

# Using a GIS: Access to Genetic Services in Oregon

Oregon Genetics Program  
Advisory Meeting

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September 7, 2007



# Defining Genetic Services Visits

- **Genetics Services Visits Include:**
  - Patients seen in a general, prenatal, or cancer genetics clinic with at least one Board Certified or Active Candidate Physician Geneticist, Genetic Counselor, or Advanced Practice Nurse in Genetics

# Defining General Genetics Cases

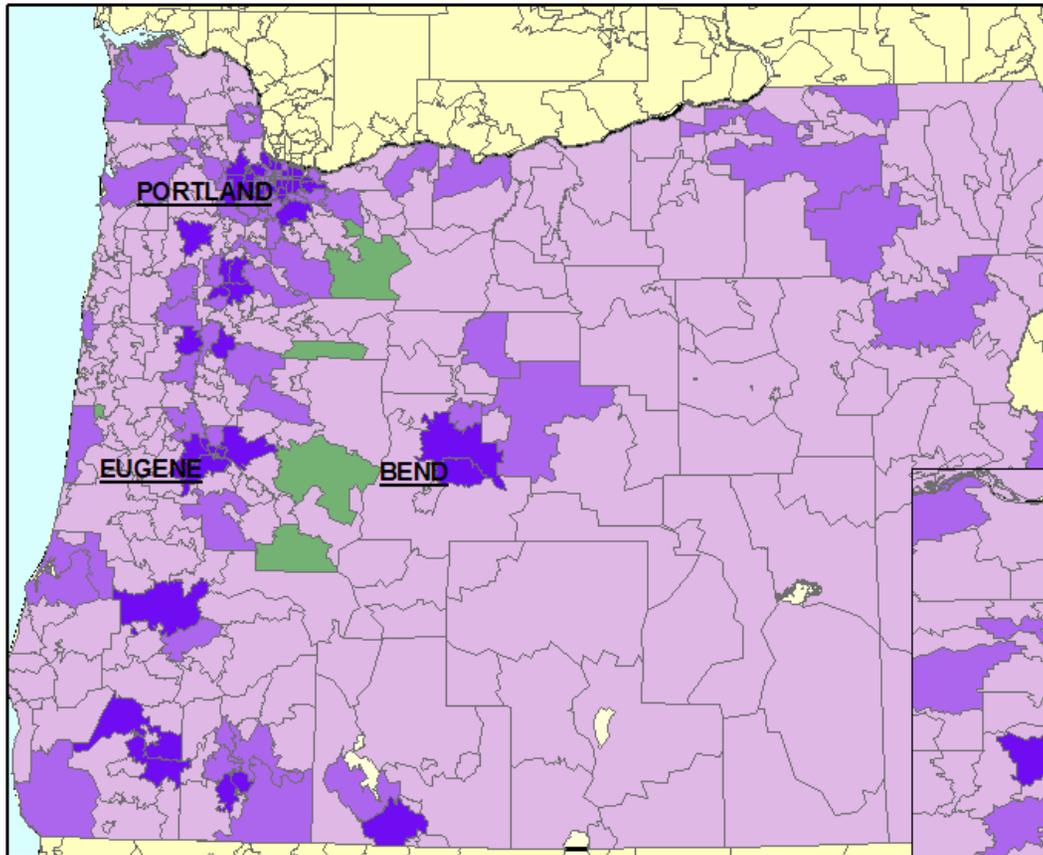
- Presumptive **General genetics cases:**

Examples **all cases coded** as the following **regardless of patient age:**

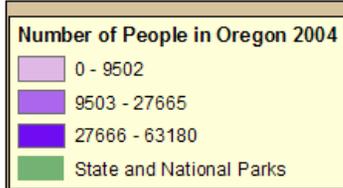
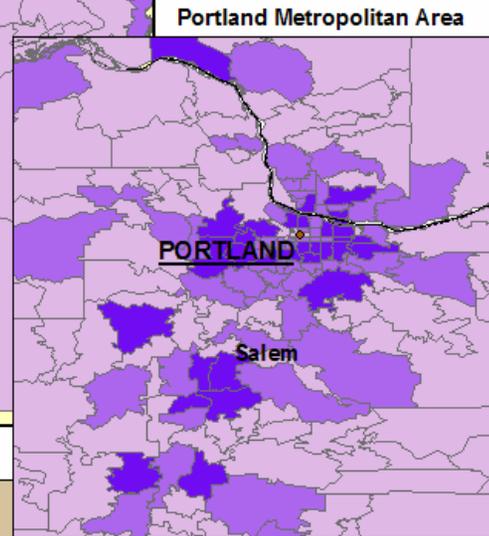
- neurological disease
- chromosomal abnormalities
- clotting disorder
- cardiovascular disease
- trisomy 21
- family history of bleeding disorder
- hemochromatosis
- hearing loss cases
- congenital anomaly

Also includes **cases** with the following codes **if patient was under 18 years of age:**

- ABNL Lab Findings
- seizure disorder
- Abnormal finding-chromosomal analysis
- epilepsy
- Anomaly of sex chromosome

