

# **Examining Tobacco Use in Rural Versus Urban United States**

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<http://www.uvm.edu/medicine/behaviorandhealth/>

# Acknowledgements/Disclosures

- **Collaborators:** Tyler D. Nighbor, PhD, Allison A. Kurti, PhD, Nate J. Doogan, PhD, Megan E. Roberts, PhD, Janice Y. Bunn, PhD, Diann E. Gaalema, PhD, Ryan Redner, PhD, Antonio Cepeda-Benito, PhD
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- **Disclosures:** Nothing to declare.

# Introduction

- Rural health disparities have been a concern in the U.S. since the 1980s.
- Rural communities on average have greater prevalence of risky health behaviors and worse outcomes than more urban regions with inadequate healthcare access a notable contributor.
- At the time of landmark 1964 Surgeon General's report on smoking and cancer, smoking prevalence was lower in rural than urban regions for both men and women.
- Smoking has decreased considerably in rural and urban areas since 1964 but more so in urban areas such that rural areas now have greater prevalence of smoking and use of other conventional tobacco products (e.g., smokeless tobacco).
- Overarching aim of this presentation is to provide a brief overview of this topic using a related series of epidemiological studies conducted using data from U.S. nationally representative samples.

Each of the studies I'll review were conducted by the TCORS Phase 1 Working Group on Vulnerable Populations

# Rural Versus Urban Use of Traditional and Emerging Tobacco Products in the United States, 2013–2014

Megan E. Roberts, PhD, Nathan J. Doogan, PhD, Cassandra A. Stanton, PhD, Amanda J. Quisenberry, PhD, Andrea C. Villanti, PhD, MPH, Diann E. Gaalema, PhD, Diana R. Keith, PhD, Allison N. Kurti, PhD, Alexa A. Lopez, PhD, Ryan Redner, PhD, Antonio Cepeda-Benito, PhD, and Stephen T. Higgins, PhD

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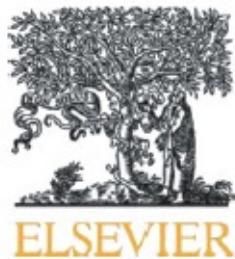
# Methods

- Used data from wave 1 of the U.S. Population Assessment of the Tobacco and Health (PATH) Study.
- Sample consisted of 45,971 civilian, noninstitutionalized youth and adults; used data from 32,320 adults (M& F, 18-90 yrs)
- PATH sampling used geographic units called segments, and were based on Census blocks. A segment was classified as urban if it included  $\geq 2,500$  people; all other segments classified as non-urban (and as rural in this study).
- Weighted national prevalence for each tobacco product and dual and polytobacco use categories, which were then compared on rural-urban differences adjusting for potential confounders (age, gender, poverty, region).

**TABLE 1—National, Rural, and Urban Weighted Prevalences of Adult Tobacco Product Use: Population Assessment of Tobacco and Health (PATH) Study, United States, 2013–2014**

Category	Traditional Tobacco Product Use, % (SE)						Emerging Tobacco Product Use, % (SE)			Dual or Polytobacco Use, % (SE)		
	Cigarettes (Daily)	Cigarettes	Menthol Cigarettes	Smokeless Tobacco	Cigars	Pipes	E-Cigarettes	Cigarillos	Hookah	Traditional Only	Emerging Only	Mixed
Overall	14.4 (0.25)	22.5 (0.31)	6.6 (0.14)	3.0 (0.10)	3.6 (0.10)	0.9 (0.05)	6.7 (0.15)	4.4 (0.10)	2.2 (0.09)	1.4 (0.05)	0.4 (0.03)	8.5 (0.17)
Rural	18.3 (0.73)	24.6 (0.91)	5.8 (0.41)	6.3 (0.31)	3.2 (0.19)	0.9 (0.11)	6.2 (0.31)	3.8 (0.19)	0.9 (0.09)	2.2 (0.14)	0.2 (0.04)	7.8 (0.35)
Urban	13.4 (0.23)	22.0 (0.30)	6.9 (0.15)	2.1 (0.11)	3.6 (0.11)	0.9 (0.05)	6.8 (0.16)	4.6 (0.12)	2.5 (0.11)	1.2 (0.05)	0.4 (0.03)	8.7 (0.19)
Difference test P	< .001	.005	.03	< .001	.07	.74	.08	< .001	< .001	< .001	.005	.02

Note. All values are for past-30-day use unless otherwise specified.



