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# Drivers and Predictors of Nurse Practitioners working in Rural Areas of the United States

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# Project Overview

- Project Goal: Explore whether increasing access to care in primary care can be achieved by addressing barriers that constrain NP practice.
- Tasks:
  - Environmental Scan
  - 5 State-level Case Studies (WA, NM, NV, TX, FL)
  - Quantitative analysis of NP data (NSSNP 2012, Medicare First Visit Claims 2004, 2008 and 2012)

# Context

- NPs growing rapidly in the US
- NPs are often considered a solution to primary care shortages, especially in rural areas
- State scope of practice (SOP) regulations may hamper full use of NPs to meet primary care demand
- Little existing research on SOP, stemming largely from a lack of appropriate data
- SOP is a state-level phenomenon and moving target

# Why the Rural Focus

- ~57 million people live in rural America
  - Rural residents older and poorer than urban residents
  - Rural communities face ongoing health workforce shortages
  - Rural states had highest rate of NPs billing Medicare\*
  - NPs more likely to provide services to vulnerable beneficiaries\*
- \*DesRoches, C.M., Gaudet, J., Perloff, J., Donelan, K., Iezzoni, L.I., and Buerhaus, P. (2013). Using Medicare data to assess nurse practitioner-provided care. *Nurs Outlook*, 61, 400-407.

# Data

- 2012 National Sample Survey of Nurse Practitioners (NSSNP) – NP reported supervisory arrangements
- Census population data – geographic variables
- Five qualitative case studies of states at varying levels of SOP (FL, TX, WA, NM, NV)

# Methods: Case Studies

- State Selection
  - State representing a mix of SOP regulations, provider densities, regions of the country, and Medicaid reimbursement levels
  - Florida, Nevada, New Mexico, Texas, Washington were selected
- Interview Participant Selection
  - Up to nine participants per state
  - Selected to reflect a range of payers, employers, and educators

# Methods: Case Studies (cont.)

## ■ Interview Participants

- Primary care safety net providers
- Large health systems that span multiple care settings and emerging care models
- NP companies and vendors that employ NPs
- NP schools
- Hospital employers
- Specialty practices



# Methods: Case Studies (cont.)

- Interview Protocol Topics
  - Care delivery
  - Access to care
  - Supply and migration
  - Challenges to NP practice
  - Cost and reimbursement issues
  - NP experience (as appropriate)