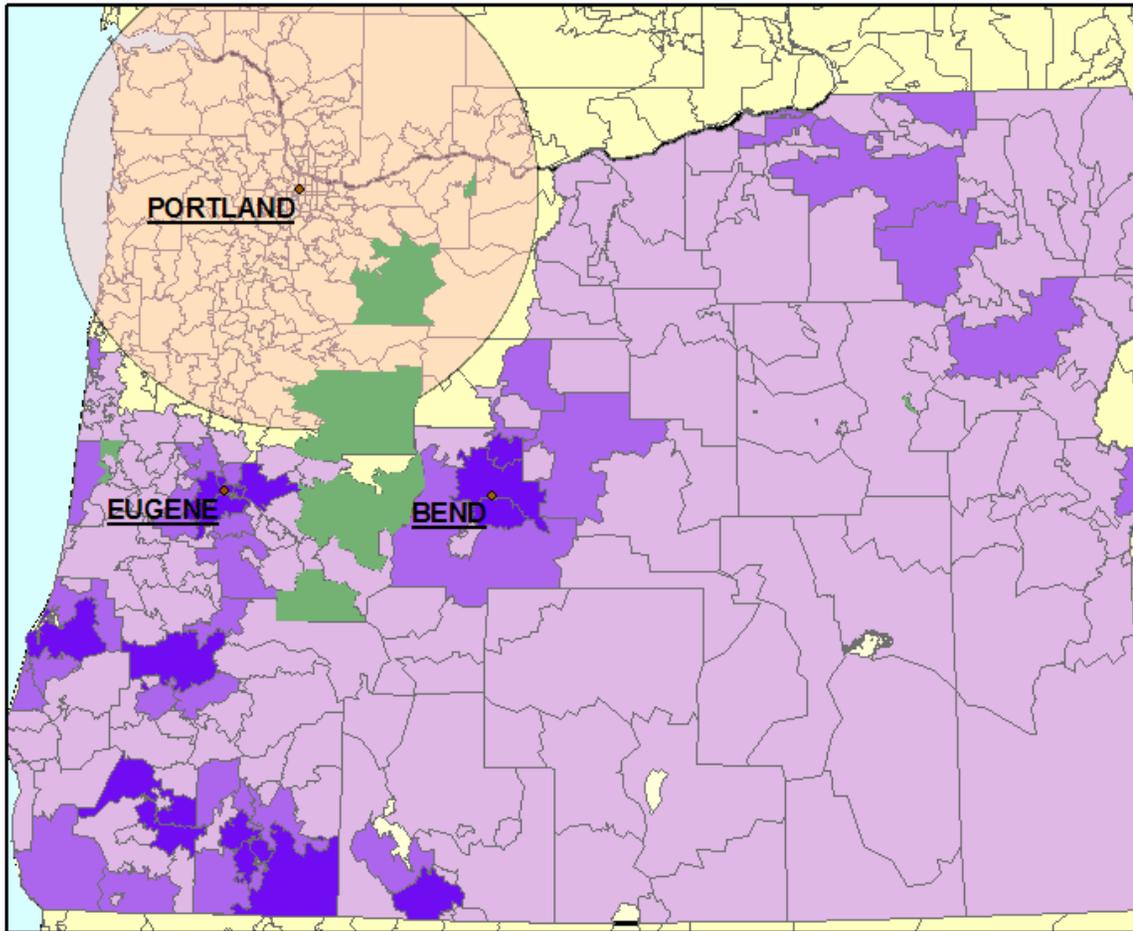


	Oregon Total
Population 2004	3,581,165

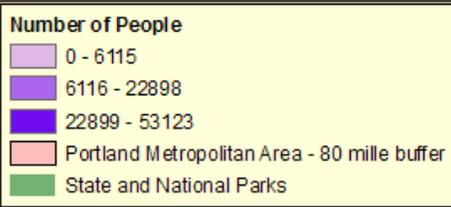


## Number of People in Oregon, 2004

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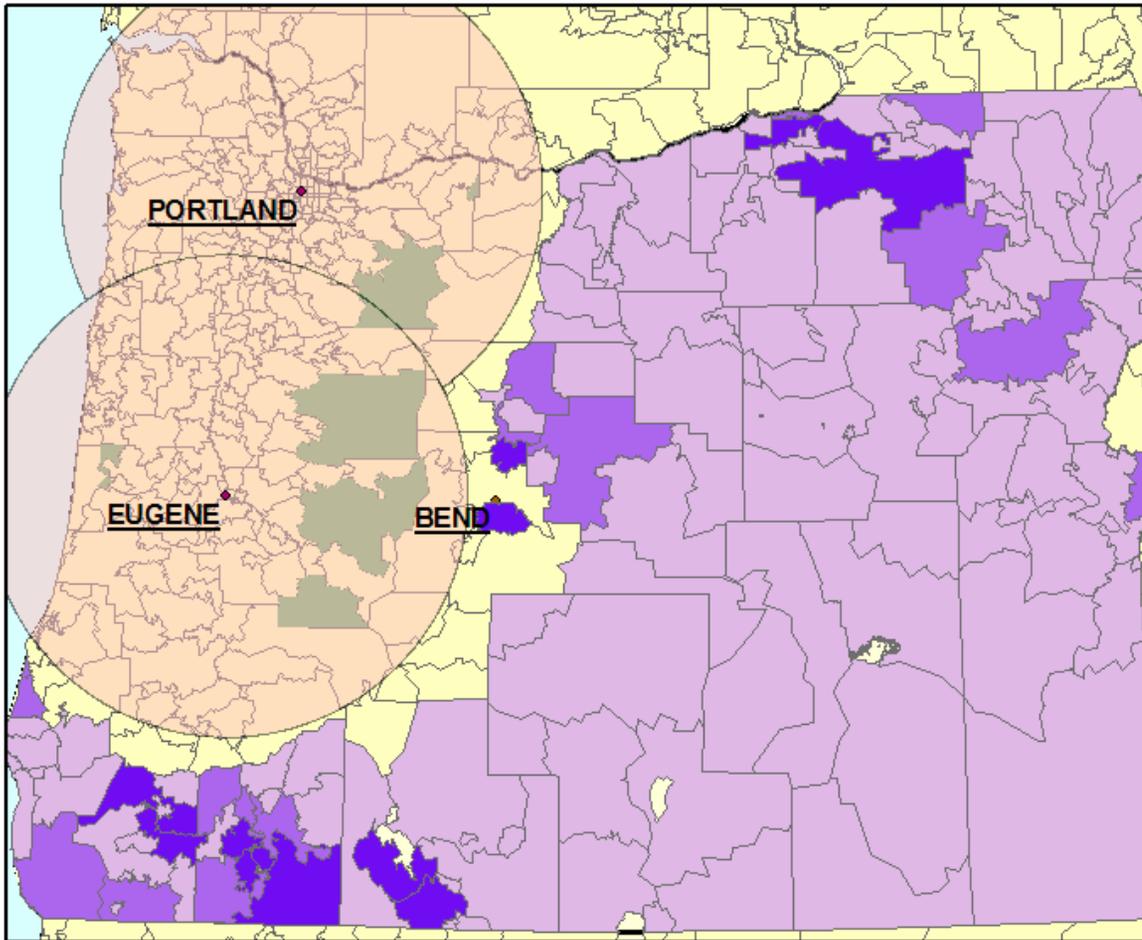


	Outside of Portland
Population 2004	1,252,470
Percent of Population	35%

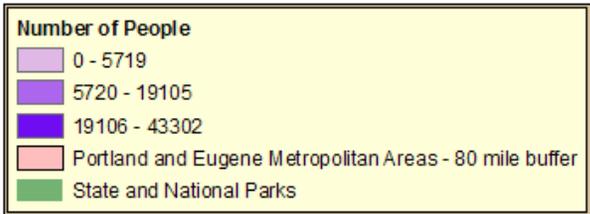


## Number of People Living 80+ miles Outside of Portland, 2004

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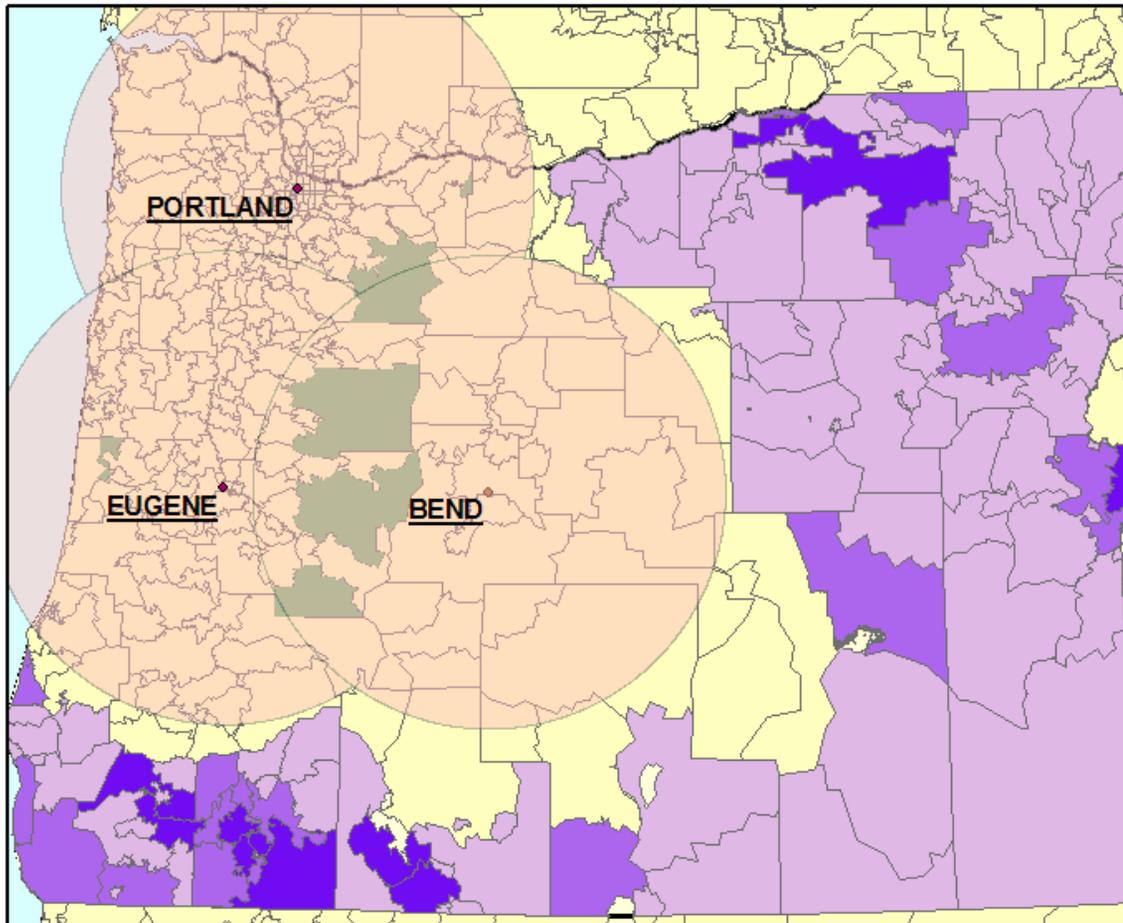


	Outside of Portland & Eugene
Population 2004	655,700
Percent of Population	18%



## Number of People Living 80+ miles Outside of Portland and Eugene, 2004

Oregon Genetics Program  
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	Outside of Portland Eugene, & Bend
Population 2004	545,101
Percent of Population	15%

**Number of People**

- 0 - 4404
- 4405 - 16326
- 16327 - 43302
- Three Metropolitan Area Buffer - 80 miles
- State and National Parks

