



Geographic Variation in Peripheral Artery Disease and Major Adverse Cardiovascular and Limb Events Among Medicare Beneficiaries



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INTRODUCTION

- Peripheral artery disease (PAD) is common, affecting >10% of those 70-79 years old and >20% of those ≥80 years
- Geographic variations exist for stroke and coronary heart disease burden, but less information is known about spatial distributions for PAD and cardiovascular disease (CVD) outcomes in people with PAD.
- We hypothesize that Medicare data can be used to identify regional differences in PAD and CVD outcomes in those with PAD.

STUDY OBJECTIVES

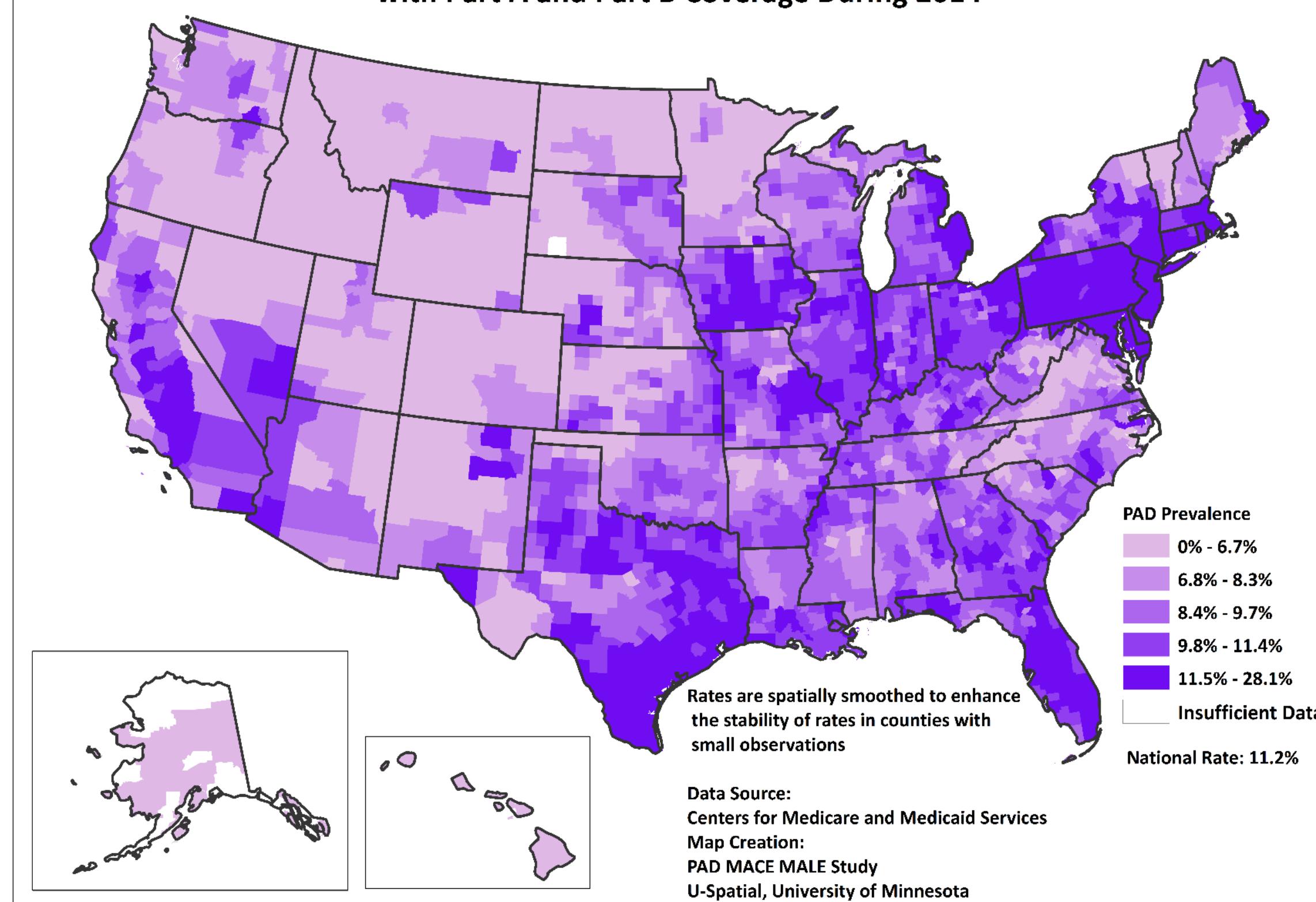
- Demonstrate US national geographic variation in PAD.
- Demonstrate US national geographic variation in major adverse cardiac events (MACE) and limb events (MALE) in the total Medicare fee for service population and those with PAD.

METHODS

- This study used a 20% sample of Medicare fee for service (FFS) beneficiaries from 2012-2014.
- Age-adjusted PAD prevalence and CVD event rates were mapped at the county level, spatially smoothed and classified by quintiles.
- MACE was defined as a composite of incident myocardial infarction, ischemic stroke or all cause death.
- MALE was defined as a composite of incident acute limb ischemic (ALI), ischemic amputation, or limb revascularization.
- Outcomes are reported as events per person year (PY).
- Mapping and spatial smoothing were performed with GeoDa 1.10 (Luc Angelina and the Regents of the University of Illinois) & ArcMap 0.4.1 (ESRI, Redlands, CA).

