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# Ensuring Healthy Pregnancy Outcomes

## For Rural Populations

# Learning Objectives

By the end of this presentation, you will be able to:

- Describe the accessibility of prenatal and maternity care in rural areas
- List unique barriers to accessing prenatal and maternity care in rural areas
- Identify how barriers to accessing prenatal and obstetric care impact maternal health and birth outcomes
- Discuss innovative strategies for providing prenatal and maternity care in rural areas
- Incorporate rural patient preferences and priorities into shared decision making for postpartum contraception

# Epidemiology of Rural Pregnancy & Prenatal Care

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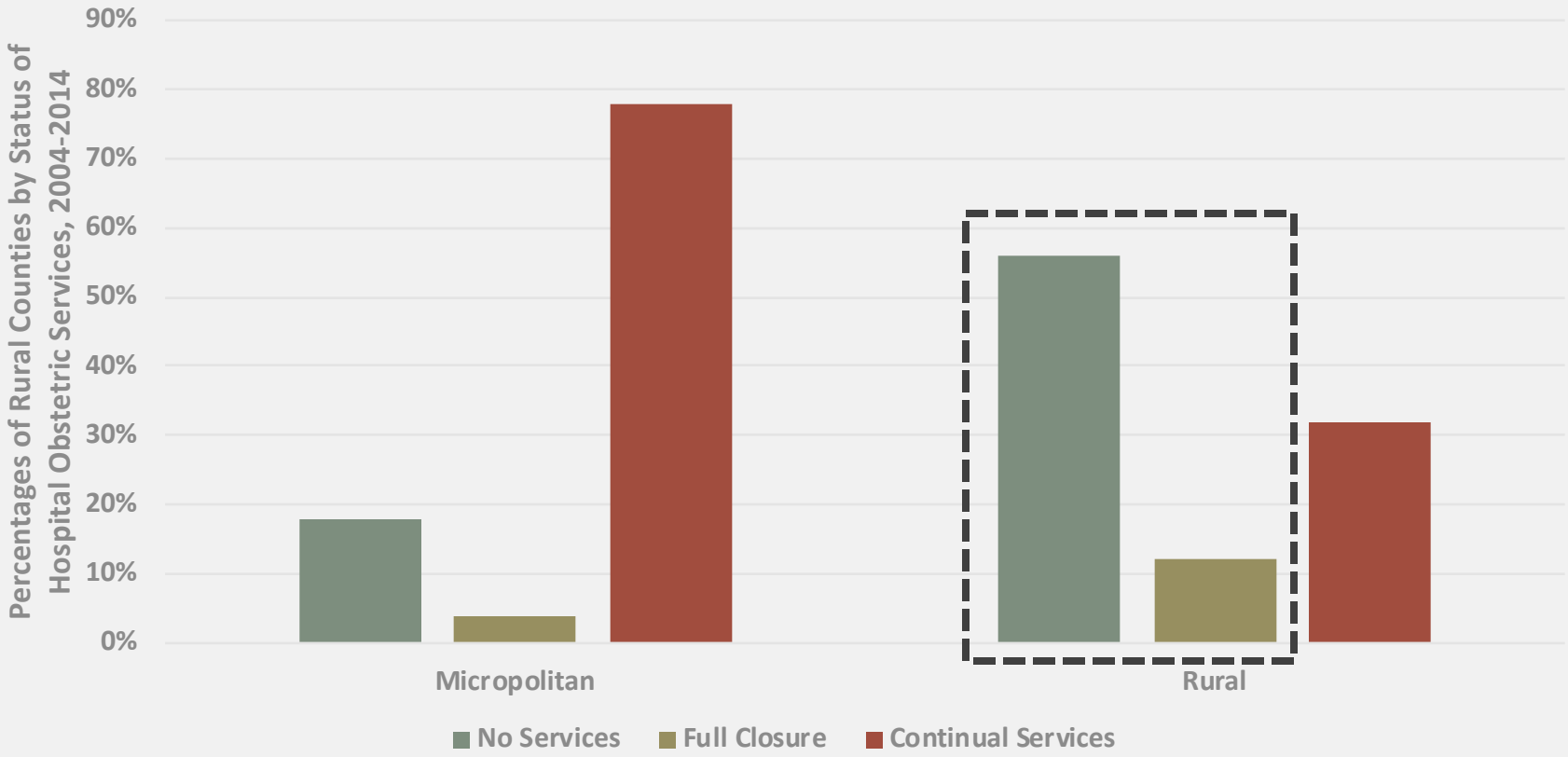
# Obstetric Services in Rural Counties Are Declining, 2004-2014[a]




[a]Micropolitan counties were rural counties with an urban core of 10 000-49 999. Rural counties were all other rural counties. A total of 646 micropolitan counties and 1338 rural counties were evaluated.

Hung P, et al. *Health Aff (Millwood).* 2017;36(9):1663-1671.