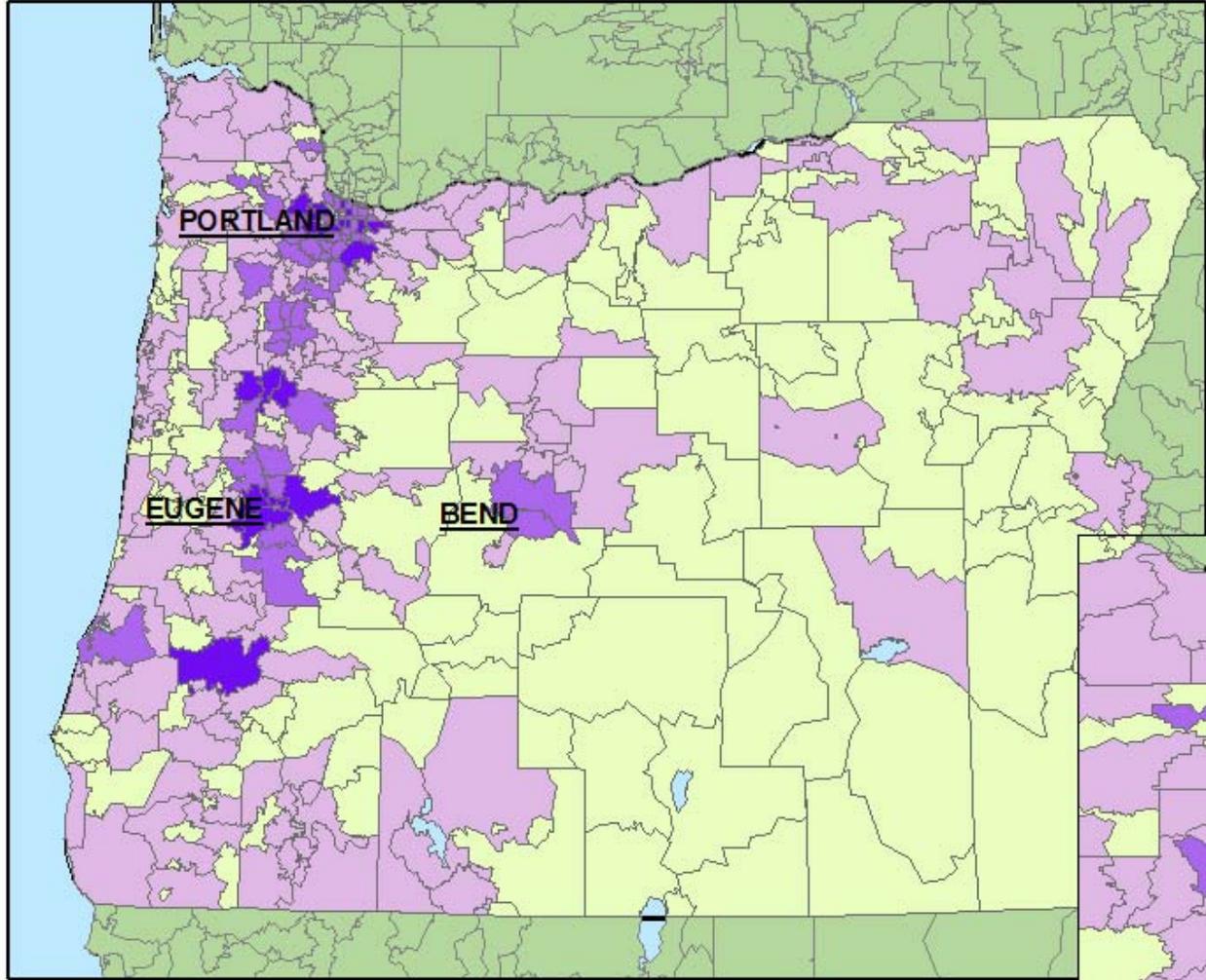
**Number of People Living 80+ miles  
Outside of Portland, Eugene,  
and Bend, 2004**

Oregon Genetics Program  
September 2007

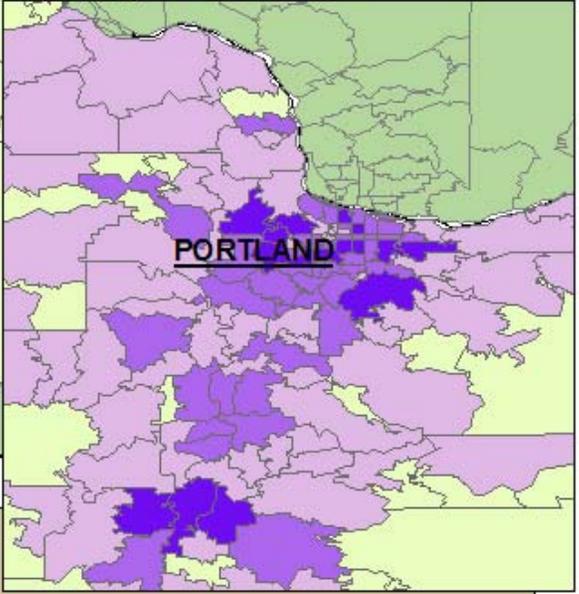
# Access to Genetics Services

- How many patients seen for **all genetics indications** in 2006 live over 80 miles away from any genetic services clinic (in Portland, Eugene, or Bend)?

All Genetics Patients	5043
US	4968
OR	4233 (85%)
WA	690 (14%)



Portland Metropolitan Area

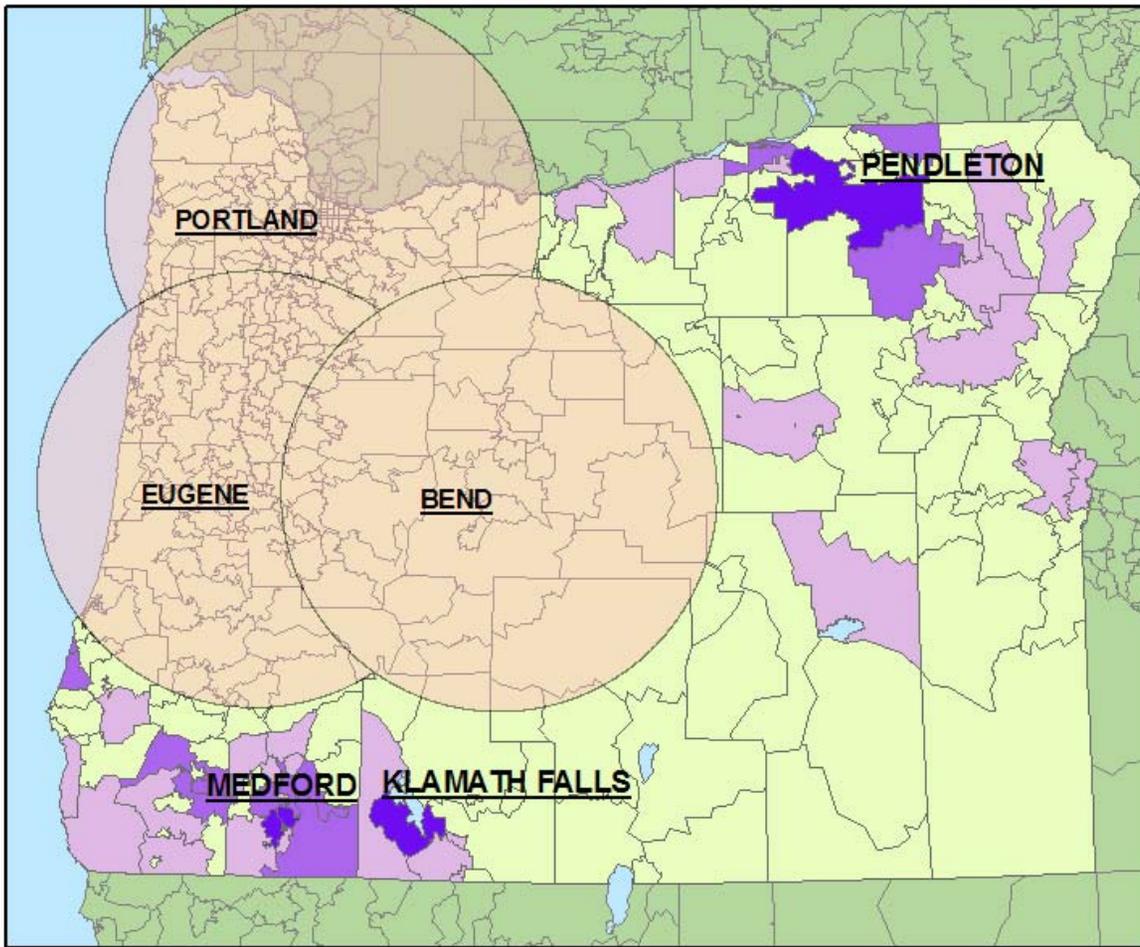


Number of Patients	
<span style="display:inline-block; width:15px; height:15px; background-color:lightpurple; border:1px solid black;"></span>	1 - 19
<span style="display:inline-block; width:15px; height:15px; background-color:purple; border:1px solid black;"></span>	20 - 52
<span style="display:inline-block; width:15px; height:15px; background-color:darkpurple; border:1px solid black;"></span>	53 - 152

**Patients Seen for Genetics Indications in Oregon, 2006**

2006 Genetics Provider Data from 10 clinics

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September, 2007



	Outside of Portland Eugene, & Bend
Population 2004	545,101
% of Population	15%
# of Genetics Patients 2006	155
% of all Genetics Patients seen in Oregon	4%