# Methods: Analysis of 2012 NSSNP

## ■ DVs

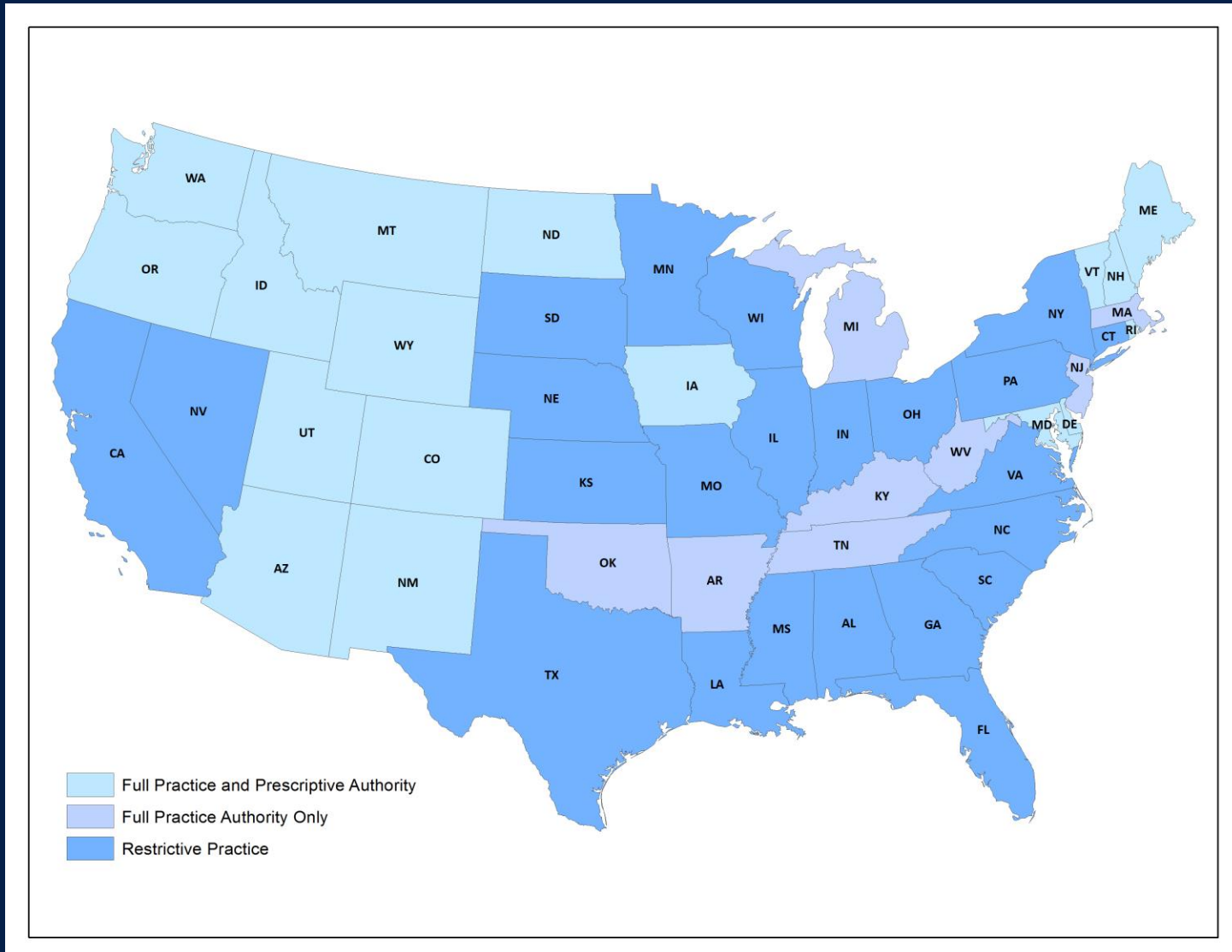
- Supply: Practicing in patient care, practicing in primary care
- Administrative: Billing and Supervision
- Patient care: having own panel, patient load
- Geography: Working in a rural area