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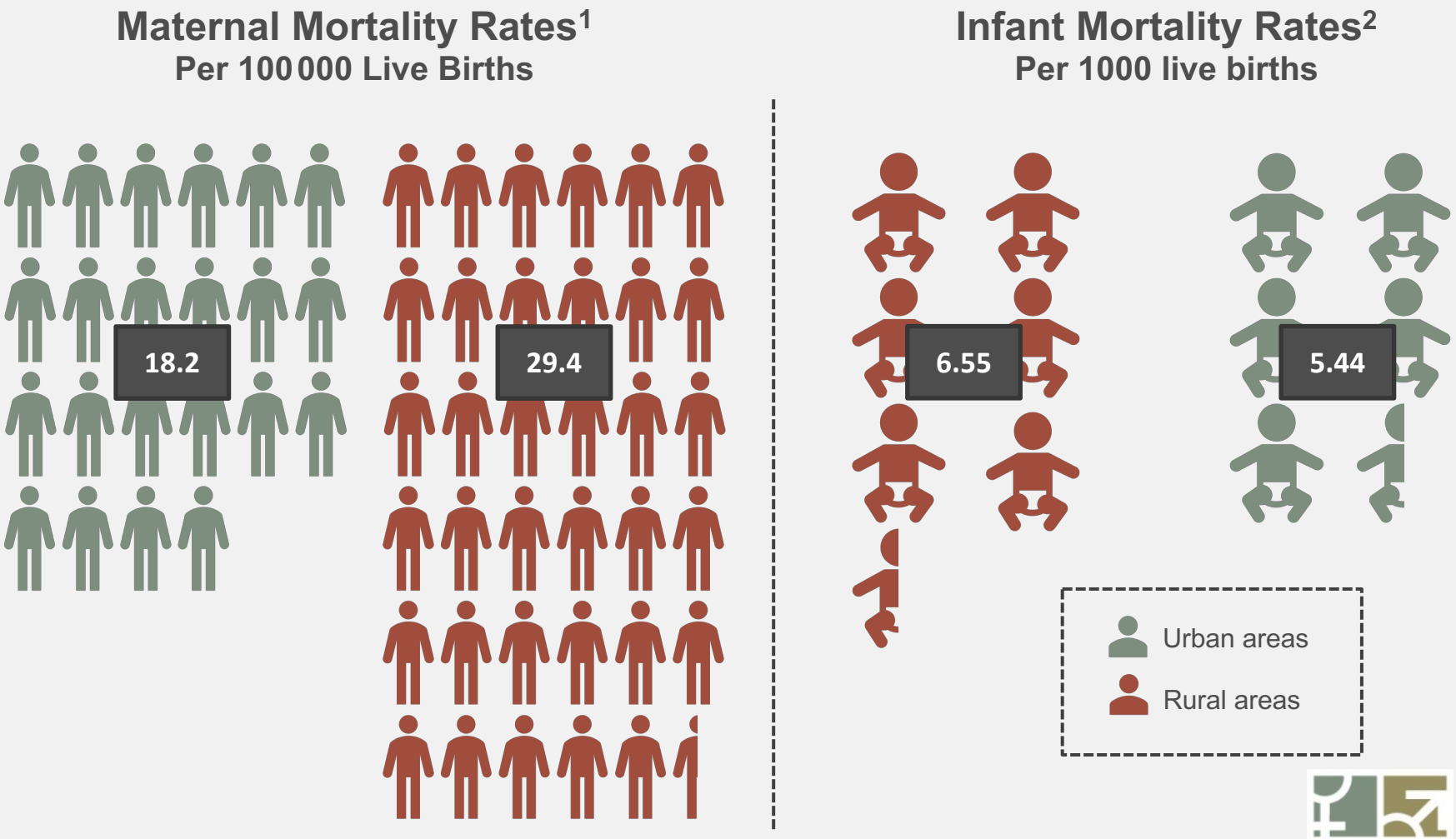
# Maternal and Infant Mortality Rates Are Higher in Rural America




1. Fine Maron D. *Scientific American.* Feb 15, 2017.
2. Ely DM, et al. *NCHS Data Brief.* 2017;(285):1-8.

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# Rural Populations Are At Risk for Worse Pregnancy Outcomes

**↑ 3.1%**

Percent increase in **births in hospitals without obstetric units** in the year following rural hospital closures[1]

**9 of 12**

Number of states with the highest rates of **very low-birth-weight deliveries** that have rural populations exceeding one-third of the state population[2]

**↑ 27%**

Percentage risk increase for **pre-term birth** among small towns and isolated rural areas in Alabama[3]


1. Kozhimannil KB, et al. *JAMA*. 2018;319(12):1239-1247.
2. ACOG Committee Opinion No. 586: Health disparities in rural women. *Obstet Gynecol*. 2014;123(2 Pt 1):384-8.
3. Kent ST, et al. *BMC Pregnancy Childbirth*. 2013;13:129.

# Barriers to Quality Prenatal and Postpartum Care

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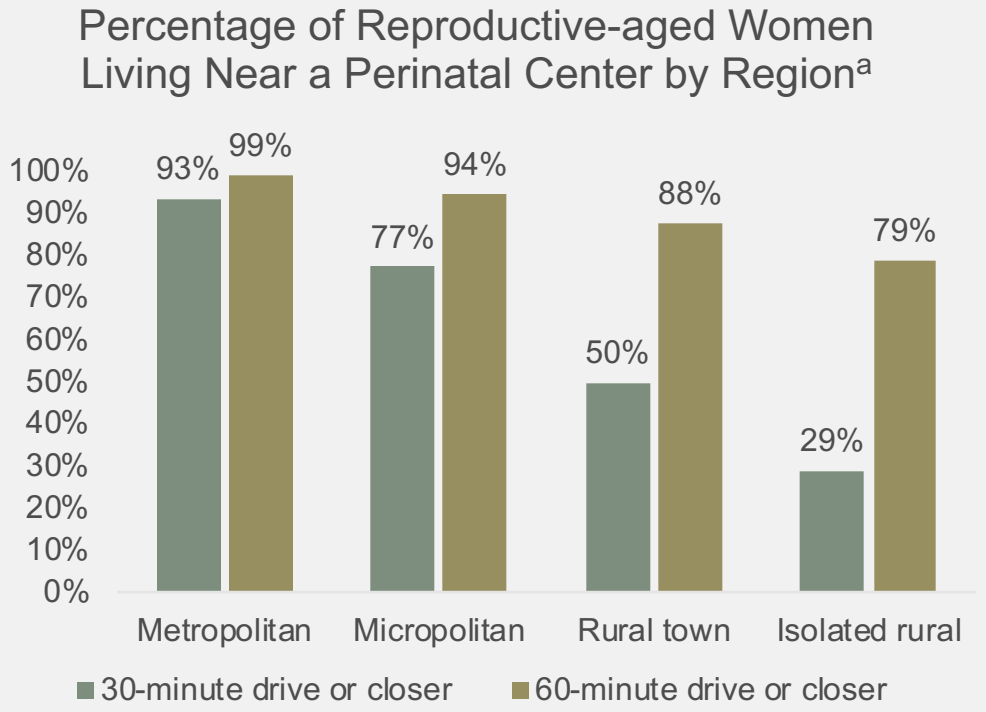
# Barriers to Quality Obstetric Care: Access

- Less than half of rural individuals live within a 30-minute drive to the nearest hospital with perinatal services[1]
- In rural counties with obstetric unit closures (n = 17), people need to travel an additional 29 miles to access obstetric care (range 9-65 miles)[2]




[a]A total of 2606 hospitals identified from the 2007 American Hospital Association survey and 49.8 million reproductive-aged women identified from the 2010 US Census Bureau estimates were included. The 4 regions were delineated by population: metropolitan (>50,000), micropolitan (10000-49999), rural town (2500-9999), and rural commuting areas (<2500).