Number of Patients traveling 80+ miles

- 1 - 3
- 4 - 9
- 10 - 17

### Patients Traveling 80+ miles for Genetics Services in Oregon, 2006

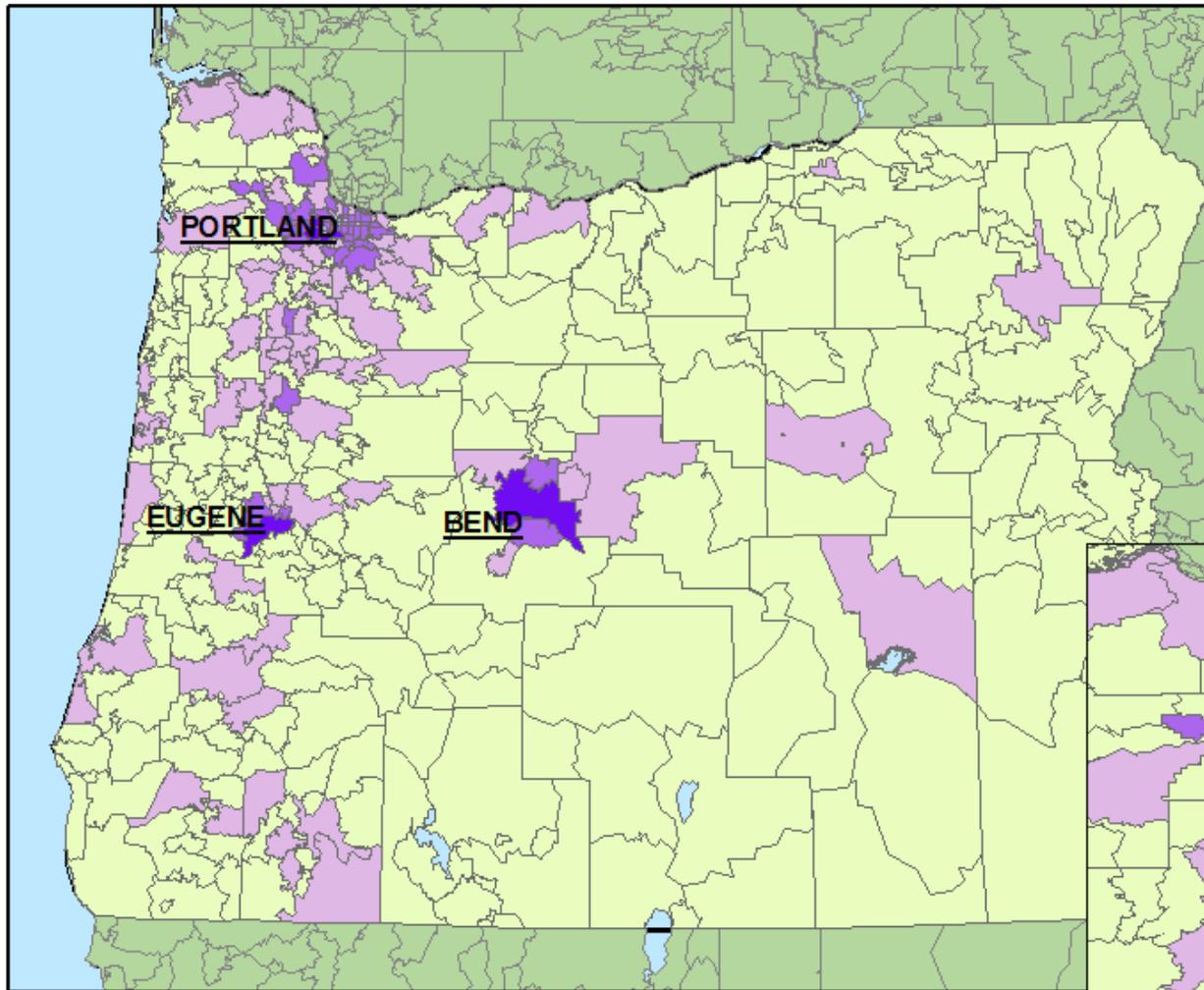
2006 Genetics Provider Data  
from 10 clinics

Oregon Genetics Program  
September, 2007

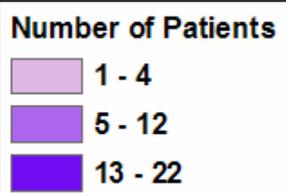
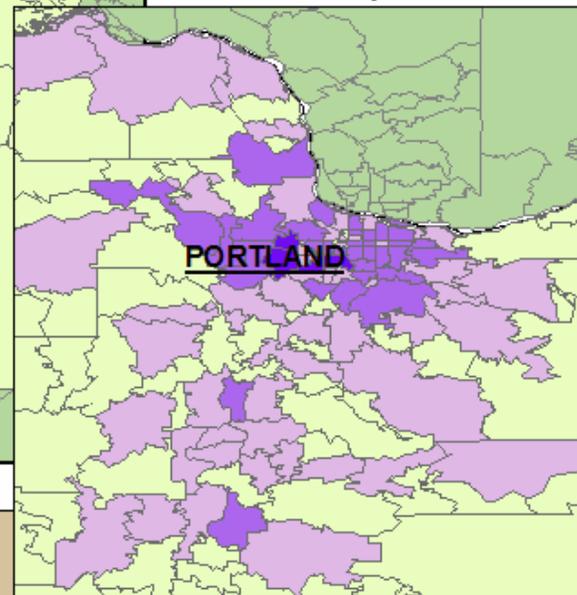
# Access to Cancer Genetics Services

- How many patients seen for cancer genetics indications in 2006 live over 80 miles away from a clinic that provides cancer genetics services (in Portland, Eugene, or Bend)?

Cancer Genetics Patients	623
US	610
OR	533 (87%)
WA	74 (12%)