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# A growing geographic disparity: Rural and urban cigarette smoking trends in the United States



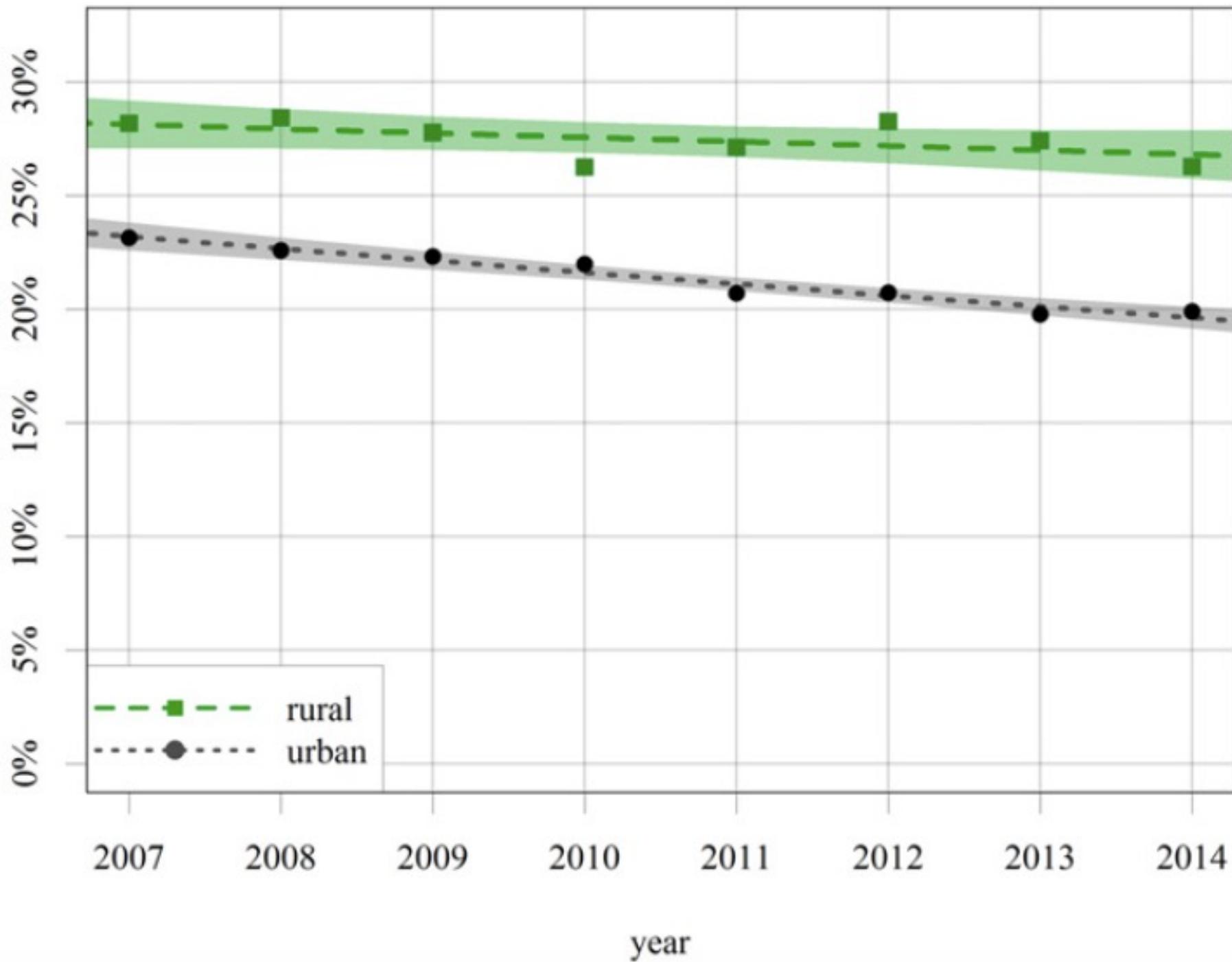
N.J. Doogan <sup>a,\*</sup>, M.E. Roberts <sup>a</sup>, M.E. Wewers <sup>a</sup>, C.A. Stanton <sup>b,c</sup>, D.R. Keith <sup>d</sup>, D.E. Gaalema <sup>e</sup>, A.N. Kurti <sup>e</sup>, R. Redner <sup>f</sup>, A. Cepeda-Benito <sup>e,g</sup>, J.Y. Bunn <sup>e</sup>, A.A. Lopez <sup>d</sup>, S.T. Higgins <sup>e</sup>



