

# Comparing PACT Implementation in Rural and Urban Clinics

Torie Johnson, MD

HSR&D Fellow, General Internal Medicine, VA Puget Sound HCS, University of Washington

Michelle Lampman, PhD, MA

Research Health Science Specialist, VISN 23 PACT Demonstration Lab, Center for Comprehensive Access and Delivery Research and Evaluation, Iowa City VA HCS

# Overview

- Discuss differences between rural and urban clinics in implementation of the Patient-Aligned Care Team (PACT) model
- Present results from separate quantitative and qualitative evaluations



Photo: PSSG Rurality Definitions and Methods Work Group

# Poll Question #1:

What is your primary role in VA?

- Student, trainee, or fellow
- Clinician
- Researcher
- Administration or management
- Other

# Background

- PACT is VHA's PCMH model
  - Restructures primary care to improve access, continuity, team-based care, care coordination and patient-centeredness
  - Implementation began in April 2010

**Other Team Members**

**Clinical Pharmacy Specialist:**

± 3 panels

**Clinical Pharmacy**

**anticoagulation:**

± 5 panels

**Social Work:** ± 2 panels

**Nutrition:** ± 5 panels

**Case Managers**

**Trainees**

**Integrated Behavioral Health**

Psychologist ± 3 panels

Social Worker ± 5 panels

Care Manager ± 5 panels

Psychiatrist ± 10 panels

**Other Team  
Members**

*For each parent facility*  
**Health Promotion Disease Prevention  
Program Manager: 1 FTE**  
**Health Behavior Coordinator: 1 FTE**  
**My HealtheVet Coordinator: 1 FTE**

**Teamlet:** assigned to 1  
panel (±1200 patients)

- **Provider: 1 FTE**
- **RN Care Mgr: 1 FTE**
- **Clinical Associate  
(LPN, MA, or  
Health Tech): 1 FTE**
- **Clerk: 1 FTE**

**Patient**

**Caregiver**

**The Patient's Primary Care Team**



# Rural Clinics and PACT

- Rural primary care clinics are smaller, have fewer staff, serve more rural patients and face greater recruitment challenges
  - May lead to different challenges to implementation

# Examples of Rural and Urban Clinics



Urban Clinic  
Puget Sound VAMC  
Seattle, WA



Rural Clinic  
Libby, MT

# Conceptual Model

## Area Characteristics

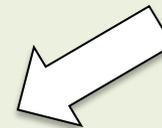
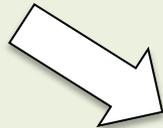
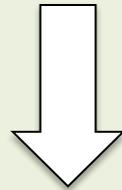
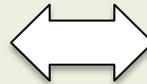
Geographic and cultural context  
Health care and community resources  
Neighborhood socioeconomic status

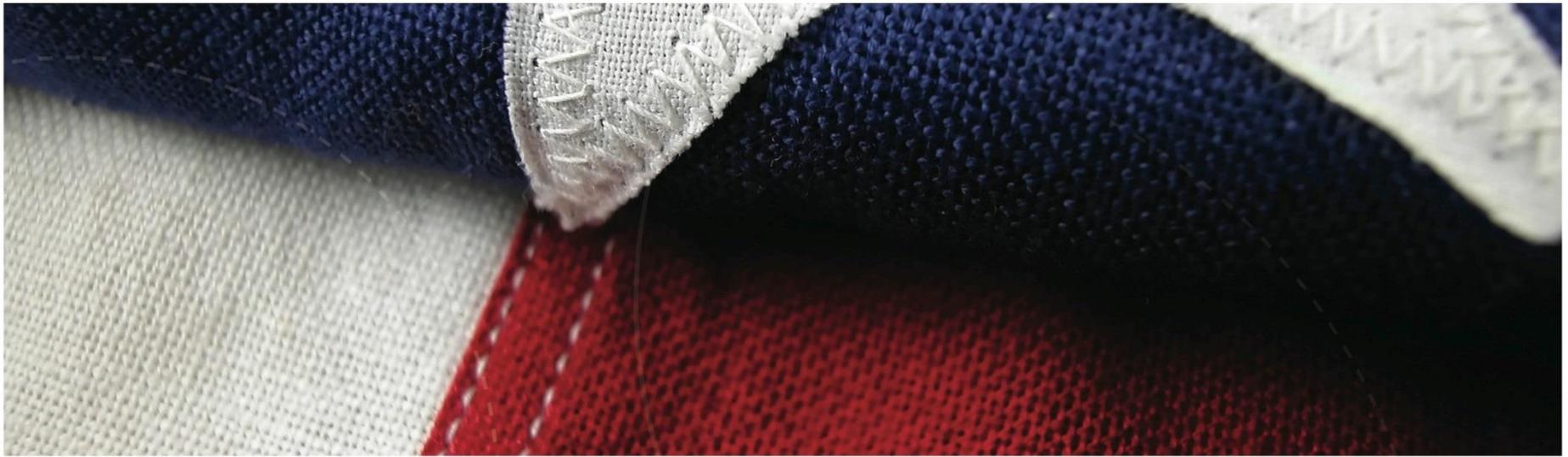
### Clinic Characteristics

Facility type  
Staffing type  
Clinic size (#pts/providers)  
Services provided

### Patient Characteristics

Co-morbidity  
Demographics  
Individual SES  
Distance to primary care





# Quantitative Evaluation

Torie Johnson, MD

HSR&D Fellow, General Internal Medicine, VA Puget Sound HCS,  
University of Washington