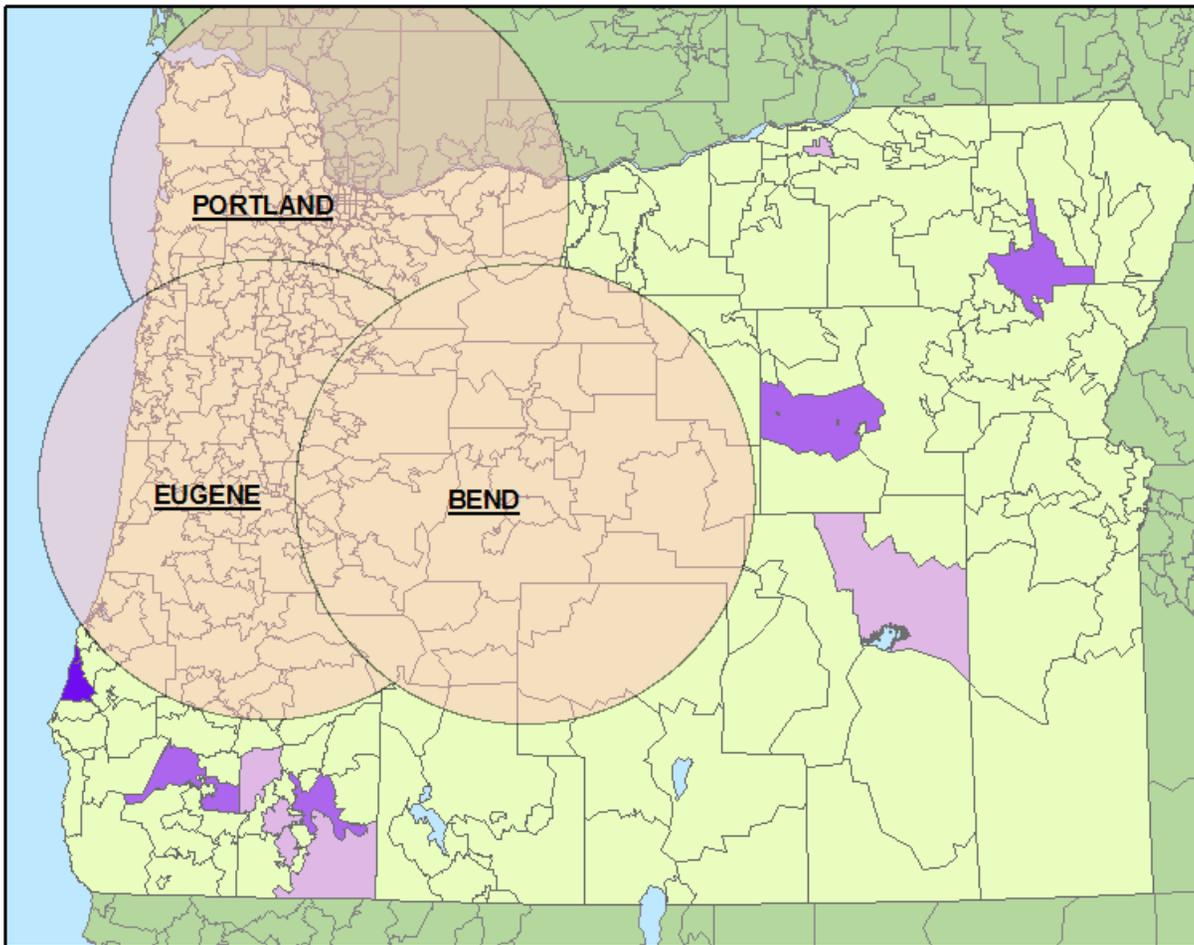
Portland Metropolitan Area



**Patients Seen for Cancer Genetics Indications in Oregon, 2006**

2006 Genetics Provider Data  
from 7 clinics

Oregon Genetics Program  
September, 2007



Number of Patients traveling 80+ miles

- 1
- 2
- 3

**Patients Traveling 80+ miles for Cancer Genetics Services in Oregon, 2006**

2006 Genetics Provider Data  
from 7 clinics

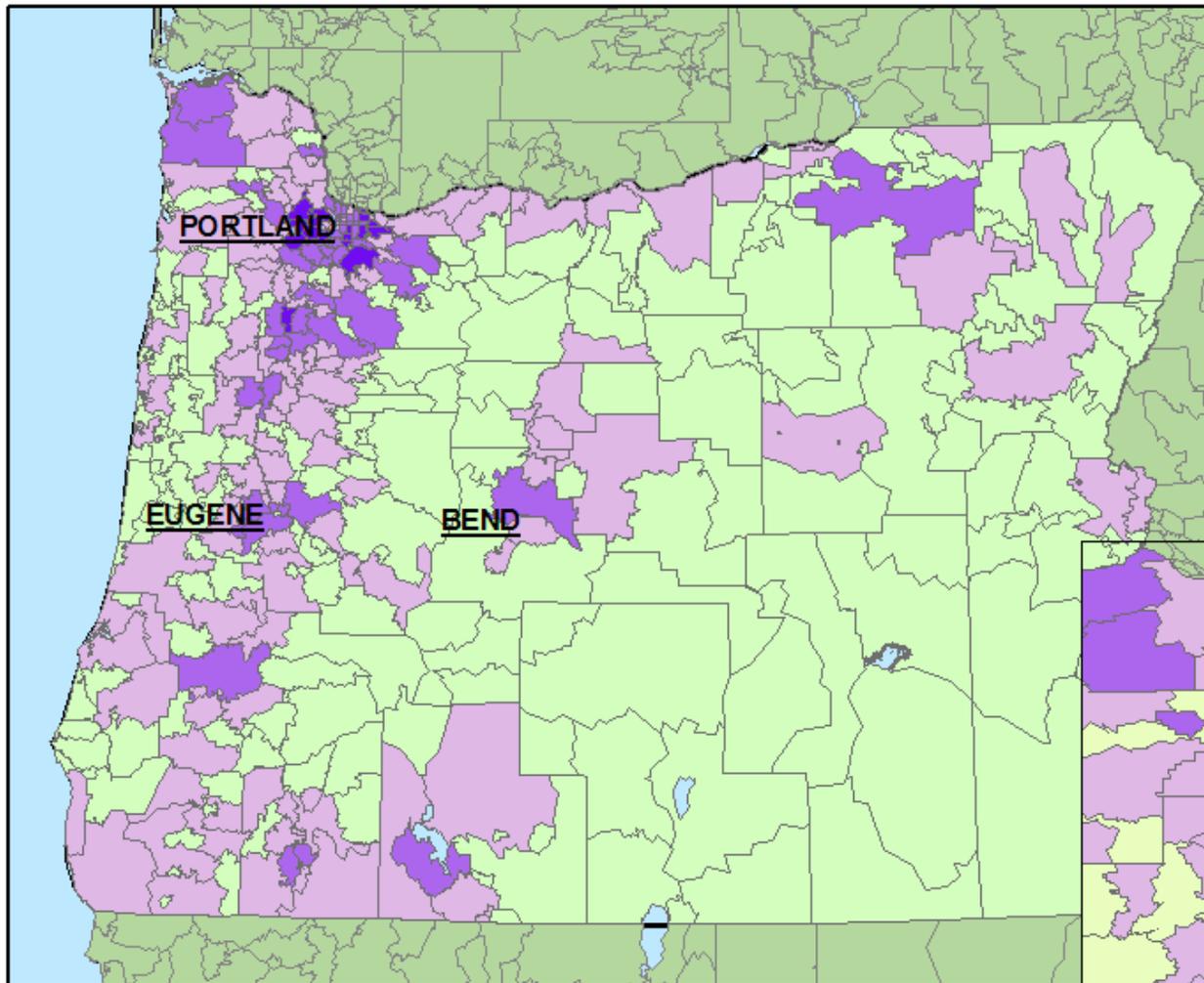
Oregon Genetics Program  
September, 2007

	Outside of Portland Eugene, & Bend
Population 2004	545,101
Percent of Population	15%
# of Cancer Genetics Patients 2006	17
% of all Cancer Genetics Patients seen in Oregon	3%

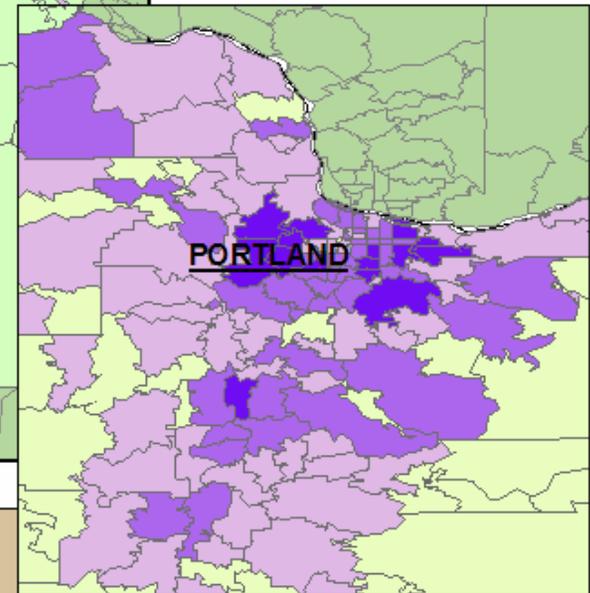
# Access to General Genetics Services

- How many patients seen for **general genetics** indications in 2006 live over 80 miles away from a clinic that provides general genetics services (in Portland)?

General Genetics Patients	1724
US	1698
OR	1322 (78%)
WA	352 (21%)



Portland Metropolitan Area

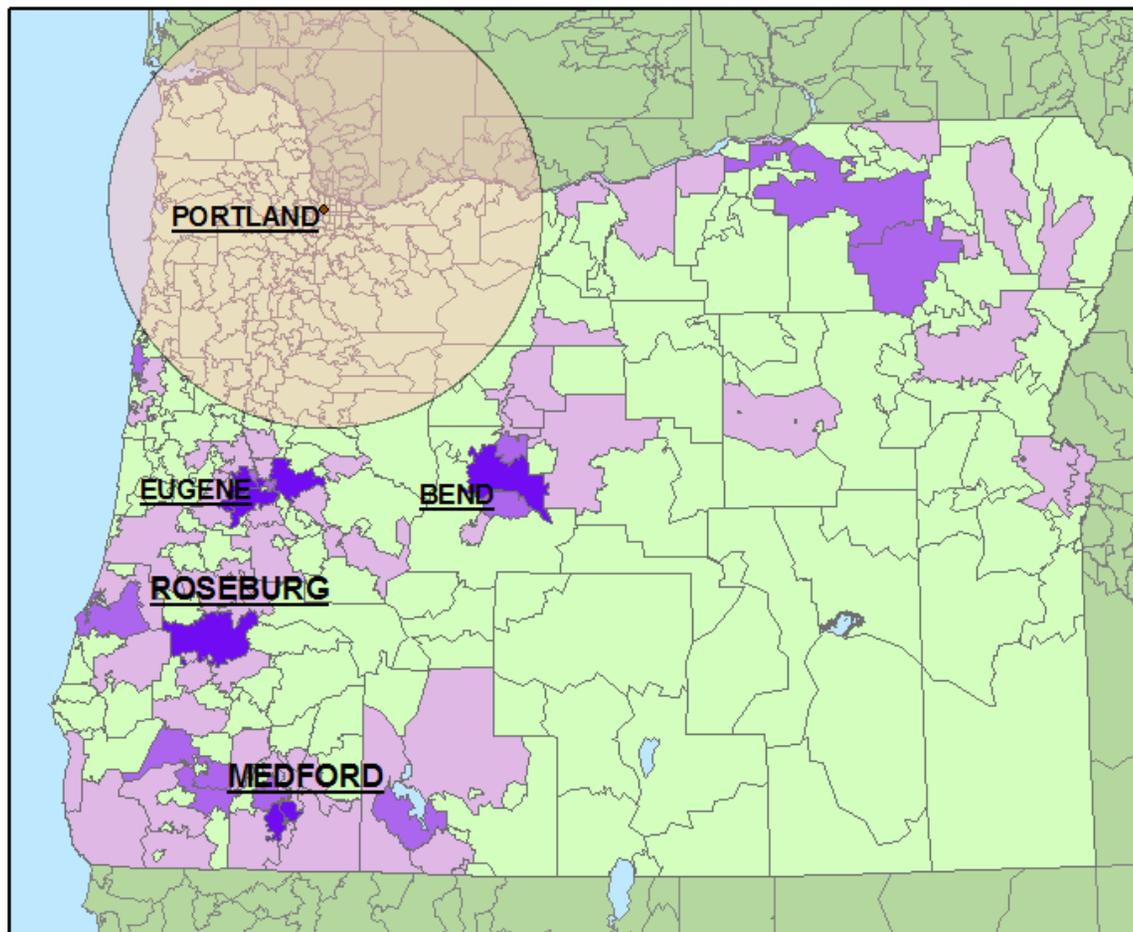


Number of Patients	
<span style="display:inline-block; width:15px; height:15px; background-color:#f080f0; border:1px solid black;"></span>	1 - 7
<span style="display:inline-block; width:15px; height:15px; background-color:#8000ff; border:1px solid black;"></span>	8 - 18
<span style="display:inline-block; width:15px; height:15px; background-color:#4b0082; border:1px solid black;"></span>	19 - 32