PAD PREVALENCE

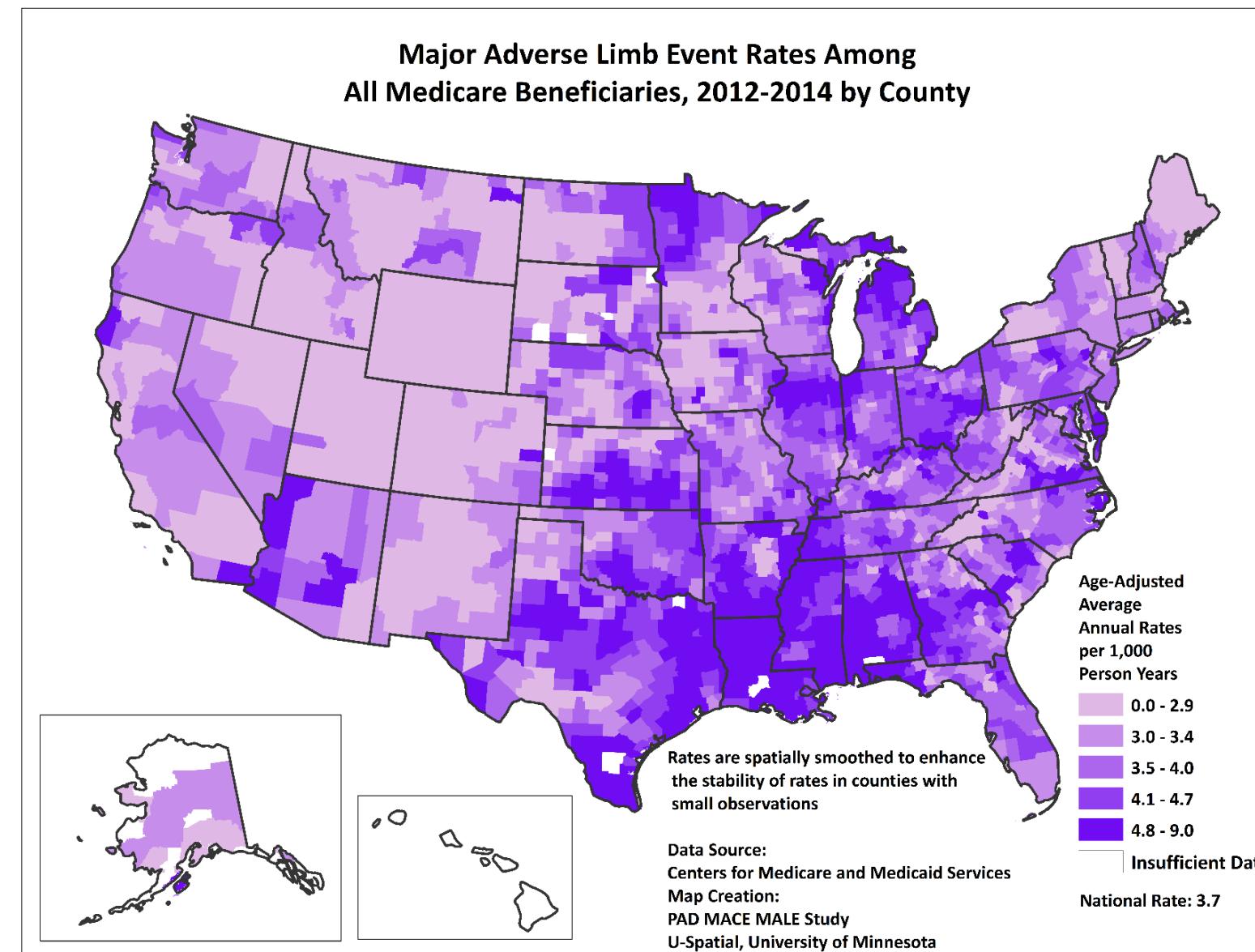
PAD Prevalence in Medicare Beneficiaries with Part A and Part B Coverage During 2014