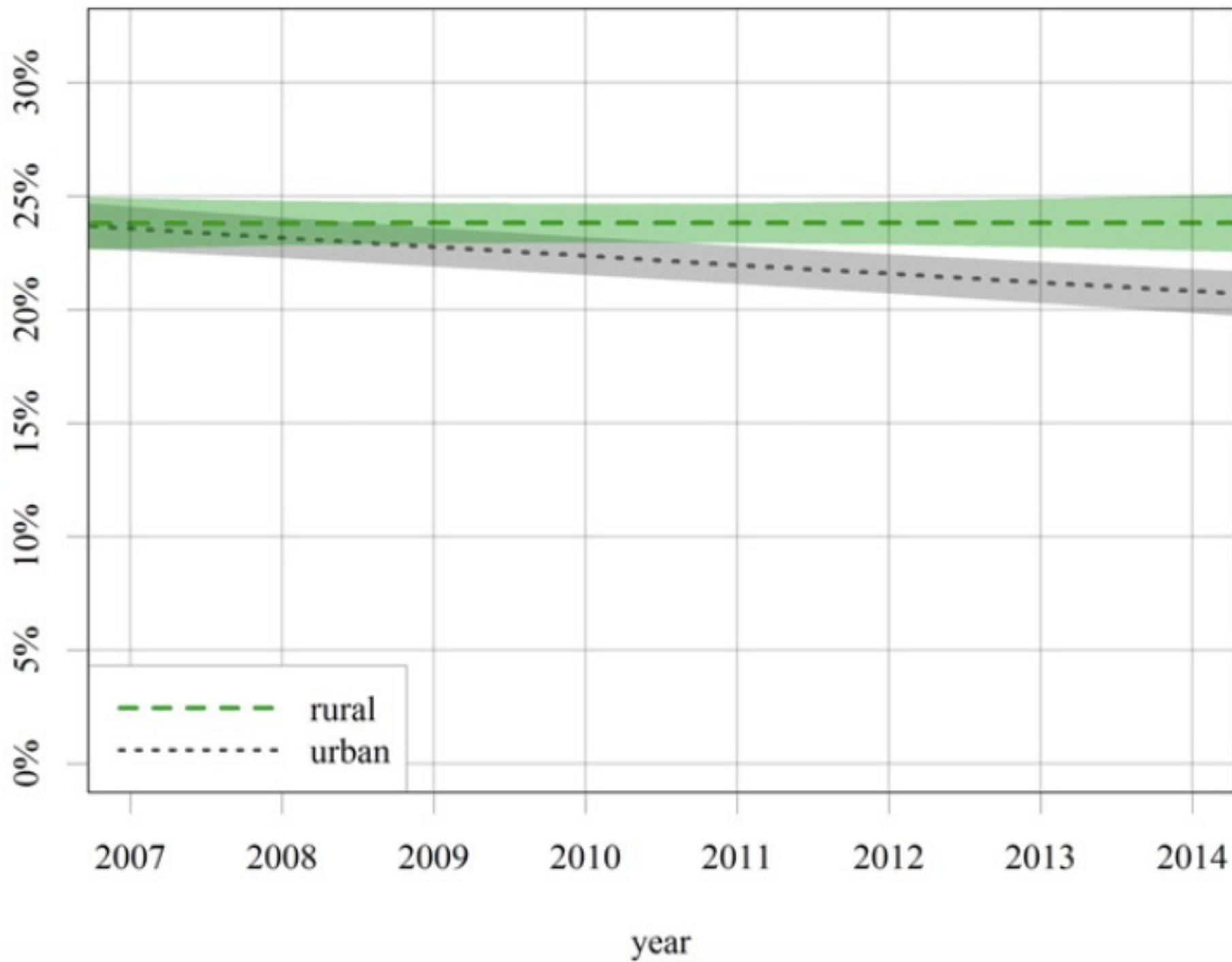
# Gaining Insights into Rural-Urban Disparities

- National Survey on Drug Use and Health: nationally representative survey of U.S. civilian, non-institutionalized population aged  $\geq 12$  years measuring prevalence and correlates of drug use;
- Comparing current smoking status (used in past 30 days &  $\geq 100$  cigs lifetime) among adults ( $\geq 18$  yrs) residing in rural vs. metropolitan/micropolitan areas (based on U.S. census)
- Unadjusted and adjusted (wide range of sociodemographic and psychiatric characteristics) smoking rates between 2007-2014; compared odds of smoking over time in rural vs. urban residents.