# Methods: Analysis of 2012 NSSNP

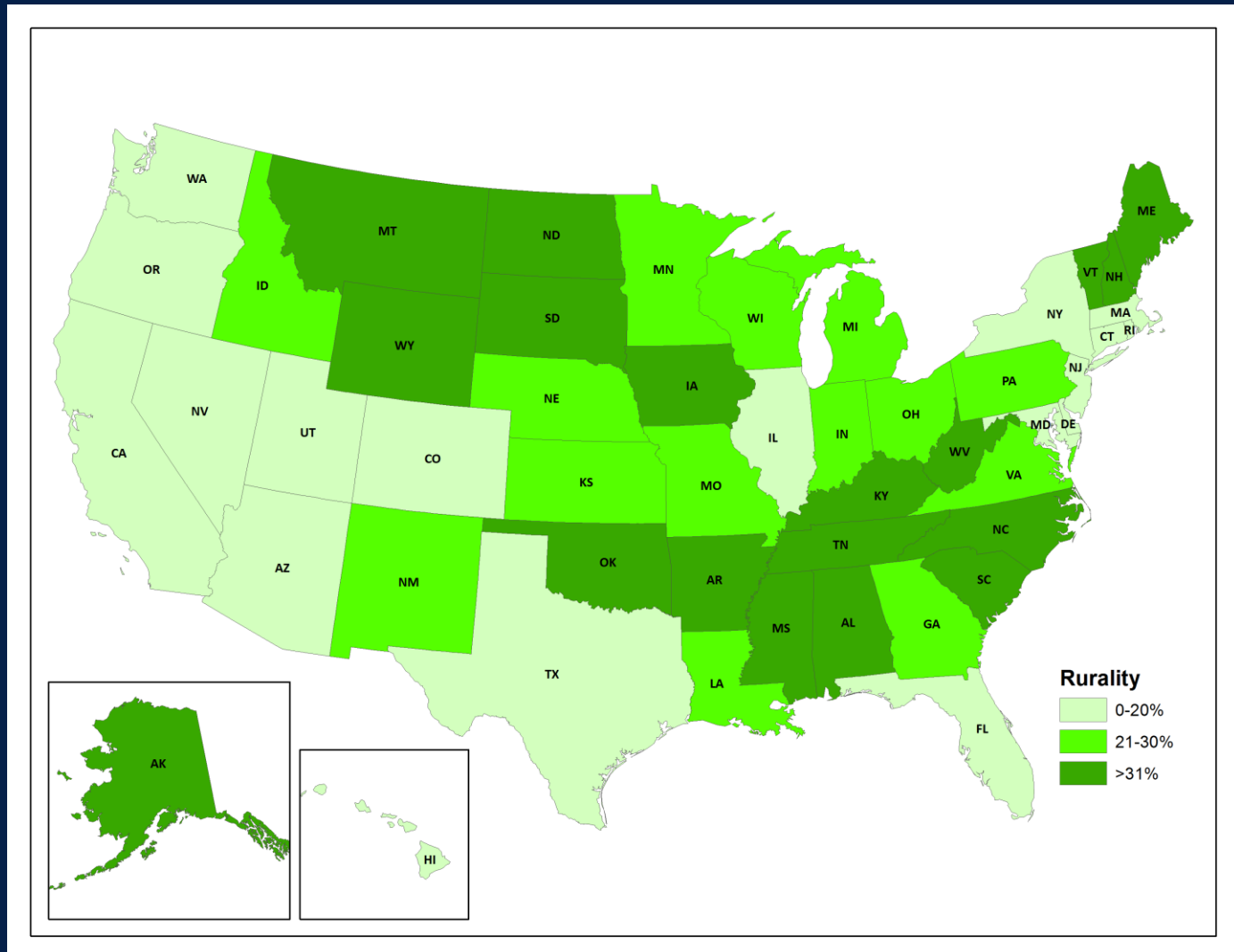
## ■ IVs

- State SOP: Full practice and prescriptive authority, full practice authority only, neither (restrictive state)
  - Individual chars: sex, race/ethnicity, age, education, rural vs. urban location
  - State chars: % in poverty, % above age 65, providers per 100K population
- ## ■ Modeling approaches: logistic regression with results presented in predicted probabilities, linear regression, interactions between SOP and rural vs. urban location

# State SOP in 2012



# Rural Landscape



# Quantitative Analysis (NSSNP)

- NPs working in a large rural town/city, small rural town, or isolated rural area (RUCA)
- 3,185 cases representing 37,794 NPs
- Considered both state rurality and state SOP

# Characteristics by NP Work Location\*

	Rural	Non-Rural
n (weighted %)	689 (21.4%)	2,796 (78.6%)
<b>Weighted Column Percentage</b>		
<b>State SOP Regulation</b>		
Full practice/prescriptive authority	24.5	16.6
Full practice authority only	19.4	16.1
Restricted practice	56.0	67.3
<b>Race/Ethnicity</b>		
Hispanic/Latino, any race	1.0	3.6
White, non-Hispanic	95.0	84.7
Black/African Am, non-Hispanic	1.4	6.3
Asian/Pac. Isl., non-Hispanic	0.9	3.5
AIAN, non-Hispanic	0.6	0.5
Two or more race, non-Hispanic	1.1	1.4
<b>Mean</b>		
<b>% Population in a Rural Area</b>	29.2	18.8
<b>PC Providers /100,000</b>	179.6	179.7
<b>% Population in Poverty</b>	16.4	15.7
<b>% Population 65 +</b>	14.1	13.8
<b>State Unemployment Rate</b>	7.2	7.6

# Quantitative Findings

- NPs in full practice and prescriptive authority states had higher predicted probability of working in a rural area
  - 6% points higher than NPs in restrictive states
  - No difference for NPs working in full practice only states
- NPs in rural states more likely to be practicing in rural areas, with SOP controlled
  - 10% increase in a state's rural population yielded 2% point increase in predicted probability of practicing in a rural area