# Aims

To describe rural-urban variation in PACT implementation by:

1. Clinic location
2. % Rural patients assigned

# Methods

Study Design: Cross-sectional, FY 2012

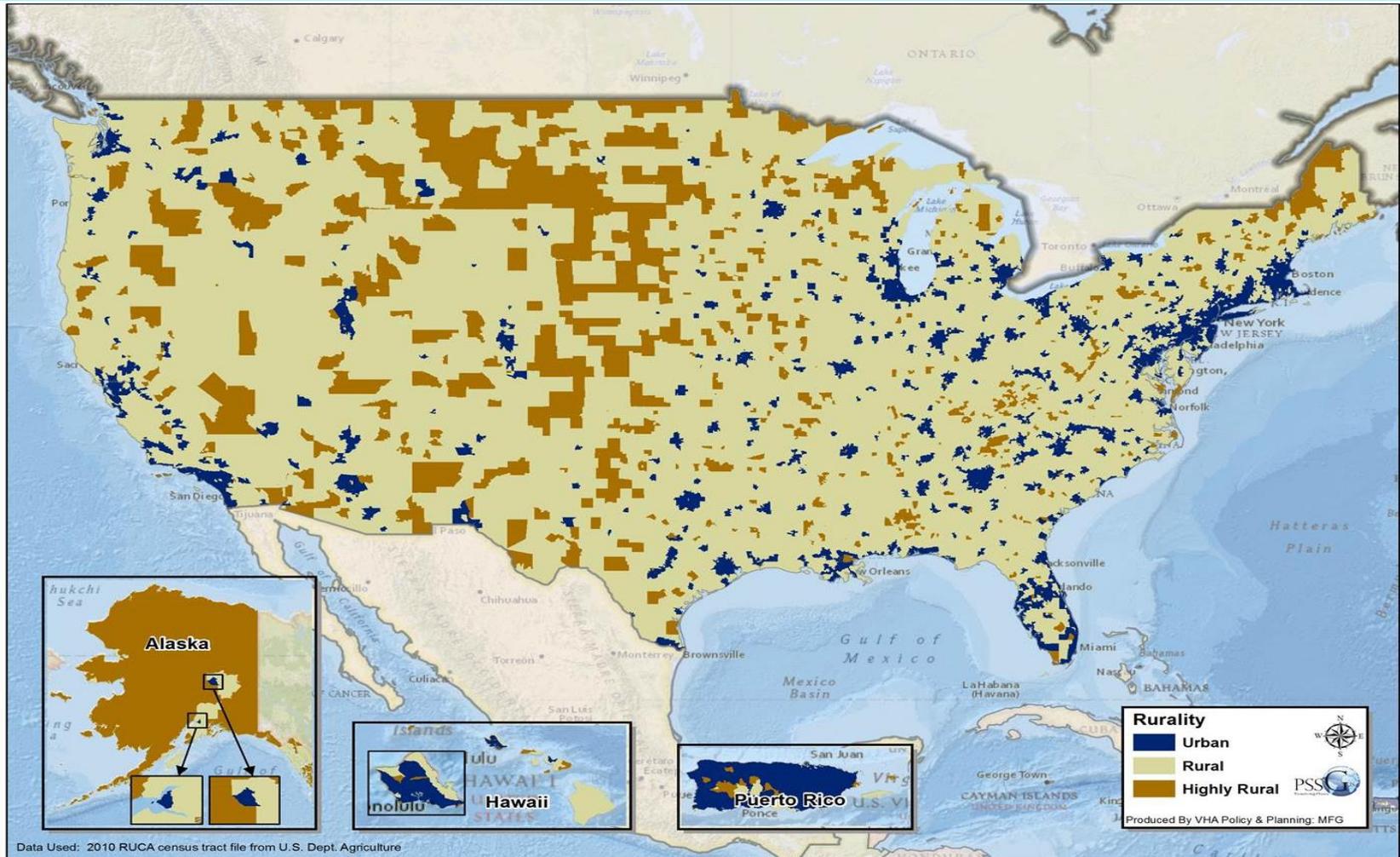
Sample: 905 VHA primary care clinics in U.S. and Puerto Rico

# Rural/Urban Assignment

Site rurality defined using 2 methods:

- 1) Rural-Urban Commuting Area (RUCA) codes for clinic address or latitude/longitude (Urban = 1.0, 1.1; Rural = all other)
  - Rural and Highly Rural analyzed together