unadjusted cigarette smoking prevalence



adjusted cigarette smoking prevalence



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## Trend differences in men and women in rural and urban U.S. settings

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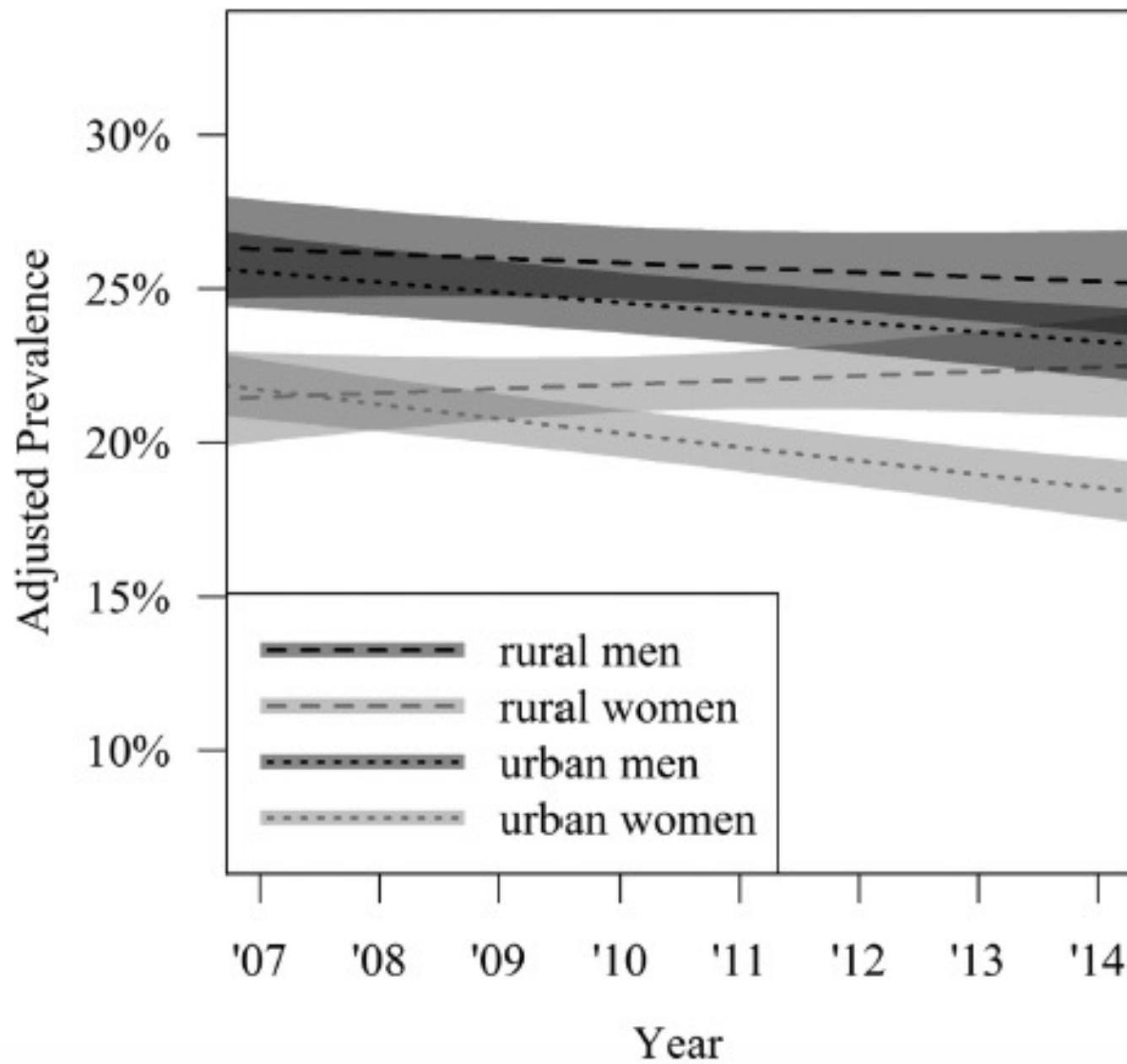
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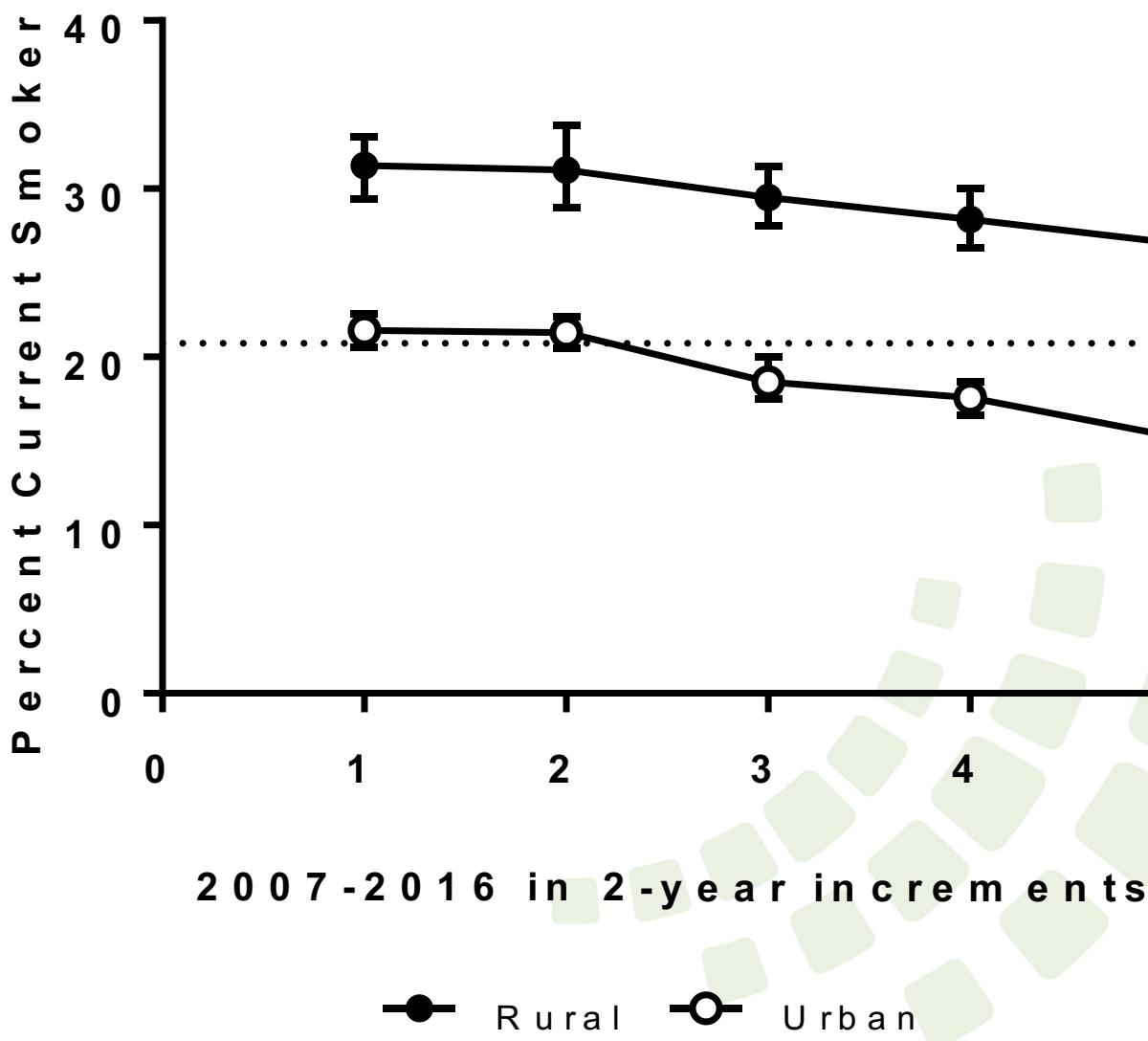
## RESEARCH ARTICLE