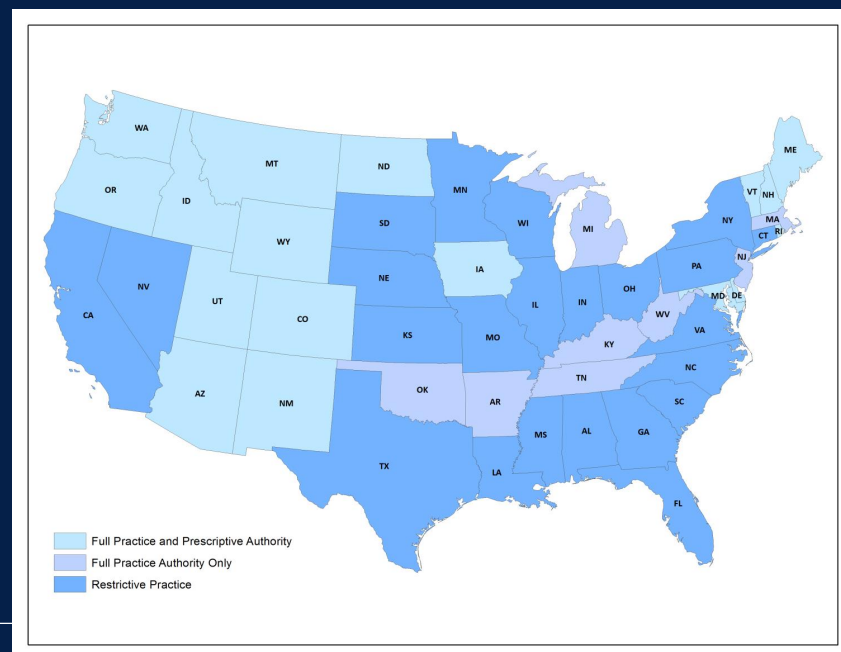
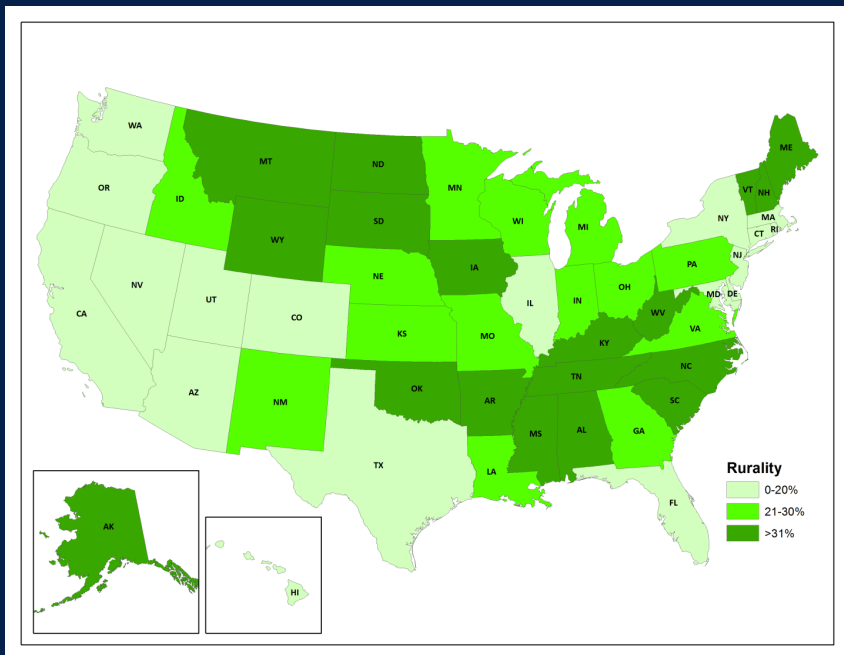


# Qualitative Findings

- Burdensome & inefficient to meet collaboration requirements in rural areas
- NMHC pose challenges to financial viability, exacerbated for those in rural areas with collaboration requirements
- Some expanded care delivery through new models of care, but still rare and under development
- Use of incentives to lure NPs to rural areas have mixed long-term results
- Increase in education focused on rural care delivery

# Conclusions

- SOP makes a difference in NP propensity to work in rural areas
- We need NPs in rural areas



# Future Considerations

- Need for healthcare in rural areas continues to exceed supply
  - States apply differential SOP regulations
  - Payers credential NPs differentially
  - Inefficient systems being used to stretch systems
- Need for greater education and training for NP practicing in rural areas
- Need for SOP restrictions to be removed to make NP rural practice more viable