1. Rayburn WF, et al. *Obstet Gynecol*. 2012;119(3):611-6.
2. Hung P, et al. *Health Serv Res*. 2016;51(4):1546-1560.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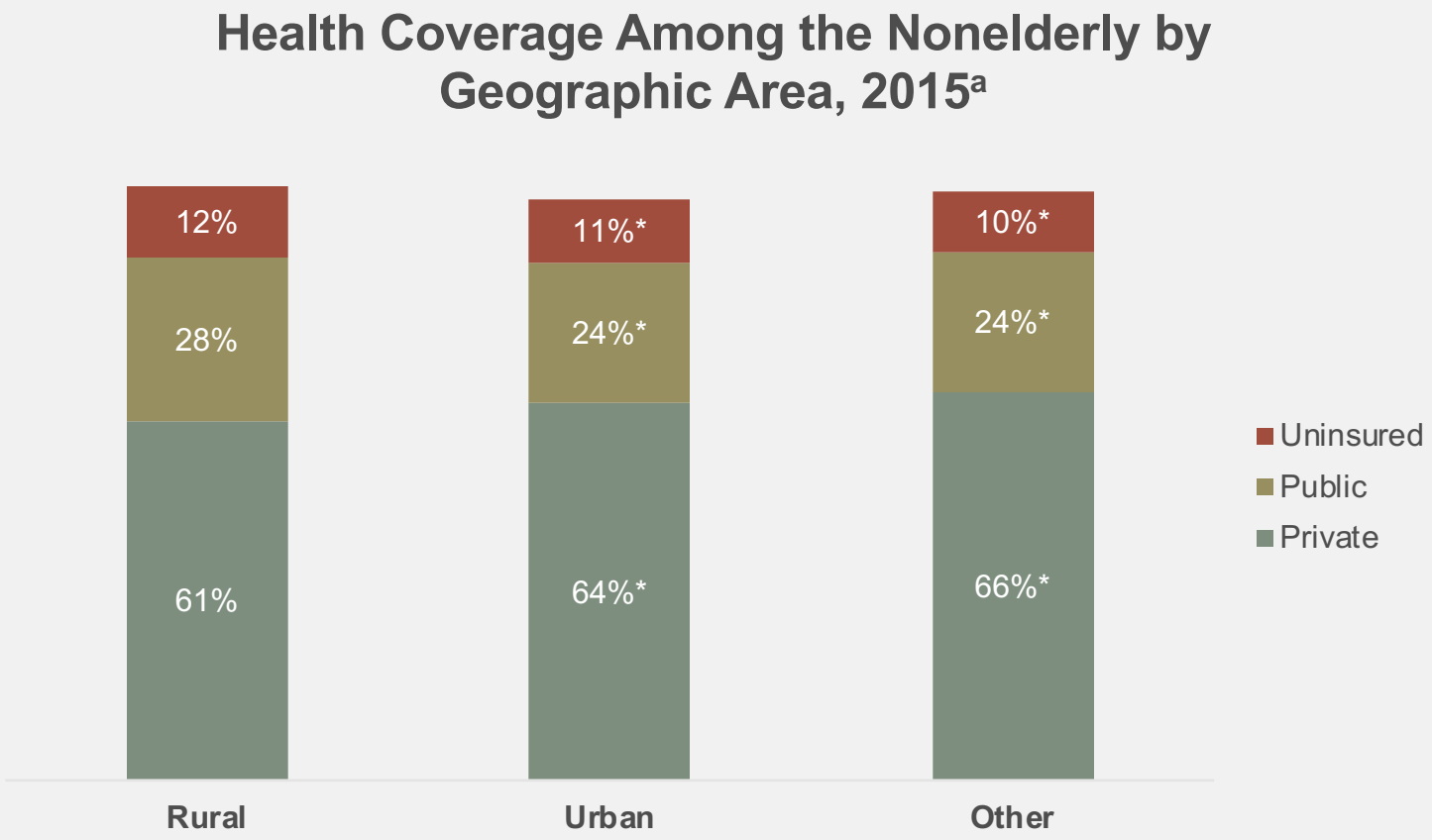
# Barriers to Quality Obstetric Care: Access




[a]Includes nonelderly individuals ages 0-64 years. Totals may not sum to 100% due to rounding. Public insurance includes Medicaid, Medicare, and Veterans Administration coverage.
*$P$ <.05 compared with rural geographic area.

Foutz J, et al. Henry J Kaiser Family Foundation. April 25, 2017.