# Smoking prevalence and trends among a U.S. national sample of women of reproductive age in rural versus urban settings

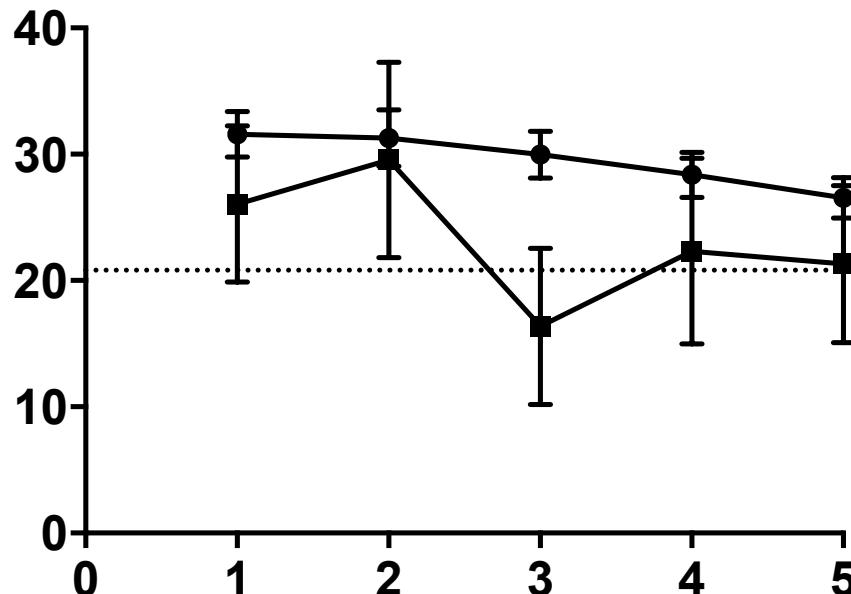
Tyler D. Nighbor  <sup>1,2\*</sup>, Nathan J. Doogan <sup>3‡</sup>, Megan E. Roberts <sup>3‡</sup>, Antonio Cepeda-Benito <sup>1,4‡</sup>, Allison N. Kurti <sup>1,2,4‡</sup>, Jeff S. Priest <sup>5</sup>, Harley K. Johnson <sup>1,2‡</sup>, Alexa A. Lopez <sup>1‡</sup>, Cassandra A. Stanton <sup>6,7‡</sup>, Diann E. Gaalema <sup>1,2,4‡</sup>, Ryan Redner <sup>1,8‡</sup>, Maria A. Parker  <sup>1,2‡</sup>, Diana R. Keith <sup>1,2‡</sup>, Amanda J. Quisenberry <sup>9‡</sup>, Stephen T. Higgins <sup>1,2,4\*</sup>

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## Percent Current Smoker



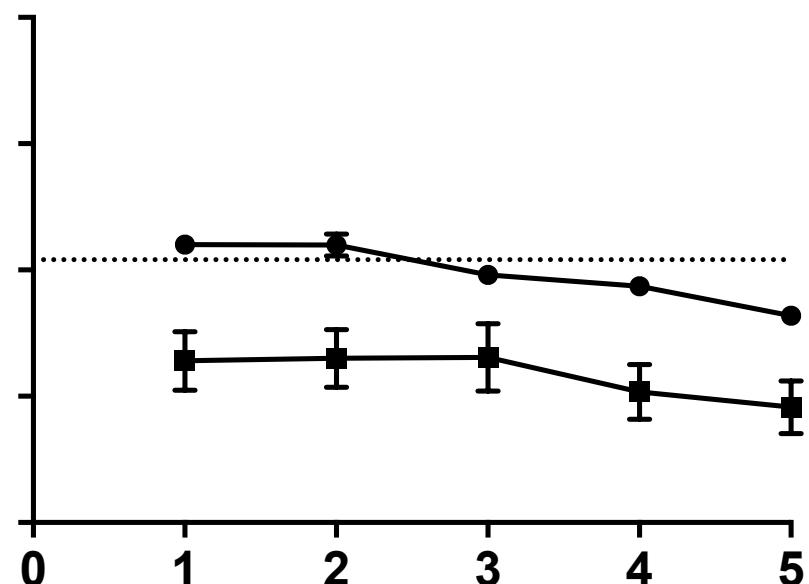
● Rural Non-Pregnant

■ Rural Pregnant

● Urban Non-Pregnant

■ Urban Pregnant

**2007-2016 in 2-year increments**



# Summary/Conclusions

- A rural-urban disparity in cigarette smoking is robust and impactful contributing to disparities in morbidity (cancer, cardiovascular disease) and mortality.
- This disparity is disproportionately impacting women, including those of reproductive age including pregnant women.
- Where previously these disparities were readily accounted for by differences in sociodemographic disparities (age, education, income, type of employment, etc.) that is not the case more recently.
- Disparities in availability and enforcement of tobacco control and tobacco regulations appear to be contributors and areas where change can be promoted (i.e., actionable).