COLLEGE OF PUBLIC HEALTH AND HUMAN SCIENCES

# Use of sexual and reproductive health services for women living in rural and urban Oregon: Impact of the Affordable Care Act

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## Background

- One of the public health priorities in the United States is ensuring that women of reproductive age have access to sexual and reproductive health (SRH) services.
- Low-income rural women face more barriers in accessing SRH services, including a lack of health insurance, than their urban counterparts.
- Medicaid expansion under the Affordable Care Act (ACA) includes several provisions that may address access to SRH services among low-income rural women of reproductive age (WRA).

## Research Objective

- Compare SRH services use among Medicaid-enrolled WRA living in rural versus urban Oregon during 2008 – 2016 period

## Study Design

### Data Sources and Study Population

- Oregon Medicaid claims data for WRA were linked to enrollment data from 2008 through 2016.
- ICD-9 and ICD-10 codes, CPT codes, the Healthcare Common Procedure Coding System (HCPCS), and National Drug Codes (NDC) in Medicaid claims were used to identify SRH services.
- Study population: WRA in urban and rural areas of Oregon who were enrolled in Medicaid between 2008-2016.
- Women who were pregnant during our study period or enrolled in Medicaid for less than 80% of each specific year were excluded.

### Measures and Analysis

- Outcomes: Use of contraceptive services, receipt of contraceptive counseling, receipt of well-woman visit, receipt of STI screening, receipt of pap smear test
- Key Independent Variables: Rural Urban Commuting Area (RUCA) category B, which includes Urban, Large Rural City/Town, and Small and Isolated Rural Towns)
- Covariates: Age, race, time
- Estimated conditional fixed-effects logistic regression models to examine differences in SRH service utilization among women in rural and urban areas

## Results

### Characteristics of Medicaid-enrolled women in Oregon by rurality status

- We found no statistically significant difference in the mean ages between the urban and small rural town populations, or between the large rural and urban populations. However, the mean age statistically differed between the small rural town and large rural areas populations.
- Race/ethnicity between urban and small rural towns, large rural areas and urban populations, and small rural town and large rural area populations significantly differed.

**Table 1 – Characteristics of Medicaid-enrolled WRA in Oregon by rurality status, 2008 – 2016.**

| Measure | Total (N = 392,111) | | Urban (N= 301,246) | | p-value | Large rural city (N= 53,001) | | p-value | Small rural town (N = 15,659) | | p-value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean or % | SD or Frequency | Mean or % | SD or Frequency | | Mean or % | SD or Frequency | | Mean or % | SD or Frequency | |
| Age (years) | 26.16 | 8.55 | 25.93 | 8.51 | 0.703 | 25.71 | 8.57 | 1.000 | 25.97 | 8.65 | 0.001 |
| Race/ethnicity | | | | | 0.000 | | | 0.000 | | | 0.000 |
| White | 58.37 | 228,894 | 62.53 | 188,357 | | 71.53 | 37,910 | | 69.61 | 10,900 | |
| Black | 3.47 | 13,614 | 4.32 | 13,009 | | 0.91 | 483 | | 0.64 | 101 | |
| Asian | 2.72 | 10,677 | 3.19 | 9,597 | | 0.82 | 435 | | 0.56 | 88 | |
| AI/AN | 2.35 | 9,203 | 2.23 | 6,717 | | 3.31 | 1,755 | | 6.42 | 1,005 | |
| NH/PI | 0.66 | 2,573 | 0.66 | 1,995 | | 0.41 | 219 | | 0.36 | 56 | |
| Hispanic | 18.68 | 73,256 | 16.02 | 48,269 | | 14.61 | 7,743 | | 15.14 | 2,370 | |
| Missing | 13.74 | 53,894 | 11.05 | 33,302 | | 8.41 | 4,456 | | 7.27 | 1,139 | |