# VHA RUCA-based Urban and Rural Areas

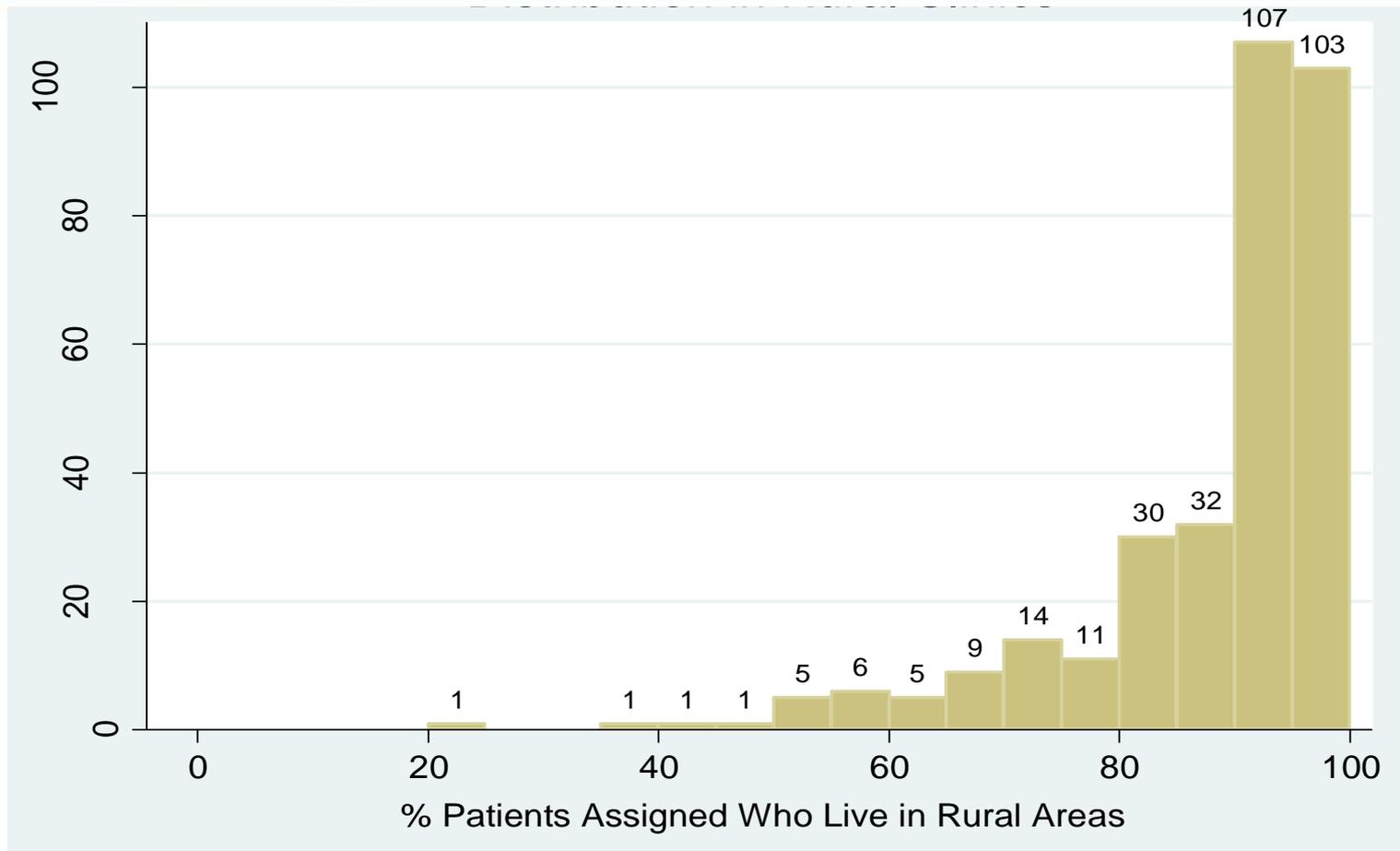


# Rural/Urban Assignment (cont.)

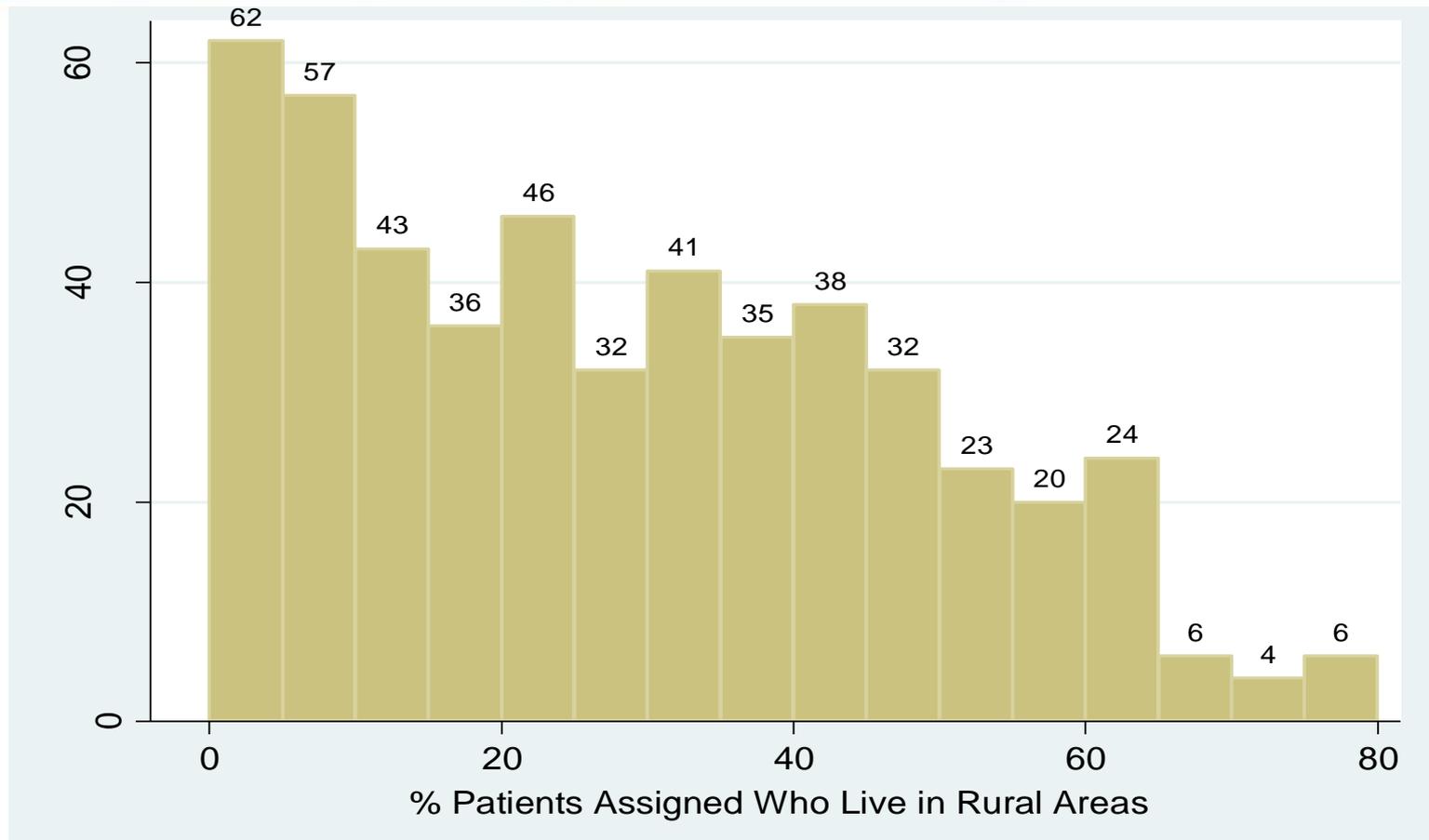
## 2) % Rural patients assigned to clinics

- Rural = >50% rural patients
- Urban = <50% rural patients

# Distribution of % Rural Patients Assigned to Primary Care in Rural-Located Clinics



# Distribution of % Rural Patients Assigned to Primary Care in Urban-Located Clinics



# Outcome

## PACT implementation measured by PACT Implementation Progress Index (PI<sup>2</sup>)

- Composite score reflecting 8 core PCMH domains
- $PI^2 = [\# \text{ domains in top quartile} - \# \text{ domains in bottom quartile}]$ , range -8 to 8

Nelson KM et al. Implementation of the Patient-Centered Medical Home in the VHA. JAMA Intern Med. 2014 Aug; 174(8):1350-8.

# PI<sup>2</sup> Data Sources

- Corporate Data Warehouse (CDW)
- Consumer Assessment of Healthcare Providers and Systems – Patient Centered Medical Home Survey (CAHPS-PCMH)
- Provider Survey

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# PI<sup>2</sup> Data and Domains

PACT GOALS	PI <sup>2</sup> domains	Source of data	# of items
Accessible, continuous and coordinated care	Access	CAHPS-PCMH CDW	11
	Continuity of care		3
	Coordination of care		8
Team-based care	Delegation, staffing, team functioning, working to top of competency	Provider survey	18
Patient-centered care	Comprehensiveness	CAHPS-PCMH	3
	Self-management support		2
	Patient-centered care and communication		6
	Shared decision making		2
Total			53

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# Analysis

- Compared PI<sup>2</sup> scores and domain scores for urban and rural clinics
- Categorized clinics by degree of PACT implementation using PI<sup>2</sup> scores
  - compared trends across categories using a non-parametric test of trend
- Adjusted for patient, facility and area characteristics using multiple linear regression

# Area Characteristics

Characteristic	All (N=905)	Rural (N=350)	Urban (N=555)
Northeast (%)	18.0	14.9	20.0
Midwest (%)*	25.2	34.0	19.6
South (%)	35.0	31.4	37.3
West (%)	21.2	19.7	22.2
Puerto Rico (%)*	0.6	0.0	0.9
County total non-federal MDs (mean)*	1689.6	156.7	2642.1
County unemployment rate (% civil labor force)	8.8	8.6	9.0

