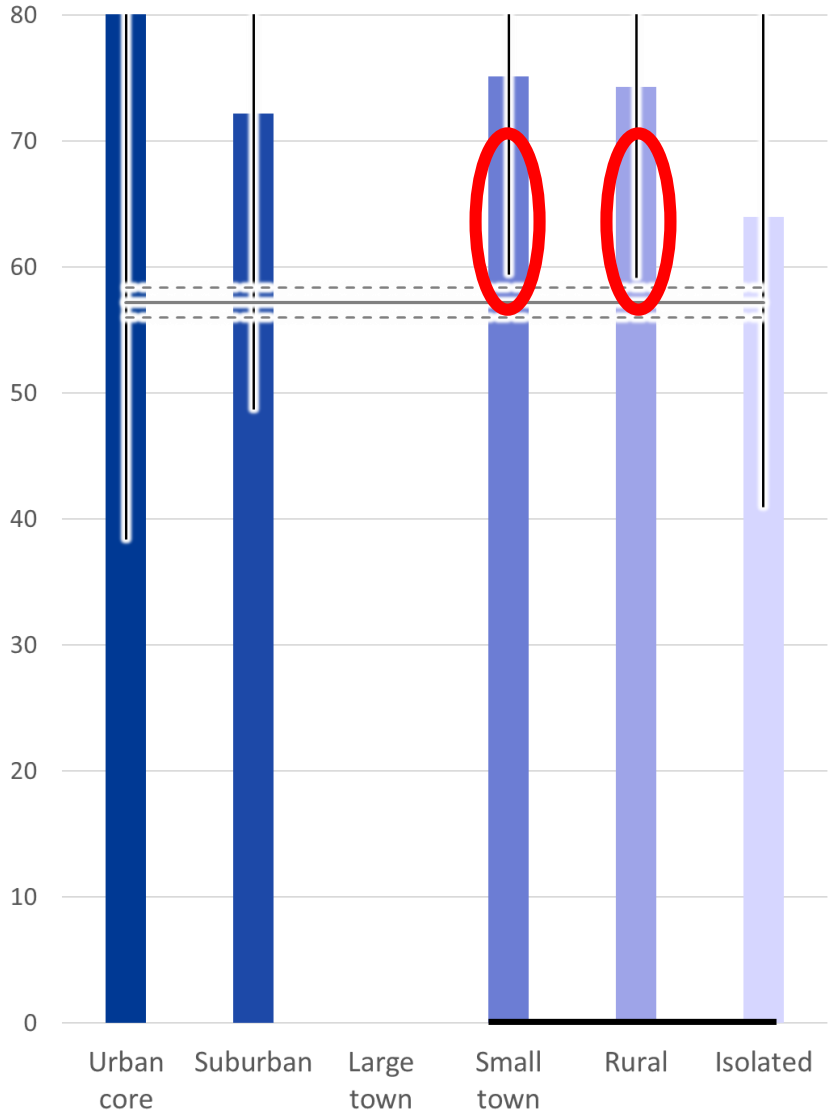
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

Statewide

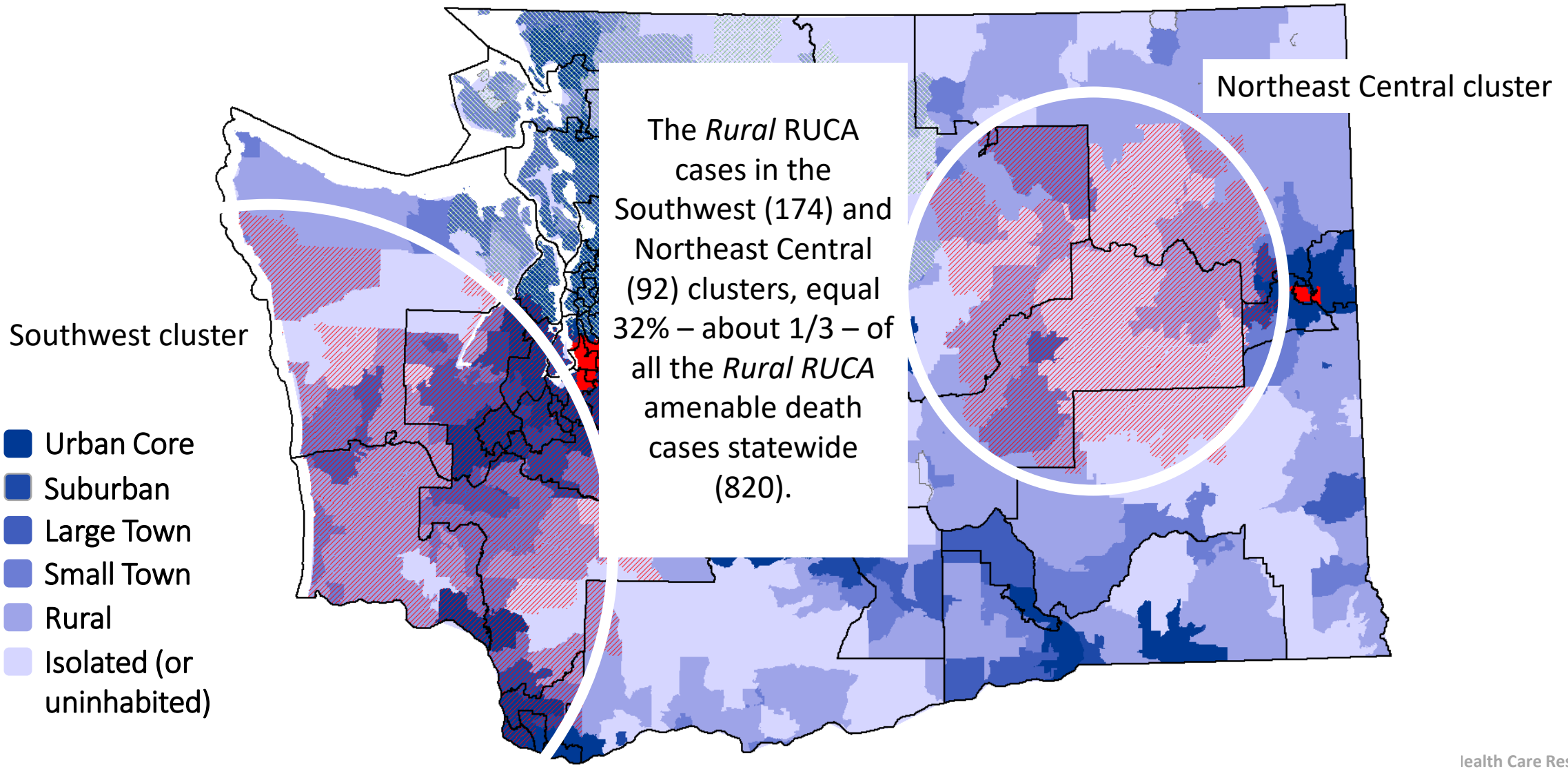


Northeast Central cluster only



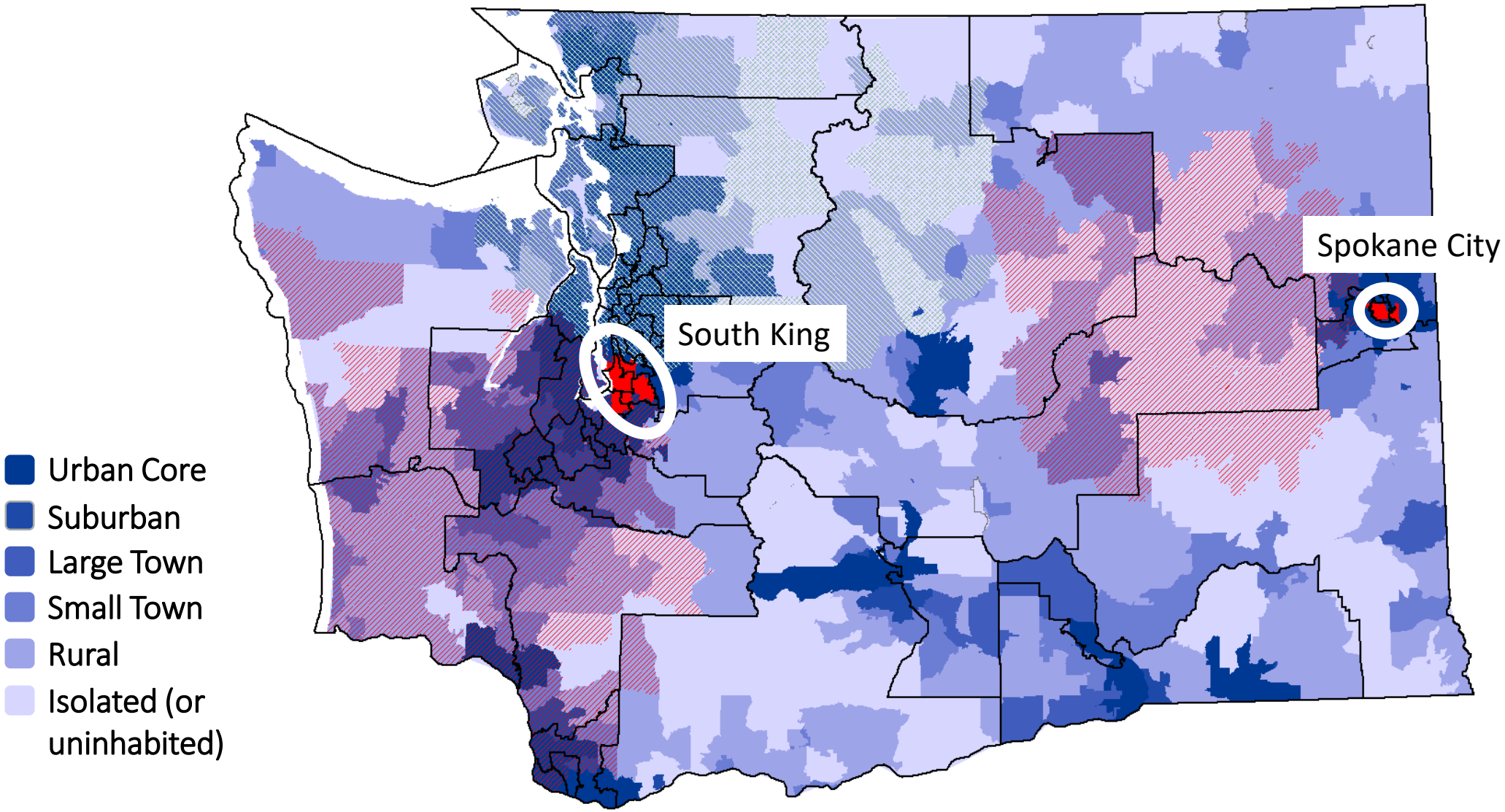
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics



Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

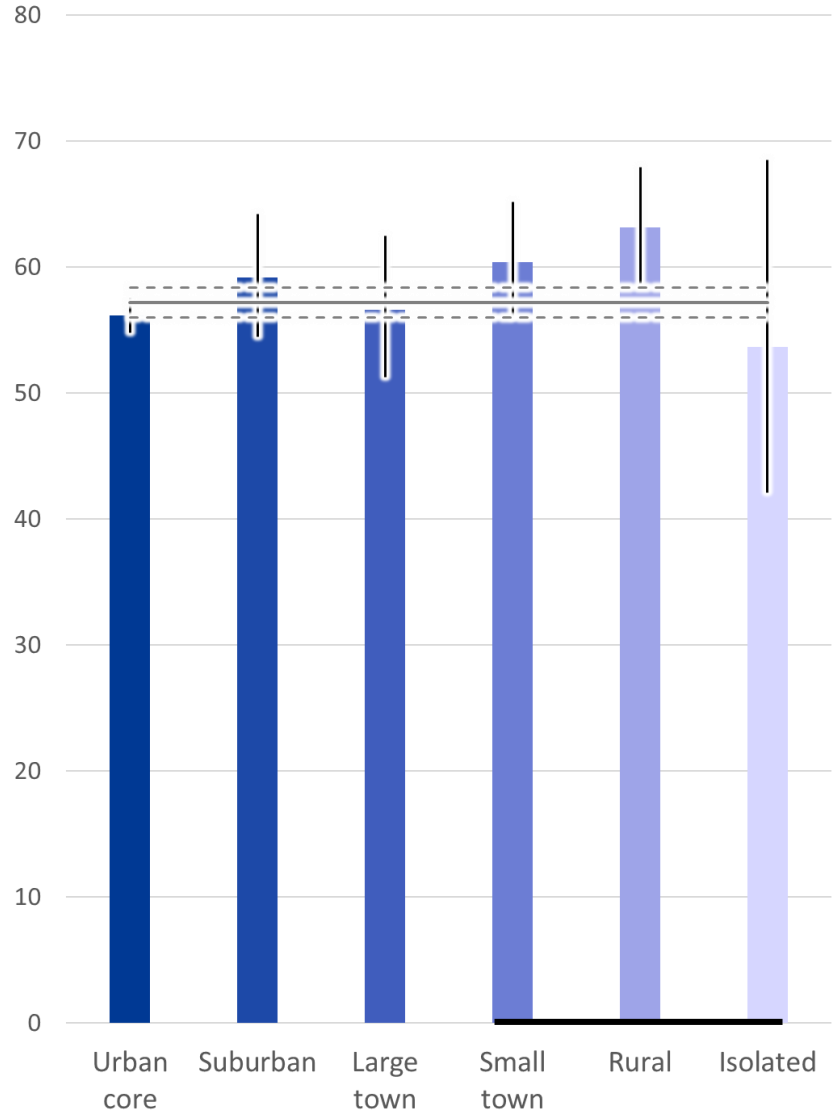
Source: Washington State Vital Statistics



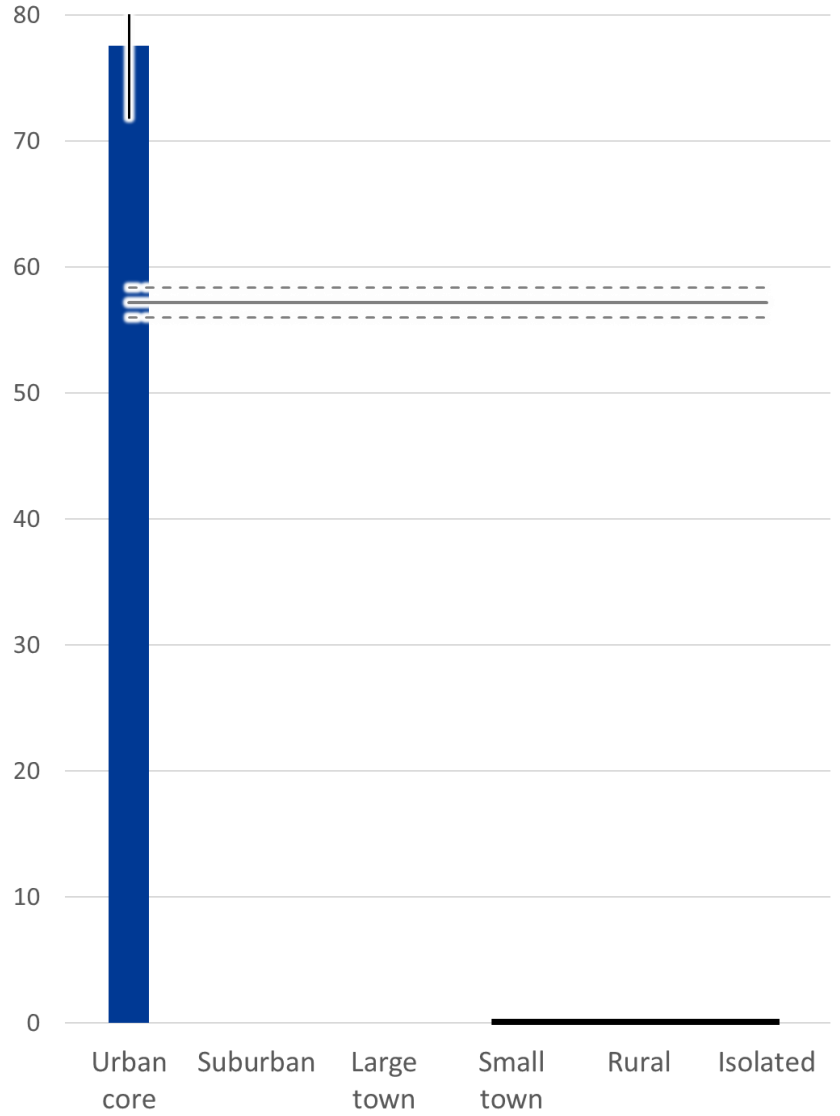
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

Statewide



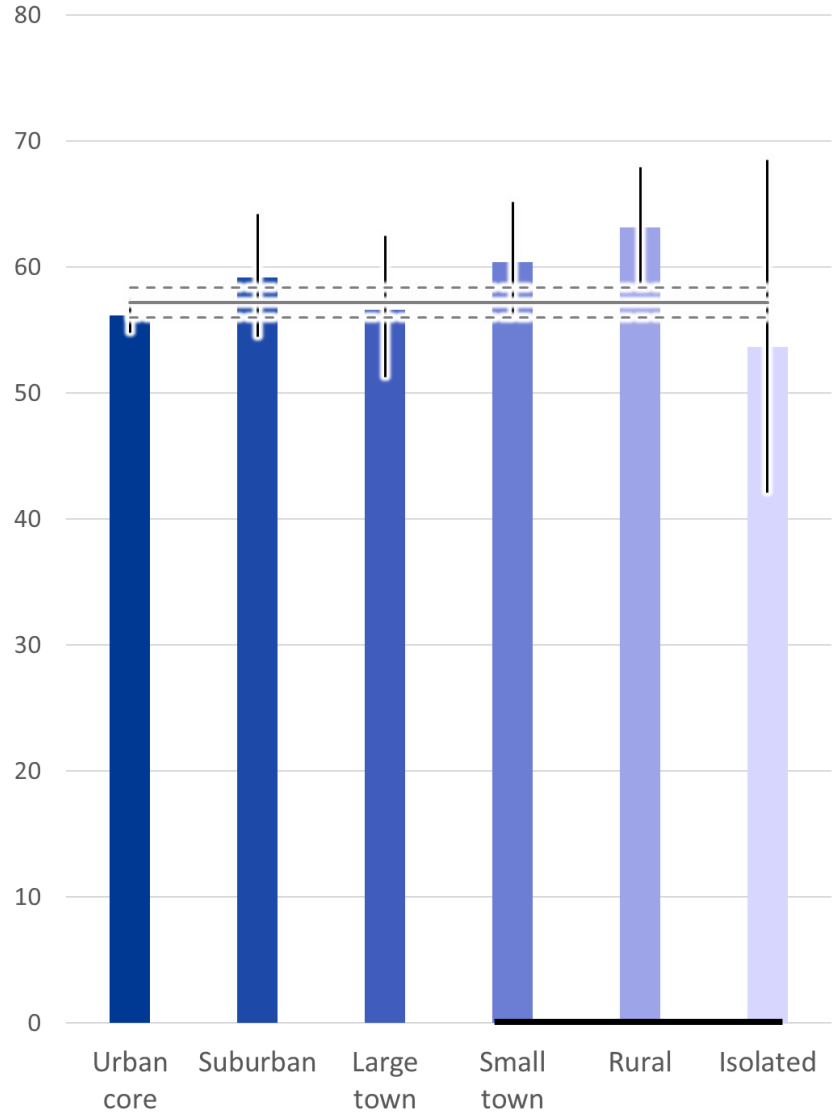
South King cluster only



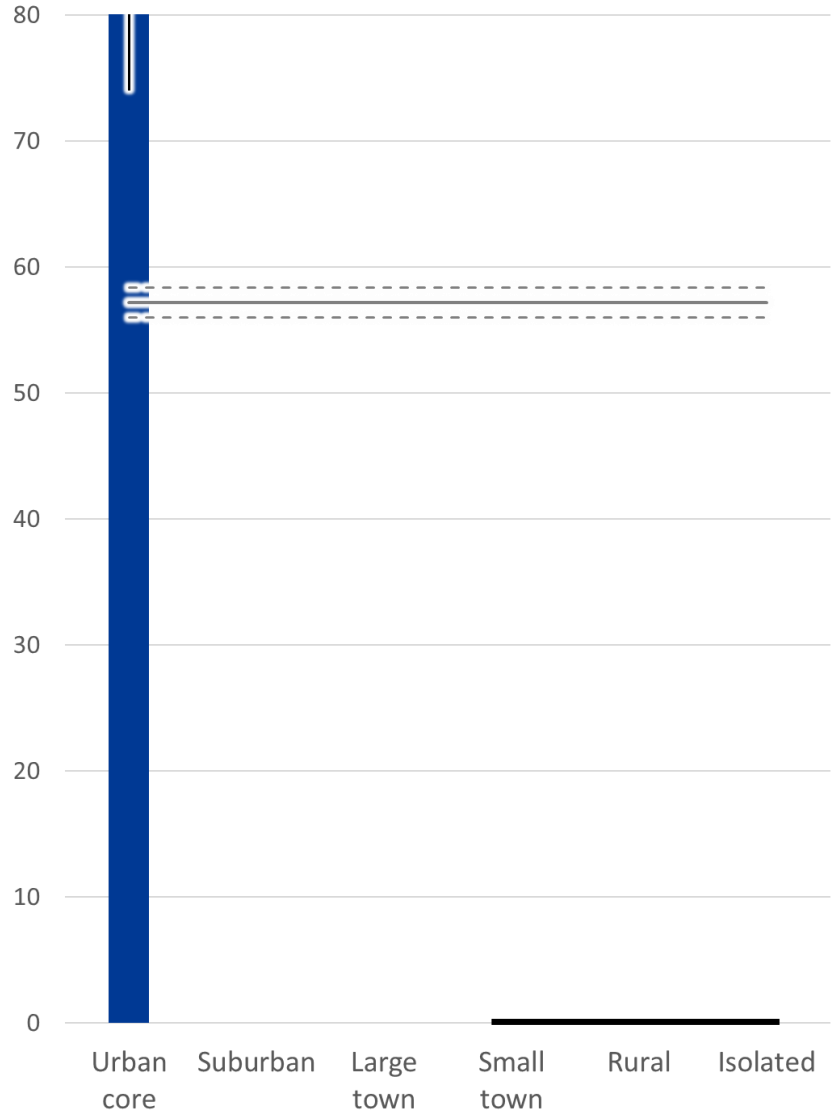
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

Statewide

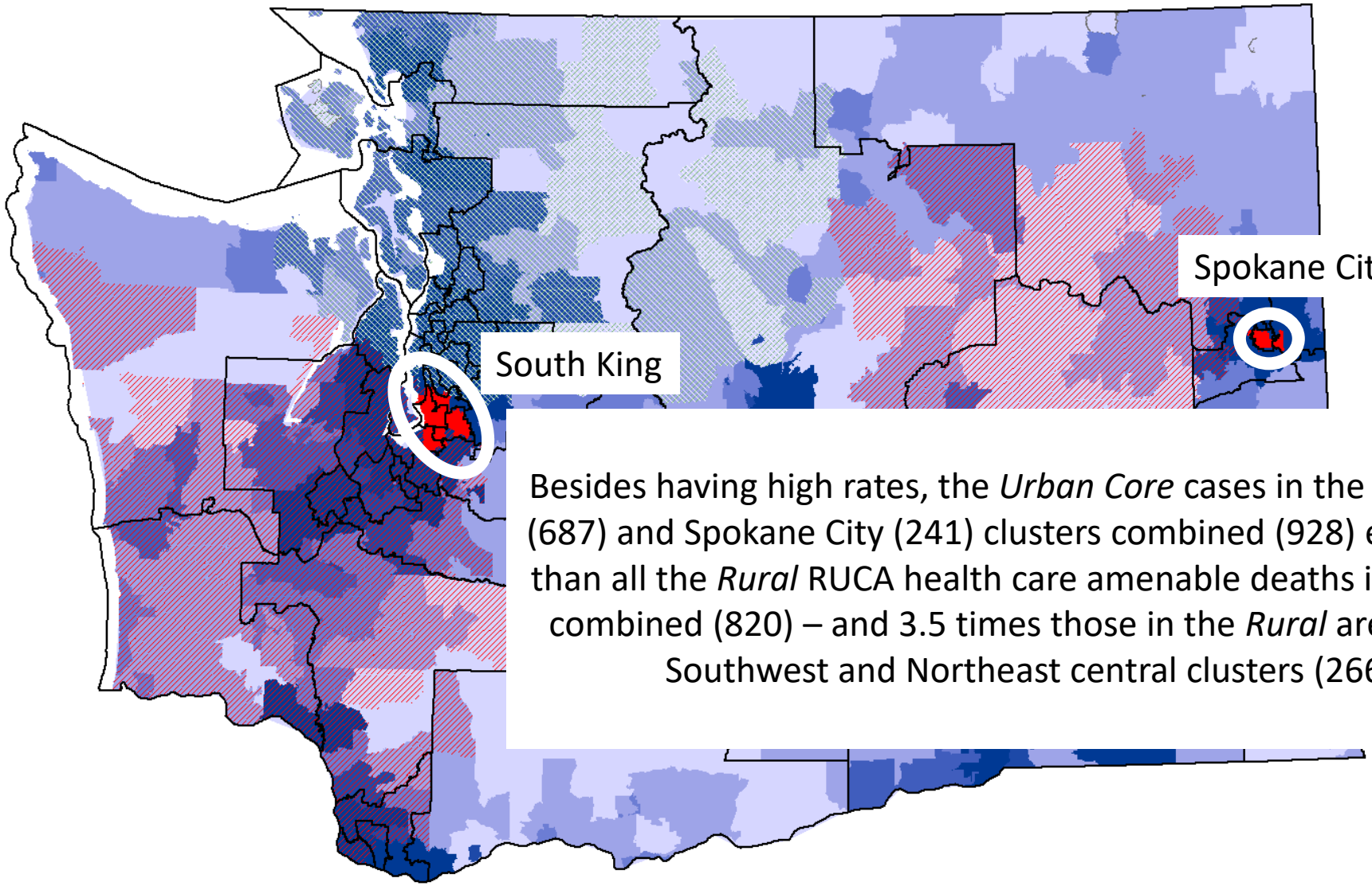


Spokane City cluster only



Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

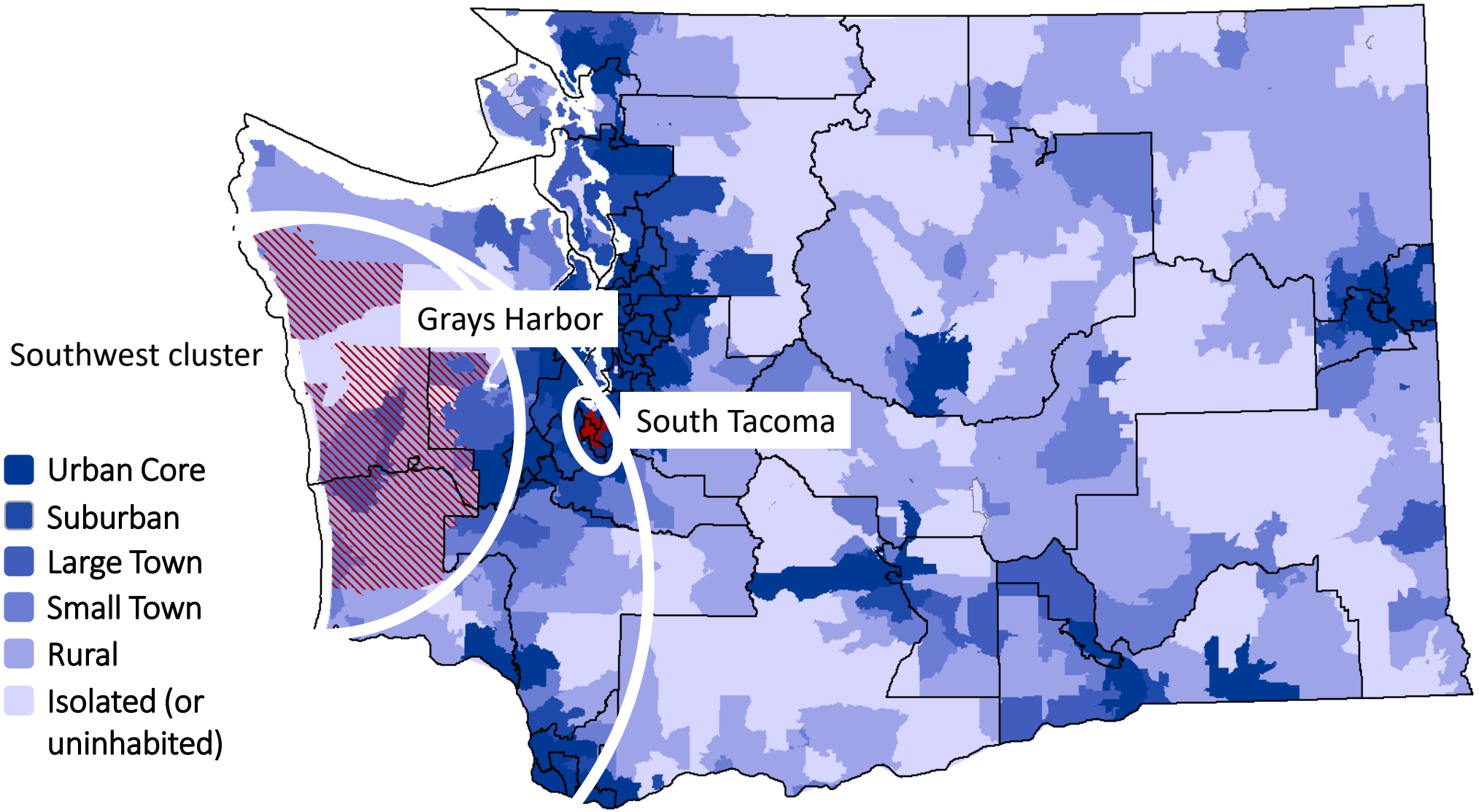
Source: Washington State Vital Statistics



Besides having high rates, the *Urban Core* cases in the South King (687) and Spokane City (241) clusters combined (928) equal more than all the *Rural* RUCA health care amenable deaths in the state combined (820) – and 3.5 times those in the *Rural* areas of the Southwest and Northeast central clusters (266).

Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics



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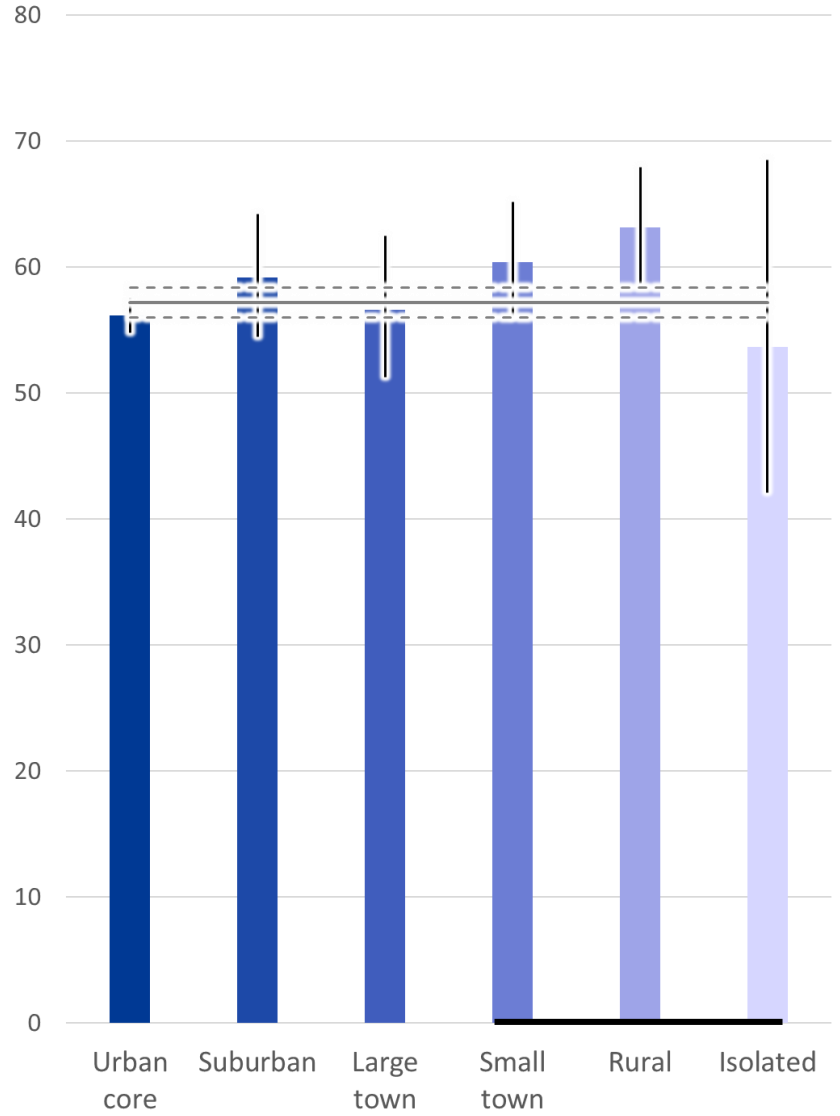
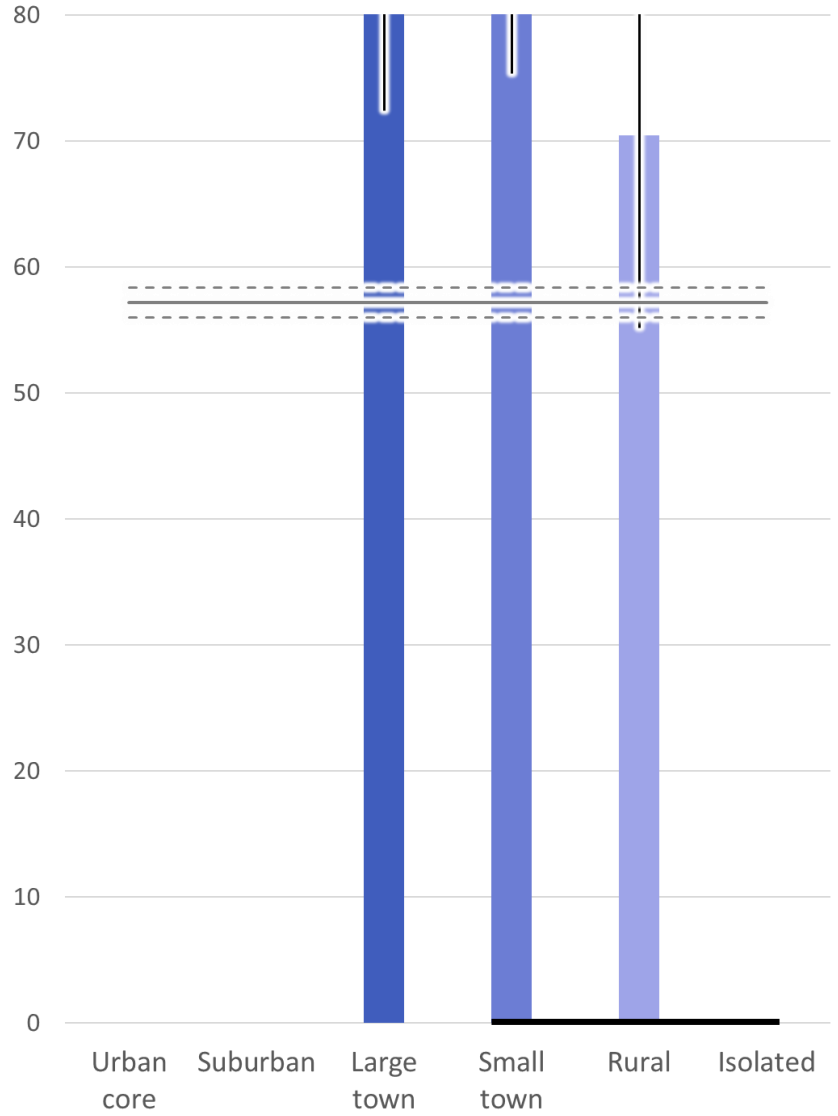
Source: Washington State Vital Statistics

Statewide



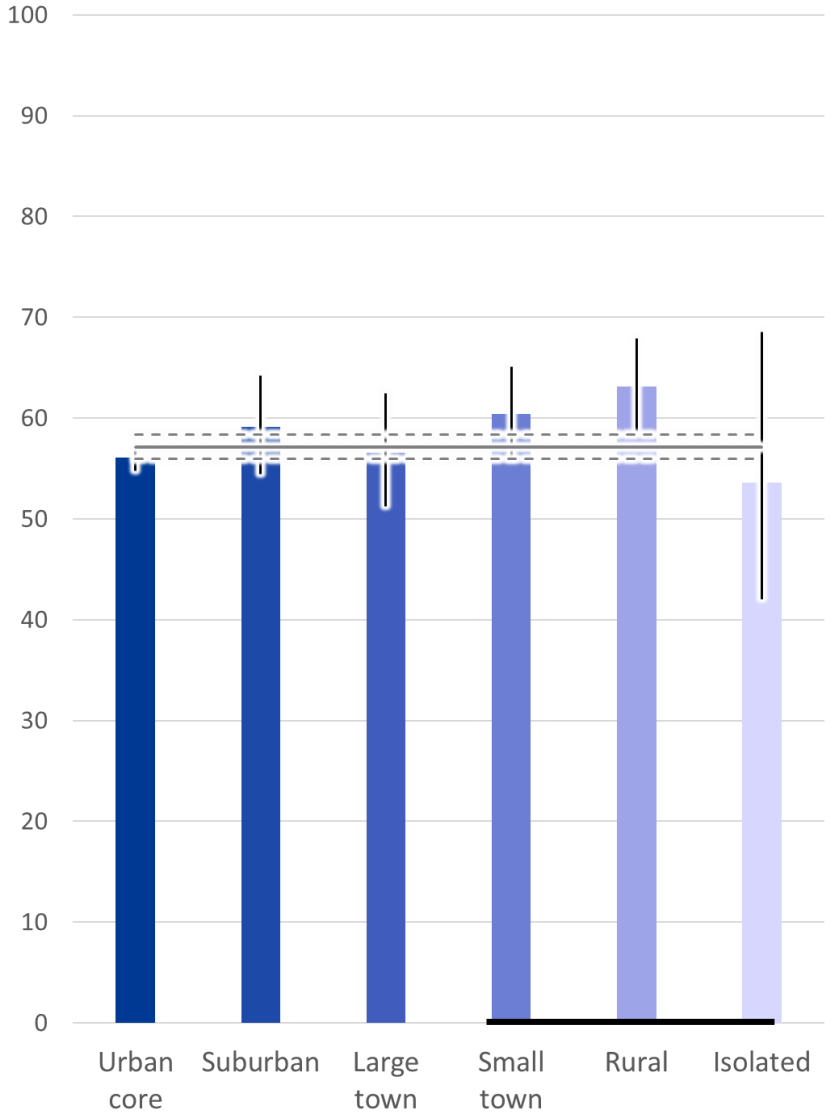
Grays Harbor cluster only



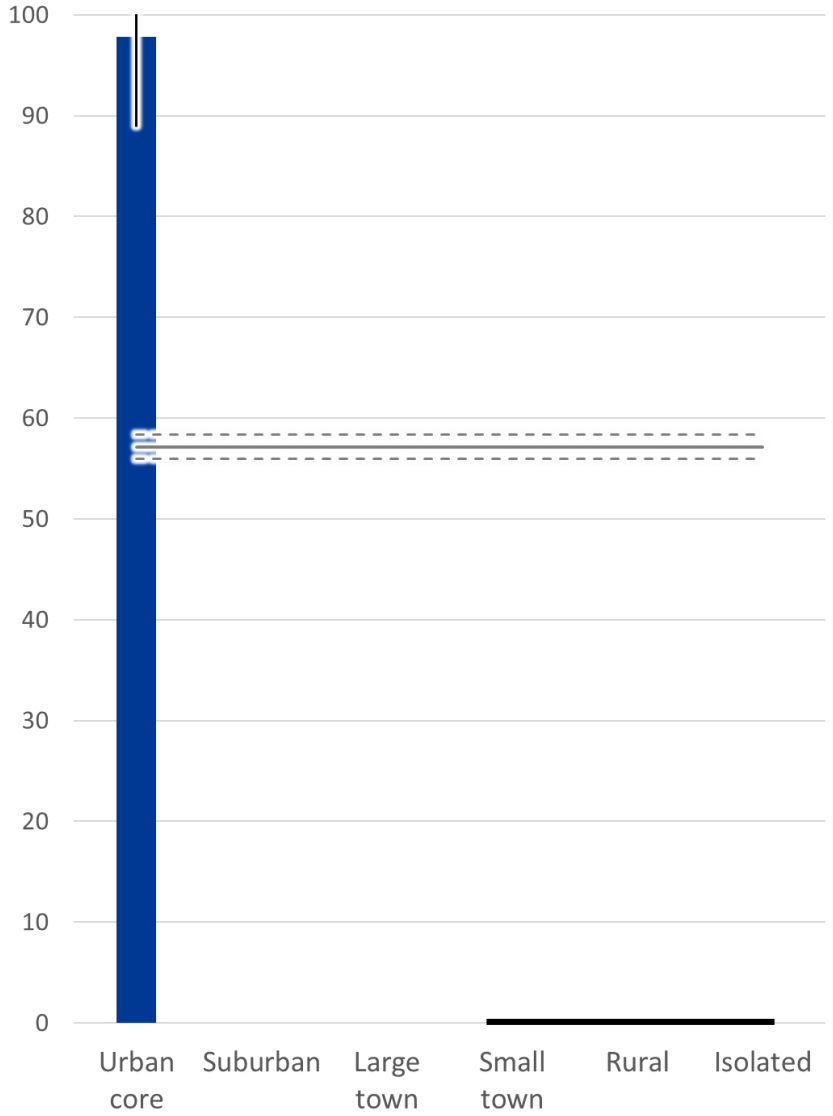
Health Care Amenable Deaths by RUCA, Ages 0-75, 2015-16

Source: Washington State Vital Statistics

Statewide



South Tacoma cluster only



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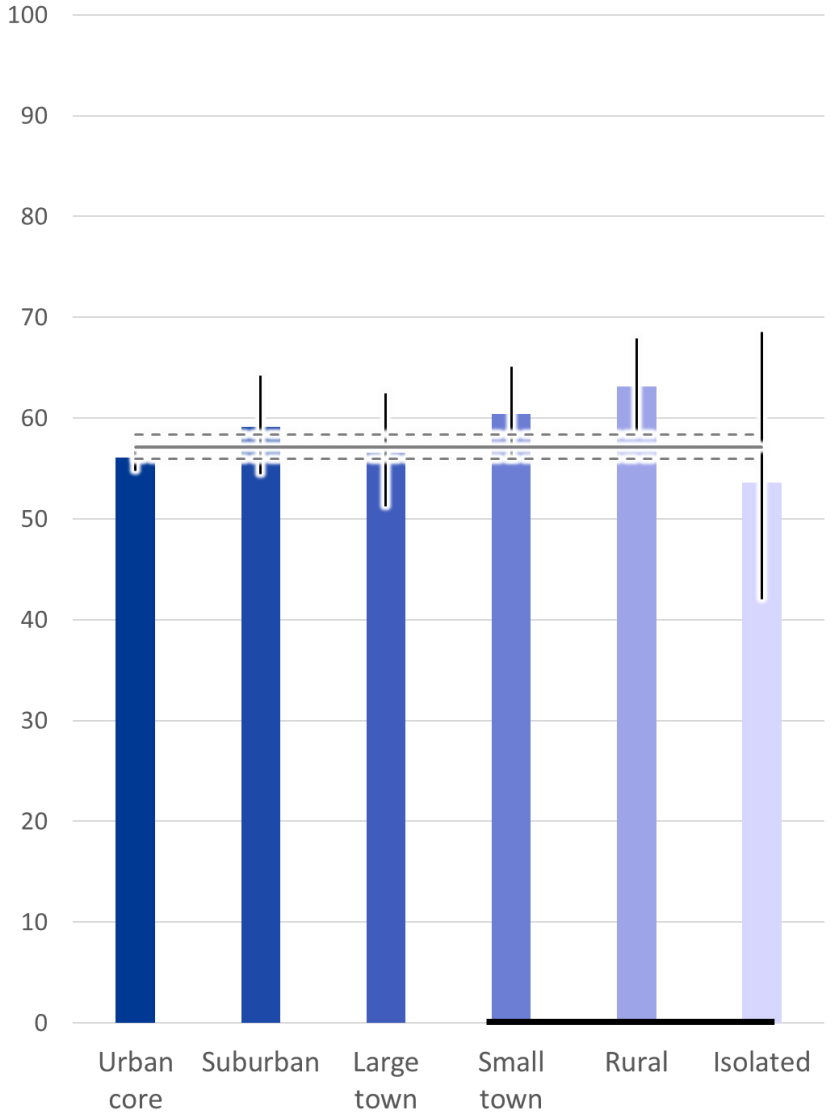

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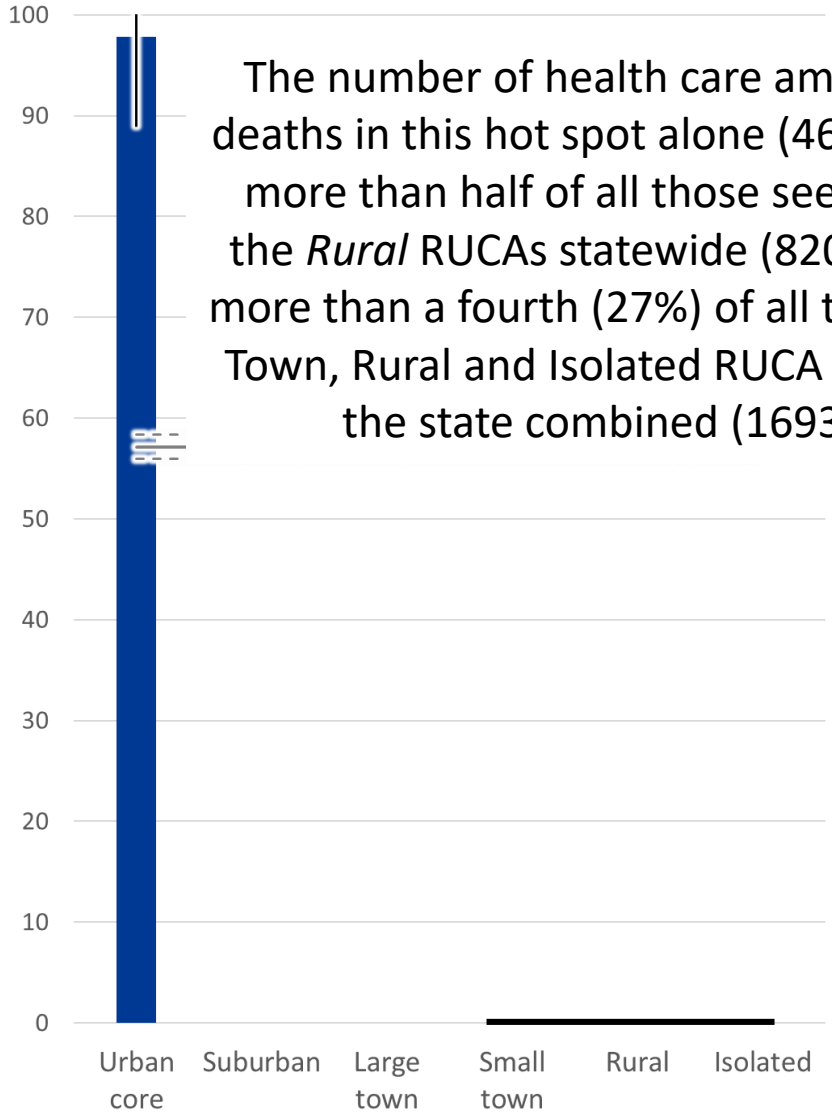


The number of health care amenable deaths in this hot spot alone (462) equal more than half of all those seen in all the *Rural* RUCAs statewide (820) – and more than a fourth (27%) of all the Small Town, Rural and Isolated RUCA areas in the state combined (1693).

Stage at Diagnosis and Screening Guidelines

Source: Washington State Cancer Registry

Generally Summary Stage

- In Situ
- Local

Early

- Regional
- Distant

Late

USPSTF Screening Guidelines

- Female Breast Cancer

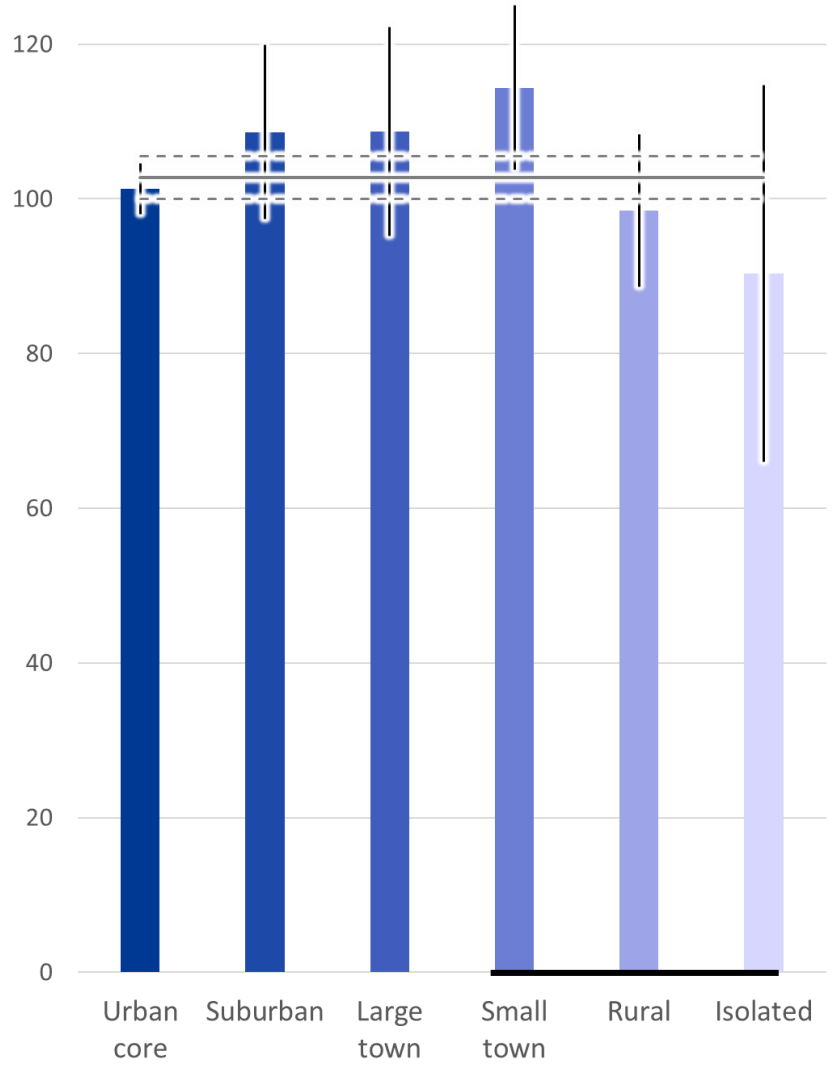
  Biennial screening mammography for women ages 50 to 74

- Colorectal Cancer

  Men and women ages 50 to 75; frequency of screening varies by type, e.g., FOBT annually, colonoscopy every 10 years

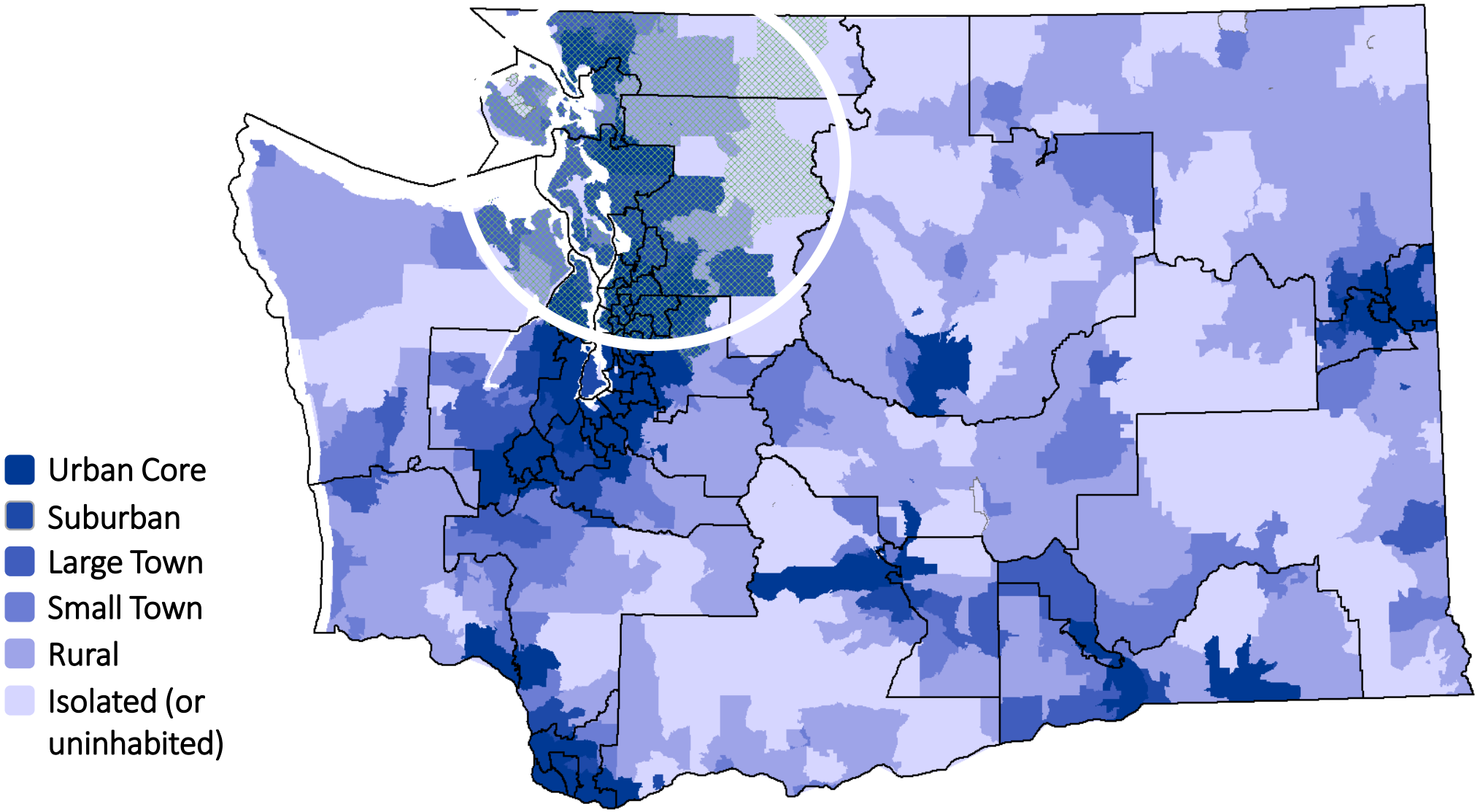
Late Stage Female Breast Cancer by RUCA, Ages 50-74, 2011-15