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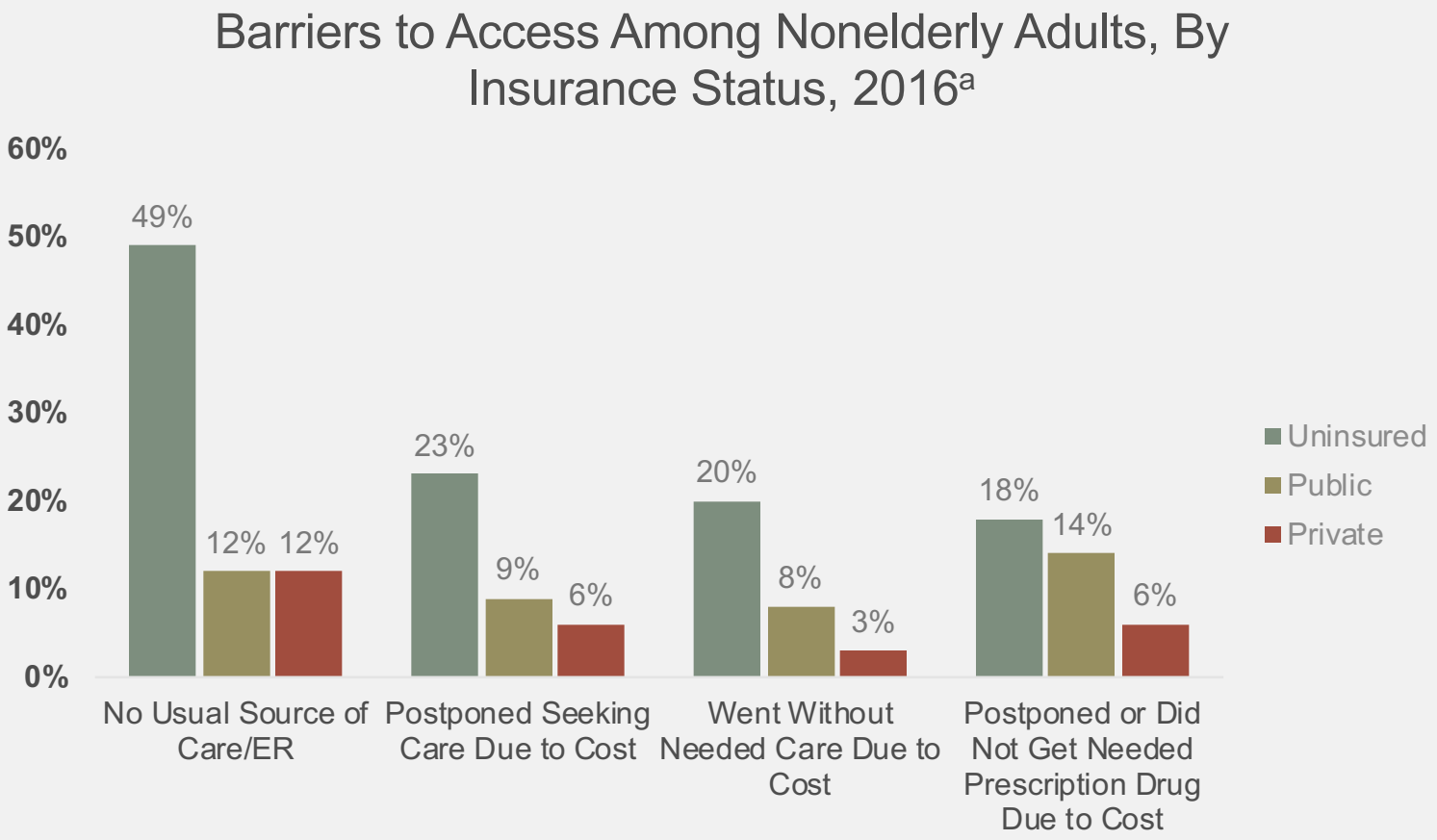
# Barriers to Quality Obstetric Care: Access




[a]Includes nonelderly adults ages 18-64 years. Includes barriers experienced in past 12 months


1. Foutz J, et al. The Henry J Kaiser Family Foundation. December 2017.
2. Loftus J, et al. *J Rural Health*. 2018;34 Suppl 1:s48-s55.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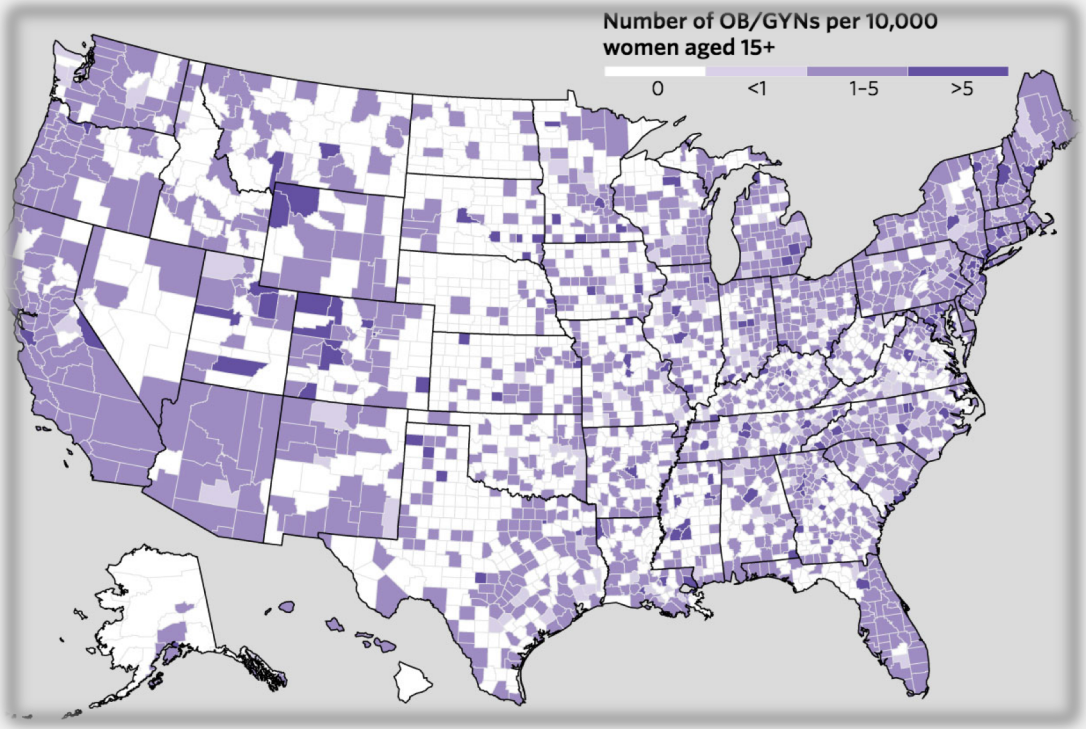
# Barriers to Quality Obstetric Care: Workforce




Approximately half of US counties—which are predominantly rural—do not have a single obstetrician-gynecologist.

Image from: McKay B, Overberg P. *The Wall Street Journal*. August 11, 2017.

Rayburn WF, et al. *Obstet Gynecol*. 2012;119(5):1017-1022.