\* $p < 0.01$

# Clinic Characteristics

Characteristic	All (N=905)	Rural (N=350)	Urban (N=555)
Community-based outpatient clinic (%)	83	94	76
# primary care patients (mean)	5,959	2,389	8,210
Adjusted panel size (mean)	1055	1014	1079
# primary care providers (mean)	11.5	3.9	16.2
Has resident PCPs (%)	9	0.6	14.2
VA Staffed (%)	85.7	76.9	91.1
Clinic staff tenure category (mean)	5.0	4.8	5.0
Operation years prior to 2010 (mean)	20.9	13.0	25.8
Clinic moved between 2010-2012 (%)	14.9	21.3	11.2

*\*All comparisons significant at  $p < 0.01$*

# Patient Characteristics

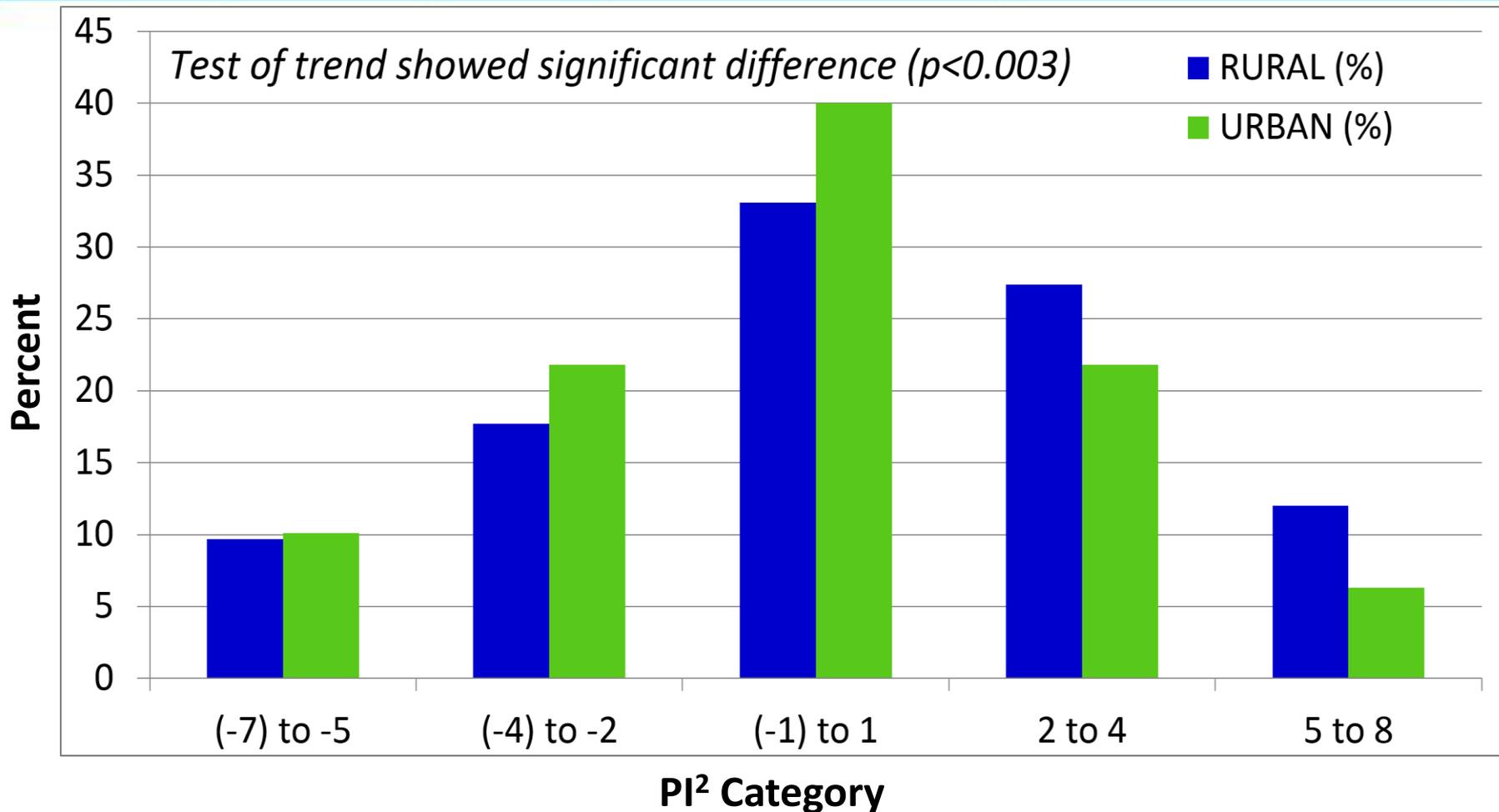
Characteristic	All (N=905)	Rural (N=350)	Urban (N=555)
Rural (%)*	52	88	29
Age (mean, years)*	64	66	64
Female (%)	5	4	6
White (%)*	80	86	76
Comorbidity index (Deyo, mean)	0.92	0.92	0.91
Service-connected disability >50% (%)	21	19	22
Miles to nearest VA primary care clinic (mean)*	17	22	14