Source: Washington State Cancer Registry



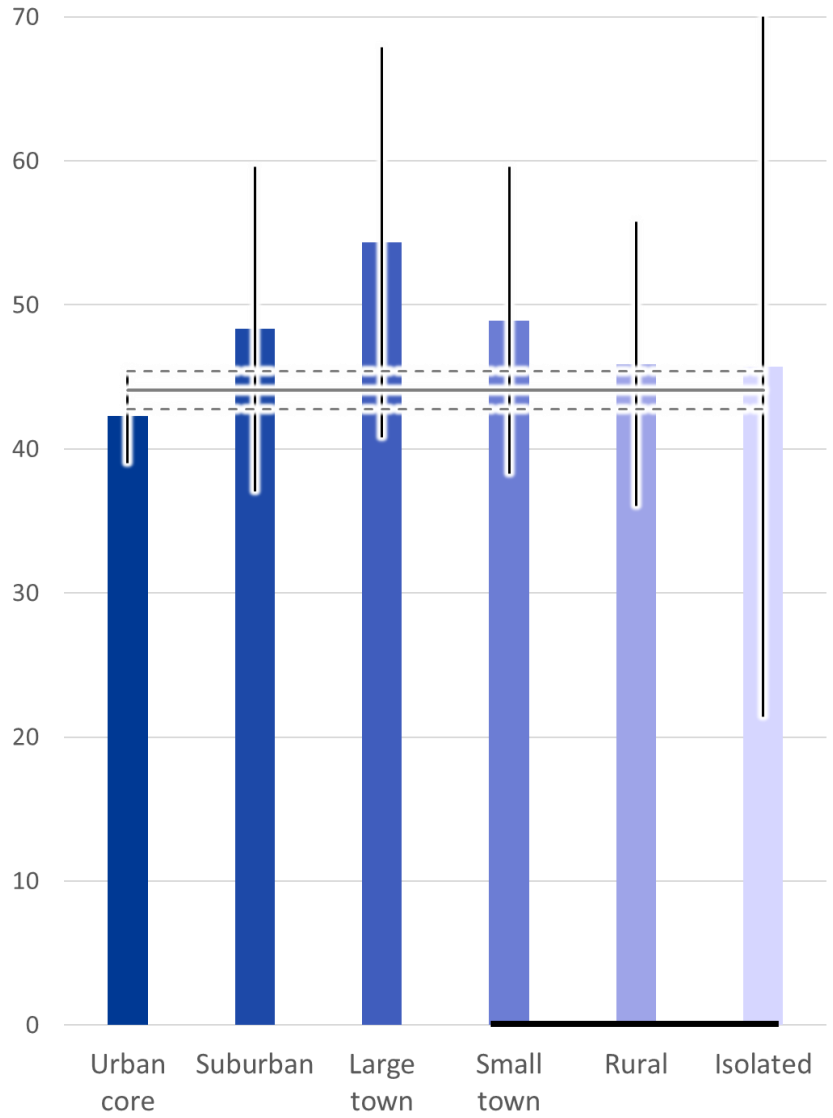
Late Stage Female Breast Cancer by RUCA, Ages 50-74, 2011-15

Source: Washington State Cancer Registry



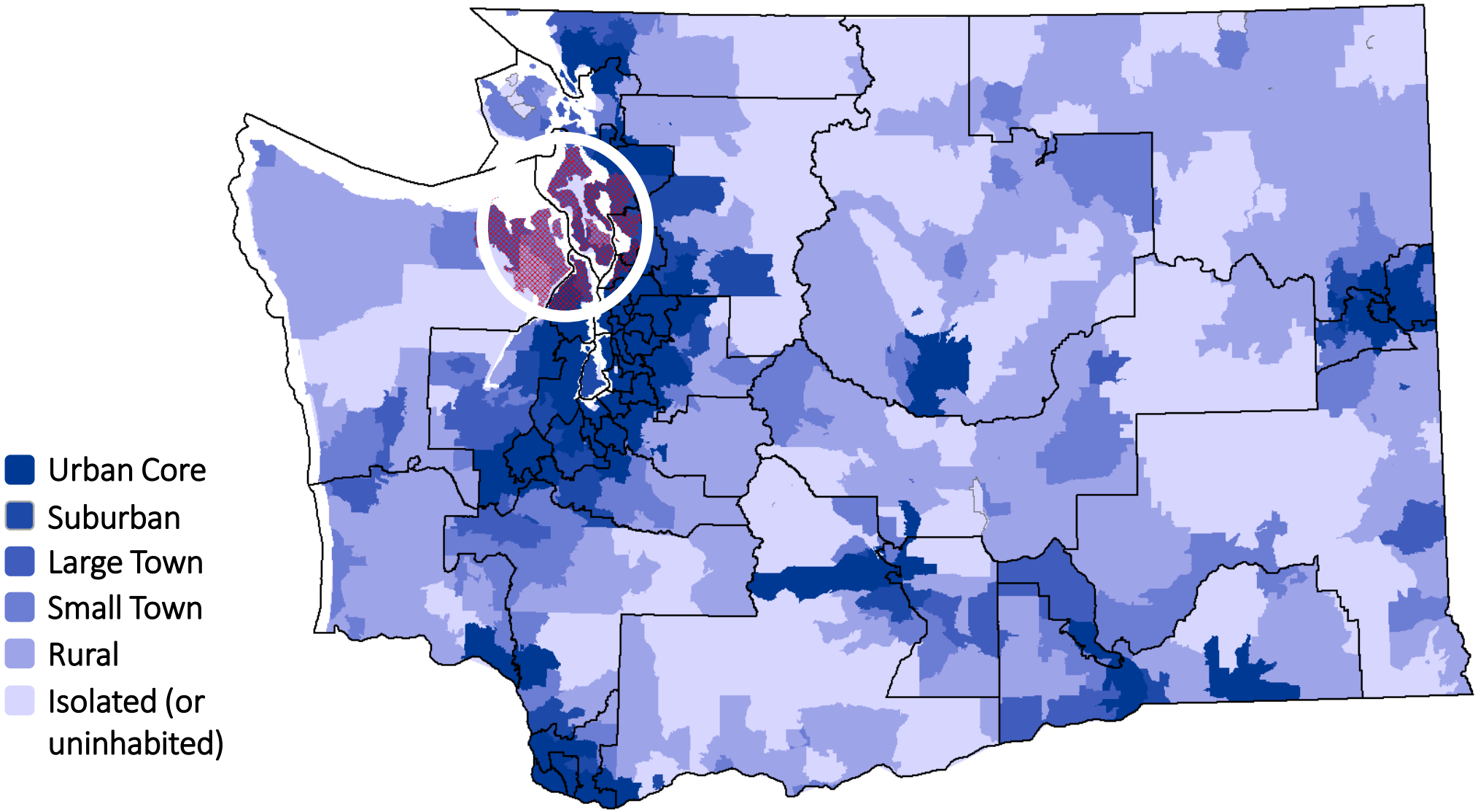
Late Stage Colorectal Cancer by RUCA, Ages 50-75, 2011-15

Source: Washington State Cancer Registry



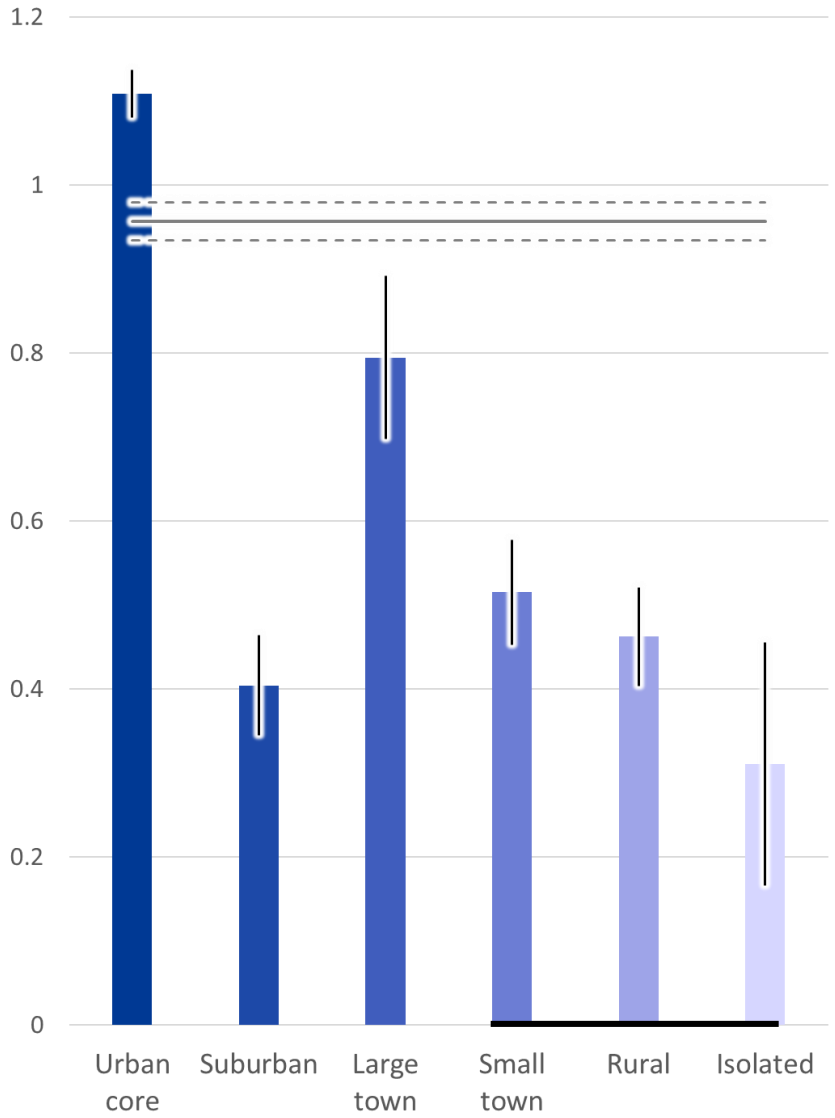
Late Stage Colorectal Cancer by RUCA, Ages 50-75, 2011-15

Source: Washington State Cancer Registry



Primary Care Physician to Population Ratio by RUCA, 2016

Source: 2016 Physician Supply Report, OFM



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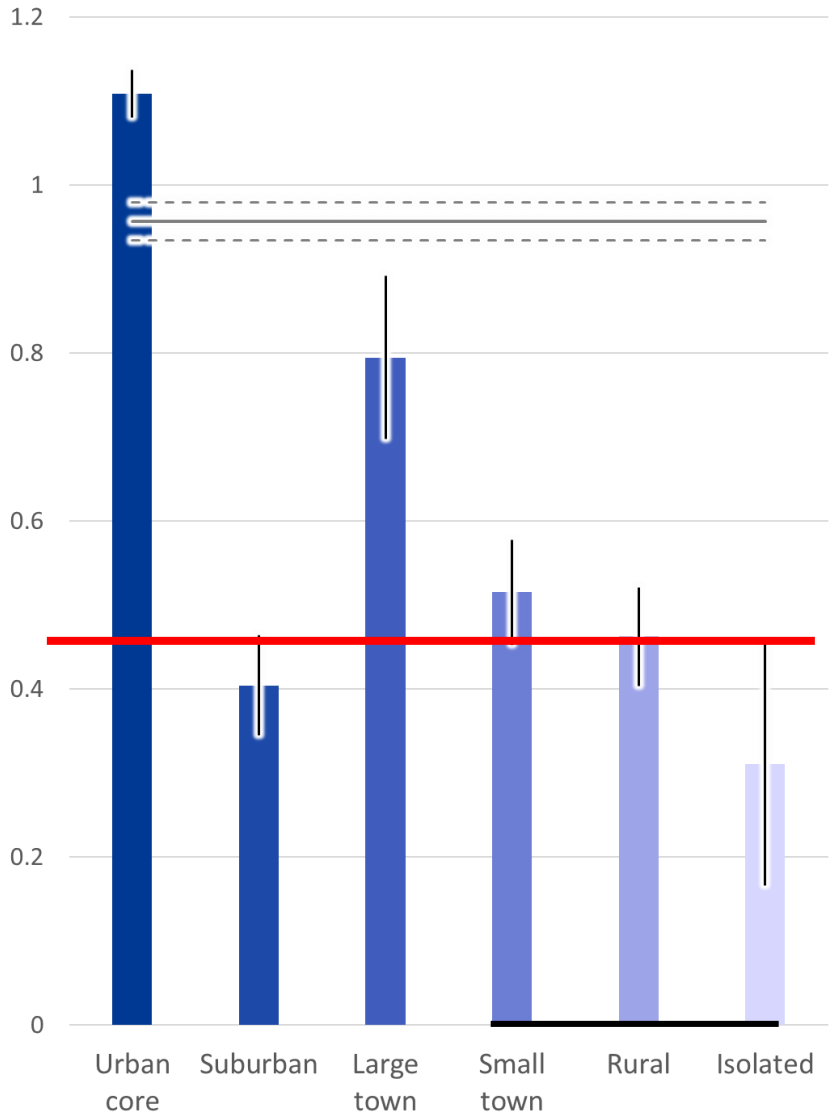

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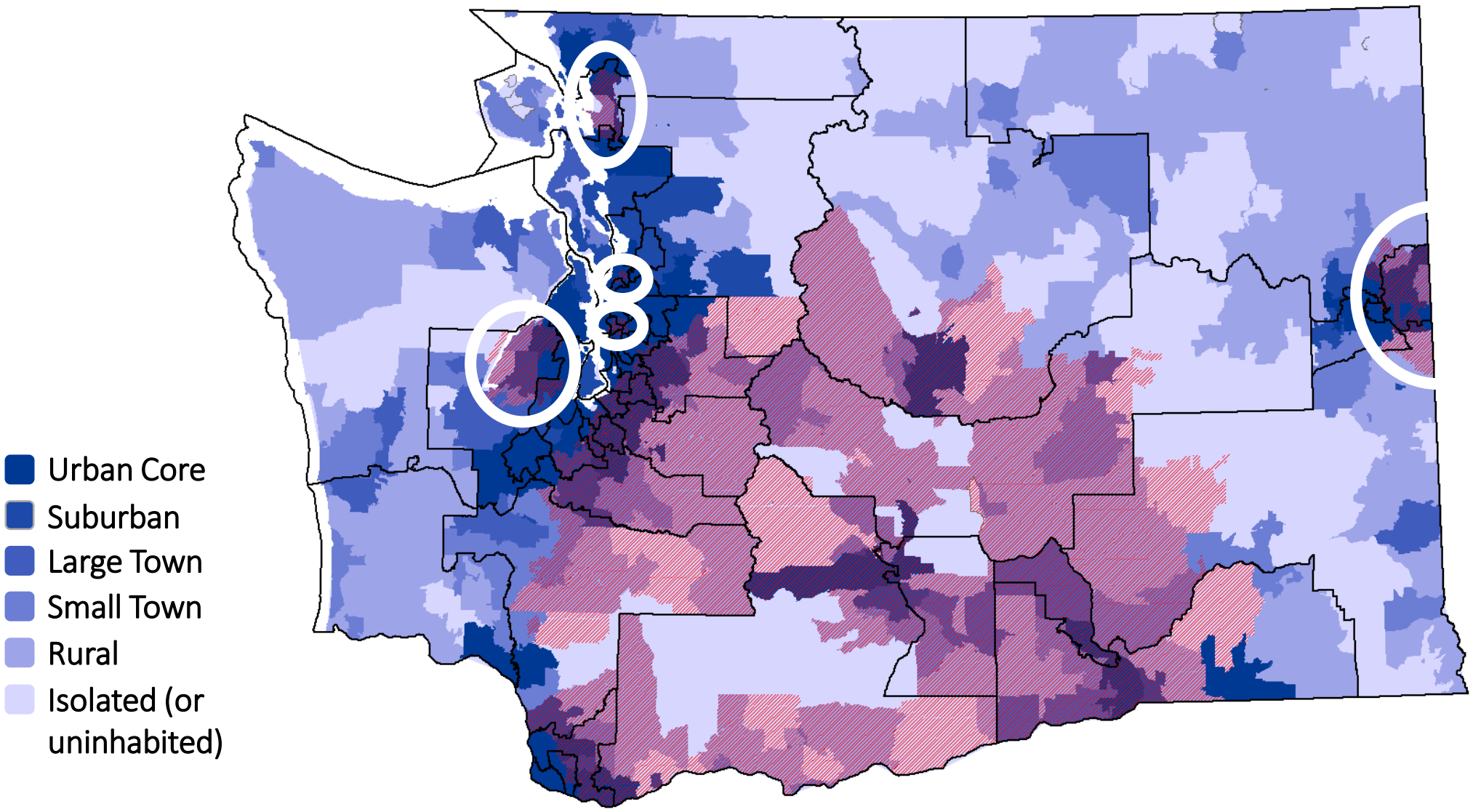
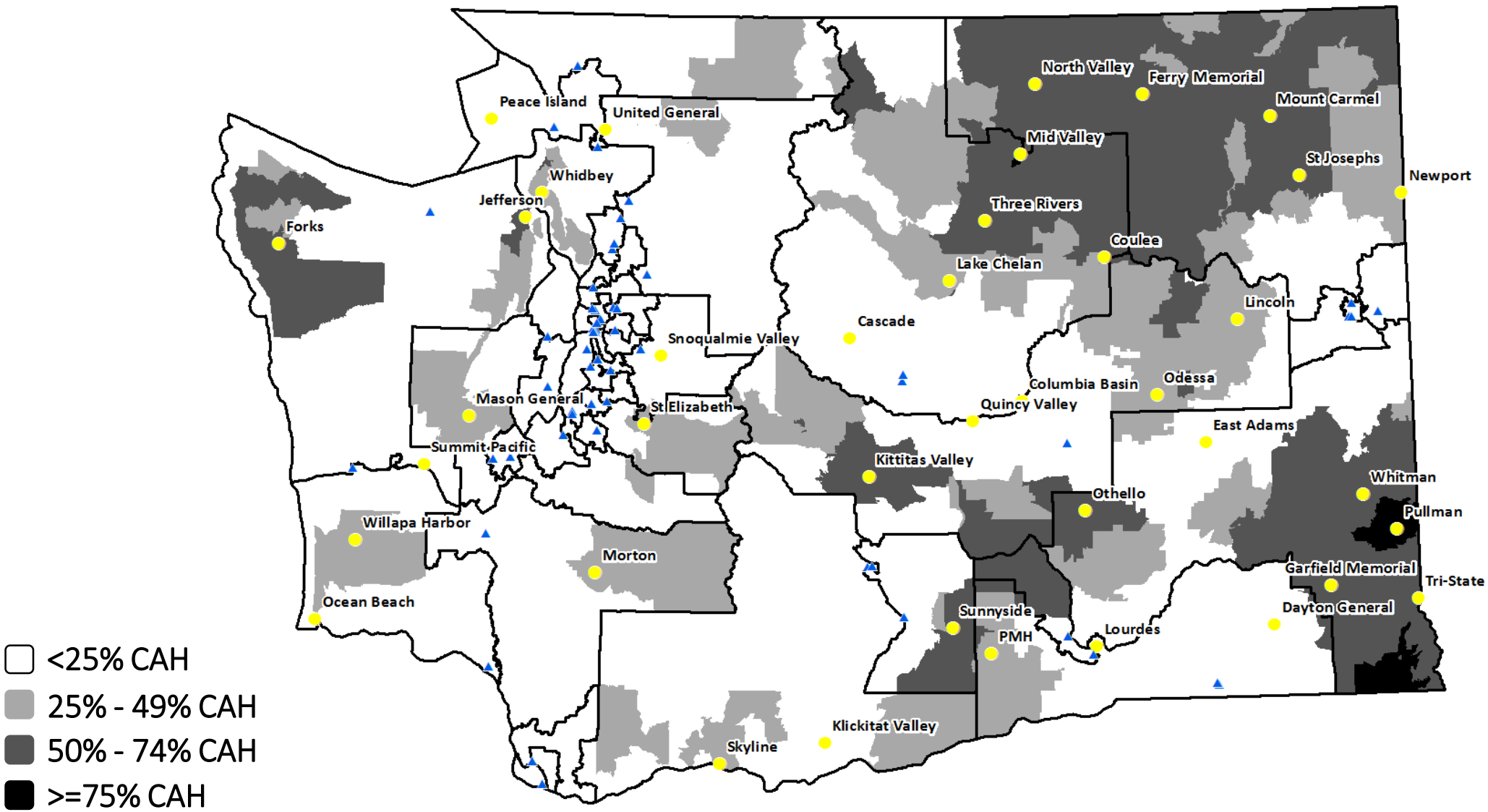


EVOLUTION OF COMMUNITIES SERVED BY CAHs

All Acute Inpatient Stays

Source: WA/OR inpatient discharge data

2010-11 combined CAH market share



All Acute Inpatient Stays

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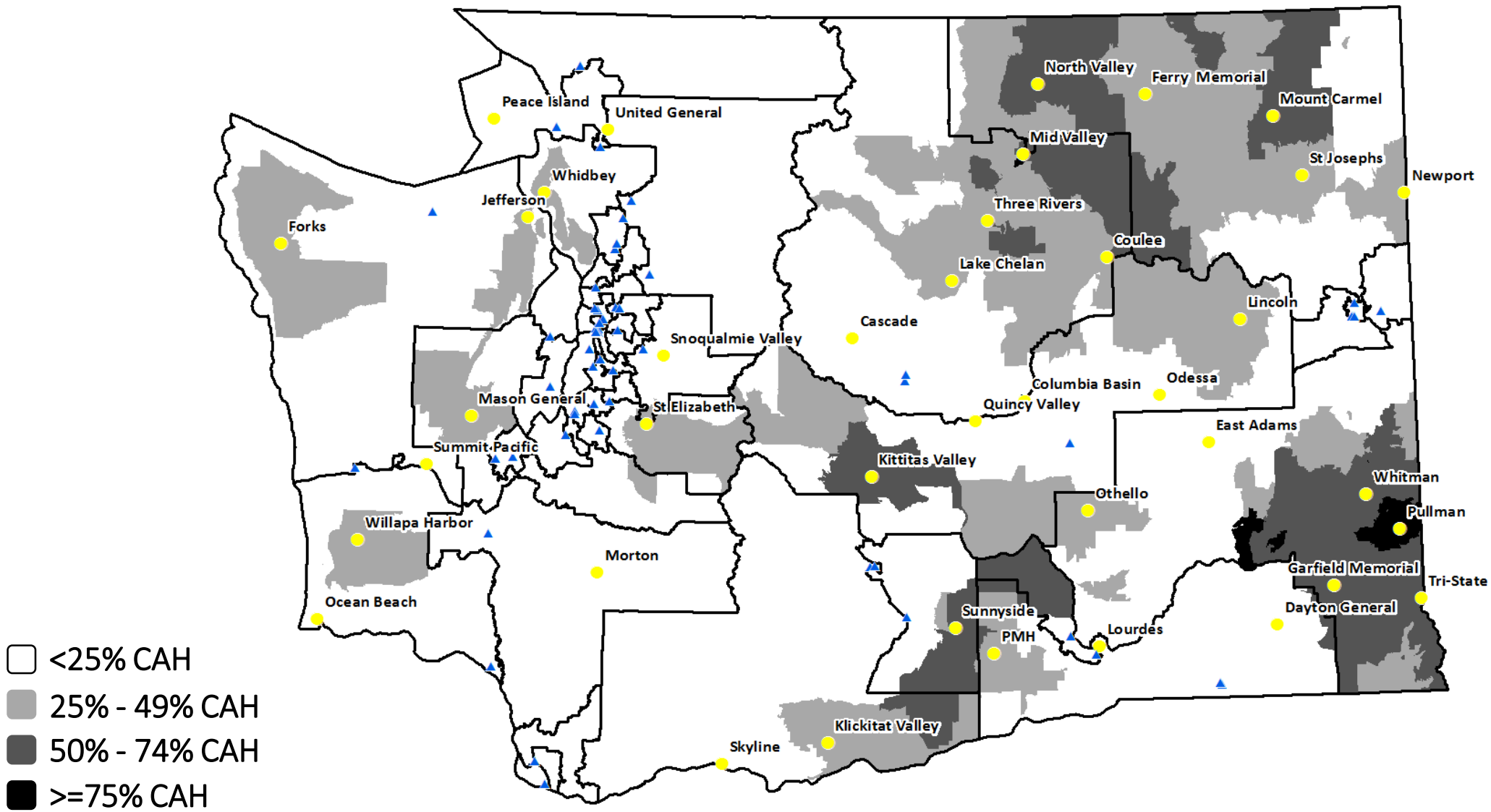
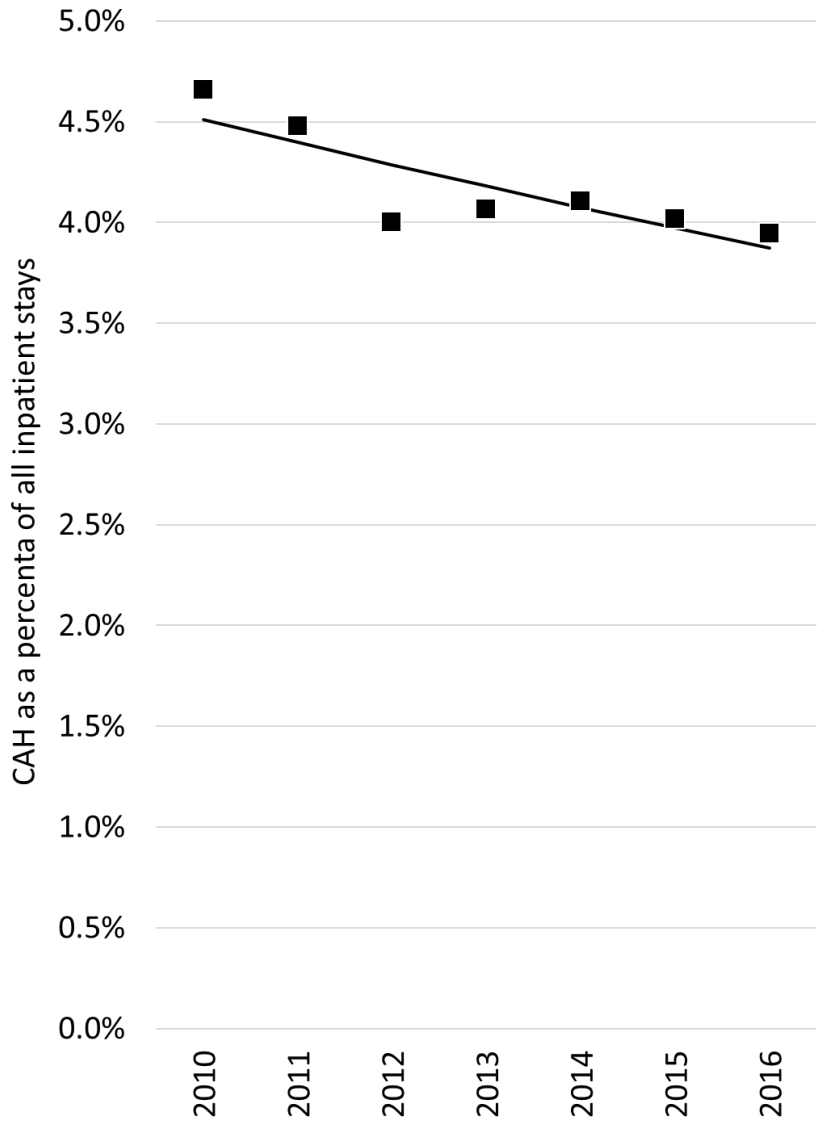
2015-16 combined CAH market share