### Patients Seen for General Genetics in Oregon, 2006

2006 Genetics Provider Data from 4 clinics

Oregon Genetics Program  
September, 2007



	Outside of Portland
Population 2004	1,252,470
Percent of Population	35%
# of General Genetics Patients 2006	262
% of all General Genetics Patients seen in Oregon	20%

**Number of Patients**

- 1 - 3
- 4 - 8
- 9 - 16

**Patients Traveling more than 80 miles for General Genetics Services, 2006**

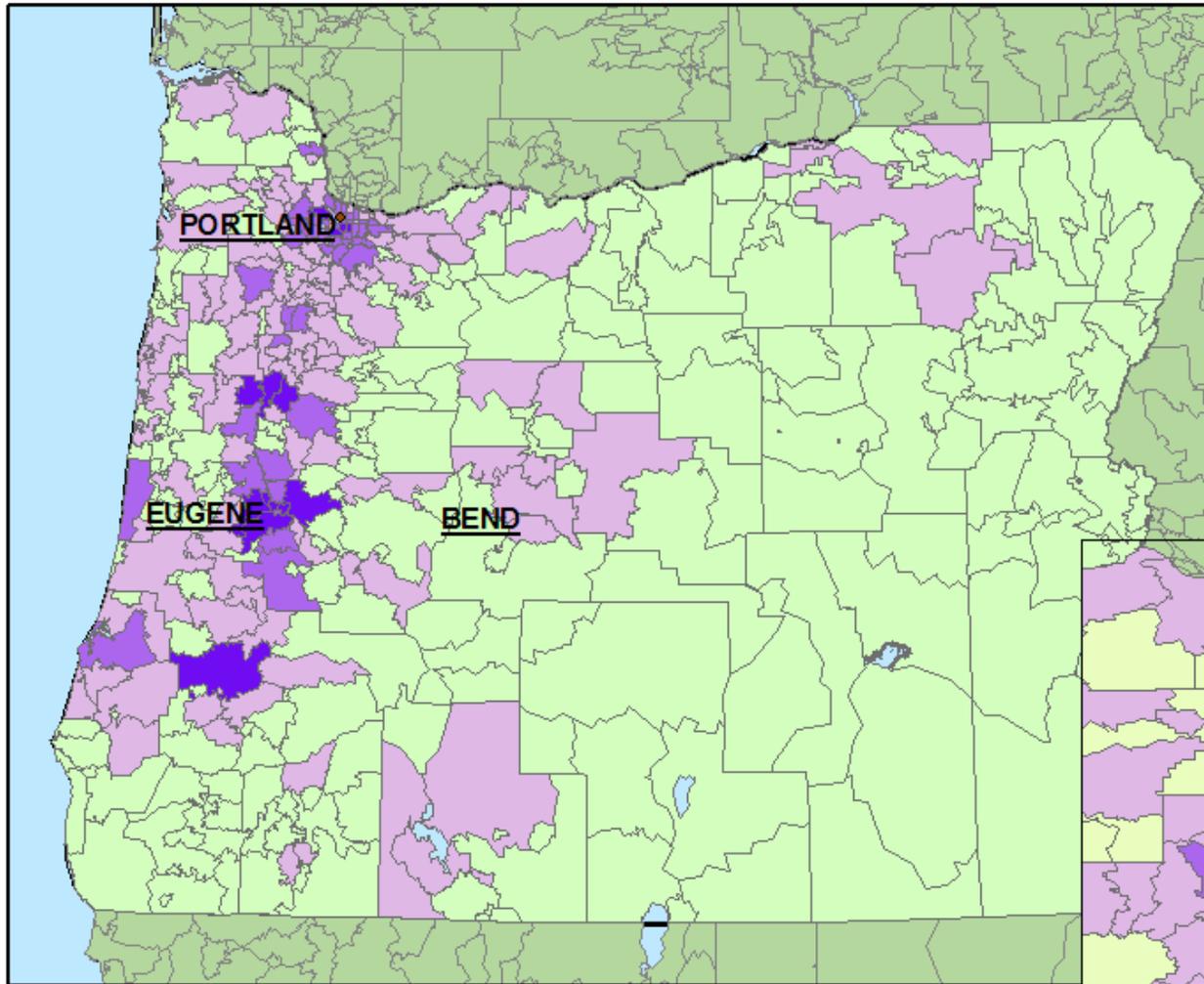
2006 Genetics Provider Data  
from 4 clinics

Oregon Genetics Program  
September, 2007

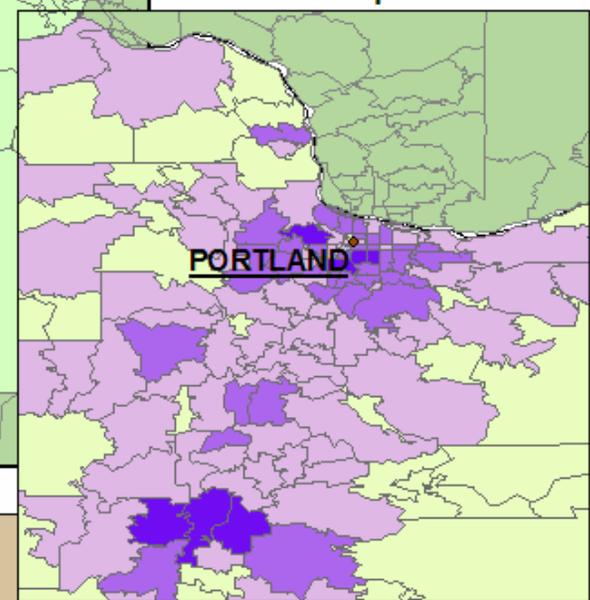
# Access to Prenatal Genetics Services

- How many patients seen for prenatal genetics services in 2006 live over 80 miles away from a clinic that provides prenatal genetics services (in Portland & Eugene)?

Prenatal Genetics Patients	2696
US	2660
OR	2378 (89%)
WA	264 (10%)