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# Barriers to Quality Obstetric Care: Quality

**There are hospital-level differences in maternal outcomes among rural and minority-serving hospitals, including higher rates of:**

- Postpartum hemorrhage in the lowest-volume rural hospitals (adjusted odds ratio [aOR] 3.06)[1]
- Low-risk and nonindicated cesarean delivery in low-volume rural hospitals[2]
- Severe maternal morbidity in black-serving hospitals compared with white-serving hospitals[3,4]
- Puerperal infection, peripartum hysterectomy, and blood transfusion in Hispanic-serving hospitals compared with non-Hispanic white-serving hospitals[3]


1. Snowden JM, et al. *Am J Obstet Gynecol*. 2015;212(3):380.e1-9.
2. Kozhimannil KB, et al. *J Rural Health*. 2014;30(4):335-343.
3. Creanga AA, et al. *Am J Obstet Gynecol*. 2014;211(6):647.e1-16.
4. Howell EA, et al. *Am J Obstet Gynecol*. 2016;214(1):122.e1-122.e7.

# Overcoming Barriers to Prenatal and Postpartum Care in Rural Settings

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# Expanding Access With Telemedicine

- Telemedicine allows patients to:
  - Take less time off work
  - Spend less money on travel, parking, and childcare
  - Avoid sitting in the waiting room with potentially ill patients
  - Access high-quality care from anywhere with an internet connection

**Telemedicine can improve access to prenatal and postpartum care in rural areas.**

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# Expanding Access With Telemedicine

| | Real-Time | Store & Forward |
|---|---|---|
| **Visits**<br>**Provider to Patient** | **Virtual Visits**<br>Example: Screening for postpartum depression and discussing contraception | **eVisits**<br>Example: Prenatal weight and blood pressure monitoring through mobile health apps |
| **Consults**<br>**Provider to Provider** | **Virtual Consults**<br>Example: Guided ultrasonography by a remote maternal-fetal medicine physician | **eConsults**<br>Example: Consultation about high-risk pregnancy |

Fogg E. Presented at: Northeast Telehealth Resource Center Regional Conference. May 23-24, 2017.

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# Potential Barriers to Telemedicine

**Startup costs**

**Reimbursement**

**Licensing**

**Malpractice**

**Security**

Fogg E. Presented at: Northeast Telehealth Resource Center Regional Conference. May 23-24, 2017.

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# Potential Barriers to Telemedicine

| | Example Solutions |
|---|---|
| **Startup costs** | Utilize existing infrastructure, take advantage of free and cost-reduced telemedicine training programs, use third-party platforms |
| **Reimbursement** | Know state private and public payer coverage, consider cash business models |
| **Licensing** | Only see patients who connect from the state in which the provider is licensed |
| **Malpractice** | Consider consulting with legal team to prepare for the additional liability brought about by a lack of face-to-face examinations |
| **Security** | Ensure platform and data storage are HIPAA compliant |

Fogg E. Presented at: Northeast Telehealth Resource Center Regional Conference. May 23-24, 2017.

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# Success With Prenatal Telemedicine

**↓ 43%** Reduction in **in-clinic prenatal care visits** among people enrolled in telemedicine monitoring[1]

**5-fold ↑** Increase in data points generated for **weight and blood pressure** measurements among people enrolled in telemedicine monitoring[1]

**↓ 46.6%** Decrease in **very-low-birth weight deliveries** after telemedicine implementation[2]

**>85%** Overall **patient satisfaction** in technology-enabled prenatal care[3]


1. Marko KI, et al. *Obstet Gynecol*. 2016;127:1S.
2. Kim EW, et al. *J Perinatol*. 2013;33(9):725-730.
3. DeNicola N, et al. *Obstet Gynecol.* 2018;131:129S.


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# Telemedicine Resources

- Telemedicine State Laws and Reimbursement Policies: http://www.cchpca.org/state-laws-and-reimbursement-policies
- On-Demand Telehealth Webinars:
  - http://www.telehealthtechnology.org/webinars/2013
  - http://www.telehealthresourcecenter.org/events/category/webinars/
- Telehealth Toolkits: https://nrtrc.org/education-topic-13
- Telehealth Resource Centers (federally funded, some assistance free of charge): http://www.telehealthresourcecenter.org/who-your-trc
- Health Resources & Services Administration Rural Telehealth: https://www.hrsa.gov/rural-health/telehealth/index.html

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# Expanding Access Through Interprofessional Teams

Team-based care is "a strategic redistribution of work among members of a practice team. In the model, all members of the physician-led team play an integral role in providing care."

- A physician, nurse practitioner, certified nurse midwife, or physician assistant will work in collaboration with a team of nurses and/or medical assistants to share responsibilities for better patient care
- Common shared responsibilities include:
  - Pre-visit planning
  - Expanded intake activities
  - Scribing during the visit
  - Care coordination activities post-visit

Sinsky C, Rajcevich E. American Medical Association. October 2015.

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# Interprofessional Team Members for Rural Obstetric Care: Family Practitioners

- The AAFP curriculum guidelines for family medicine residents include training in core obstetric skills and advanced obstetric skills (eg, cesarean delivery)[1]

- Surgical delivery is within the scope of family medicine based on a joint AAFP/ACOG statement on cooperative practice[2]

Even though the majority of women believe their family practitioners could provide competent care,[3] only 19% of family practices offer routine delivery services.[4]


1. AAFP. Recommended Curriculum Guidelines for Family Medicine Residents. August 2016.
2. AAFP, ACOG. AAFP-ACOG joint statement on cooperative practice and hospital privileges. July 1998.
3. Boyle GB, et al. *Fam Pract Manag*. 2003;10(3):37-40.
4. AAFP. Table 16: Number of Babies Delivered. 2016.