All Acute Inpatient Stays

Source: WA/OR inpatient discharge data

2010-16 trend of CAH stays as a percent of all stays

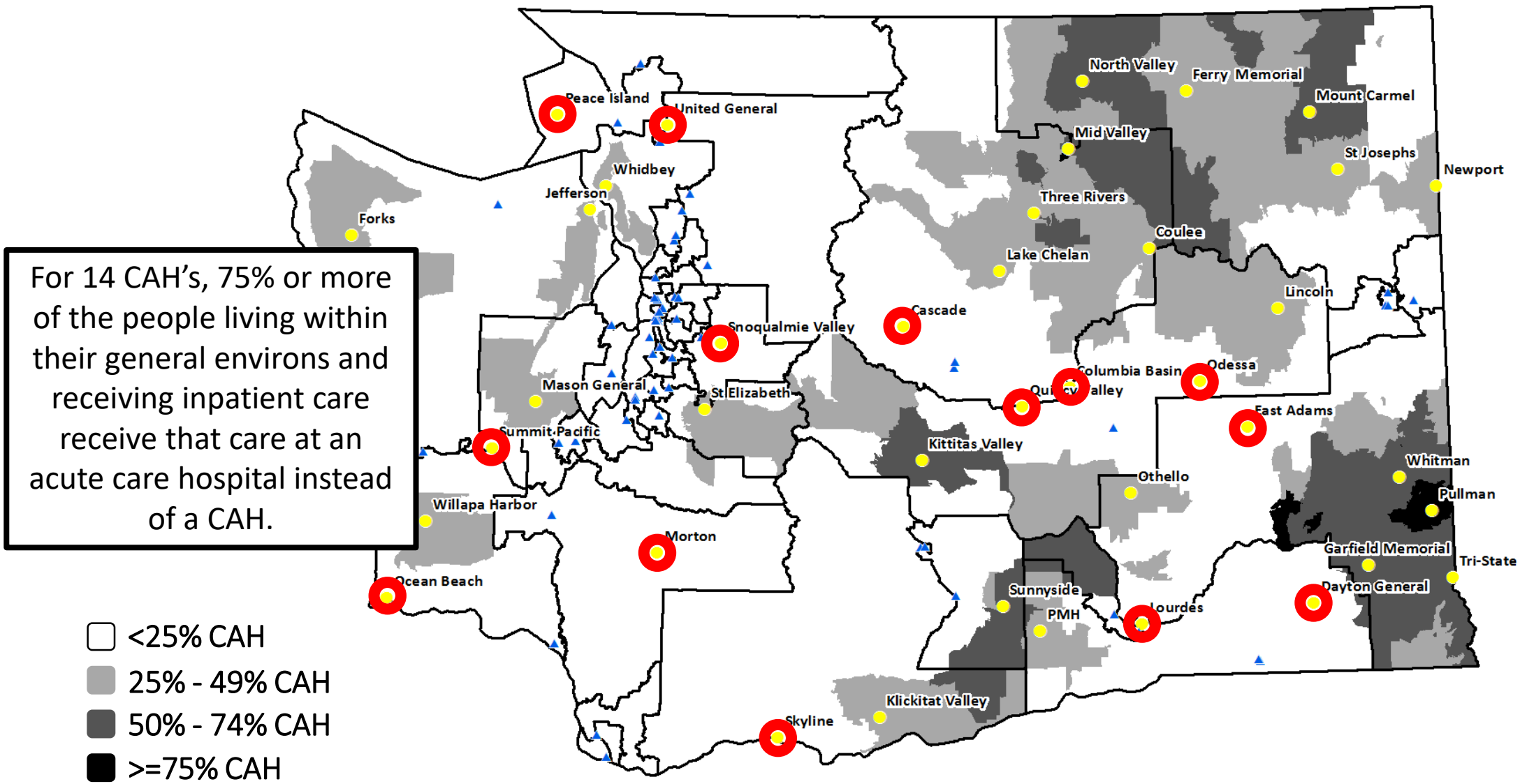


Trend significant
-2.5% per year

All Acute Inpatient Stays

Source: WA/OR inpatient discharge data

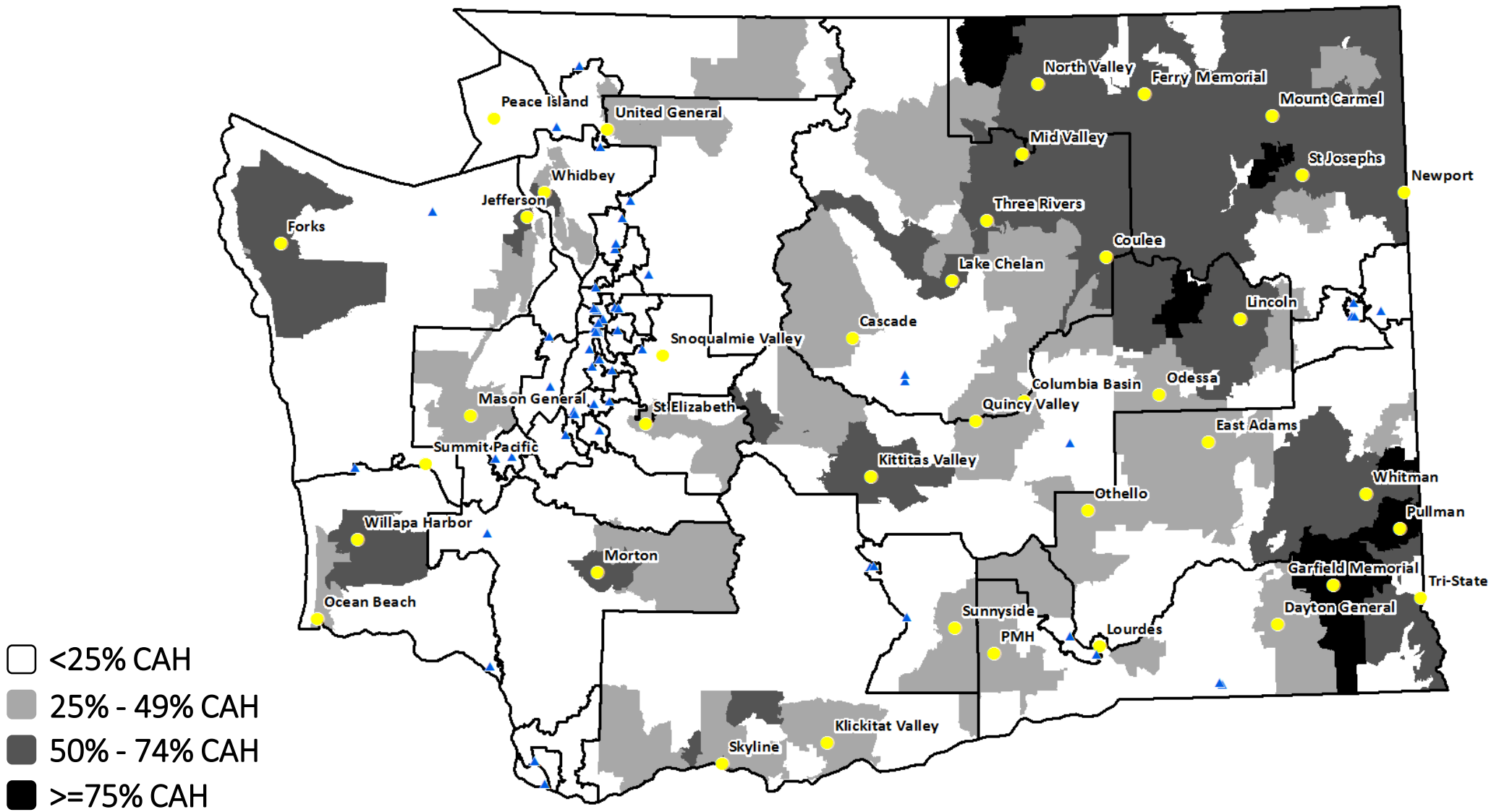
2015-16 combined CAH market share



Medical Only Inpatient Stays

Source: WA/OR inpatient discharge data

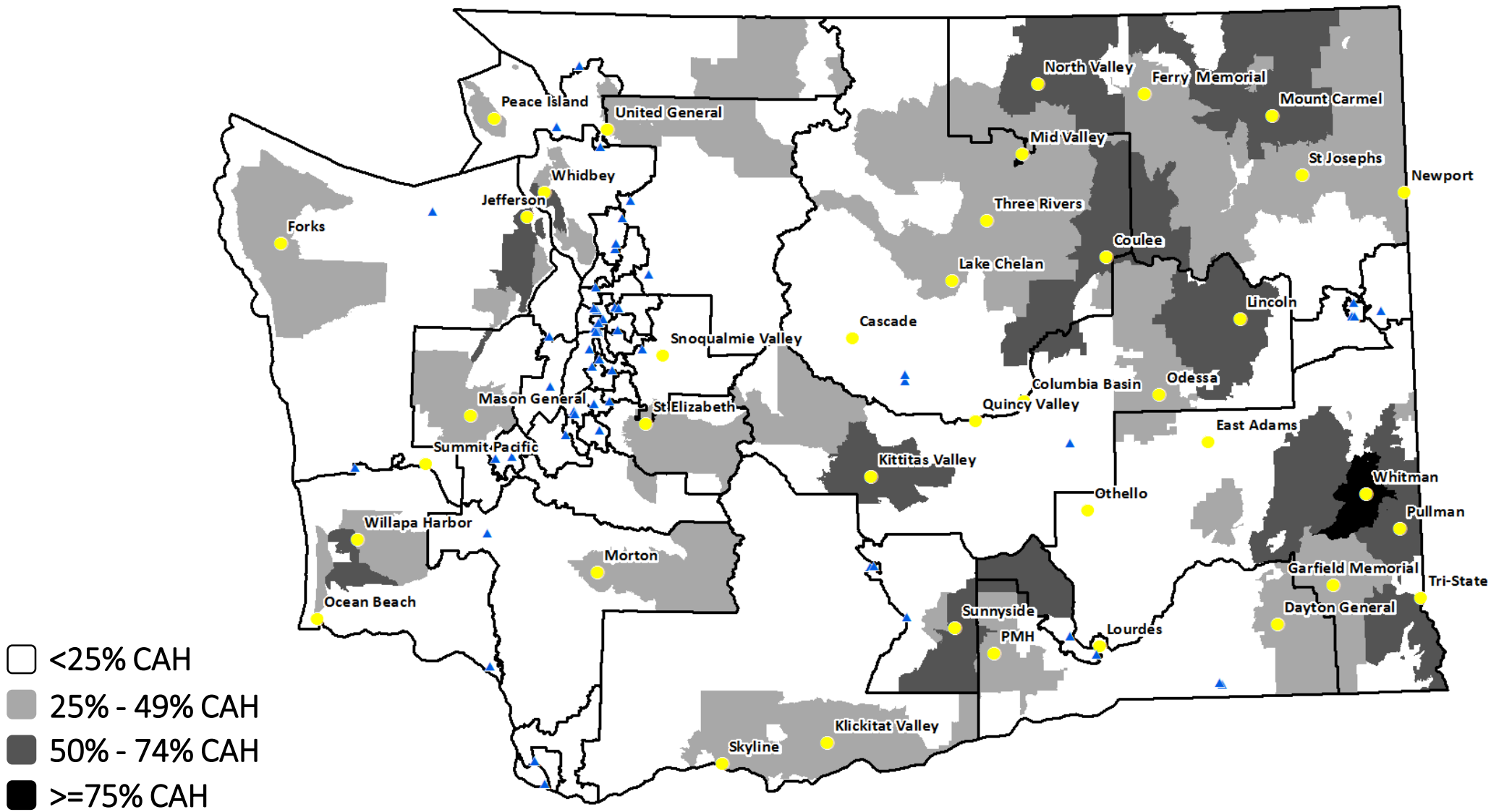
2010-11 combined CAH market share



Medical Only Inpatient Stays

Source: WA/OR inpatient discharge data

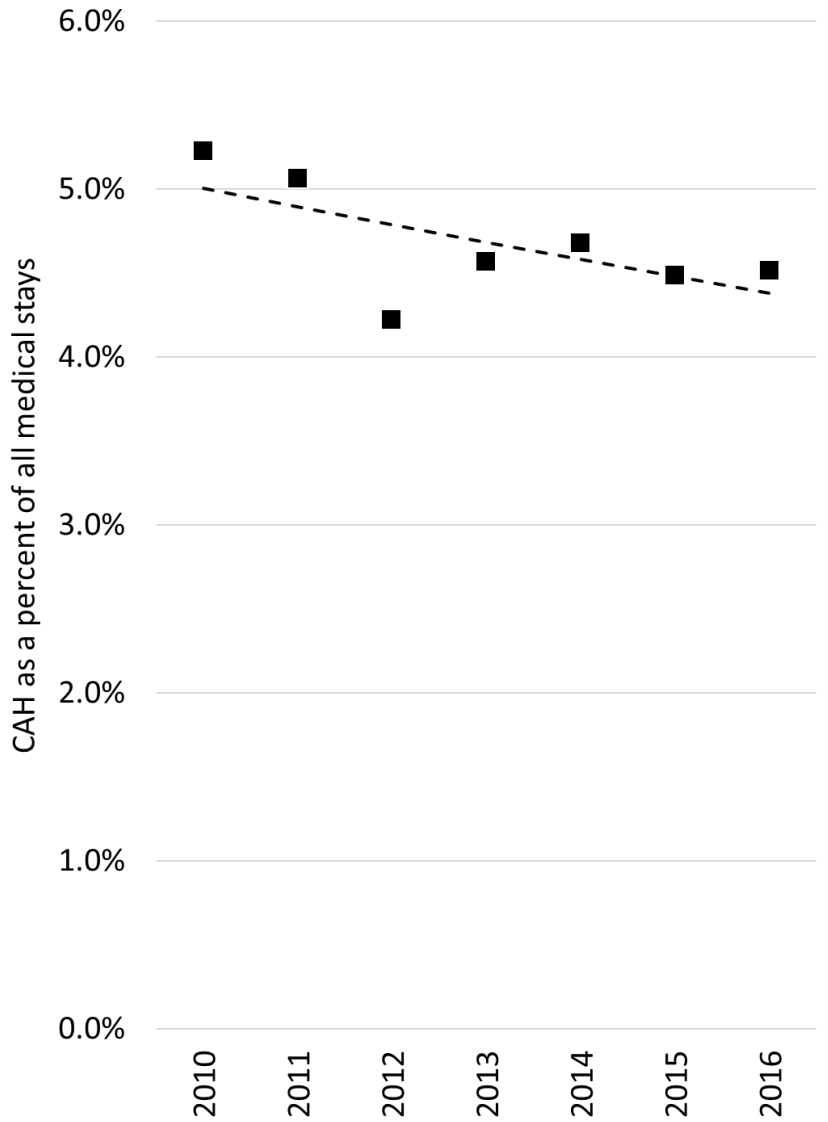
2015-16 combined CAH market share



Medical Only Inpatient Stays

Source: WA/OR inpatient discharge data

2010-16 trend of CAH stays as a percent of all stays

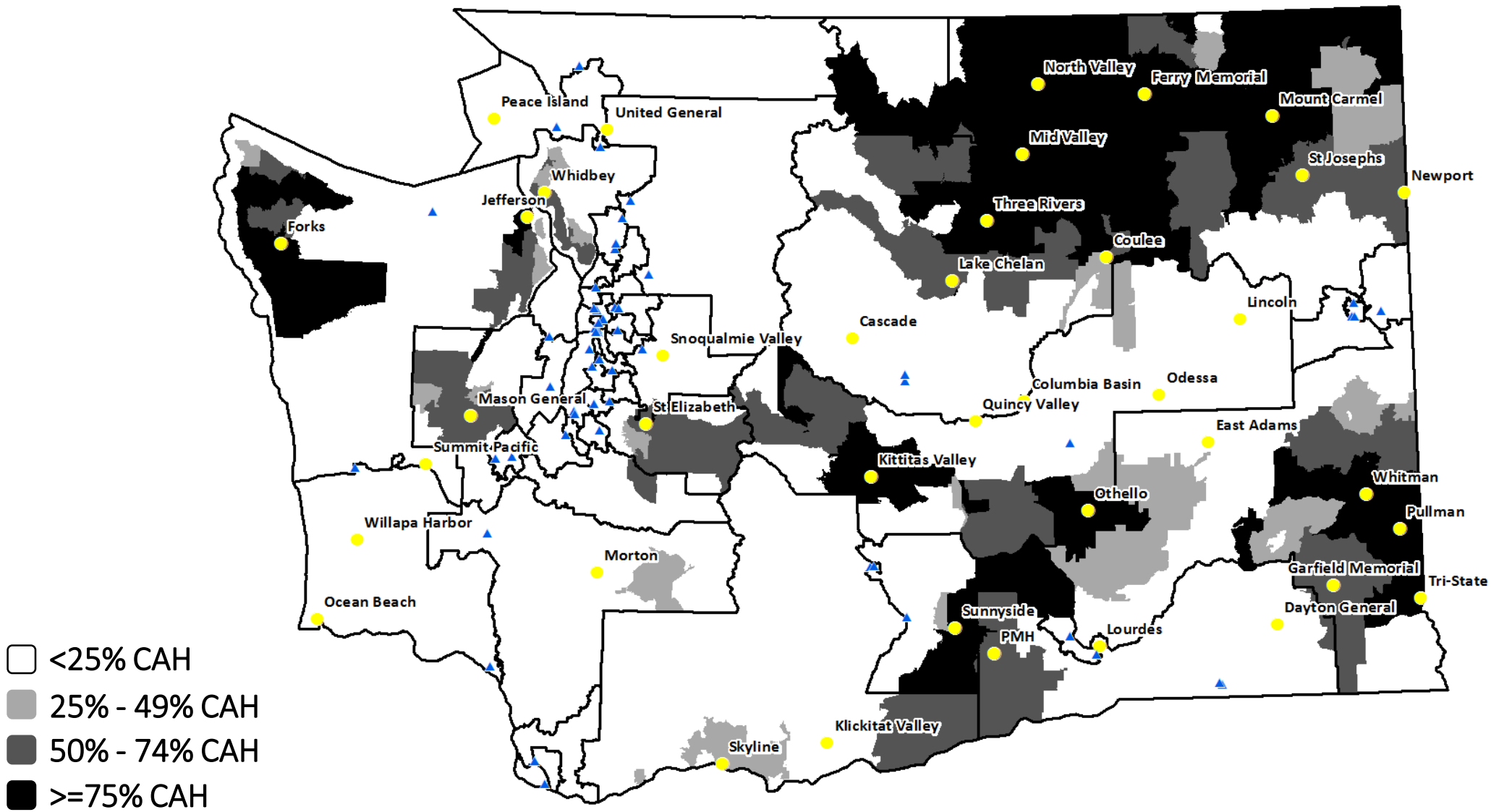


Best fit; trend not significant

Deliveries Only Inpatient Stays

Source: WA/OR inpatient discharge data

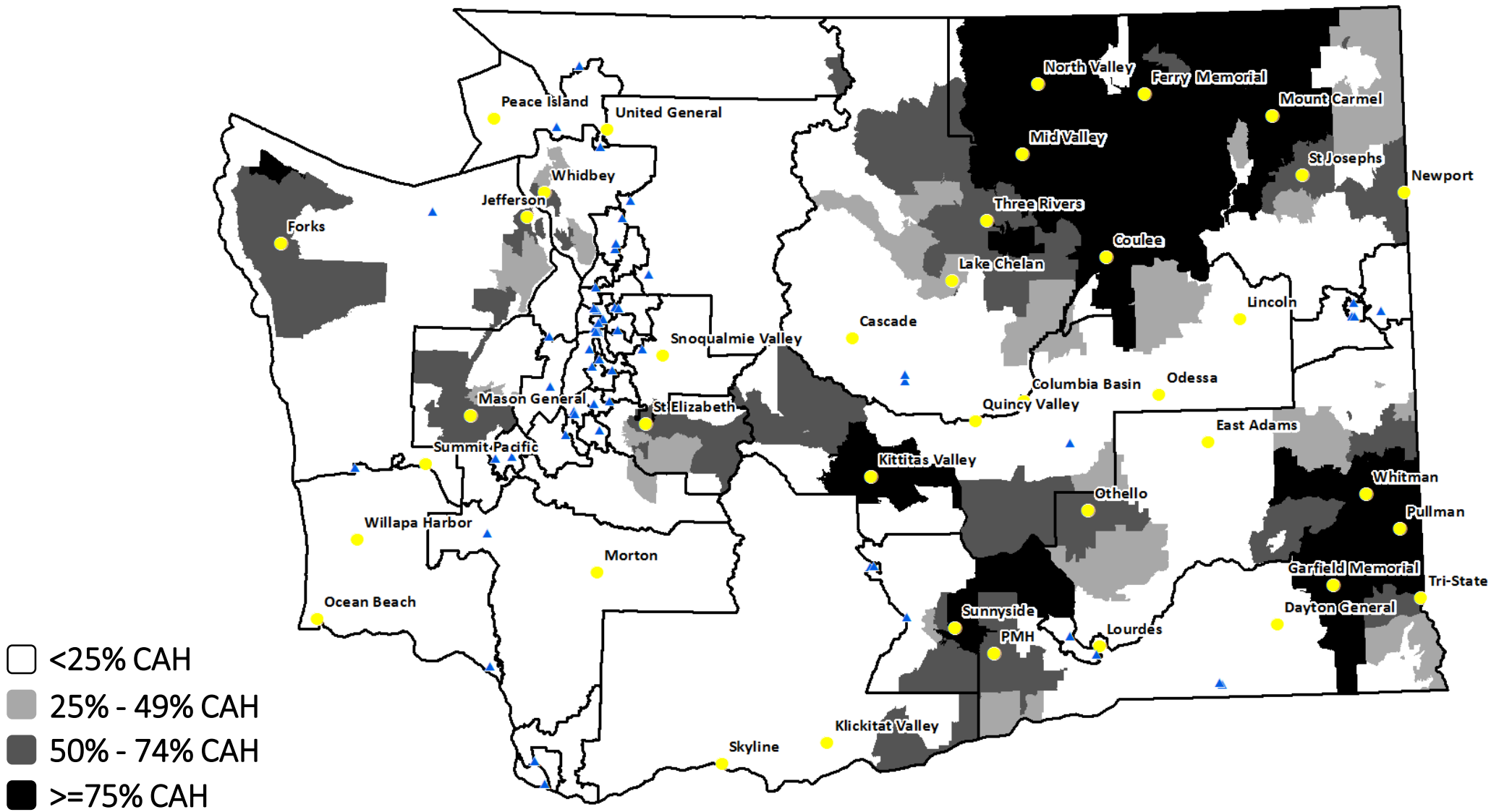
2010-11 combined CAH market share



Deliveries Only Inpatient Stays

Source: WA/OR inpatient discharge data

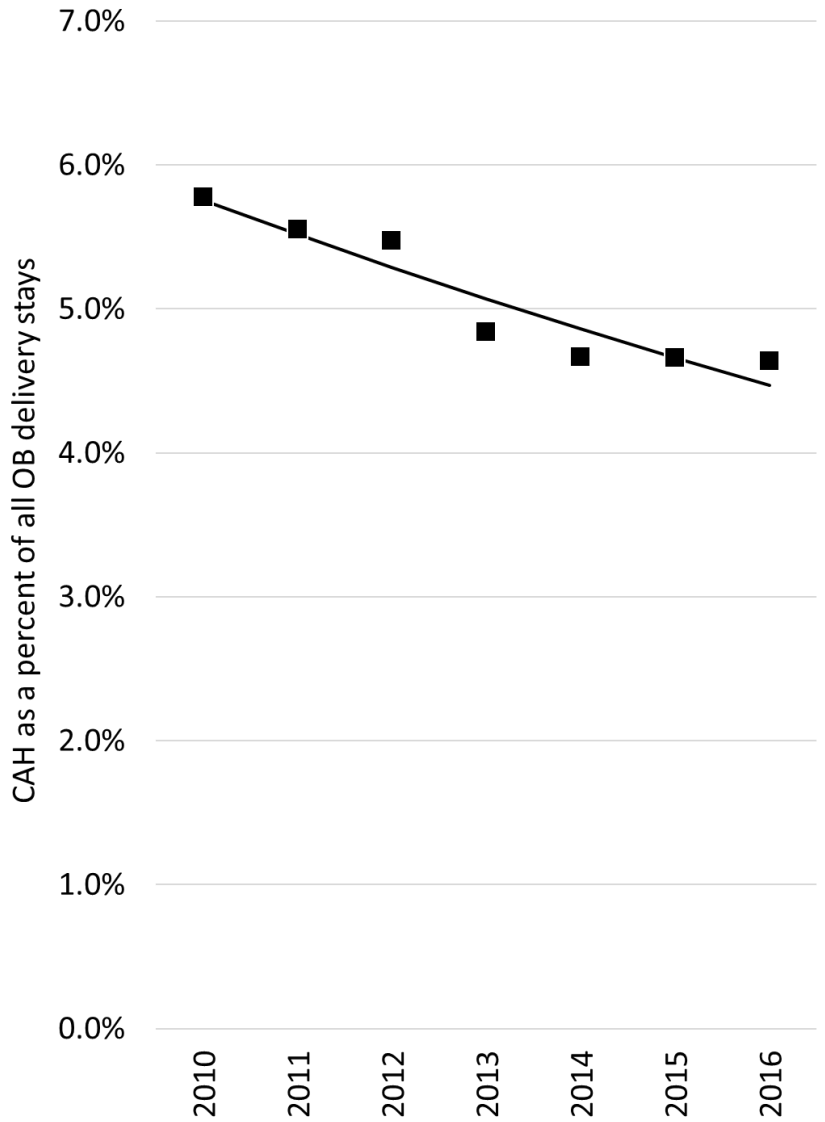
2015-16 combined CAH market share



Deliveries Only Inpatient Stays

Source: WA/OR inpatient discharge data

2010-16 trend of CAH stays as a percent of all stays

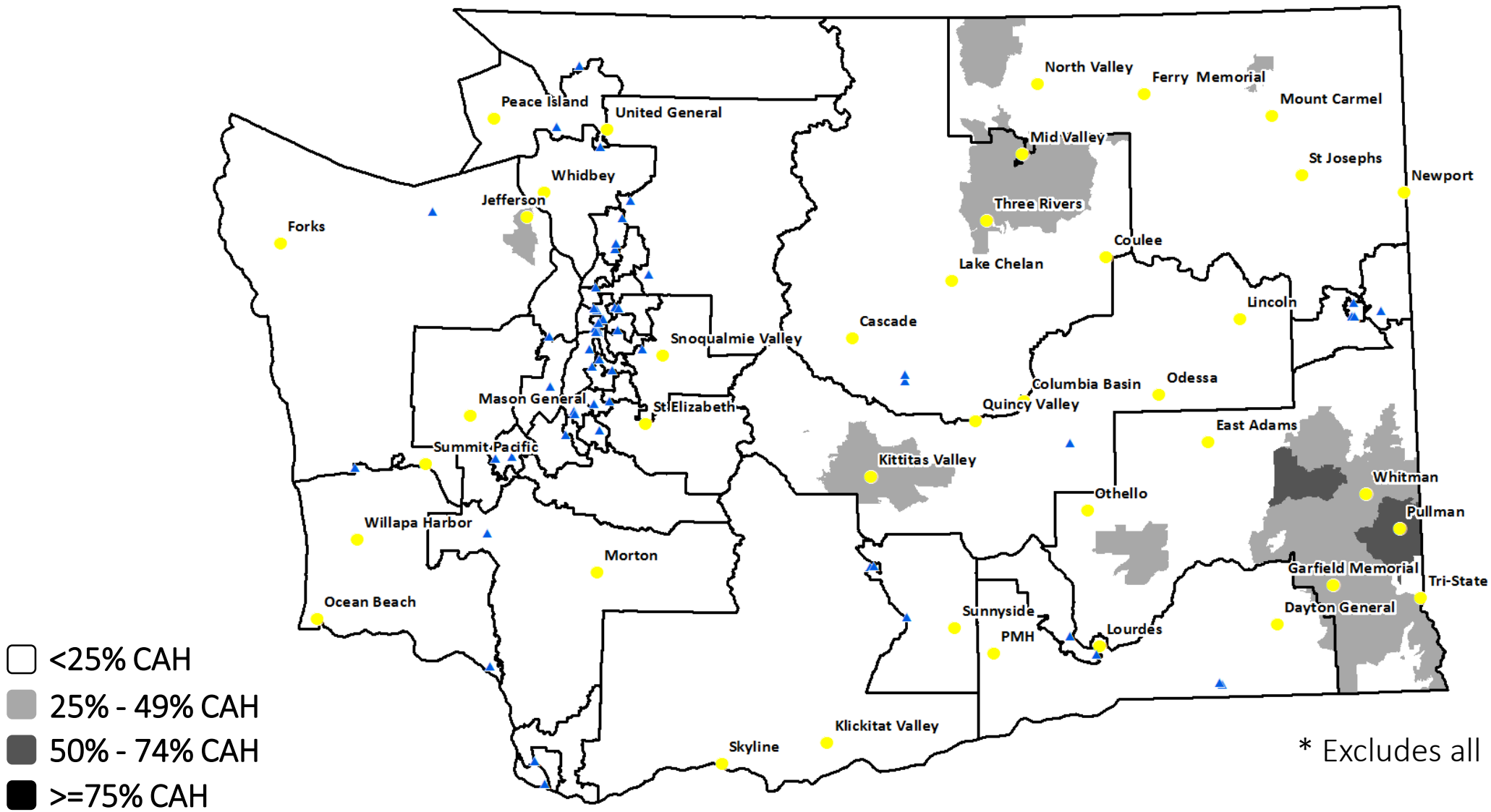


Trend significant
-4.1% per year

Surgeries* Only Inpatient Stays

Source: WA/OR inpatient discharge data

2010-11 combined CAH market share



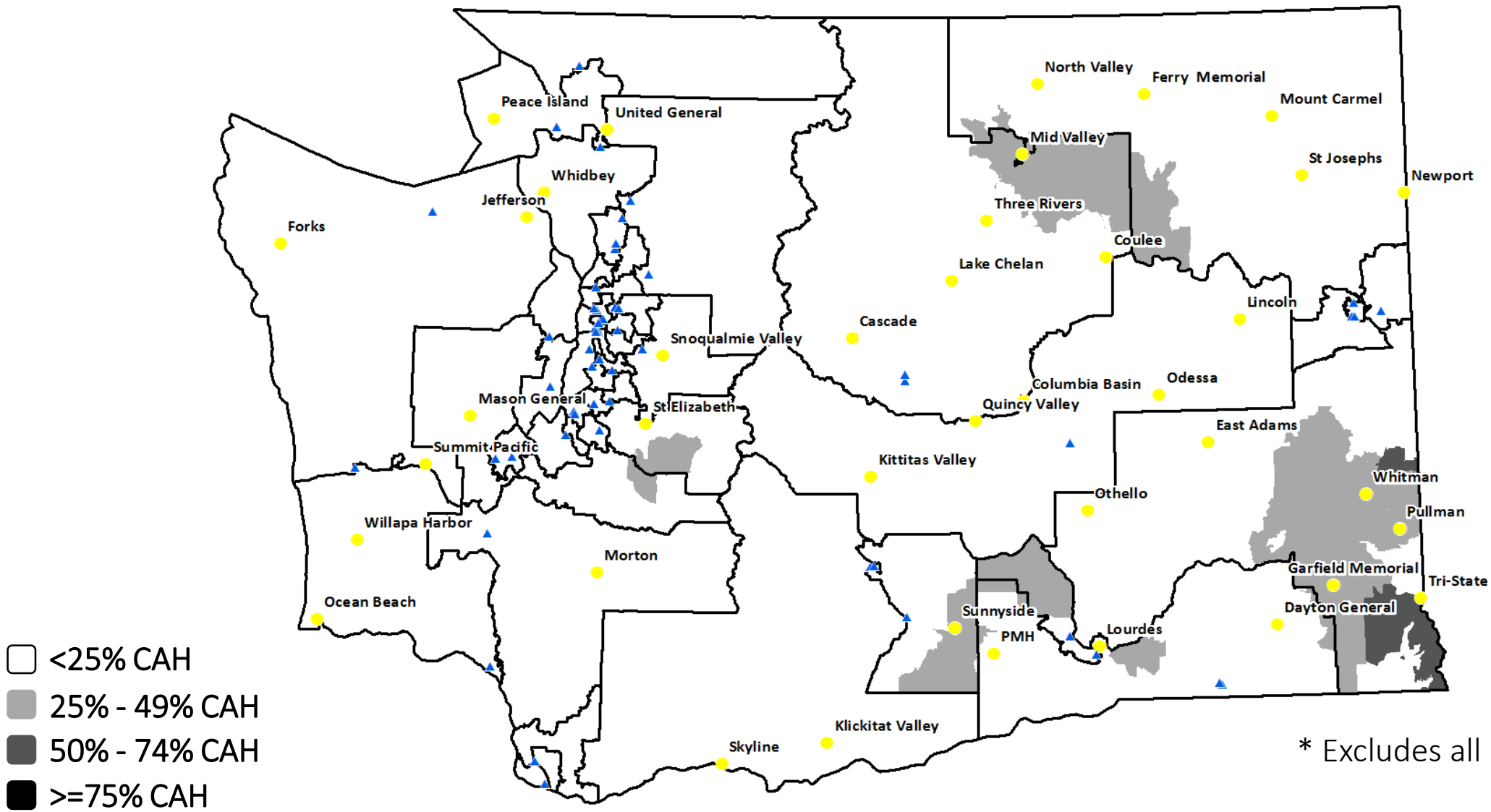
- <25% CAH
- 25% - 49% CAH
- 50% - 74% CAH
- >=75% CAH