\* $p < 0.01$

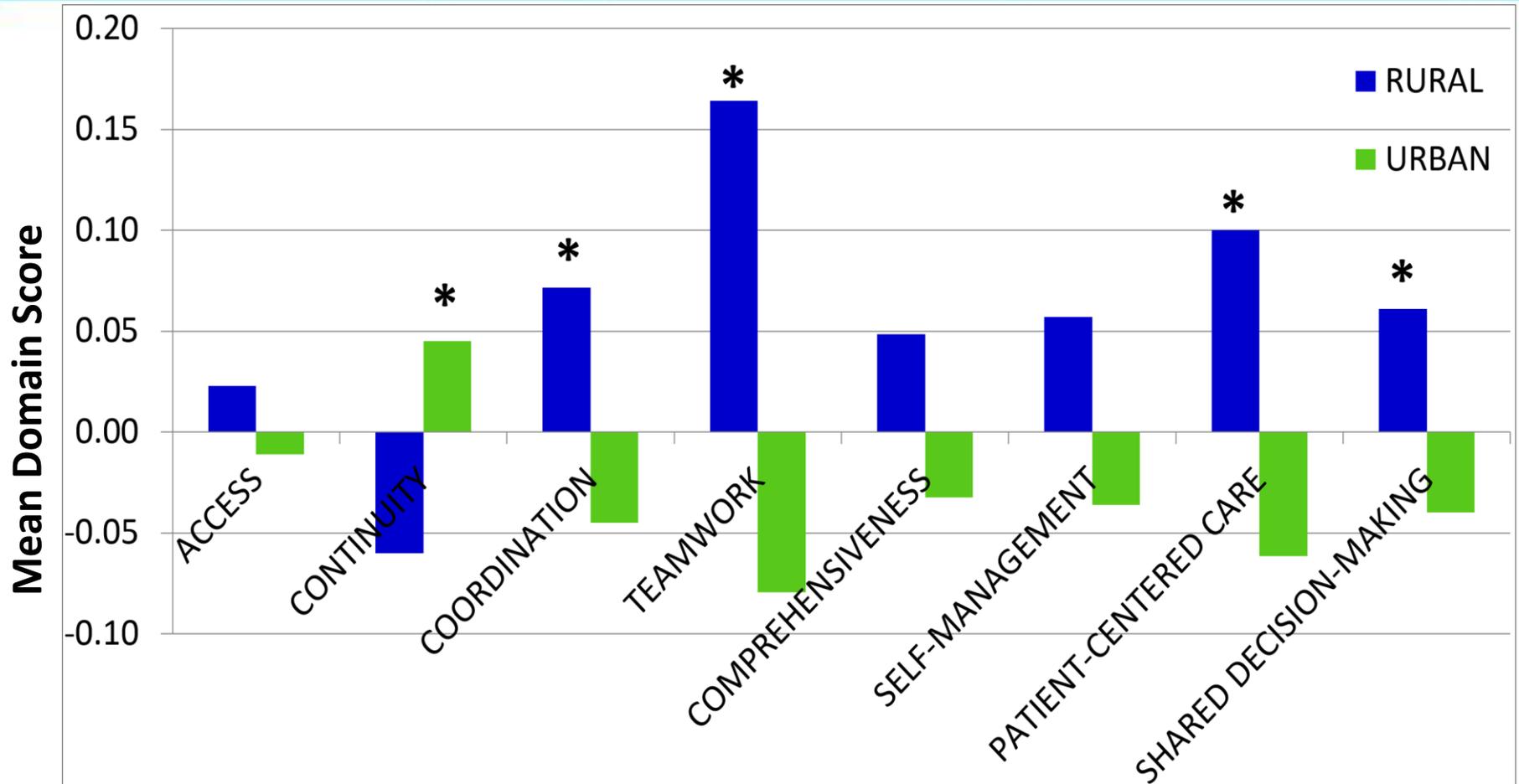
# PACT Implementation (PI<sup>2</sup>) Overall Scores

Measure	Urban Mean PI <sup>2</sup> (SD)	Rural Mean PI <sup>2</sup> (SD)	P-value
Location-based (VHA)	-0.24 (3.06)	0.39 (3.40)	<b>0.005</b>
% Rural patients	-0.37 (2.96)	0.34 (3.37)	<b>0.002</b>