# Interprofessional Team Members for Rural Obstetric Care: County Health Office

Agents for community-level policy and systems change[1]

Coordination and implementation of health education services[1]

Delivery of care through the establishment of weekly or monthly clinics attended by family practitioners, advanced practice registered nurses, or physician assistants[2]


1. Hann NE. *Prev Chronic Dis*. 2005;2(Spec No):A03.
2. Hueston WJ, Murry M. *J Rural Health*. 1992;8(4):283-90.


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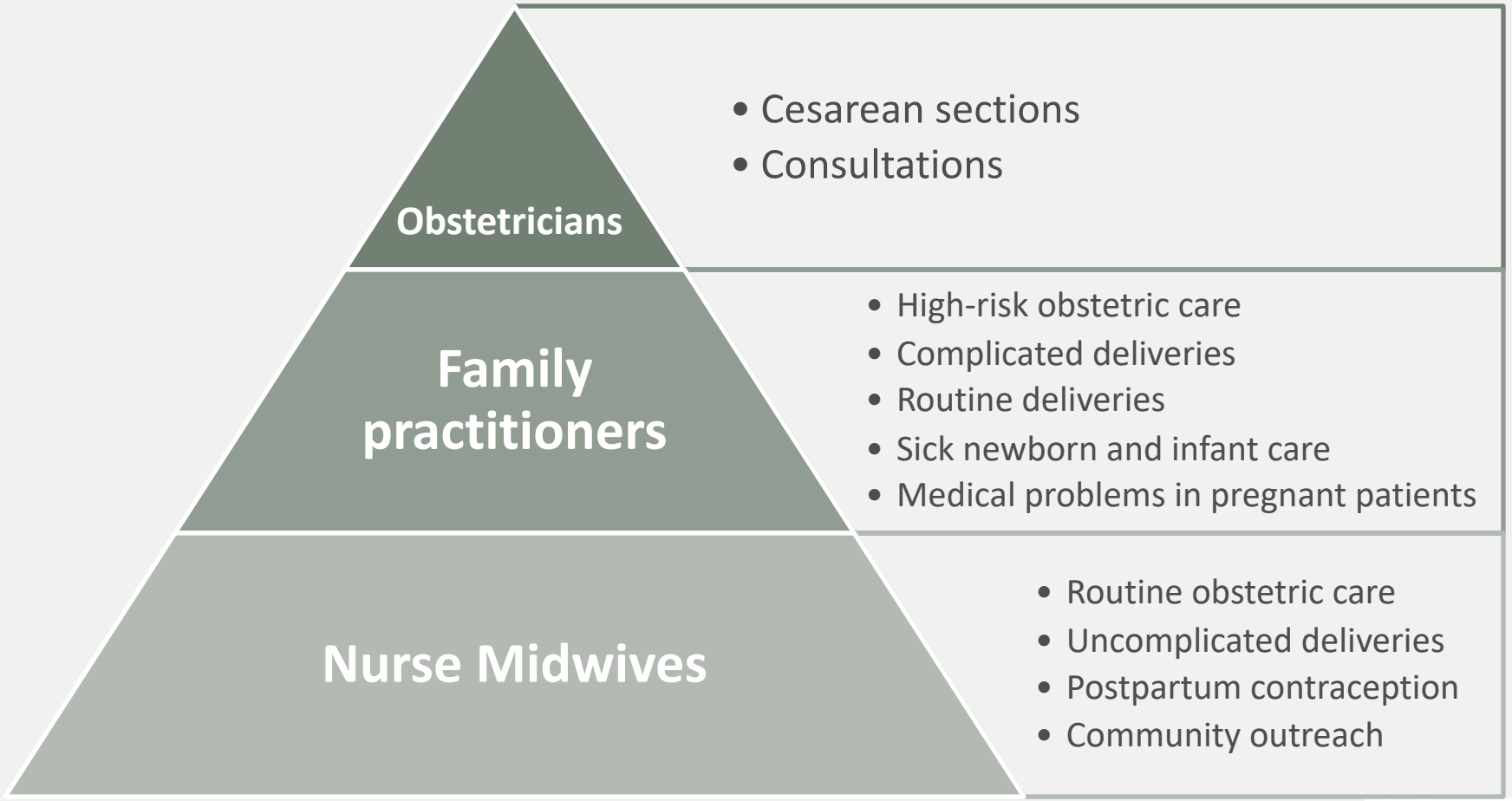
# Example: Three-Tier Model




Hueston WJ, Murry M. *J Rural Health*. 1992;8(4):283-90.

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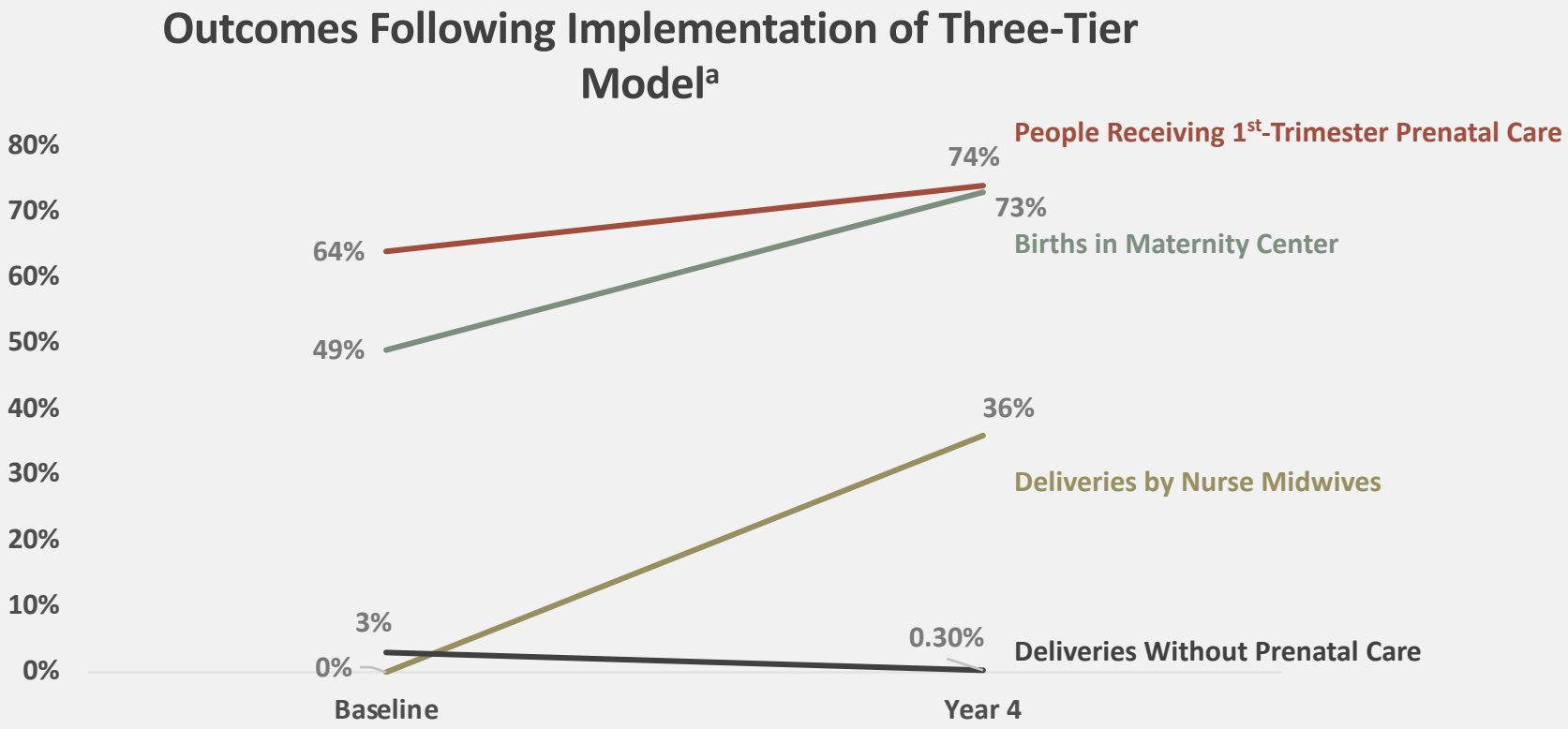
# Example: Three-Tier Model