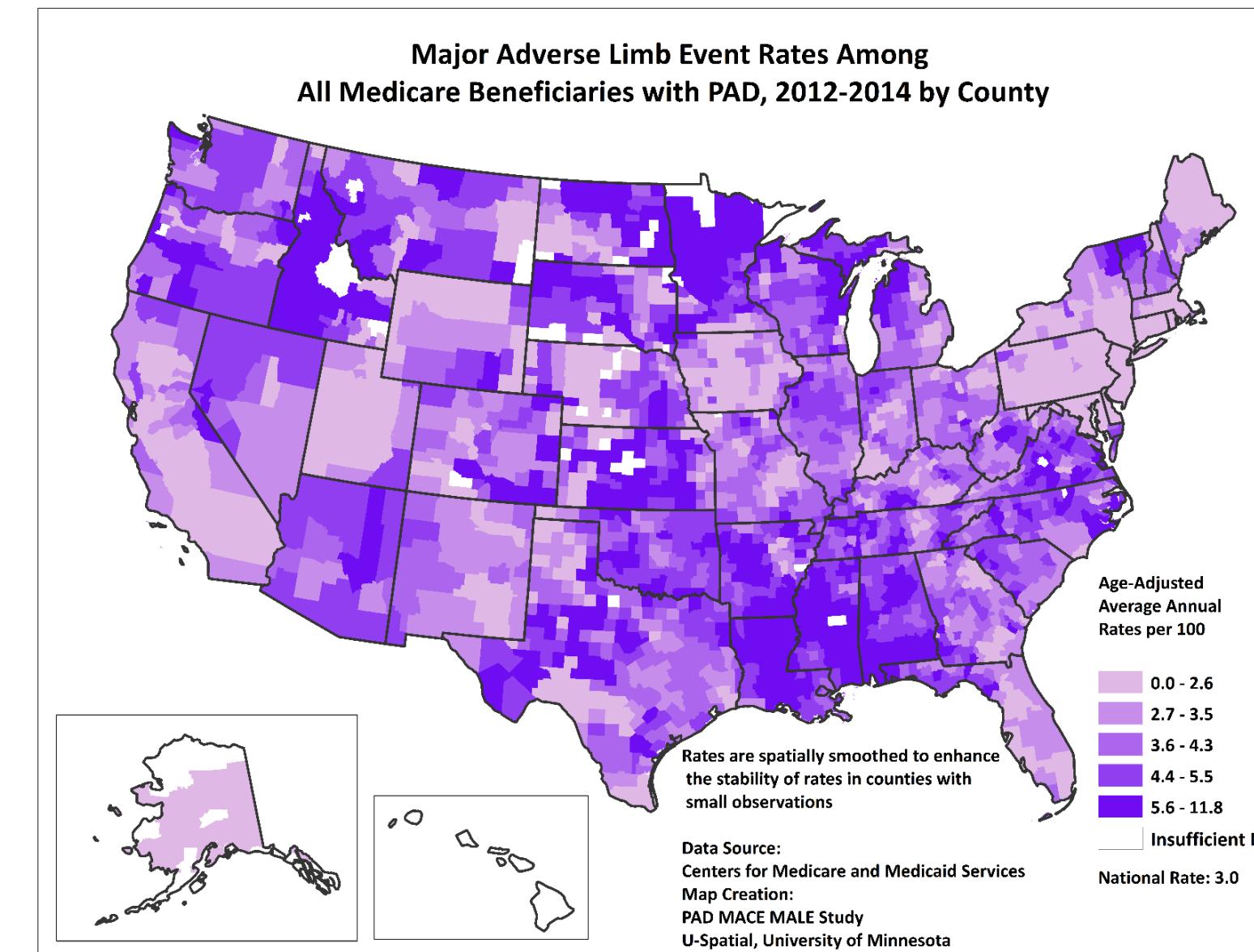
PAD prevalence varies greatly. It is more prevalent in the Rust Belt, mid-Atlantic states, Iowa, Florida, Texas and parts of California.