# Distribution for Urban and Rural Clinics Across PI<sup>2</sup> Categories



# PI<sup>2</sup> Domain Scores for Urban and Rural Clinics



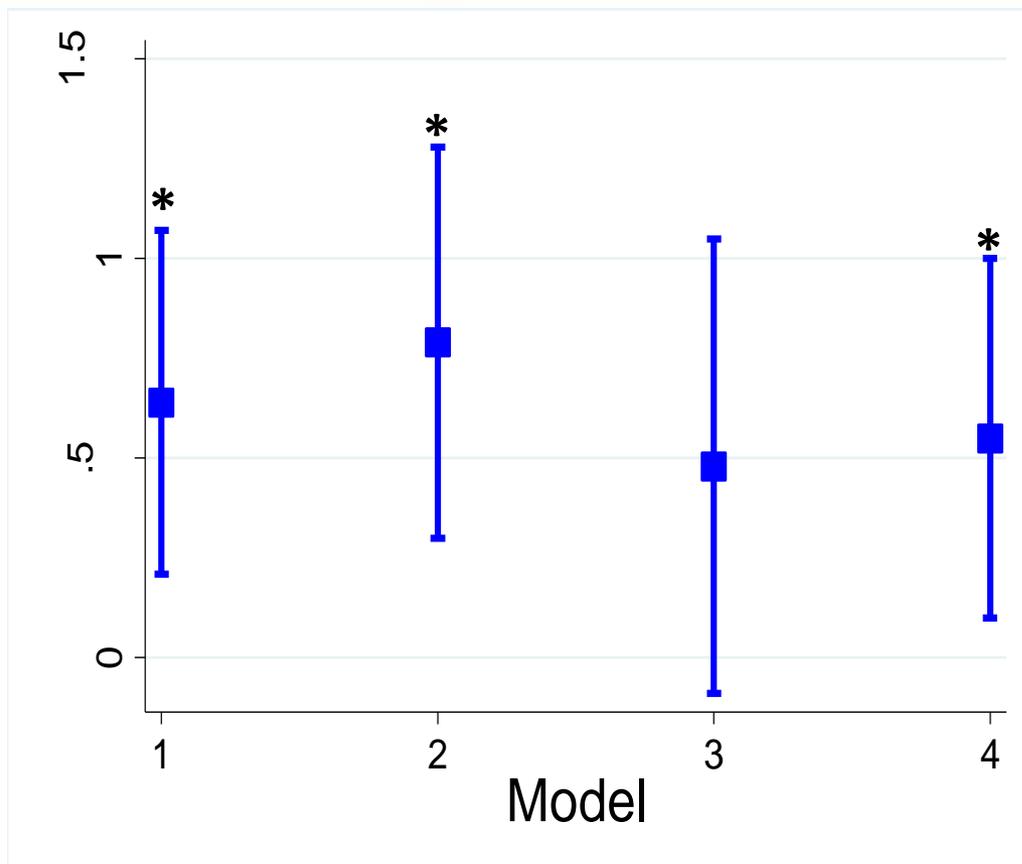
# Difference in $PI^2$ as Rurality Increases

**Model 1:** Unadjusted relationships between rural measure and  $PI^2$

**Model 2:** Adjusted for patient age, comorbidity, gender, service connection, ethnicity, distance to primary care, neighborhood SES

**Model 3:** Adjusted for clinic total primary care patients, panel size, staffing, academic function, facility type, address change, staff tenure

**Model 4:** Adjusted for region, area unemployment rate, # non-federal MDs



\* $p < 0.05$

# Limitations

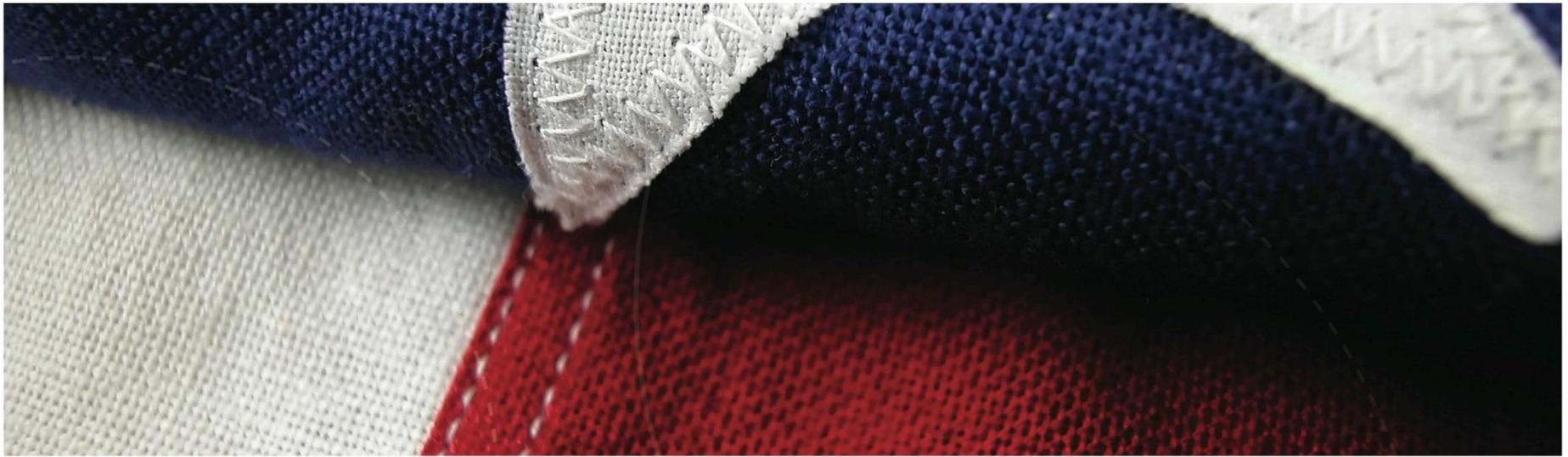
- Cross-sectional
- Missing data in team-based care domain
- Some measures used to construct PI<sup>2</sup> based on self-report
- PACT and PI<sup>2</sup> measure specific to VHA, may not be generalizable

# Conclusions

- PACT implementation was significantly greater overall in rural compared to urban VHA primary care clinics
- Adjustment for patient, clinic and regional characteristics suggests urban-rural differences in PACT implementation may largely be related to clinic-level factors

# Acknowledgements

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# Multiple-Case Study of Primary Care CBOCs

Michelle Lampman, PhD, MA

Research Health Science Specialist, VISN 23 PACT Demonstration Lab,  
Center for Comprehensive Access and Delivery Research and  
Evaluation, Iowa City VA HCS



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# Aim

To learn more about the experiences of rural primary care clinics implementing PACT and whether they differ from the experiences of clinics in urban areas

# Poll Question #2

What best describes your experience working in a rural clinic?