[a]Data are hospital-wide data for births in maternity center, deliveries by nurse midwives, and deliveries without prenatal care. Data are from county-wide analyses for people receiving 1st-trimester prenatal care. The maternity center opened in July 1985. Baseline data is from 1984-1986.

Hueston WJ, Murry M. *J Rural Health*. 1992;8(4):283-90.

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# Advocacy at State and Federal Levels: Encouraging Rural Practice

Promote state initiatives offering financial incentives to providers of rural obstetric care[1]

Encourage participation in loan repayment programs that require practicing in rural areas[1]

**Examples of modifiable factors associated with increased placement of rural physicians:[2,3]**

- Competitive salary
- Medical school loan repayment
- Availability of rural rotations
- Longitudinal rural pipeline programs


1. Committee on Health Care for Underserved Women. ACOG. February 2014.
2. Duffrin C, et al. *South Med J*. 2014;107(11):728-33.
3. Quinn KJ, et al. *Acad Med*. 2011;86(11):1397-1406.


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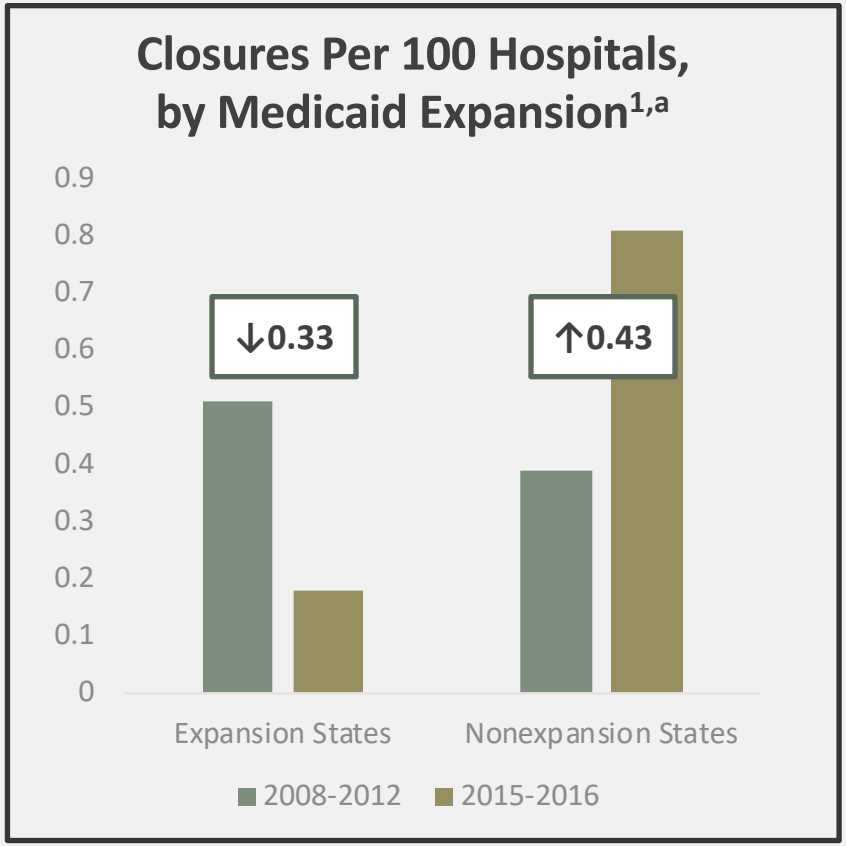
# Advocacy at State and Federal Levels: Payer Considerations

Promote Medicaid eligibility expansion and other policies increasing rural insurance coverage[1]

Advocate for reimbursement for prenatal care delivered through telemedicine[2]




[a]Analysis of data from the Centers for Medicare and Medicaid Services, the Henry J Kaiser Family Foundation, and the Census Bureau.