* Excludes all OB procedures

Surgeries* Only Inpatient Stays

Source: WA/OR inpatient discharge data

2015-16 combined CAH market share

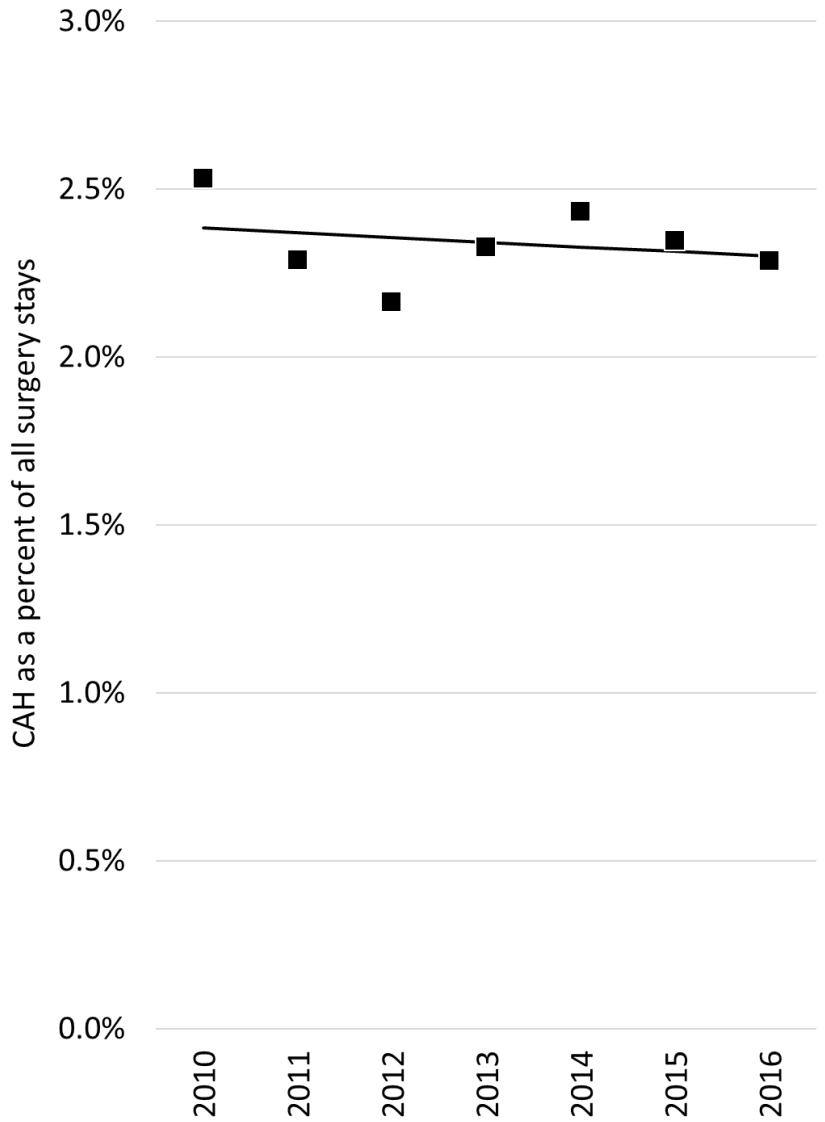


* Excludes all OB procedures

Surgeries* Only Inpatient Stays

Source: WA/OR inpatient discharge data

2010-16 trend of CAH stays as a percent of all stays



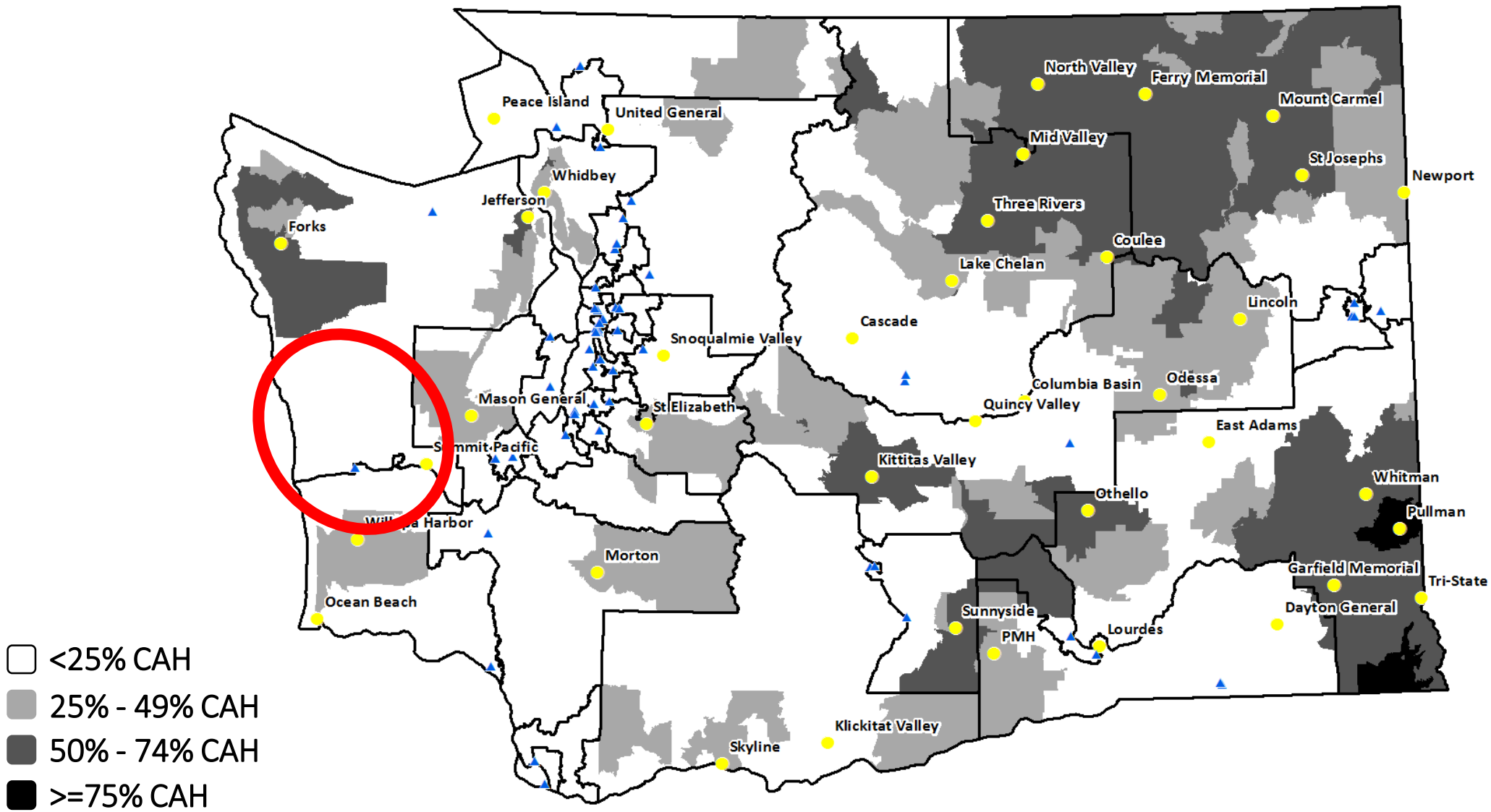
Trend significant
-0.6% per year

* Excludes all OB procedures

All Acute Inpatient Stays

Source: WA/OR inpatient discharge data

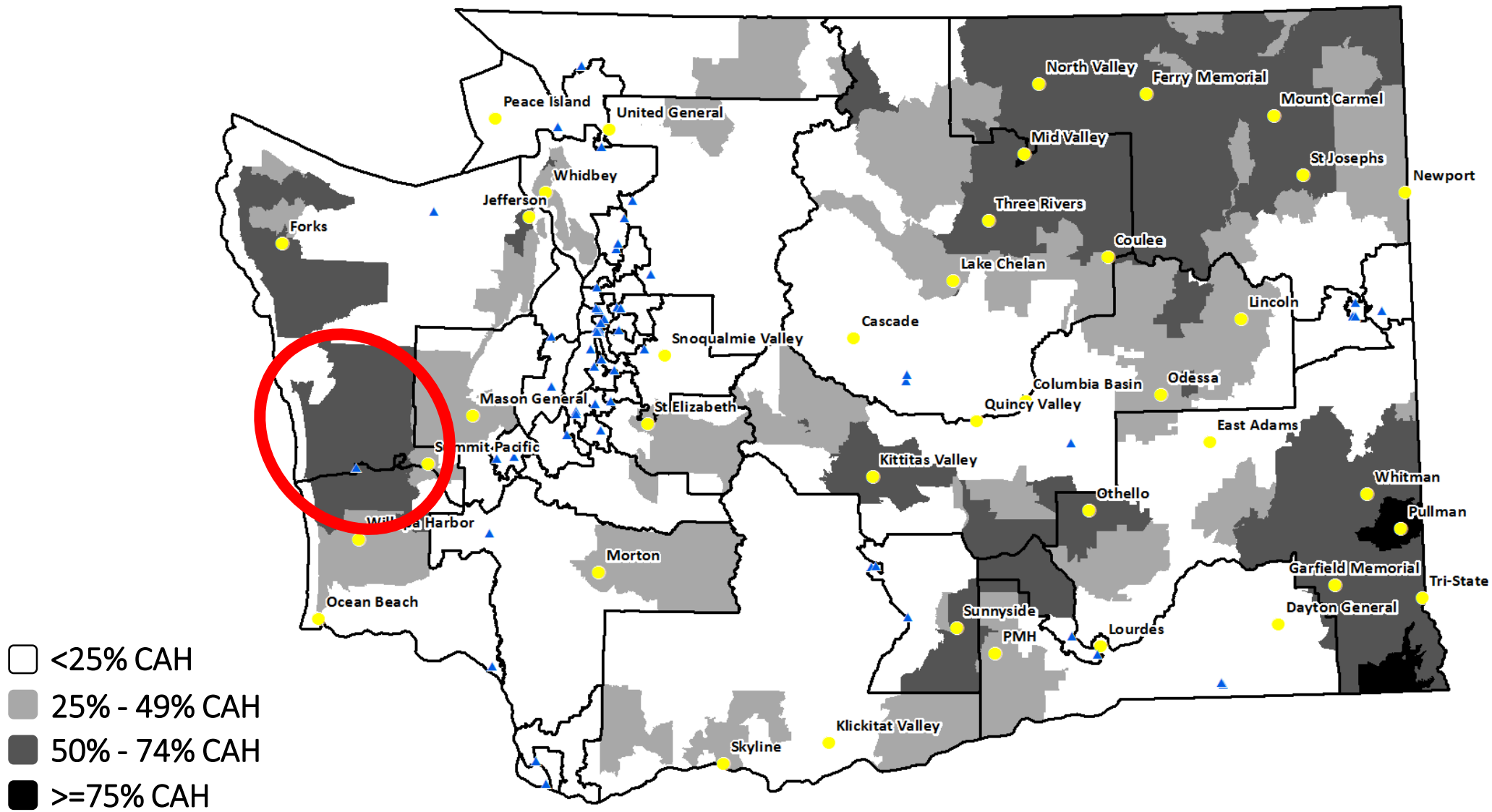
2010-11 combined CAH market share



All Acute Inpatient Stays with **Grays Harbor Hospital**

2010-11 combined CAH market share

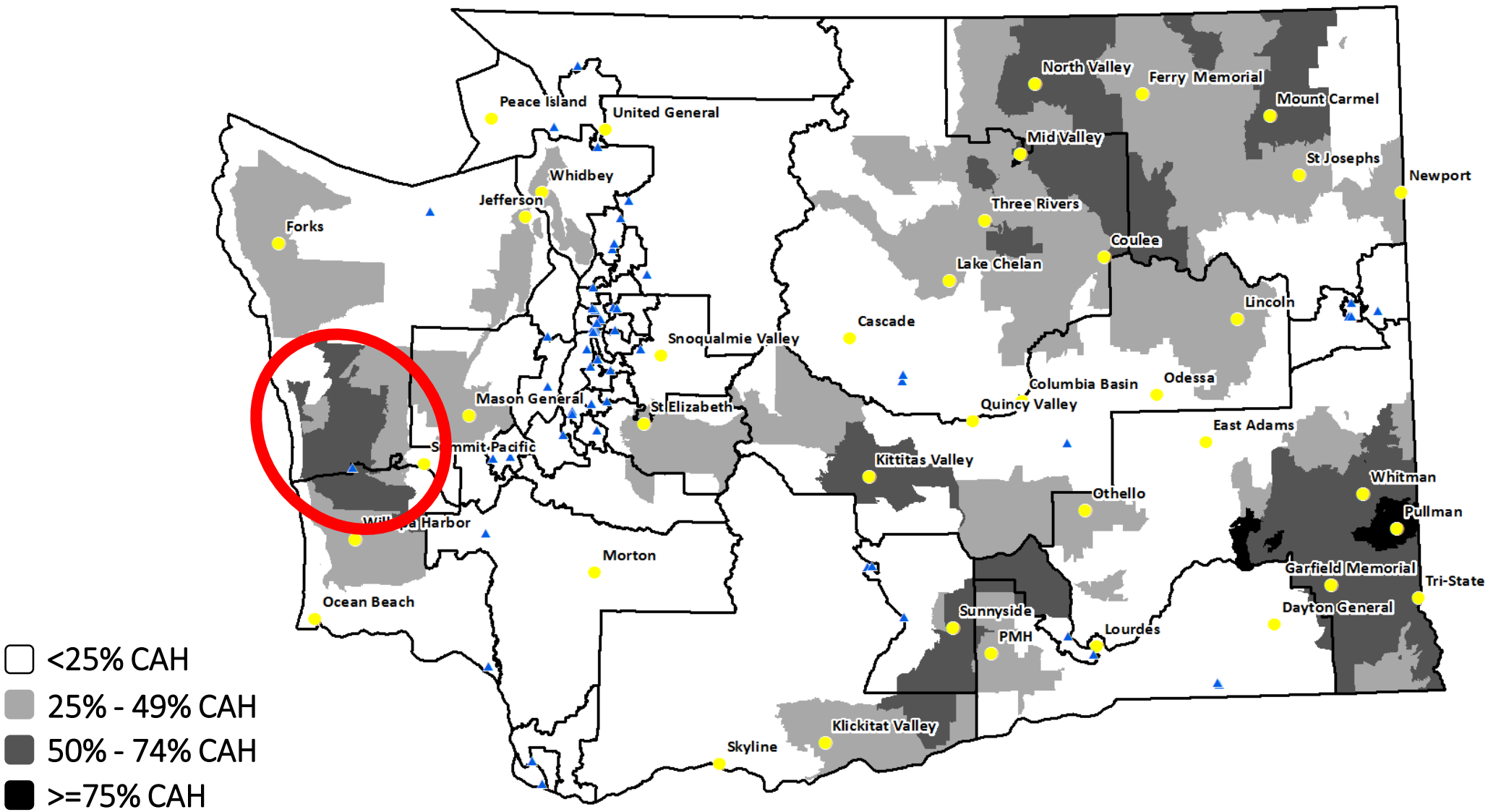
Source: WA/OR inpatient discharge data



All Acute Inpatient Stays with **Grays Harbor Hospital**

2015-16 combined CAH market share

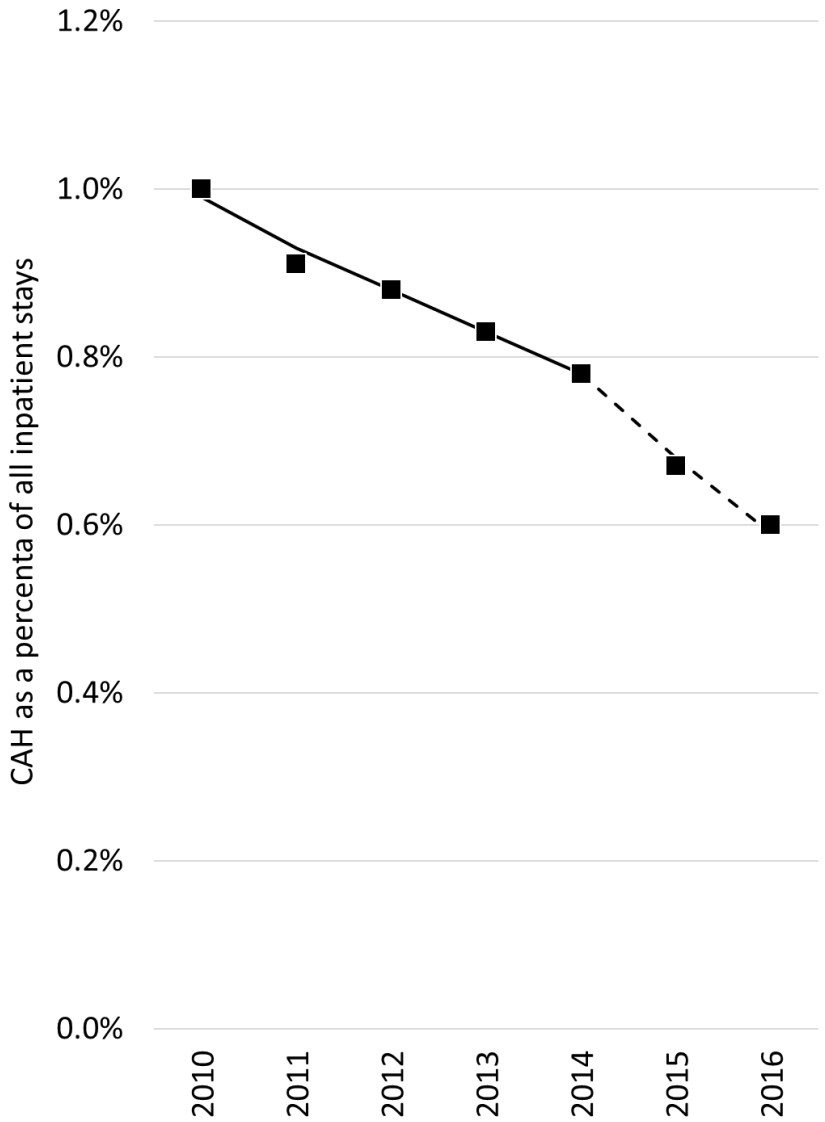
Source: WA/OR inpatient discharge data



Grays Harbor Hospital Inpatient Stays

Source: WA/OR inpatient discharge data

2010-16 trend of CAH stays as a percent of all stays



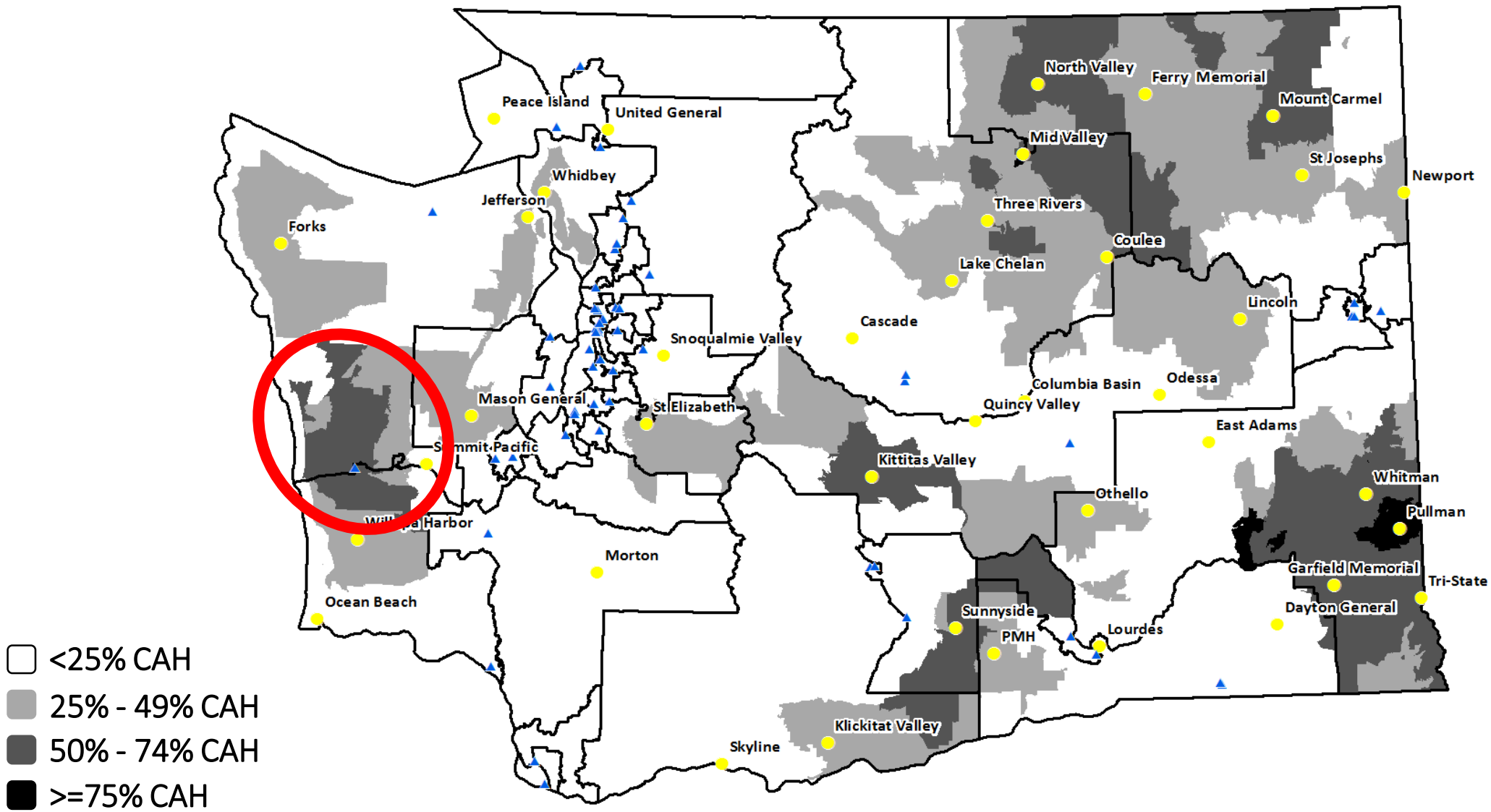