MALE

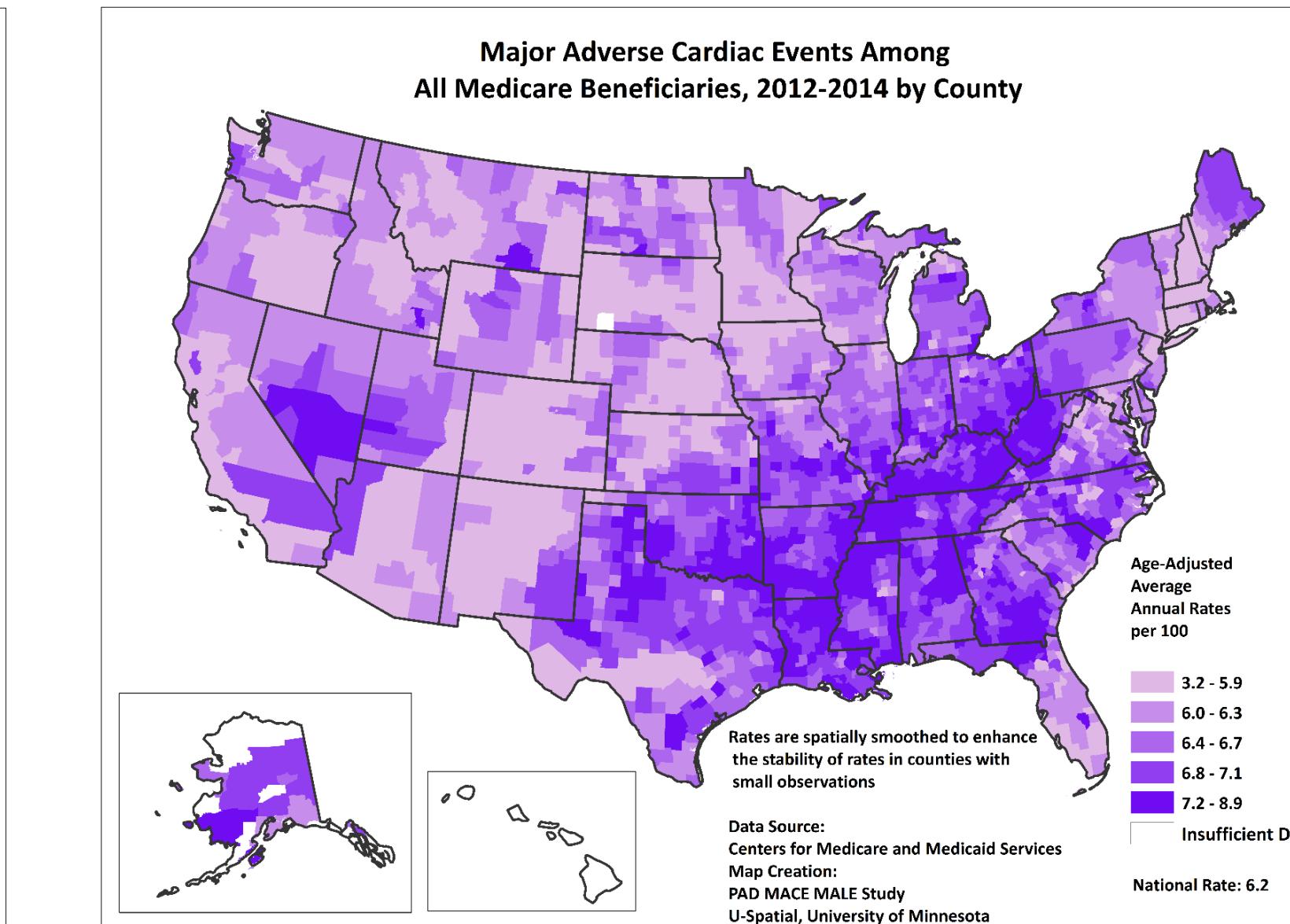
MEDICARE FFS POPULATION