1. Lindrooth RC, et al. *Health Aff (Millwood)*. 2018;37(1):111-120.
2. Weinstein RS, et al. *Am J Med*. 2014;127(3):183-187.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# Advocacy at State and Federal Levels: Scope of Practice

Nurse Practice Laws and Regulations

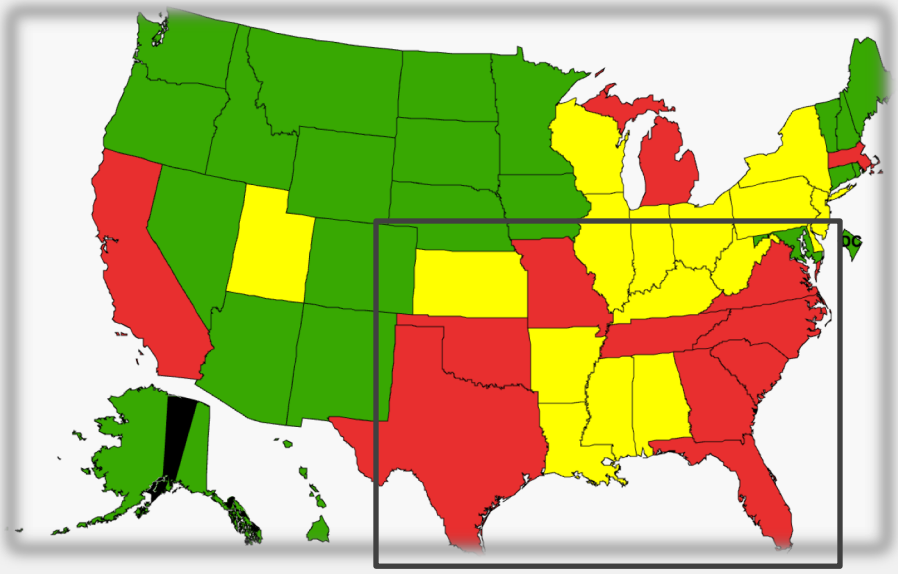

Image from: AANP. State Practice Environment.

Full Practice

Reduced Practice

Restricted Practice

OB/GYNs Per 10000 Women

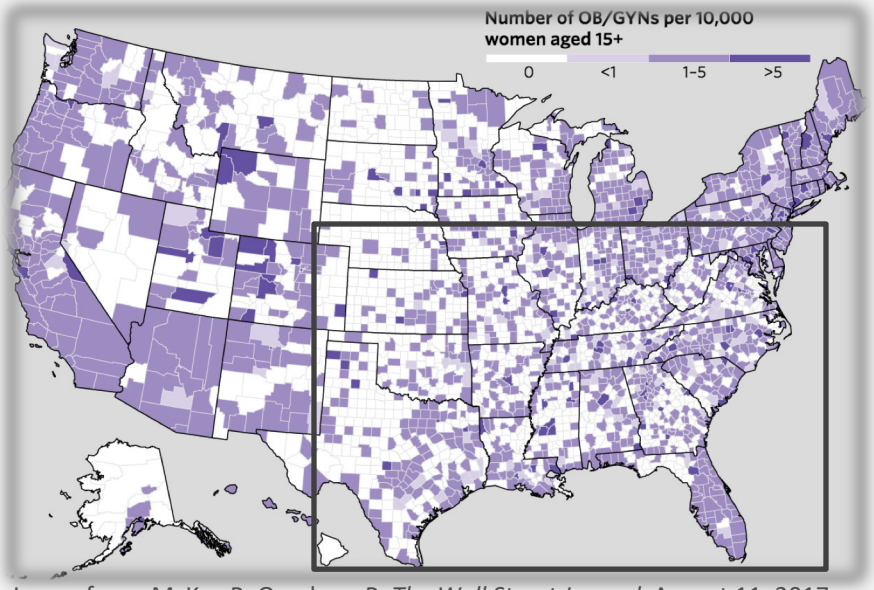


Image from: McKay B, Overberg P. *The Wall Street Journal*. August 11, 2017.

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# Rural Populations With Additional Barriers

# Additional Considerations: Undocumented People and Migrant Farm Workers

**Underinsured**

**High poverty**

**Mistrust of health services**

**Poor health**

**Migratory lifestyle**


1. Hasstedt K. Guttmacher Institute. November 19, 2014.
2. Bircher H. *MCN Am J Matern Child Nurs*. 2009;34(5):303-307.
3. Rhodes SD, et al. *Am J Public Health*. 2015;105(2):329-337.


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# Additional Considerations: Undocumented People and Migrant Farm Workers

| | Example Solutions |
|---|---|
| **Underinsured** | Consider cash-based appointment structures, advocate for increased coverage |
| **Poverty** | Increase availability of convenient services to reduce direct and indirect cost burdens |
| **Mistrust of health services** | Provide culturally competent care and translation services if needed |
| **Poor health** | Collaborate with county health offices to increase public health education |
| **Migratory lifestyle** | Provide care through innovative technology, including mobile health apps and telemedicine |


1. Hasstedt K. Guttmacher Institute. November 19, 2014.
2. Bircher H. *MCN Am J Matern Child Nurs*. 2009;34(5):303-307.
3. Rhodes SD, et al. *Am J Public Health*. 2015;105(2):329-337.


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# Additional Considerations: Native Americans

**↑ 46%** Percent increase in risk for **neonatal death** among rural Native Americans relative to rural white people[1]

**↑ 84%** Percent increase in risk for **inadequate prenatal care** among rural Native Americans relative to rural white people[1]

**↑ 34%** Percent increase in risk for **preterm birth** among Native Americans in Washington and Montana relative to white people in these states[2]

**2.0 per 1000 children** Prevalence of **fetal alcohol syndrome disorder** (FASD) among Native American children 7 to 9 years (compared to 0.3 among all children)[3]


1. Baldwin LM, et al. *Am J Public Health*. 2009;99(4):638-646.
2. Hwang M, et al. *Matern Child Health J*. 2013;17(10):1908-1912.
3. Fox DJ, et al. *MMWR Morb Mortal Wkly Rep*. 2015;64(3):54-57.


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# Additional Considerations: Native Americans

- Alcohol abuse and FASD rates vary[1]
  - The stereotype of alcohol abuse among Native Americans is harmful
  - Approach screening with an understanding of the potential perception of discriminatory practices

- FASD and alcohol use during pregnancy should be addressed within the context of sociocultural factors that play a role in alcohol use among Native Americans
  - Avoid messaging that places blame on pregnant individuals who consume alcohol[2]
  - Address systemic and social factors that impact alcohol consumption during pregnancy[2,3]
    - Advocate for community resources (eg, alcohol abuse counseling)
    - Support educational efforts
    - Promote programs that address underlying economic needs


1. US Department of Health and Human Services. Fetal Alcohol Spectrum Disorders Among Native Americans. 2007
2. Bell E, et al. *Public Health Ethics.* 2015;9(1):65-77.
3. Mangum B. *Biostat Epidemiol Int J.* 2018;1(1):25-29.