Trend significant -5.7% per year, 2010-14

Best fit; trend not significant, 2014-16

All Acute Inpatient Stays with **Grays Harbor Hospital**

2015-16 combined CAH market share

Source: WA/OR inpatient discharge data

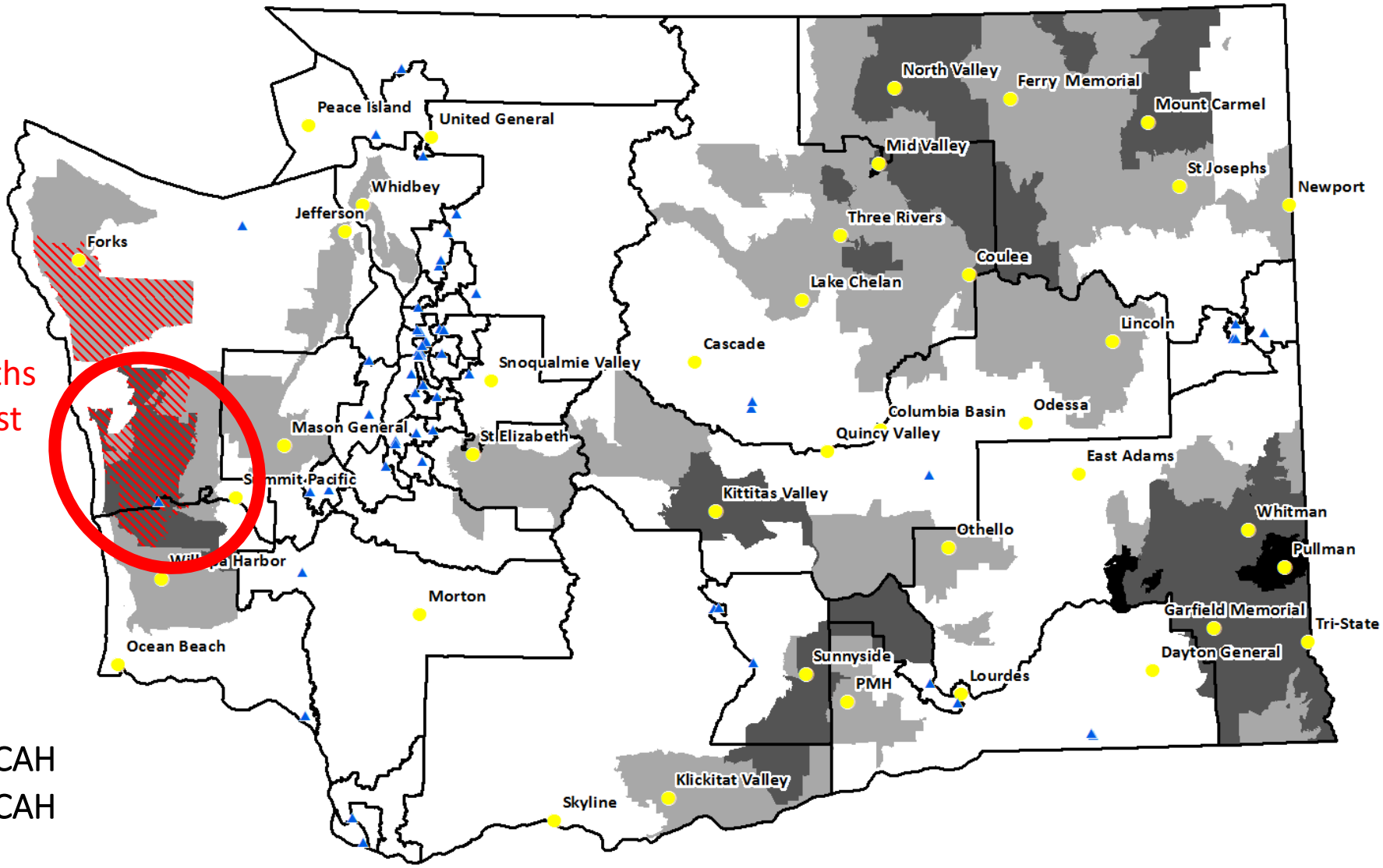


All Acute Inpatient Stays with **Grays Harbor Hospital**

2015-16 combined CAH market share

Source: WA/OR inpatient discharge data

Grays Harbor Health Care Amenable Deaths hot spot in Southwest cluster



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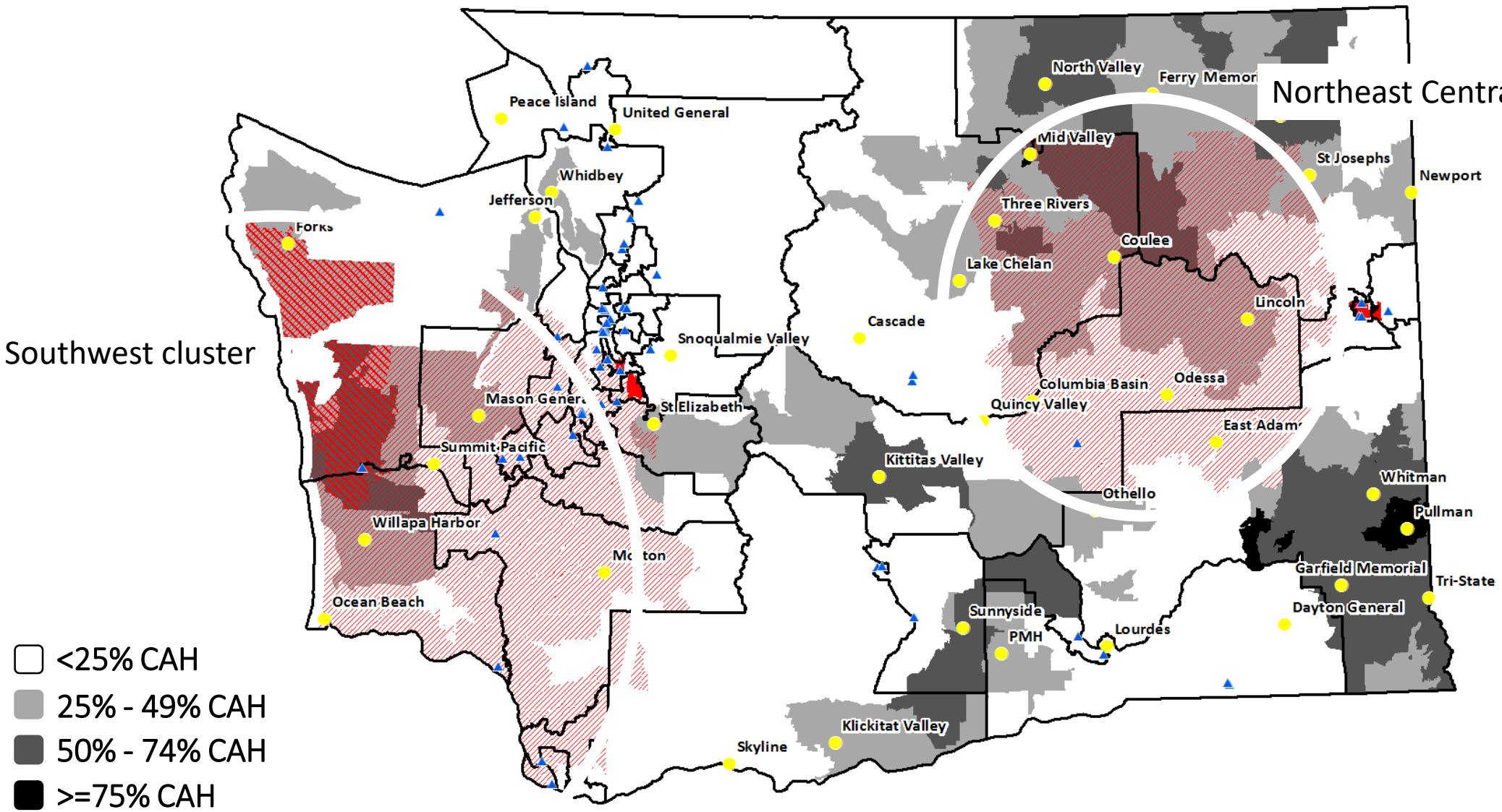
All Acute Inpatient Stays with **Grays Harbor Hospital**

2015-16 combined CAH market share

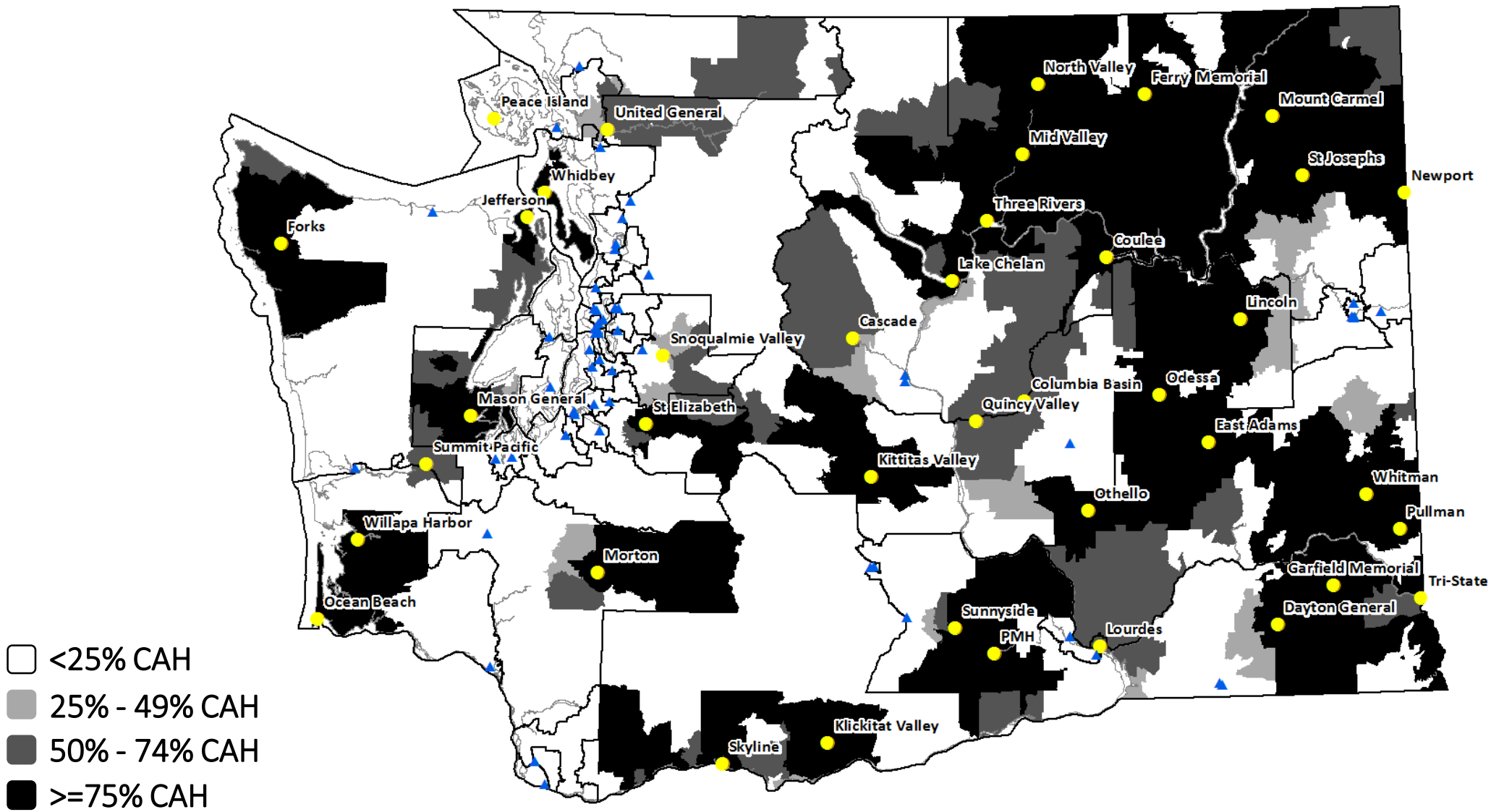
Source: WA/OR inpatient discharge data



Emergency Department Visits

Source: WA-APCD/OFM

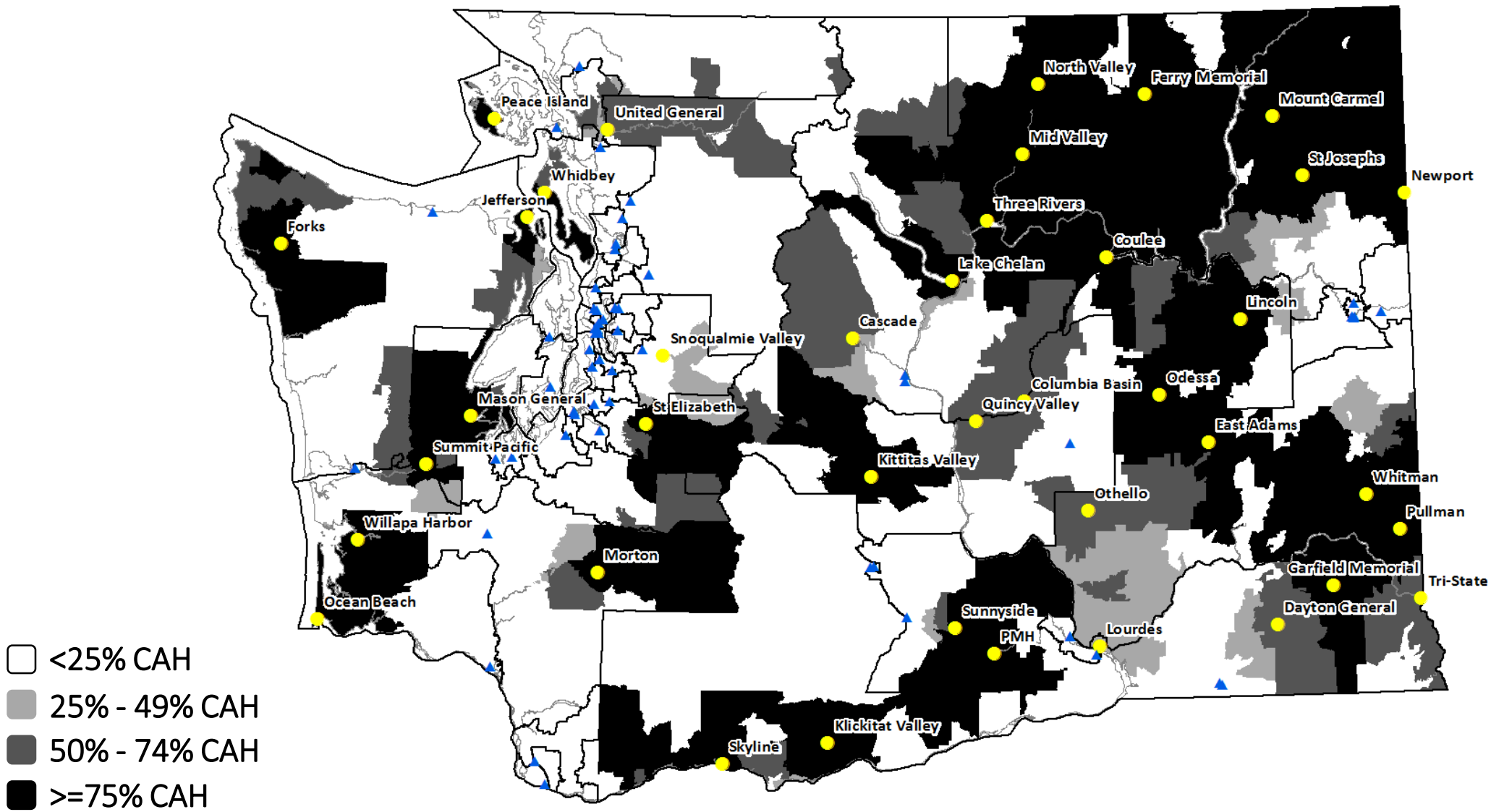
2011 CAH market share (Medicare only)



Emergency Department Visits

Source: WA-APCD/OFM

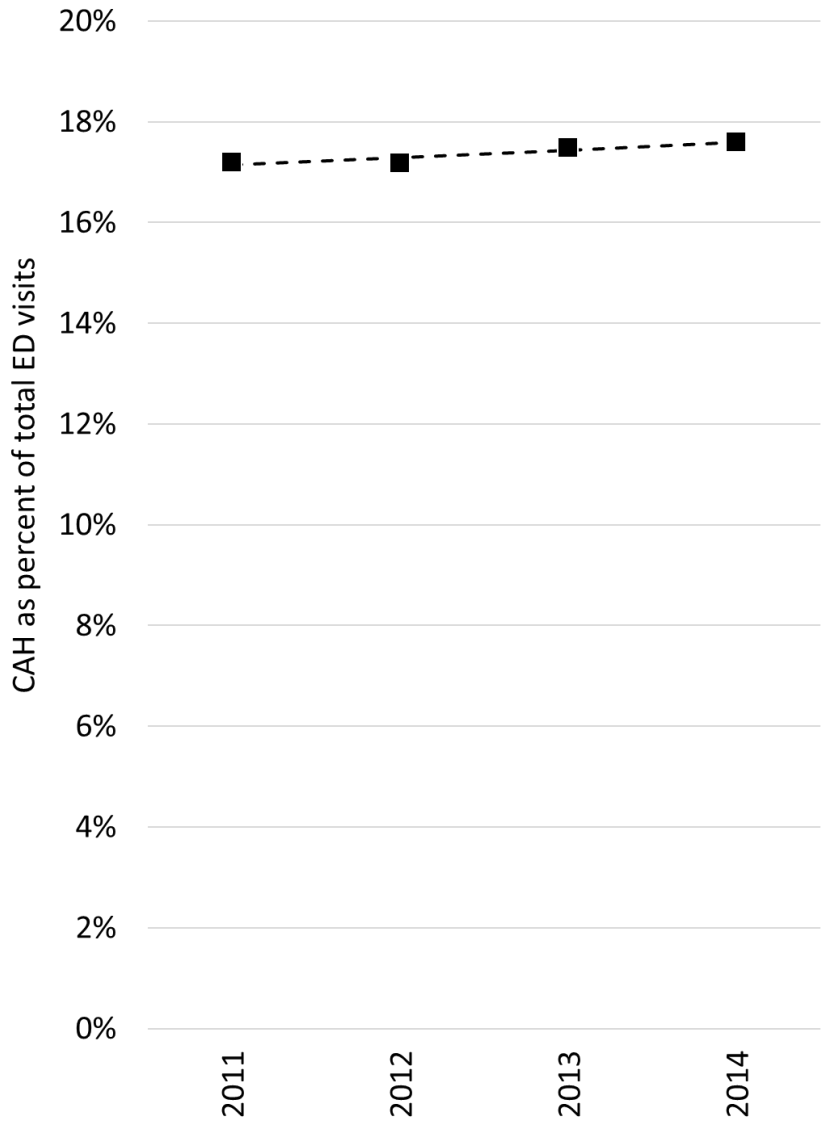
2014 CAH market share (Medicare only)



Emergency Department Visits (Medicare)

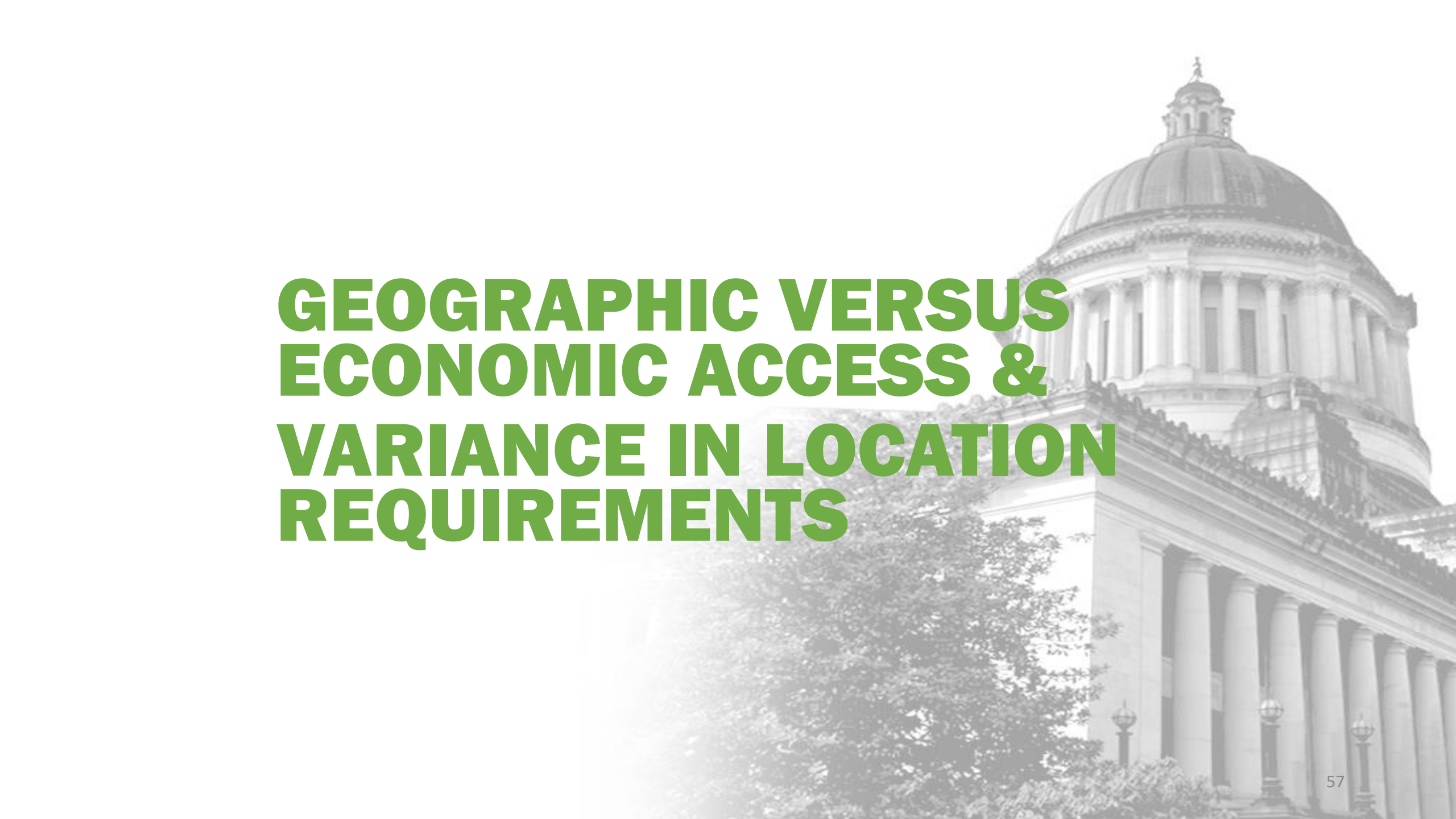
2010-16 trend of CAH stays as a percent of all stays