Portland Metropolitan Area

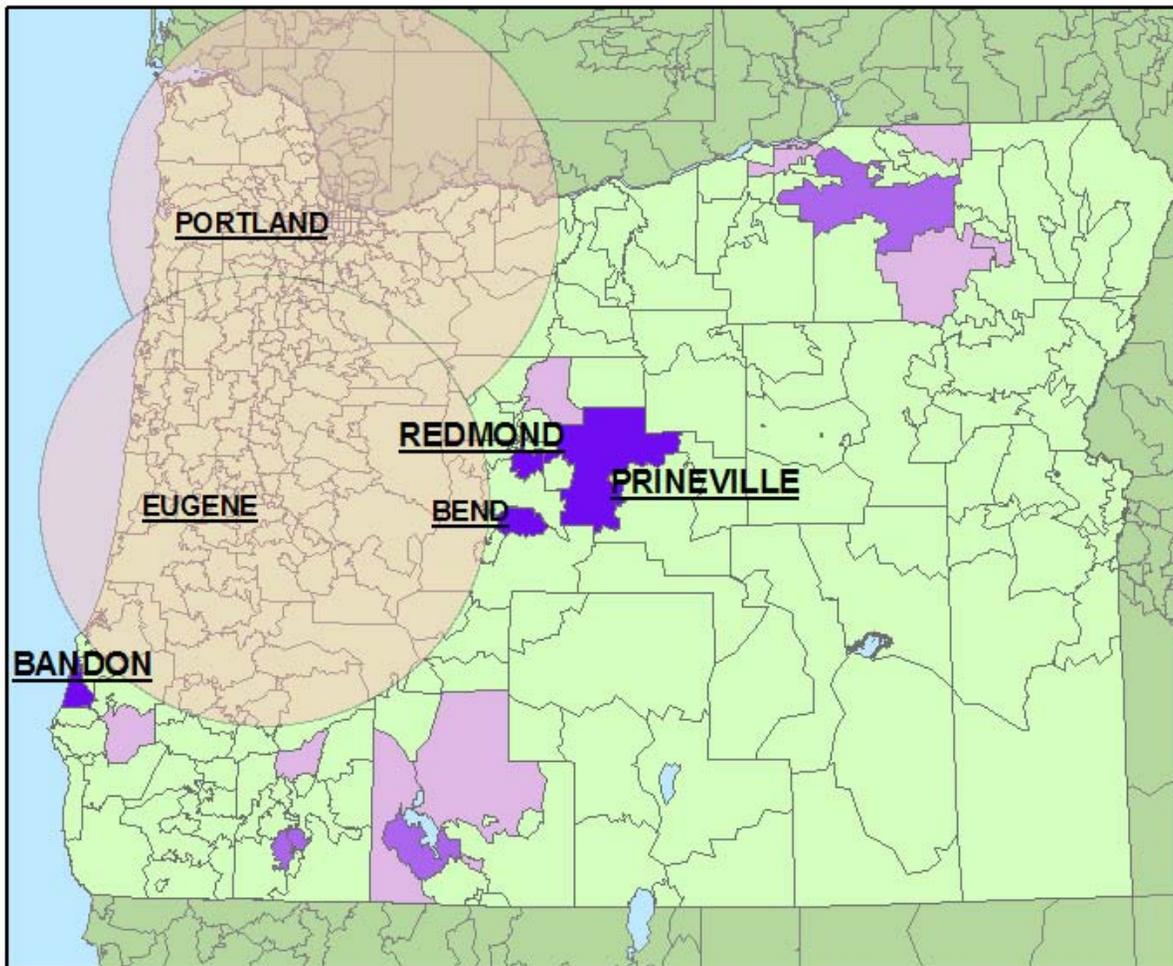


Number of Patients	
	1 - 13
	14 - 37
	38 - 130

### Patients Seen for Prenatal Genetics Services in Oregon, 2006

2006 Genetics Provider Data  
from 3 clinics

Oregon Genetics Program  
September, 2007



**Number of Patients**

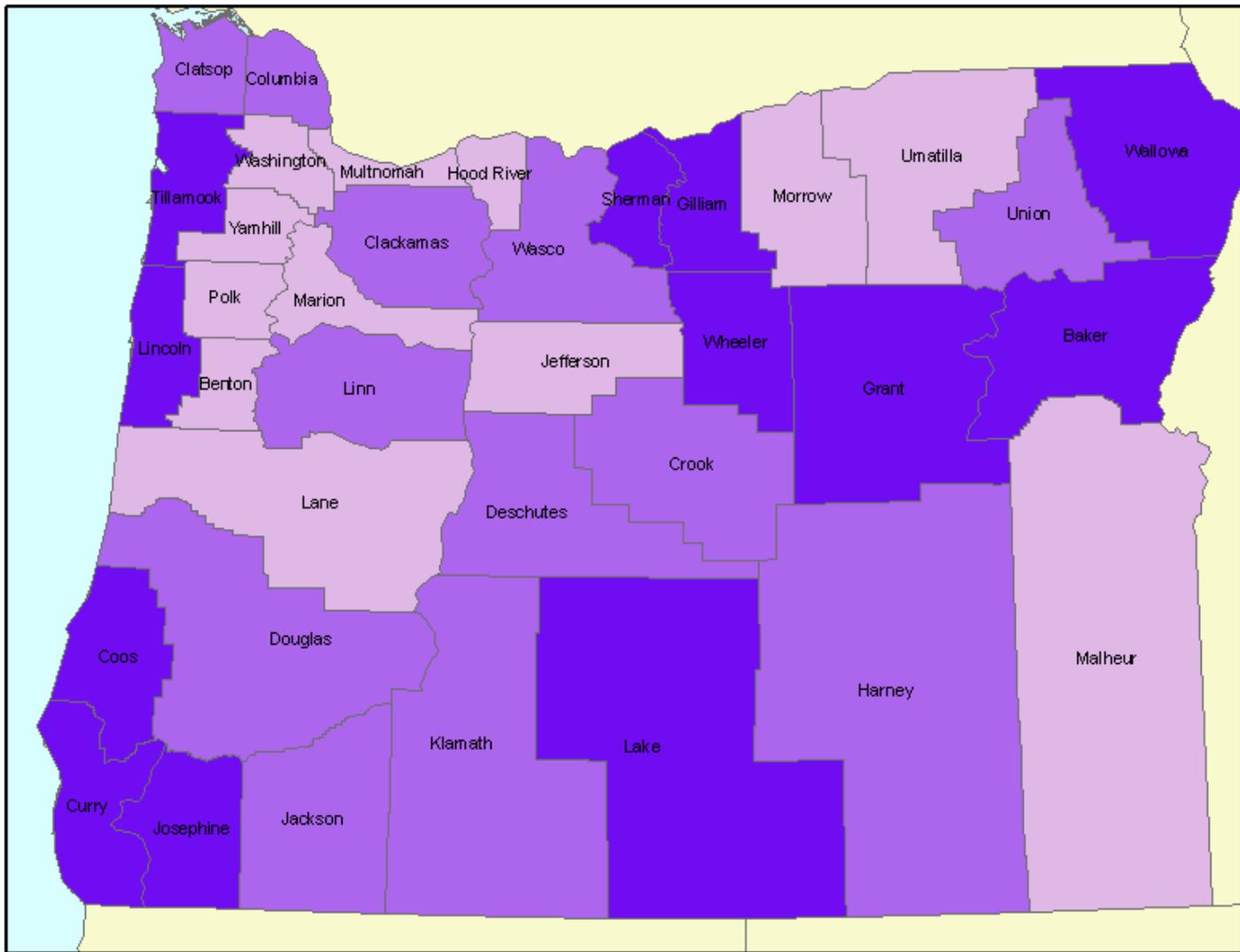


**Patients Traveling 80+ miles for Prenatal Genetics Services in Oregon, 2006**

2006 Genetics Provider Data  
from 3 clinics

Oregon Genetics Program  
September, 2007

	Outside of Portland & Eugene
Population 2004	655,700
Percent of Population	18%
Number of Prenatal Patients 2006	58
Percent of Prenatal Patients seen in Oregon	2%



**Mean age by County**

- 31.1 - 36.6
- 36.7 - 41.2
- 41.3 - 48.8

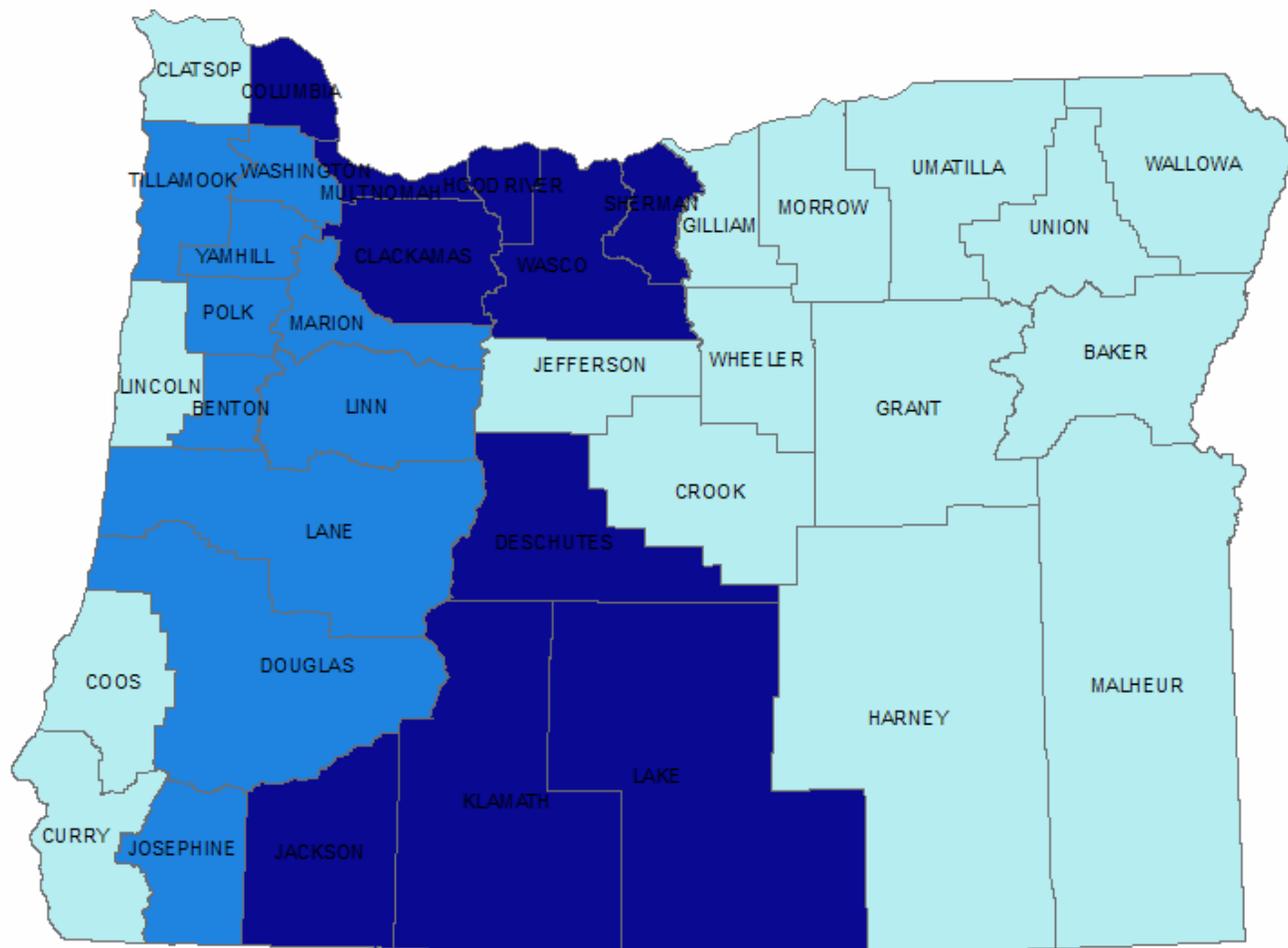
**Mean Age by County, Oregon  
2000**

Oregon Genetics Program  
September 2007

# Access to Genetics Services - Conclusions from 2006 data

- **4%** of **all** patients seen who live >80 miles from Portland, Bend, or Eugene (vs. **15%** expected)
- **3%** of **cancer genetics** patients seen who live >80 miles from Portland, Bend, or Eugene (vs. **15%** expected)
- **20%** of **general genetics** patients seen who live >80 miles from Portland (vs. **35%** expected)
- **2%** of **prenatal genetics** patients seen who live >80 miles from Portland or Eugene (vs. **18%** expected)