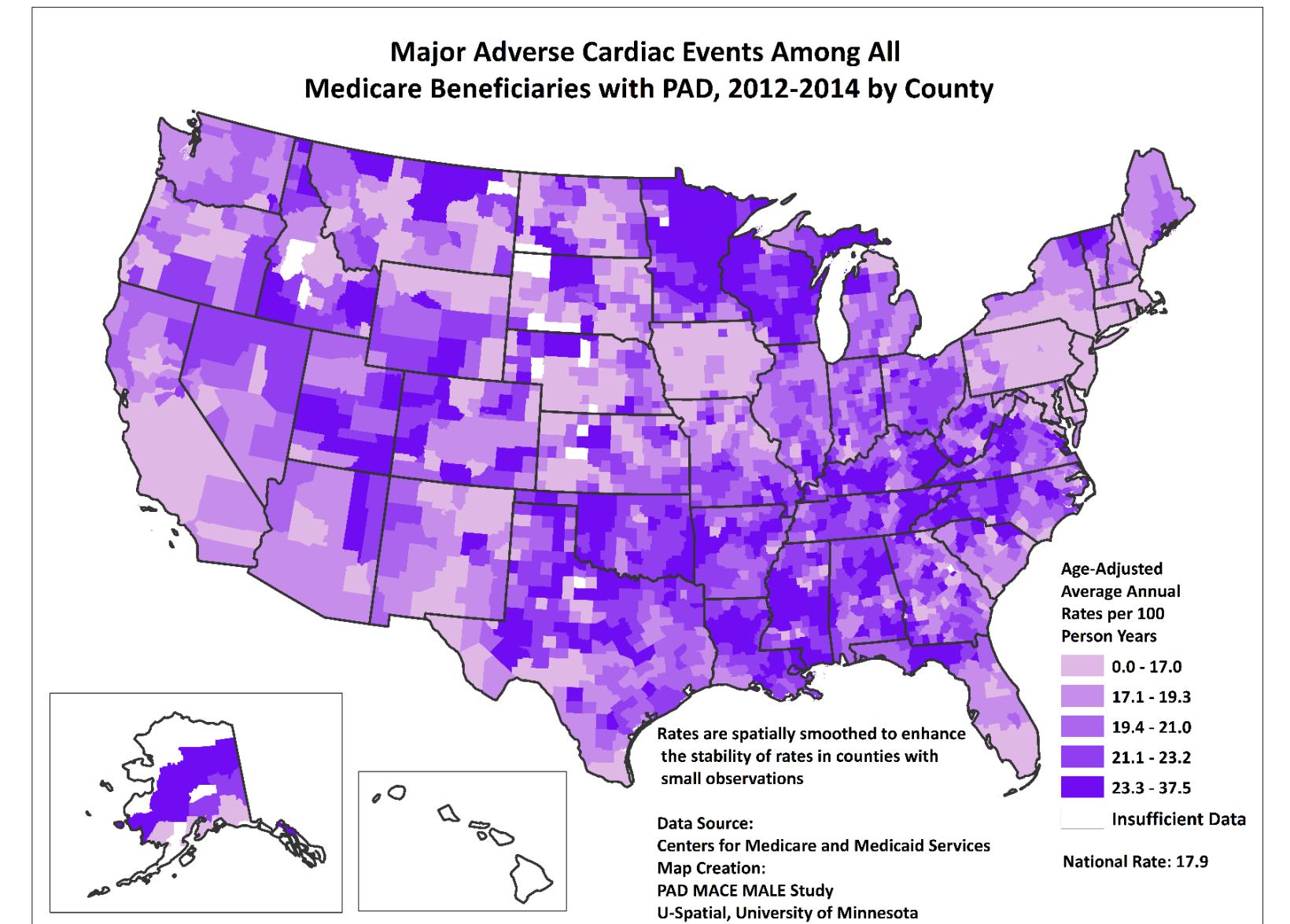
PAD POPULATION



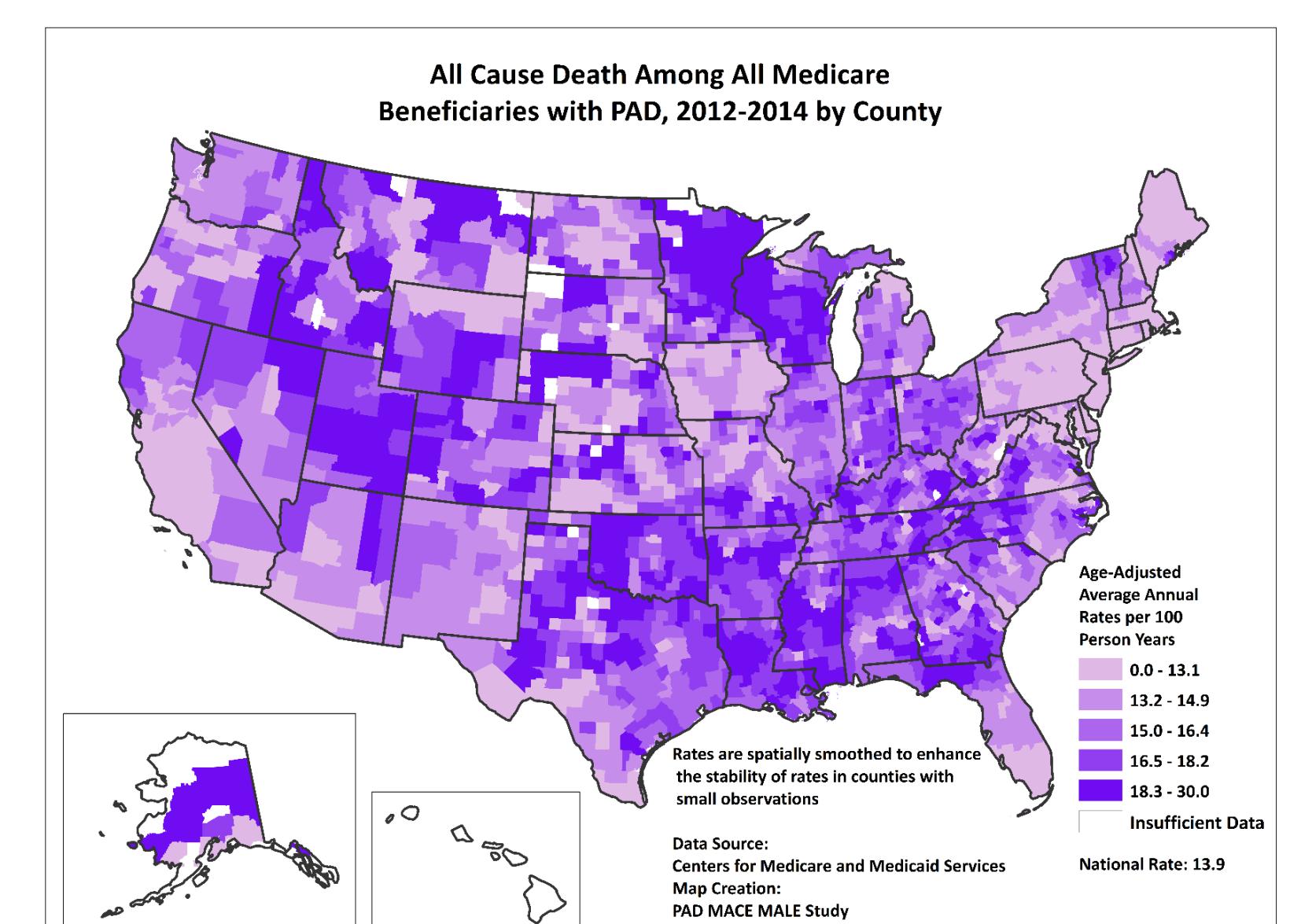