Source: WA-APCD/OFM



Best fit; trend not significant

GEOGRAPHIC VERSUS ECONOMIC ACCESS & VARIANCE IN LOCATION REQUIREMENTS



Department of Health and Human Services

OFFICE OF
INSPECTOR GENERAL

MEDICARE BENEFICIARIES PAID NEARLY HALF OF THE COSTS FOR OUTPATIENT SERVICES AT CRITICAL ACCESS HOSPITALS

Daniel R. Levinson
Inspector General

October 2014
OEI-05-12-00085

Figure 2: Calculation of Medicare Payments and Beneficiary Coinsurance Payments to Acute-Care Hospitals

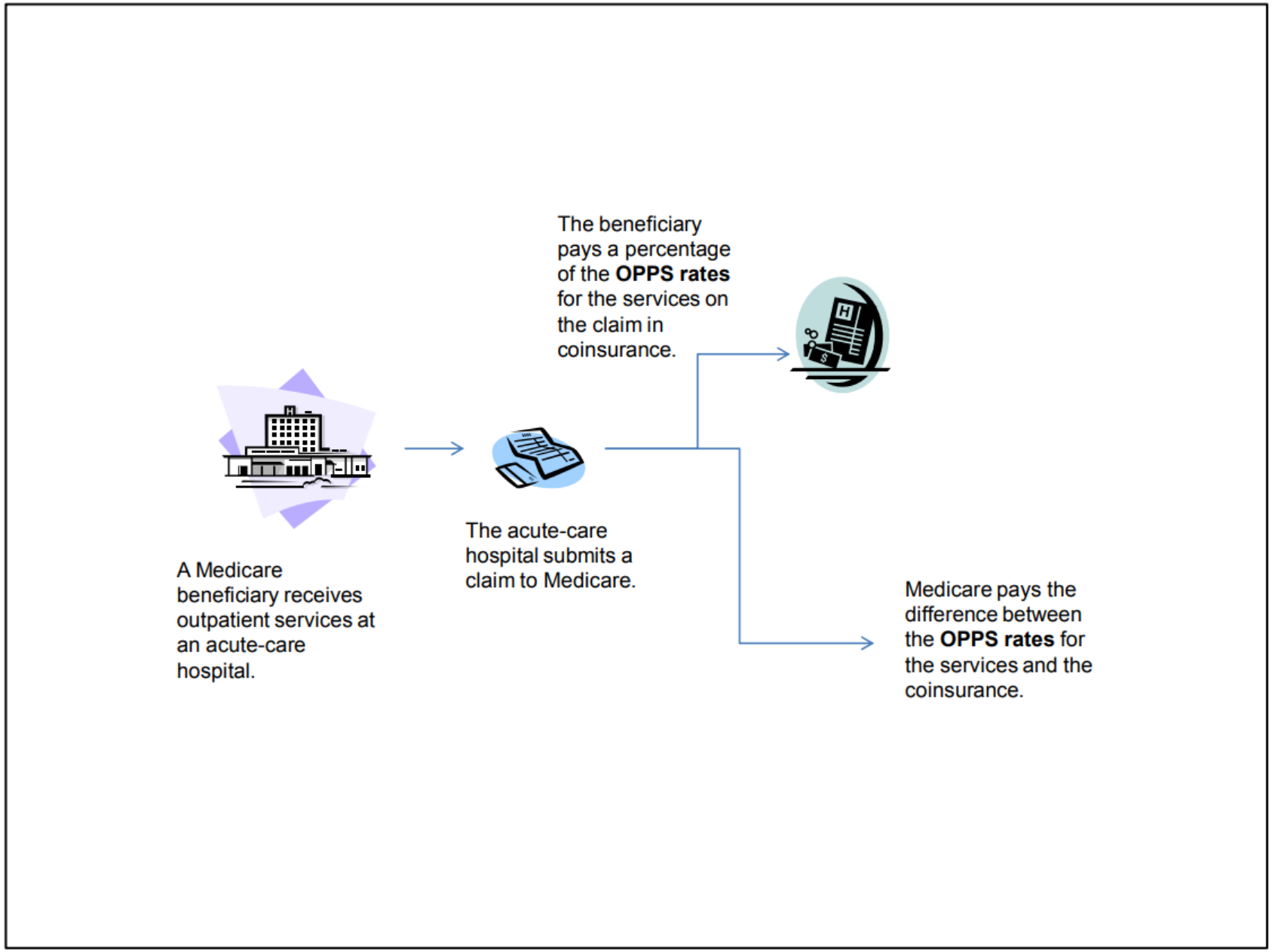
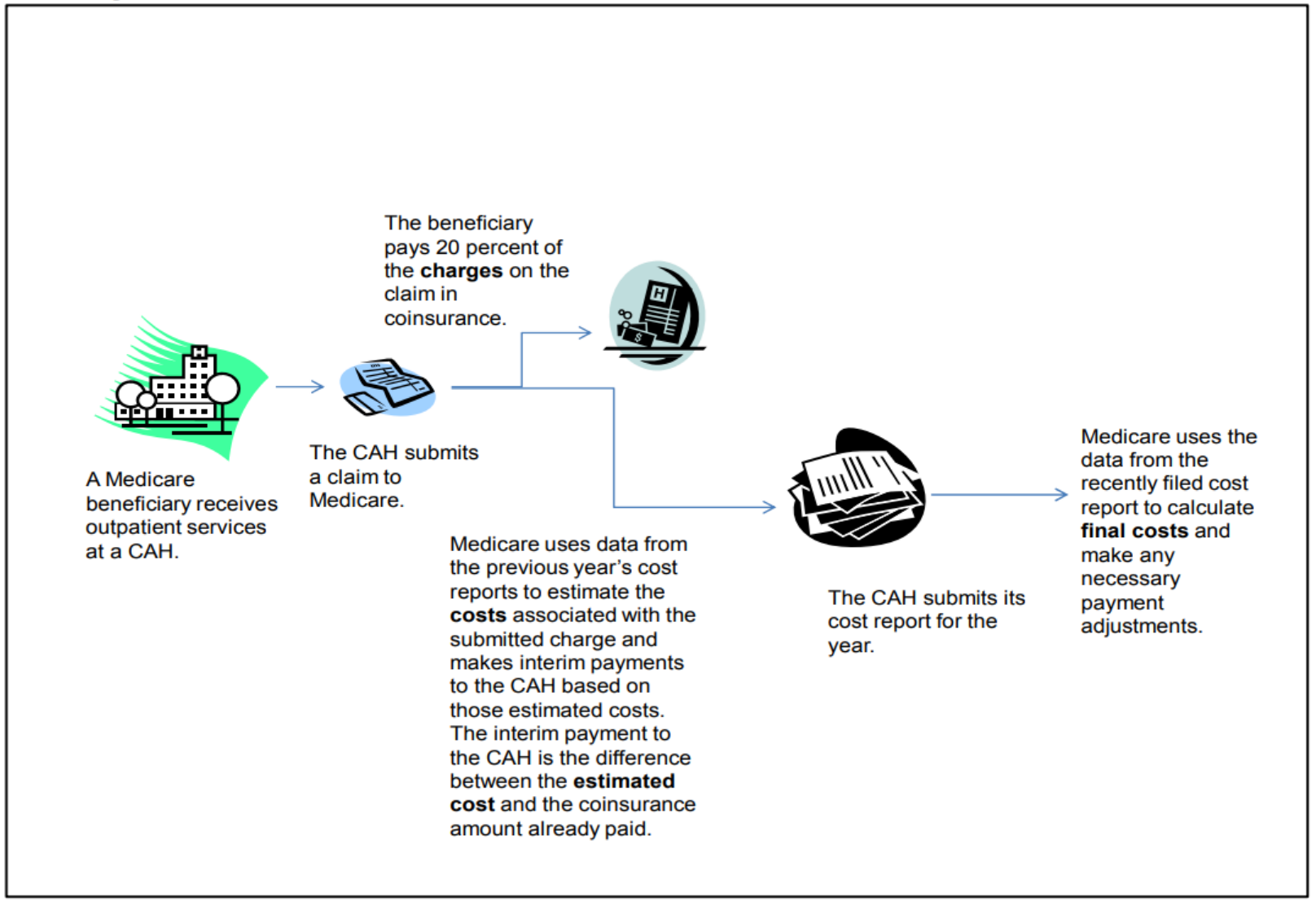


Figure 1: Calculation of Medicare Payments and Beneficiary Coinsurance Payments to CAHs



Source: OIG analysis of Medicare payment policies for outpatient services at CAHs, 2014.

Table 2: Beneficiaries' Coinsurance Amounts at CAHs and Acute-Care Hospitals in 2012 for Frequently Provided Outpatient Services

Service number	Service type	Number of times service was provided at CAHs	Basis for calculating coinsurance		Coinsurance payments*	
			CAHs' average charge	OPPS payment rate at acute-care hospital	Beneficiary average coinsurance amount at CAHs	Beneficiary minimum unadjusted copayment amount at acute-care hospitals**
Service1	Electrocardiogram tracing	759,686	$164.31	$26.75	$32.86	$5.35
Service 2	Hydrate IV infusion add-on	655,763	$89.66	$24.81	$17.93	$4.96
Service 3	Therapeutic, prophylactic, or diagnostic injection; subcutaneous or intramuscular	442,458	$70.12	$34.81	$14.03	$6.96
Service 4	Therapeutic, prophylactic, or diagnostic injection; IV push, new drug add-on	338,707	$110.45	$34.81	$22.09	$6.96
Service 5	Intravenous infusion (initial)	297,692	$277.77	$126.64	$55.55	$25.33
Service 6	Therapeutic, prophylactic, or diagnostic injection; IV push	288,644	$131.31	$34.81	$26.26	$6.96
Service 7	Cardiac rehab/monitor	238,445	$171.15	$69.61	$34.23	$13.92
Service 8	Airway inhalation treatment	186,575	$84.80	$29.71	$16.96	$7.72
Service 9	Intravenous infusion (additional)	180,779	$99.98	$34.81	$20.00	$6.96
Service 10	Transthoracic echocardiogram with Doppler complete	89,674	$1,540.40	$392.78	$308.08	$78.56

Source: OIG analysis of 2012 NCH outpatient files, 2014.

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Source: OIG analysis of 2012 NCH outpatient files, 2014.

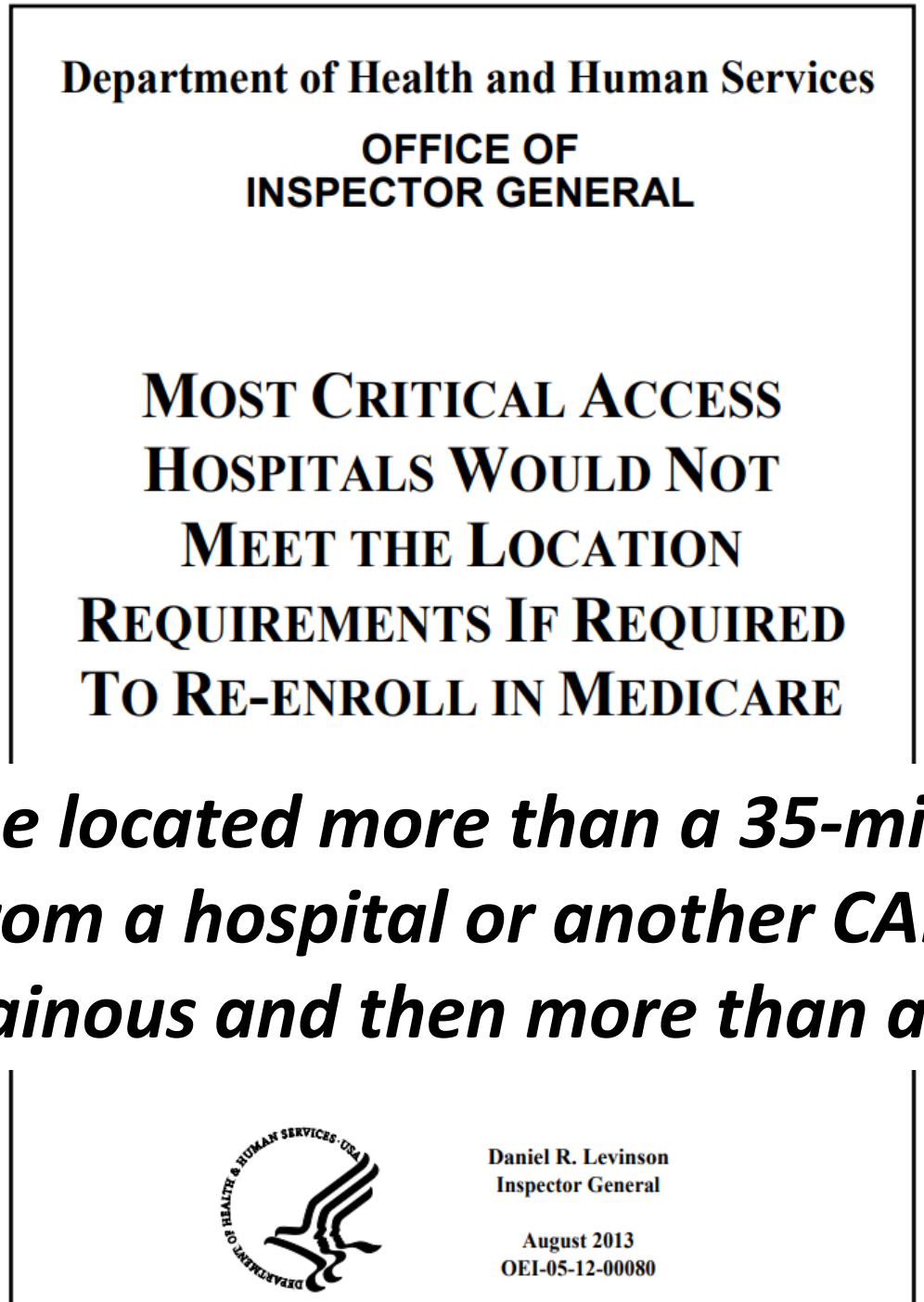
Department of Health and Human Services

OFFICE OF
INSPECTOR GENERAL

MOST CRITICAL ACCESS HOSPITALS WOULD NOT MEET THE LOCATION REQUIREMENTS IF REQUIRED TO RE-ENROLL IN MEDICARE

Daniel R. Levinson
Inspector General

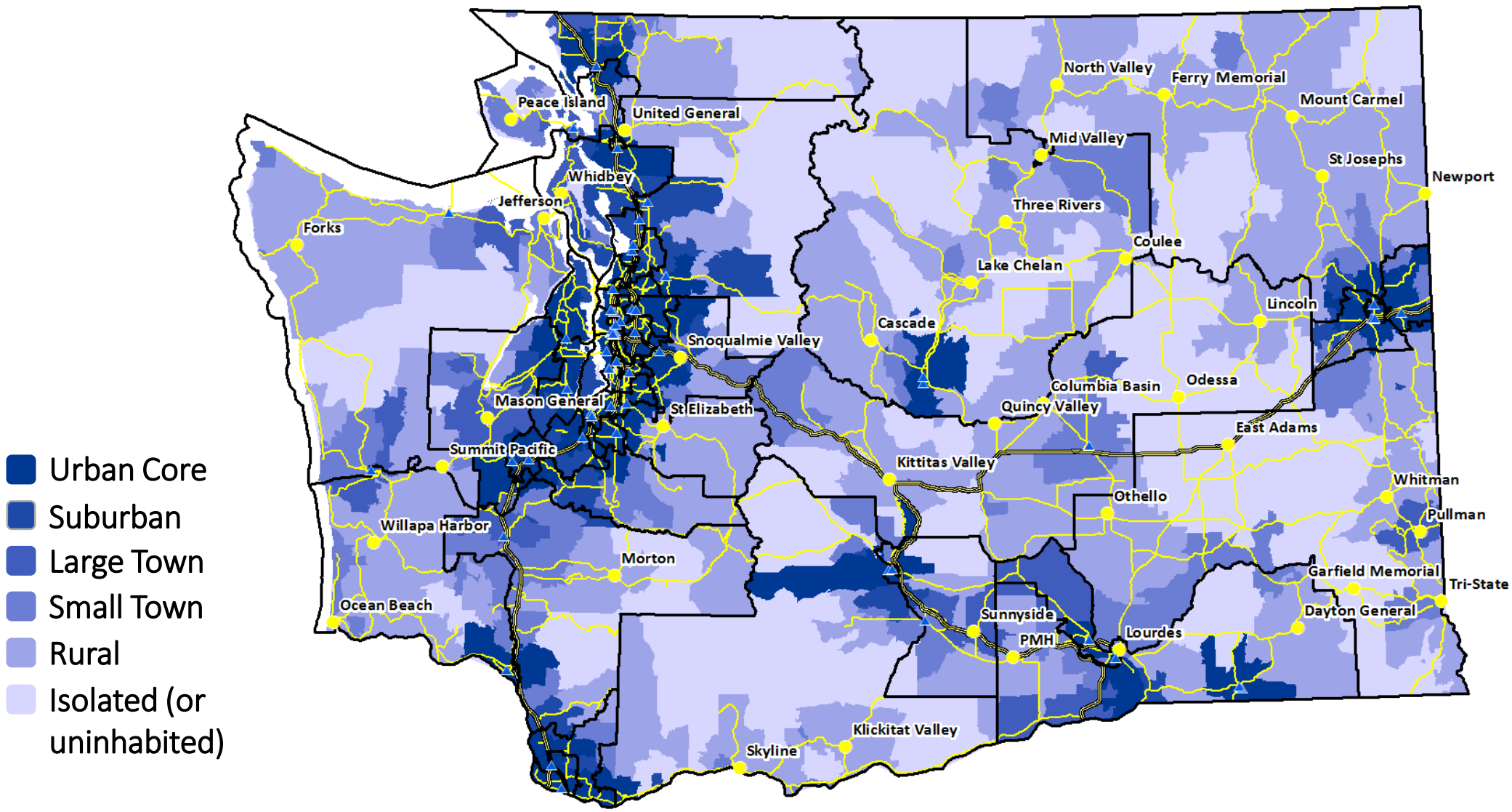
August 2013
OEI-05-12-00080



The CAH must be located more than a 35-mile drive from a hospital or another CAH (unless mountainous and then more than a 15-mile drive)

RUCA with Major Roadways and Hospitals

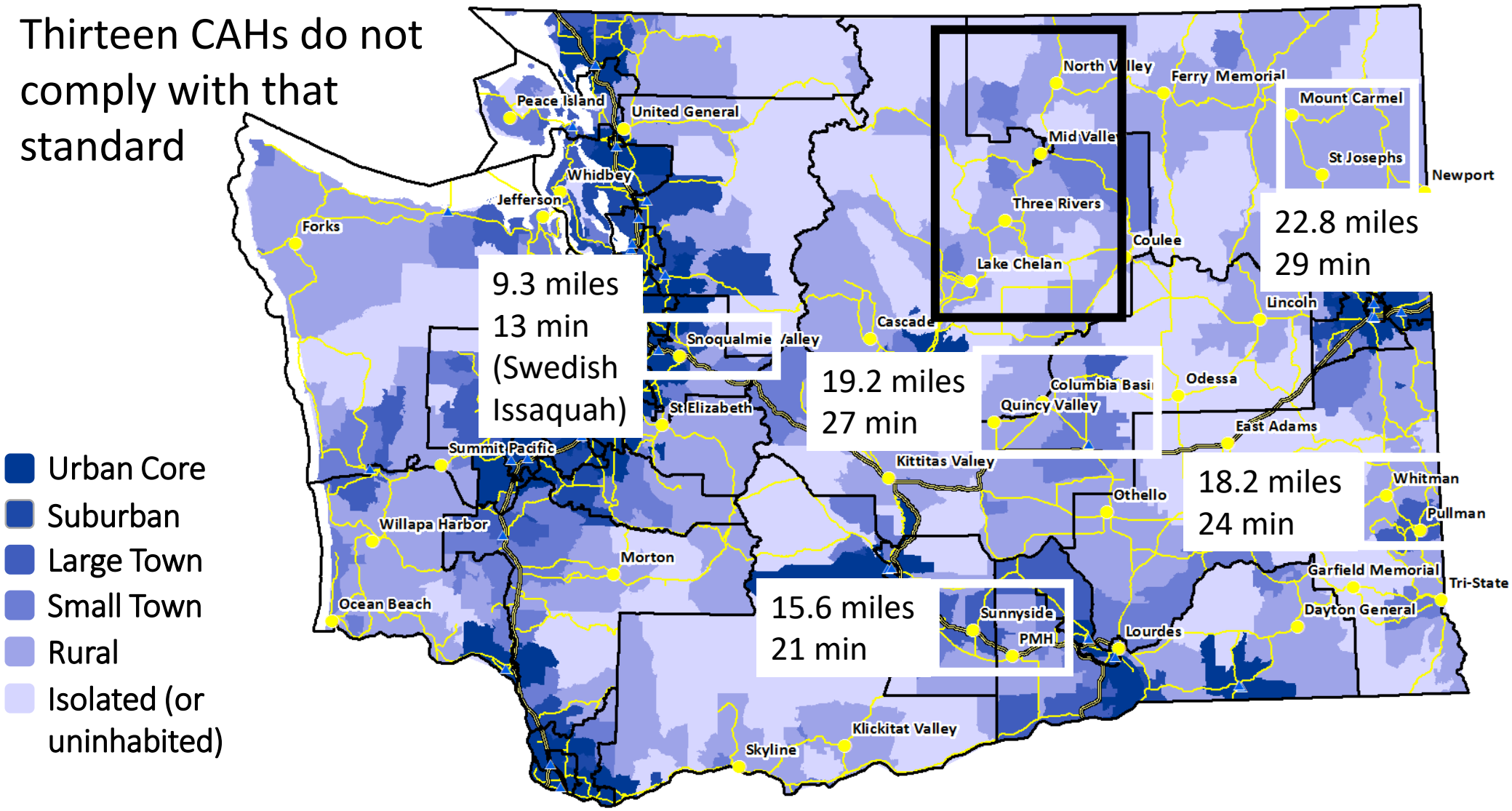
Source: Rural Health Research Center (UW)

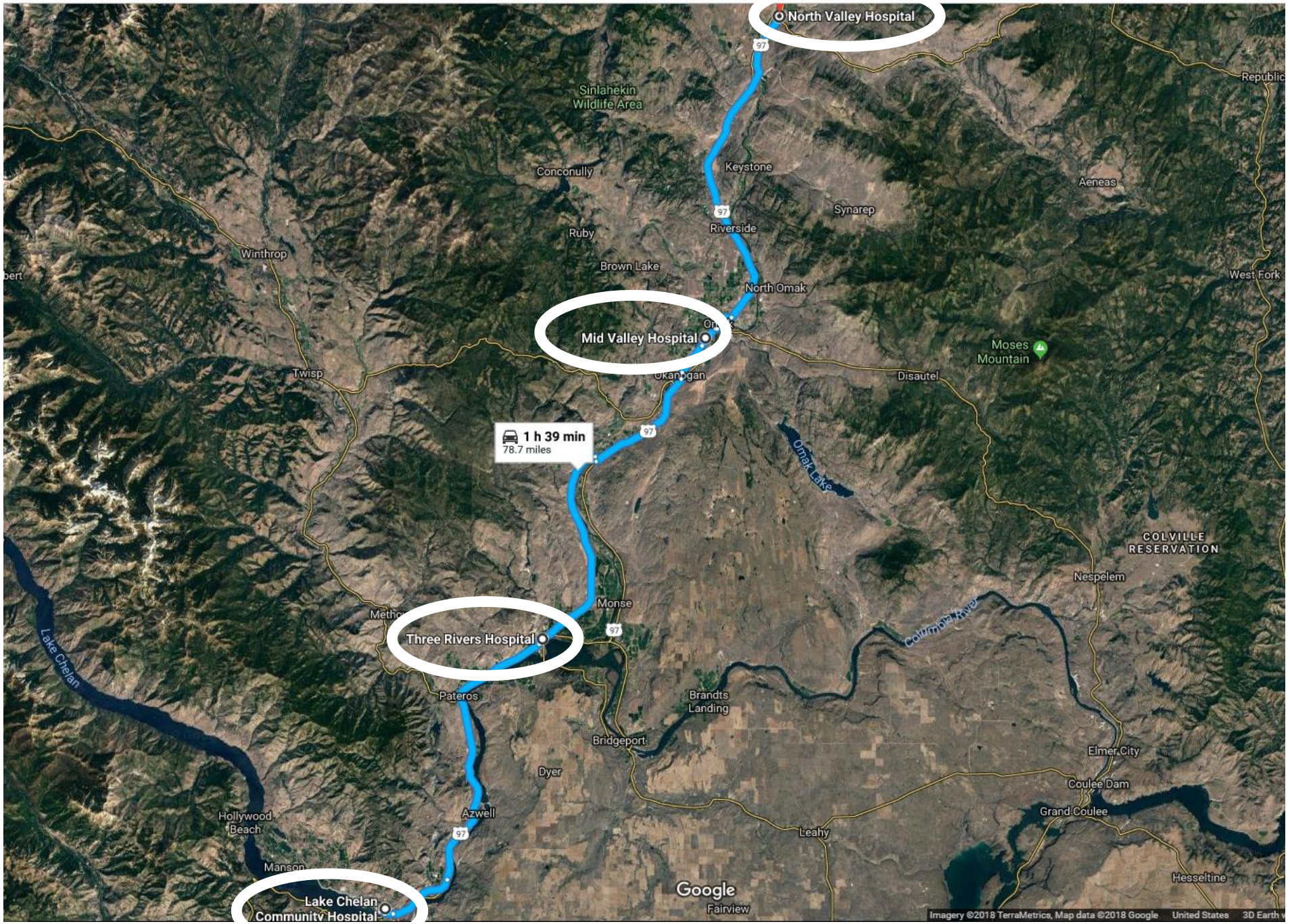


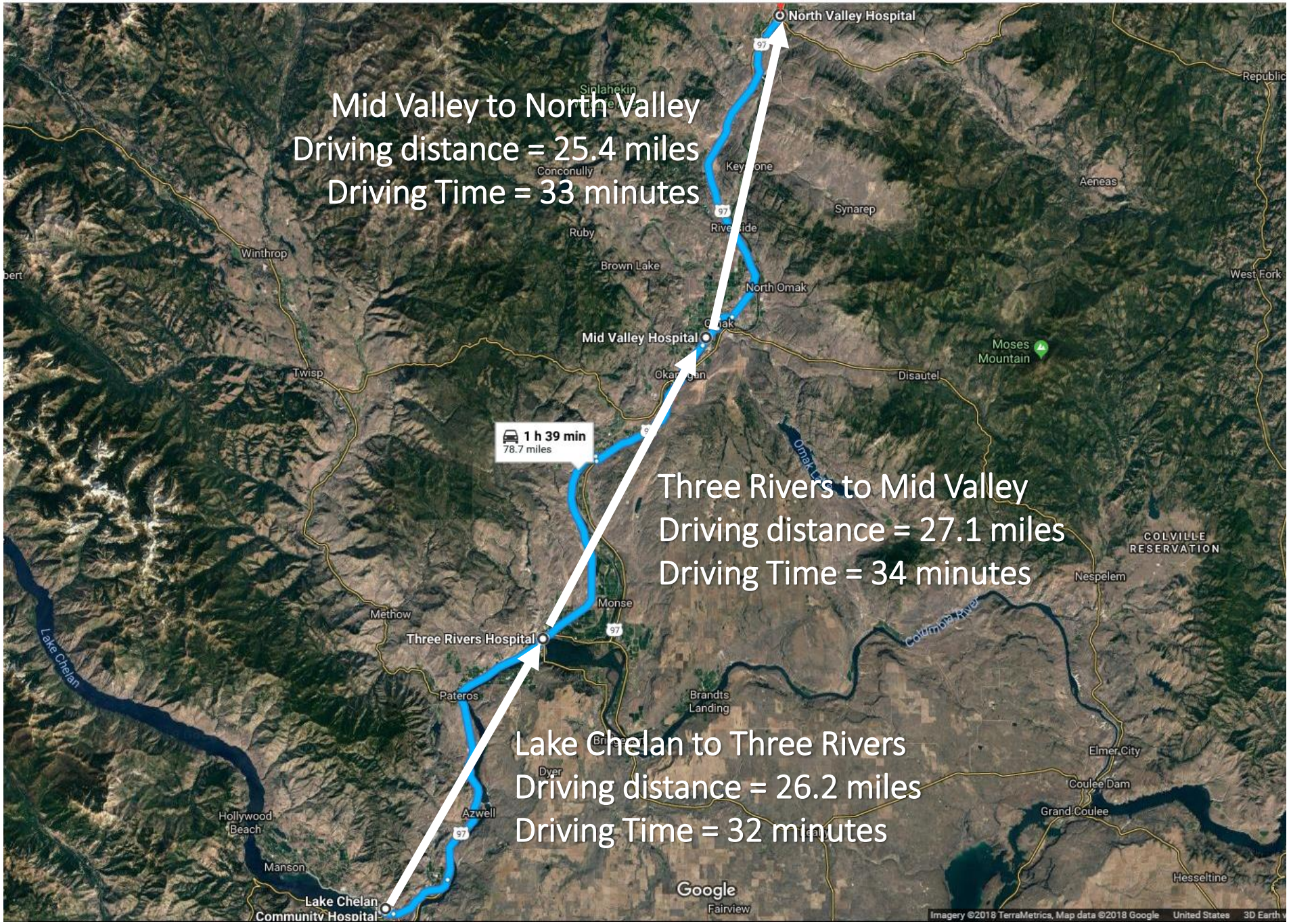
RUCA with Major Roadways and Hospitals

Source: Rural Health Research Center (UW)