- I currently work in a rural clinic
- I have worked in a rural clinic in the past
- I have never worked in a rural clinic
- I have conducted research in rural clinics

# Case Selection

- Purposeful sample using maximum variation
- RUCA classification used to identify Urban, Large Rural, and Small Rural clinics
- VISN → Health Care System HCS → Primary Care CBOCs
- Five cases selected for study

# Data Collection

- Site visits conducted by two researchers
  - Direct observation
  - Unstructured interviews
- ≈ 60 participants
  - 17% PCPs, 20% RN Care Managers, 20% Clinical Associates, 18% Administrative Associates, 18% extended team members, and 8% clinic managers

# Data Analysis

- Thematic analysis of detailed case reports
- MaxQDA qualitative analysis software
- Developed codebook using deductive and inductive techniques
- Identification of cross-cutting themes

# Case Descriptions

	Clinic A	Clinic B	Clinic C	Clinic D	Clinic E
<b>External Characteristics</b>					
<i>Rural Classification</i>	Small Rural	Large Rural	Large Rural	Urban	Urban
<i>Approx. Community Population (2014)</i>	8,000	15,000	32,000	58,000	68,000
<i>Approx. Miles from Parent VAMC</i>	120	100	80	80	70
<b>Clinic Characteristics</b>					
<i>Years of operation</i>	4	4	16	16	18
<i>Approx. # of assigned patients</i>	1,200	2,000	4,100	4,000	4,600
<i>Number of PACTs</i>	2	2	4	5	5
<i>Staffing Ratio</i>	3.18	3.18	3.92	3.06	2.87

# Reported Challenges by Case

	Clinic A	Clinic B	Clinic C	Clinic D	Clinic E
<b>External Characteristics</b>					
<i>Distance to VAMC</i>	√	√	√	√	√
<i>Travel / transportation</i>	√	√	√	√	√
<i>Patient characteristics</i>	√	√	√	√	√
<i>Limited community resources</i>		√	√		
<i>Internet connectivity</i>	√				
<b>Clinic Characteristics</b>					
<i>Staffing / turnover</i>	√	√	√	√	√
<i>Time</i>	√	√	√	√	√
<i>Space</i>			√	√	√
<b>PACT Implementation</b>					
<i>Organizational isolation</i>	√	√	√	√	√
<i>Patient preferences / behavior</i>	√	√	√	√	√
<i>Staff buy-in</i>	√	√	√	√	√
<i>Coordination with off-site services</i>	√	√	√	√	√

# Cross-cutting Themes

- Distance is perceived as a barrier for both rural and urban clinics
- Patient preferences and behaviors can impact PACT performance and implementation
- Primary Care CBOCs experience frequent change

# Cross-cutting Theme: Distance-Related Barriers

- Urgent / emergent conditions
- Long distances for specialty care
- Transportation issues
- Fewer community resources
- Professional and organizational isolation

# Cross-cutting Theme: Patient Preferences & Behavior

- Patient engagement
- Appropriateness / fit of PACT processes
- Patient behaviors
- Patient expectations
- Improved relationships with patients

# Cross-cutting Theme: Frequently Changing Context

- Culture for PACT
  - New vs. fully operational
  - Resistance to change
- Staff turnover
- Adapting to change

# Limitations

- Generalizability beyond cases
- Potential for response bias
- Potential for reporting bias
- Changing VA policy
- Highly unique context within the VA
  - Organizational structure
  - Patient population

# Interpretation and Understanding

- Similar experiences among rural and urban clinics
- Distance to VAMC vs. rural location
  - Both urban clinics located >60 miles from VAMC
- Impact of patient preferences and behaviors
  - Both urban clinics assigned >50% rural patients

# Interpretation and Understanding - Continued

- Importance of context to PACT implementation and performance
  - Frequently changing context
  - Importance of informal structure
  - Meaningful connections require current context

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# Take Home Points

- PACT implementation, as measured by PI<sup>2</sup> in FY 2012, was significantly better overall for rural compared to urban clinics for 2 different measures of rurality
- Organizational and clinic structure and patient characteristics influence PACT implementation
- Efforts to improve PACT should account for specific challenges encountered in urban and rural clinics
- It is important to consider how unique context and circumstances relate to PACT implementation

# Questions/Comments

Torie Johnson MD  
([Victoria.Johnson3@va.gov](mailto:Victoria.Johnson3@va.gov))

Michelle Lampman PhD, MA  
([Michelle.Lampman@va.gov](mailto:Michelle.Lampman@va.gov))

thank you!

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