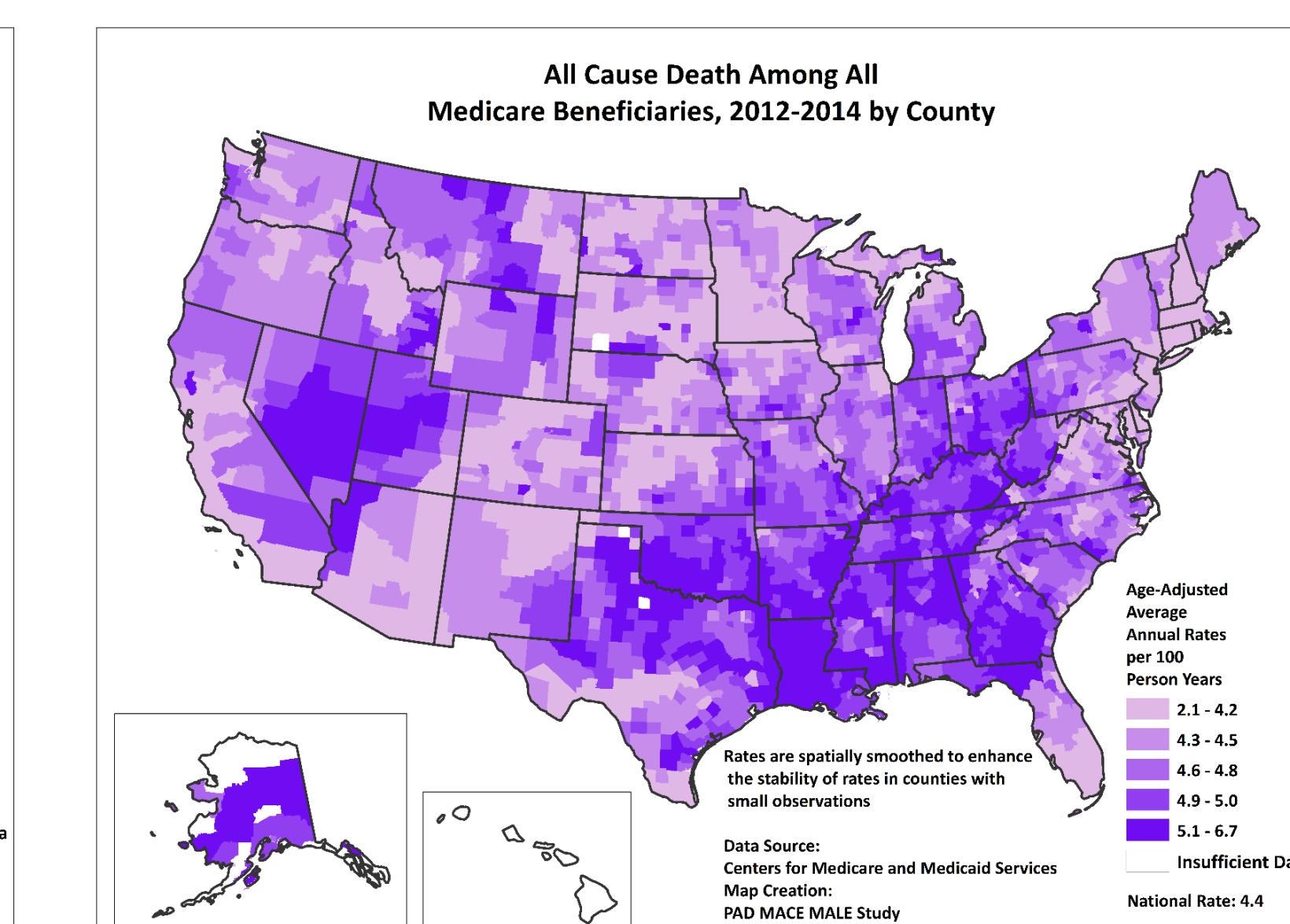
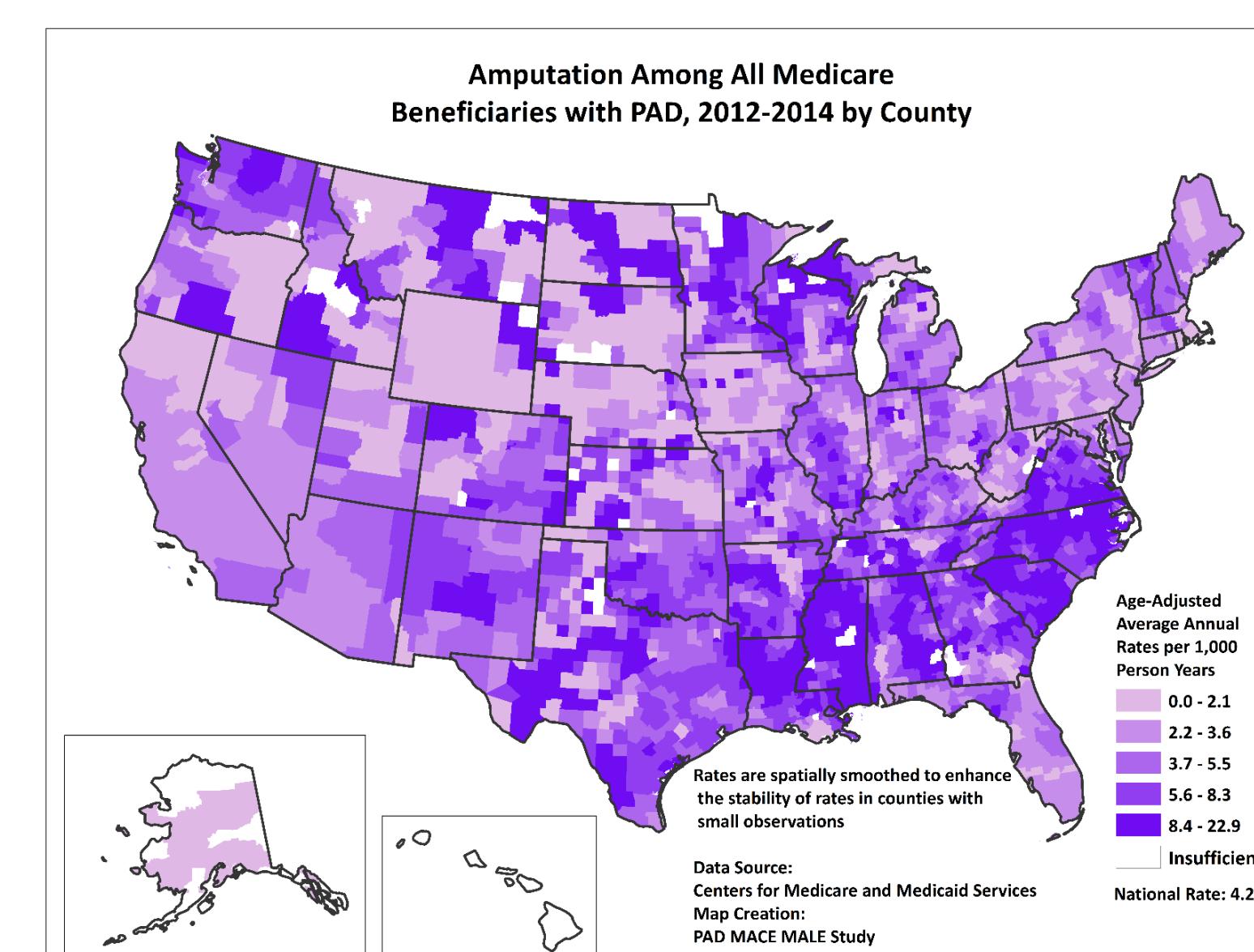