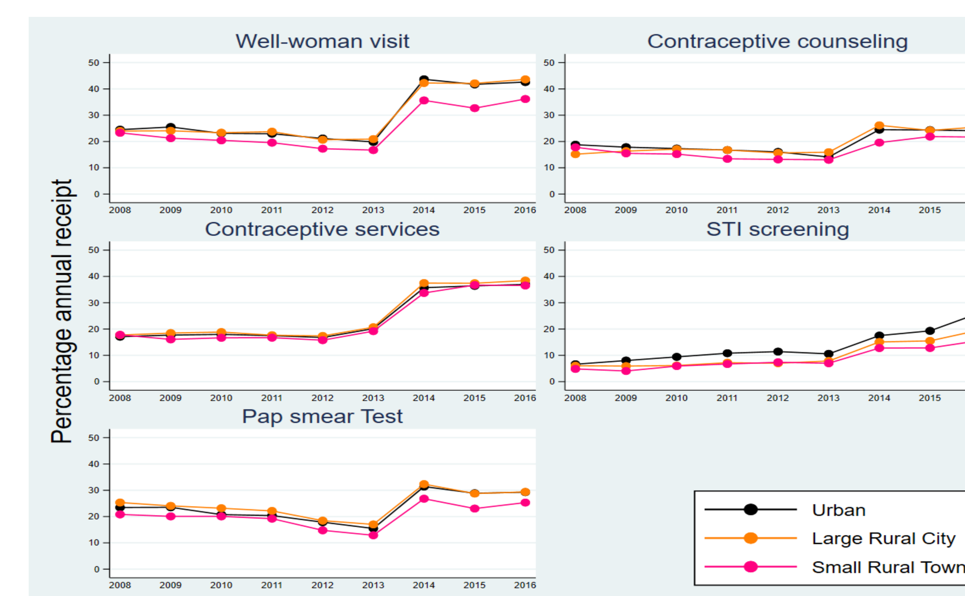
Note: AI/AN stands for American Indian/Alaska Native.
NH/PI stands for Native Hawaiian/Pacific Islander.

### Receipt of sexual and reproductive health services

Annual receipt of sexual and reproductive services over time in Medicaid-enrolled WRA in urban, large rural areas, and small rural towns of Oregon from 2008 to 2016 is depicted in Figure 1.

- Across all years, the percentage annual receipt for well-woman visits and pap smear test are slightly lower for women living in small rural towns compared to women living in urban and large rural areas.
- Across all years, the percentage annual receipt for STI screening is slightly lower for women living in small rural towns and large rural areas compared to women living in urban regions.
- Across all years, the percentage annual use of contraceptive services and contraceptive counseling is almost similar among different rurality categorizations.
- For all three categories of rurality, the percentage of annual receipt for all five outcomes increased after the implementation of ACA Medicaid Expansion in 2014.

**Figure 1 - Annual receipt of sexual and reproductive services over time in Medicaid-enrolled women in urban, large rural, and small rural areas of Oregon**




Adjusted odds ratios for rural-urban comparisons are reported in Table 2.

- **Annual receipt of well-woman visits:** Women in small rural towns of Oregon are significantly less likely to receive well-woman visits compared to women living in urban areas of Oregon.
- **Annual receipt of STI screening**: Women in small rural towns of Oregon are significantly less likely to receive STI screening compared to women living in urban areas of Oregon. In addition, women living in Oregon large rural areas are significantly less likely to receive STI screening compared to women living in urban areas of Oregon.
- **Receipt of pap smear test**: Women in Oregon small rural towns are significantly less likely to receive pap smear test compared to women living in urban areas of Oregon.

**Table 2 – Receipt of sexual and reproductive health services among Oregon WRA in 2008 – 2016 by rurality status**

| Service | Large Rural Areas | | Small Rural Towns | |
|---|---|---|---|---|
| | Odds Ratio | Std. Err. | Odds Ratio | Std. Err. |
| Well-woman visit | 0.95 [0.90, 1.01] | 0.03 | $0.87^{***}$ [0.80, 0.94] | 0.01 |
| Contraceptive Counseling | 0.96 [0.90, 1.02] | 0.03 | 0.95 [0.87, 1.04] | 0.005 |
| Contraceptive Services | 0.97 [0.91, 1.03] | 0.03 | 1.00 [0.92, 1.09] | 0.01 |
| STI Screen | $0.91^{*}$ [0.84, 0.98] | 0.04 | $0.81^{***}$ [0.72, 0.90] | 0.004 |
| Pap smear Test | 0.99 [0.94, 1.05] | 0.03 | $0.91^{*}$ [0.84, 0.99] | 0.006 |

Note: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.
95% confidence intervals are in brackets.
Results from conditional fixed-effects logistic regressions. All models controlled for age, race, and time. Women who live in urban Oregon are the reference group.

## Conclusion/Implications

- Women residing in small rural towns in Oregon are less likely to receive sexual and reproductive health services compared to those living in urban and large rural areas.
- For all 3 categories of rurality, the percentage of annual receipt for all five sexual and reproductive health services increased after the implementation of Medicaid Expansion in 2014.
- In the next phase of our research, we will use interrupted time-series analysis to assess the effect of the Medicaid Expansion on existing disparities in access to SRH services between rural and urban WRA.
- These findings have potential to influence policies to improve access to SRH services in rural areas and provide valuable information to states who have not yet expanded Medicaid coverage to low-income women.

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