# *Incidence of invasive cancer among Oregonians under age 50, 1996-2004 (Age-adjusted Smoothed Rates)*



**Rate per 100,000**

**Cancer Incidence**

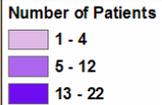
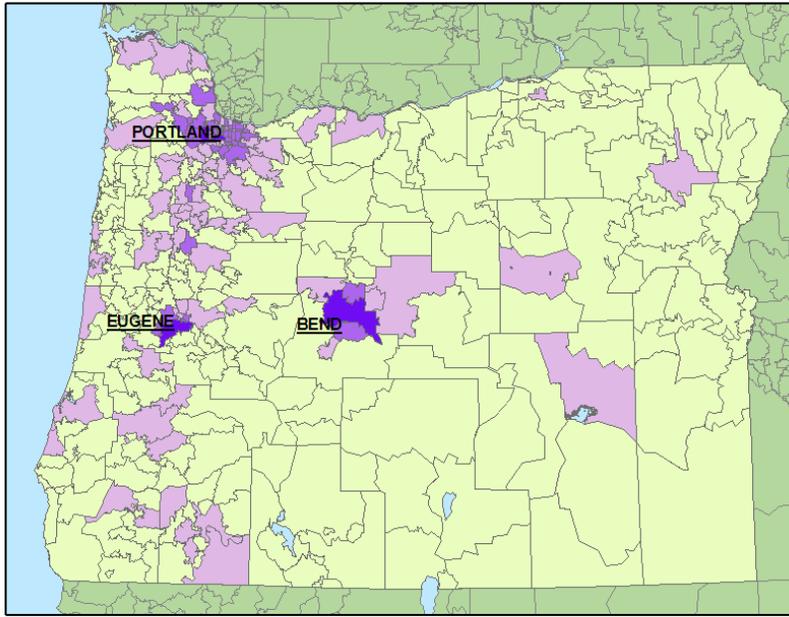
71.3 - 88.5

88.6 - 94.2

94.3 - 101.8

Oregon State Cancer Registry  
September, 2007

# Cancer Genetics Services Data by Zip Code

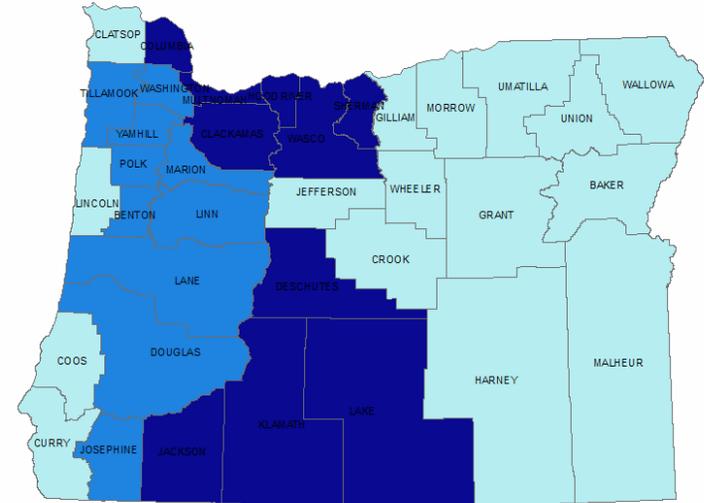


**Patients Seen for Cancer Genetics Indications in Oregon, 2006**

2006 Genetics Provider Data from 7 clinics

Oregon Genetics Program  
September, 2007

# Incidence of invasive cancer among Oregonians under age 50, 1996-2004 (Age-adjusted Smoothed Rates)

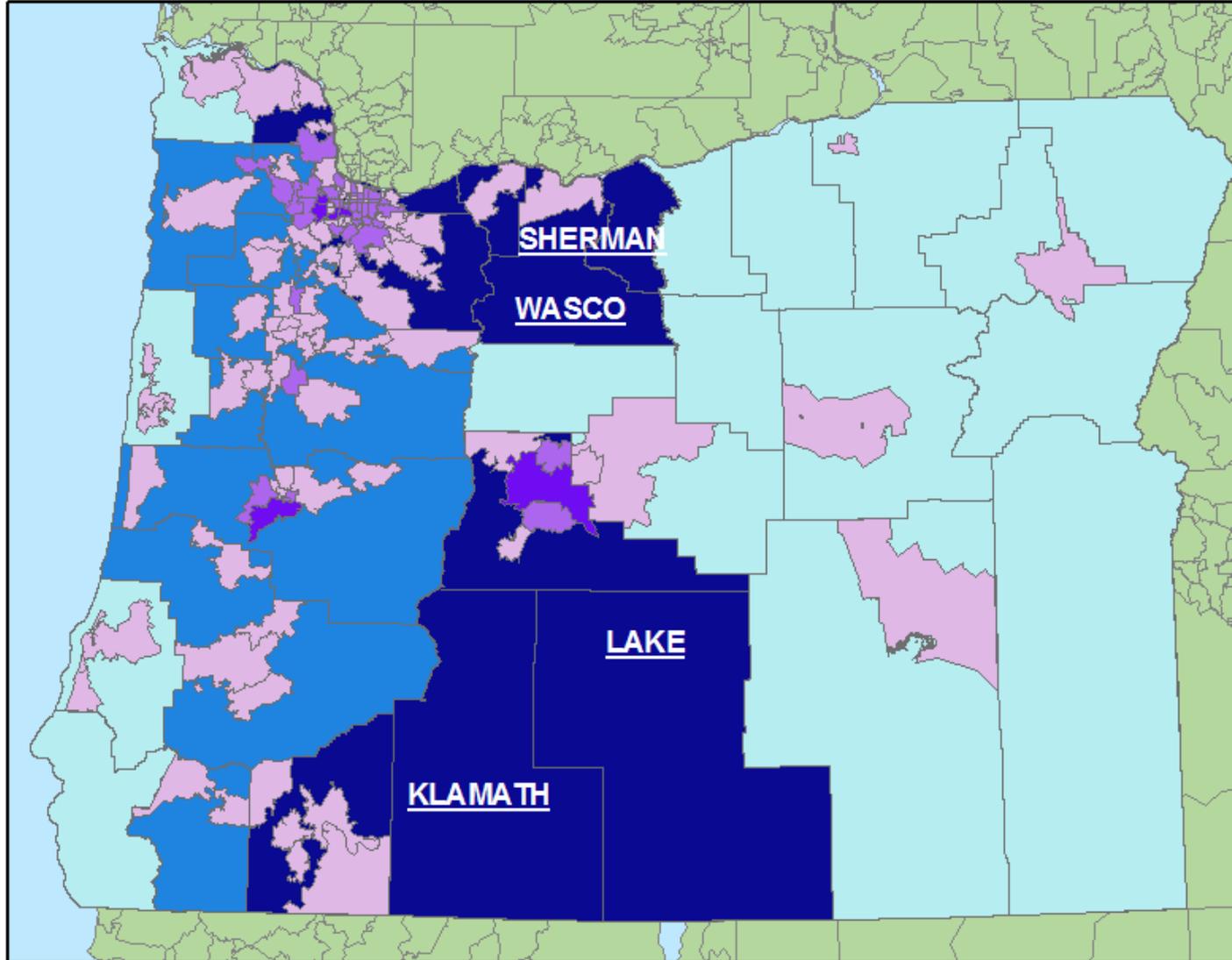


100,000  
cidence  
88.5  
94.2  
101.8

Oregon State Cancer Registry  
September, 2007

# Oregon Cancer Registry Data by County





**Cancer Genetics Patients    Cancer Incidence under age 50**



**Patients Seen for Cancer Genetics, 2006 & Early Diagnosed Cancer Cases, 1996-2004**

2006 Genetics Provider Data & 1996-2004 Cancer Registry Data

Oregon Genetics Program  
September, 2007