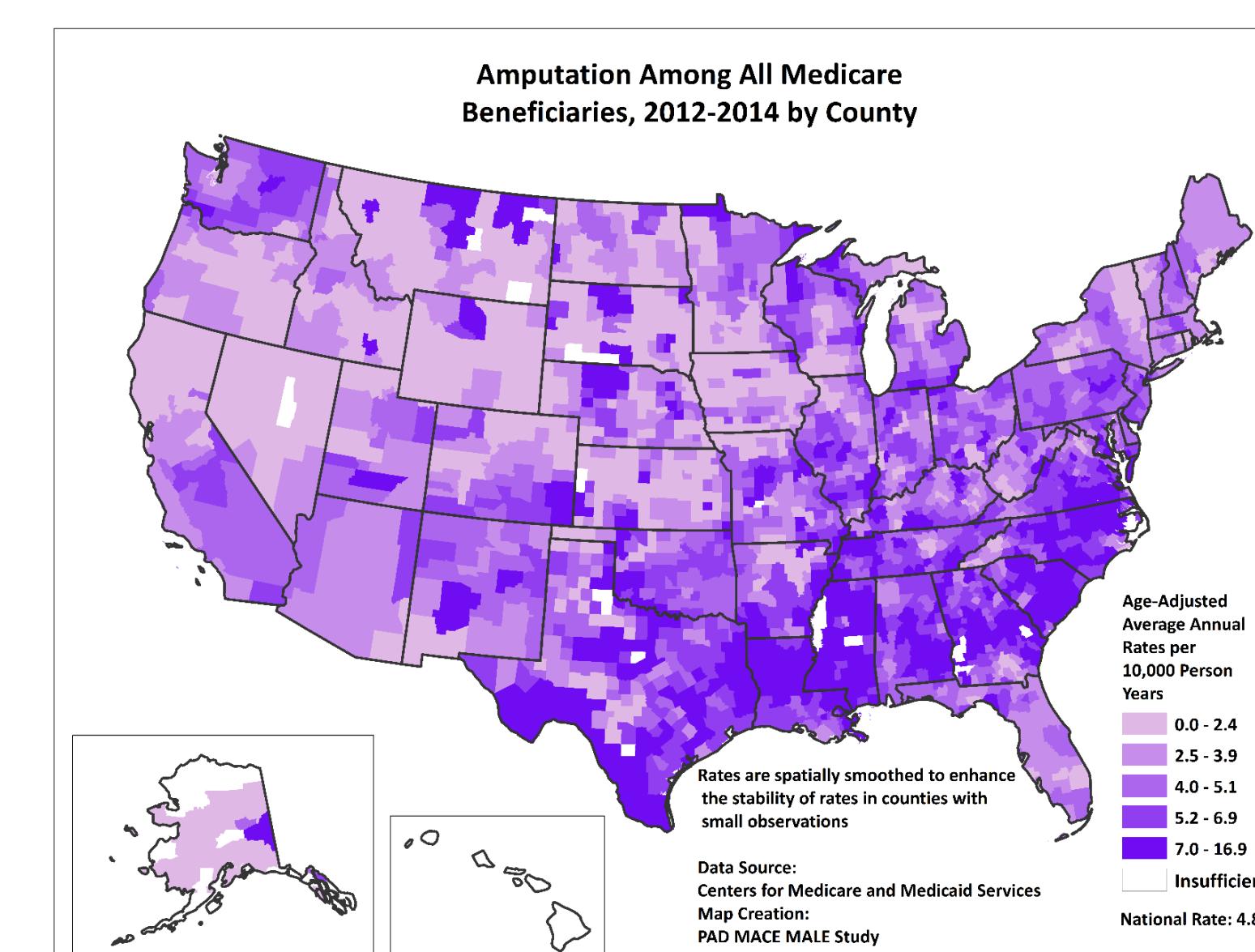
MEDICARE FFS POPULATION