Thirteen CAHs do not comply with that standard

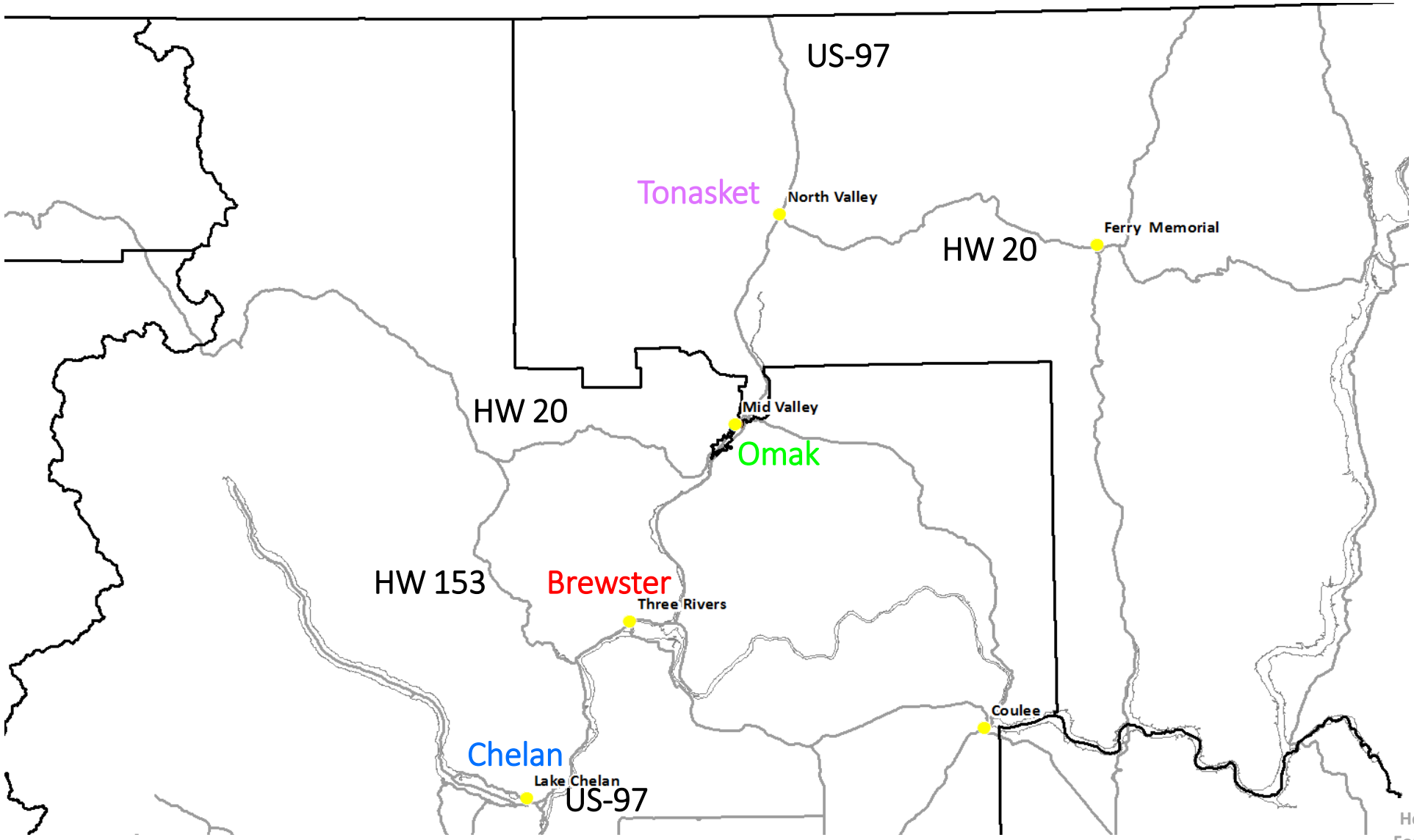



North Valley Hospital
Sinlahekin Wildlife Area
Republic
Conconully
Keystone
Aeneas
Synarep
Riverside
Ruby
Winthrop
Brown Lake
West Fork
North Omak
Mid Valley Hospital
Moses Mountain
Twisp
Okanogan
Disaut
1 h 39 min
78.7 miles
Omak Lake
COLVILLE RESERVATION
Nespelem
Monse
Three Rivers Hospital
Columbia River
Lake Chelan
Pateros
Brandts Landing
Bridgeport
Elmer City
Dyer
Coulee Dam
Grand Coulee
Hollywood Beach
Azwell
Leahy
Manson
Hesseltine
Lake Chelan Community Hospital
Google
Fairview
Imagery ©2018 TerraMetrics, Map data ©2018 Google
United States
3D Earth


North Valley Hospital
Mid Valley to North Valley
Driving distance = 25.4 miles
Driving Time = 33 minutes
Mid Valley Hospital
1 h 39 min
78.7 miles
Three Rivers to Mid Valley
Driving distance = 27.1 miles
Driving Time = 34 minutes
Three Rivers Hospital
Lake Chelan to Three Rivers
Driving distance = 26.2 miles
Driving Time = 32 minutes
Lake Chelan Community Hospital
Siplahekin
Conconully
Winthrop
Ruby
Brown Lake
Synarep
Aeneas
North Omak
Moses Mountain
Disautel
Twisp
Monse
Methow
Nespelem
COLVILLE RESERVATION
Columbia River
Lake Chelan
Pateros
Brandts Landing
Elmer City
Coulee Dam
Grand Coulee
Hollywood Beach
Azwell
Manson
Hesseltine
Fairview
Google
Imagery ©2018 TerraMetrics, Map data ©2018 Google United States 3D Earth

All Acute Inpatient Stays

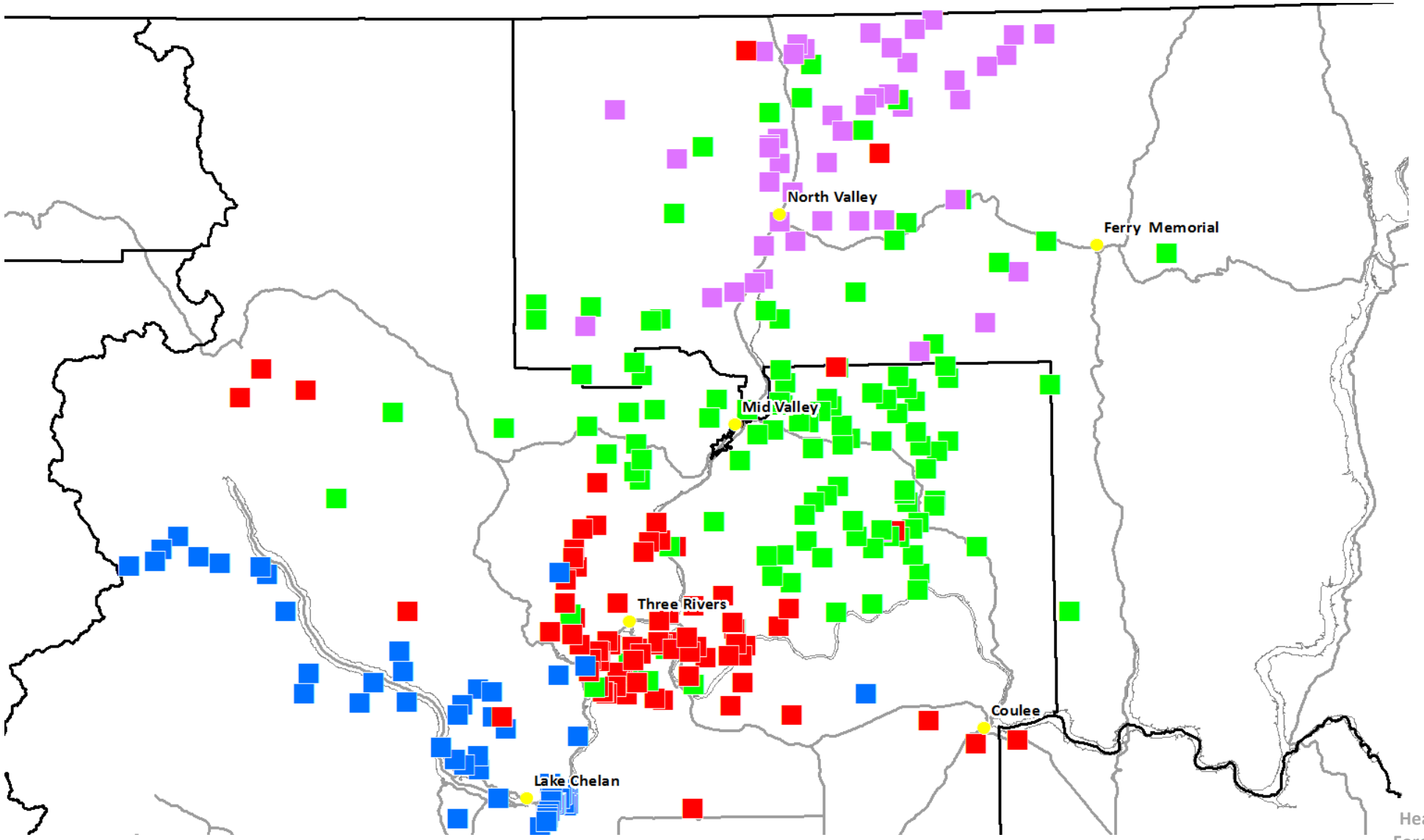
Source: WA/OR inpatient discharge data



All Acute Inpatient Stays

Source: WA/OR inpatient discharge data

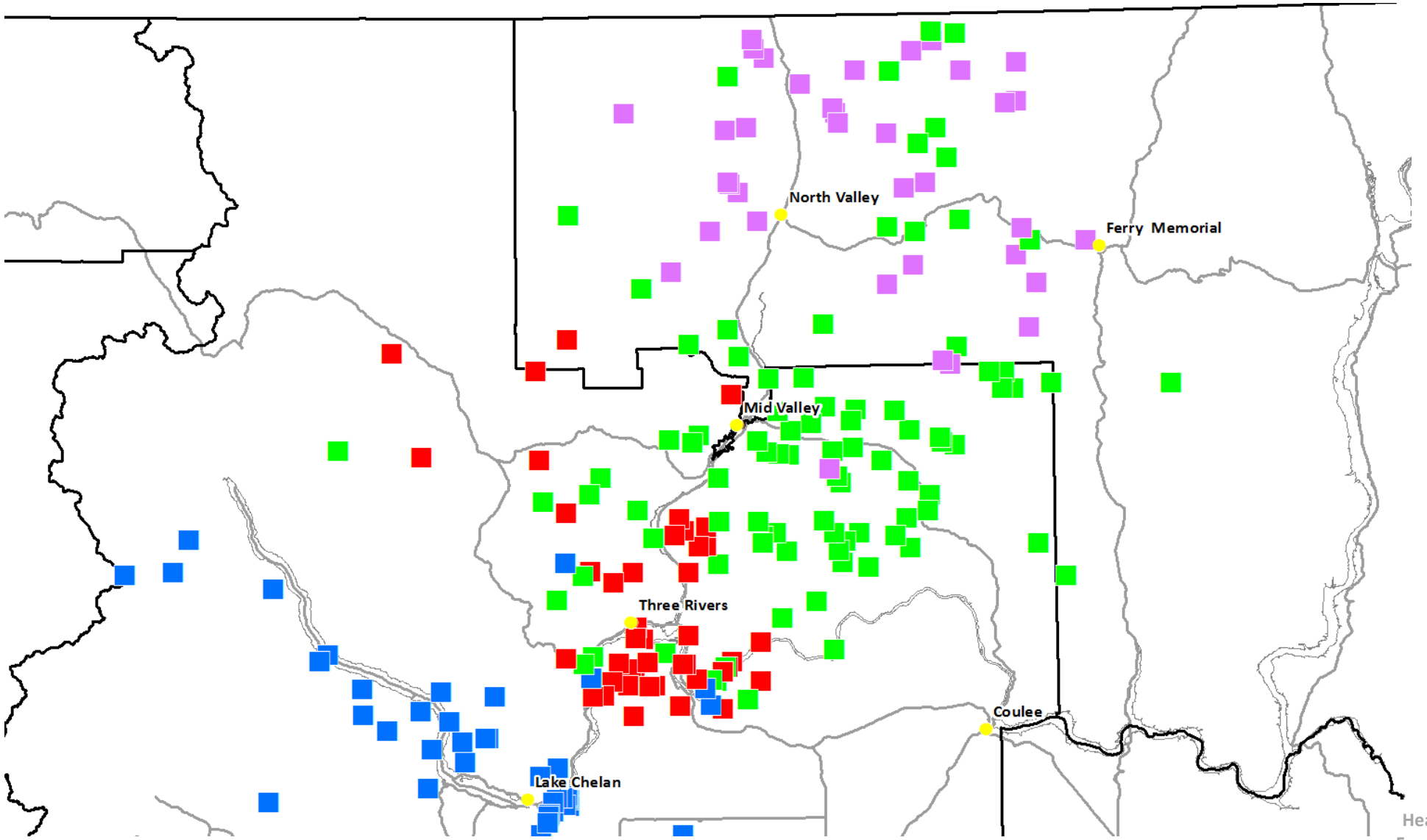
2010-11 competing CAHs' market shares



All Acute Inpatient Stays

Source: WA/OR inpatient discharge data

2015-16 competing CAHs' market shares



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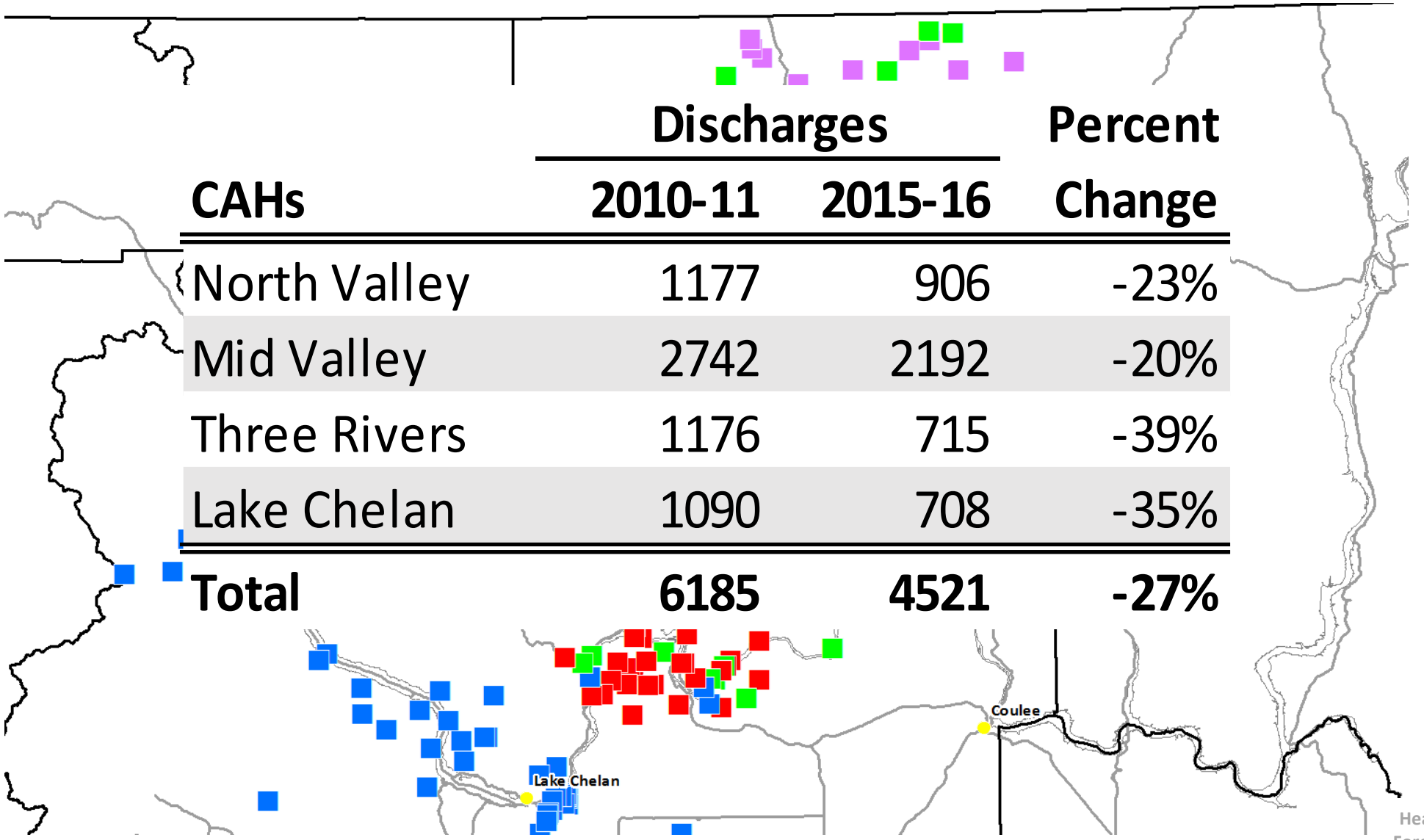
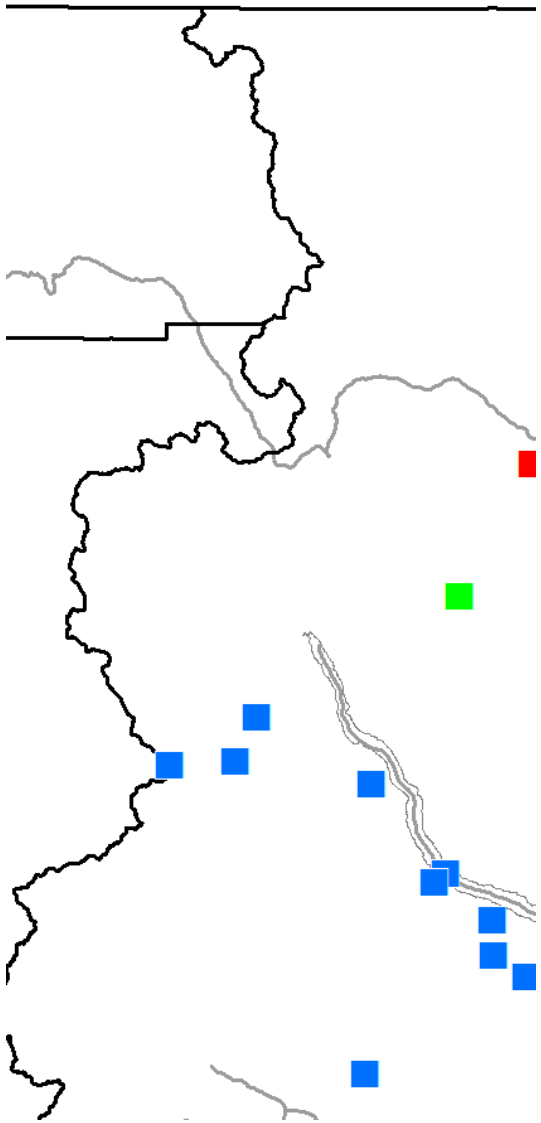


CAHs	Discharges 2010-11	Discharges 2015-16	Percent Change
North Valley	1177	906	-23%
Mid Valley	2742	2192	-20%
Three Rivers	1176	715	-39%
Lake Chelan	1090	708	-35%
Total	**6185**	**4521**	**-27%**

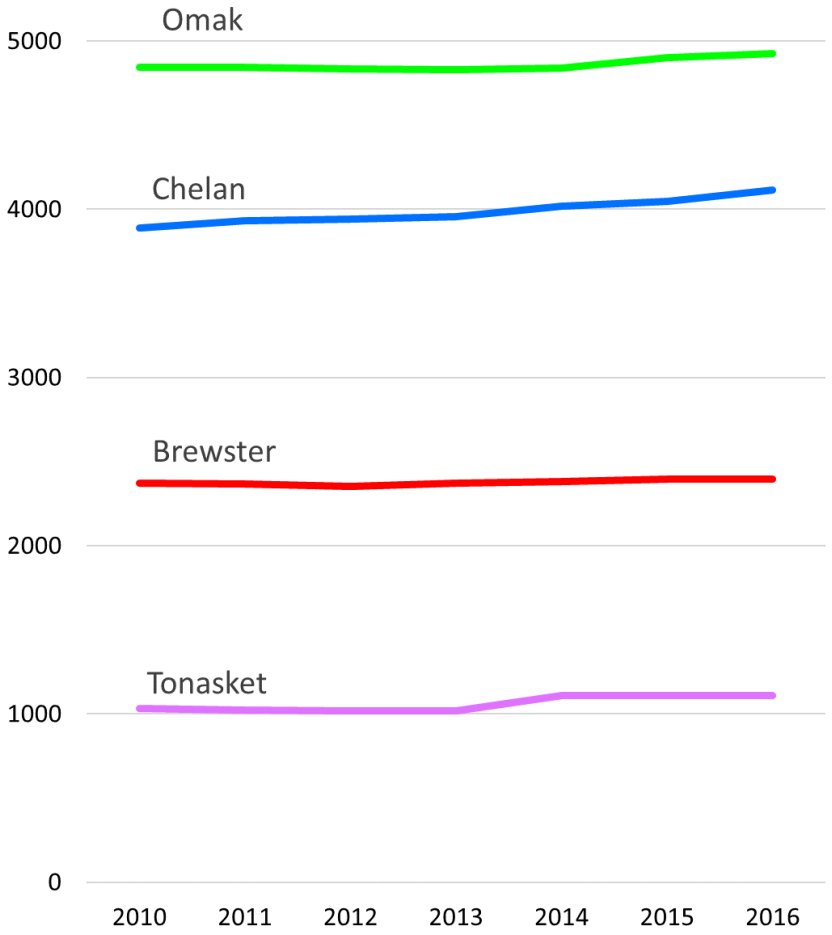
All Acute Inpatient Stays

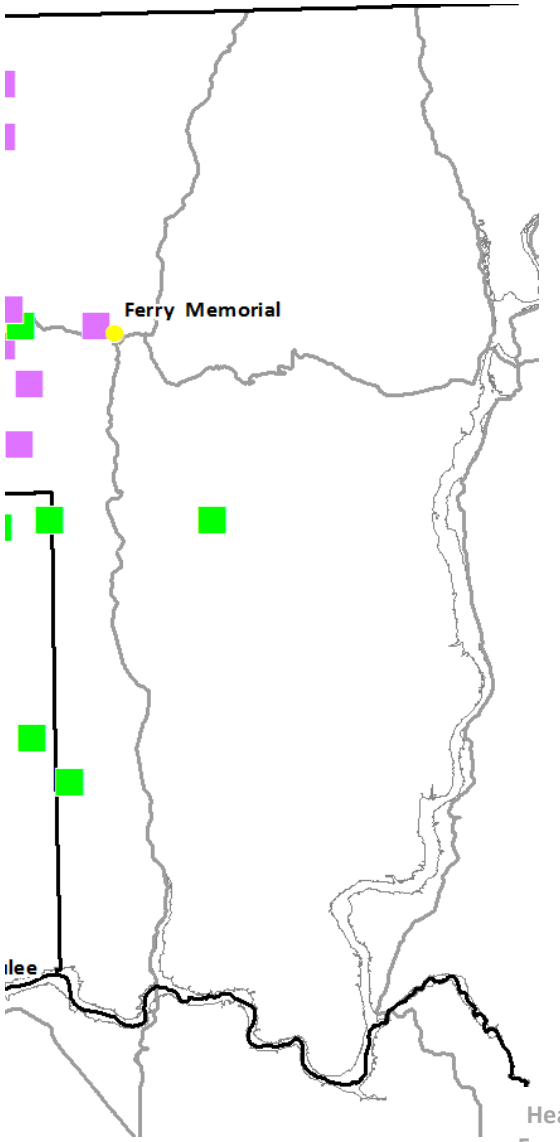
Source: WA/OR inpatient discharge data

2015-16 competing CAHs' market shares



Population





CONCLUSIONS

- Rural versus non-rural may be a misleading construct; health disparities exist but they cut across all regions
- Some communities' reliance on CAHs appear to be diminishing – at least for inpatient care
- Medicare reimbursement policies for outpatient care may force patients to choose between geographic and economic access
- Some CAHs are competing with each other for a shrinking pool of patients

FOR MORE INFORMATION:

Joe Campo, MPH
360-725-3862
Joe.campo@ofm.wa.gov
ofm.wa.gov

OFM
OFFICE OF FINANCIAL MANAGEMENT