PAD POPULATION

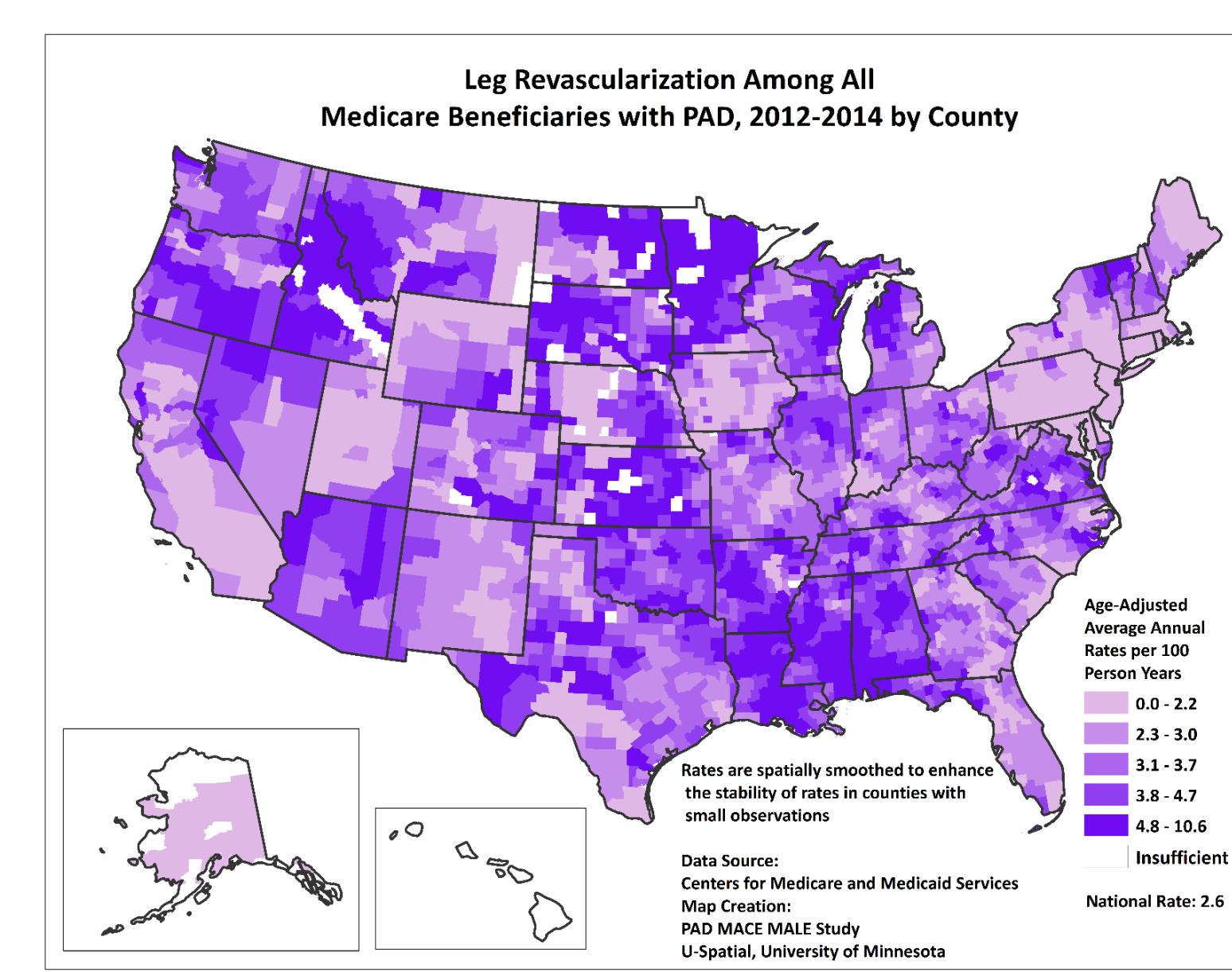
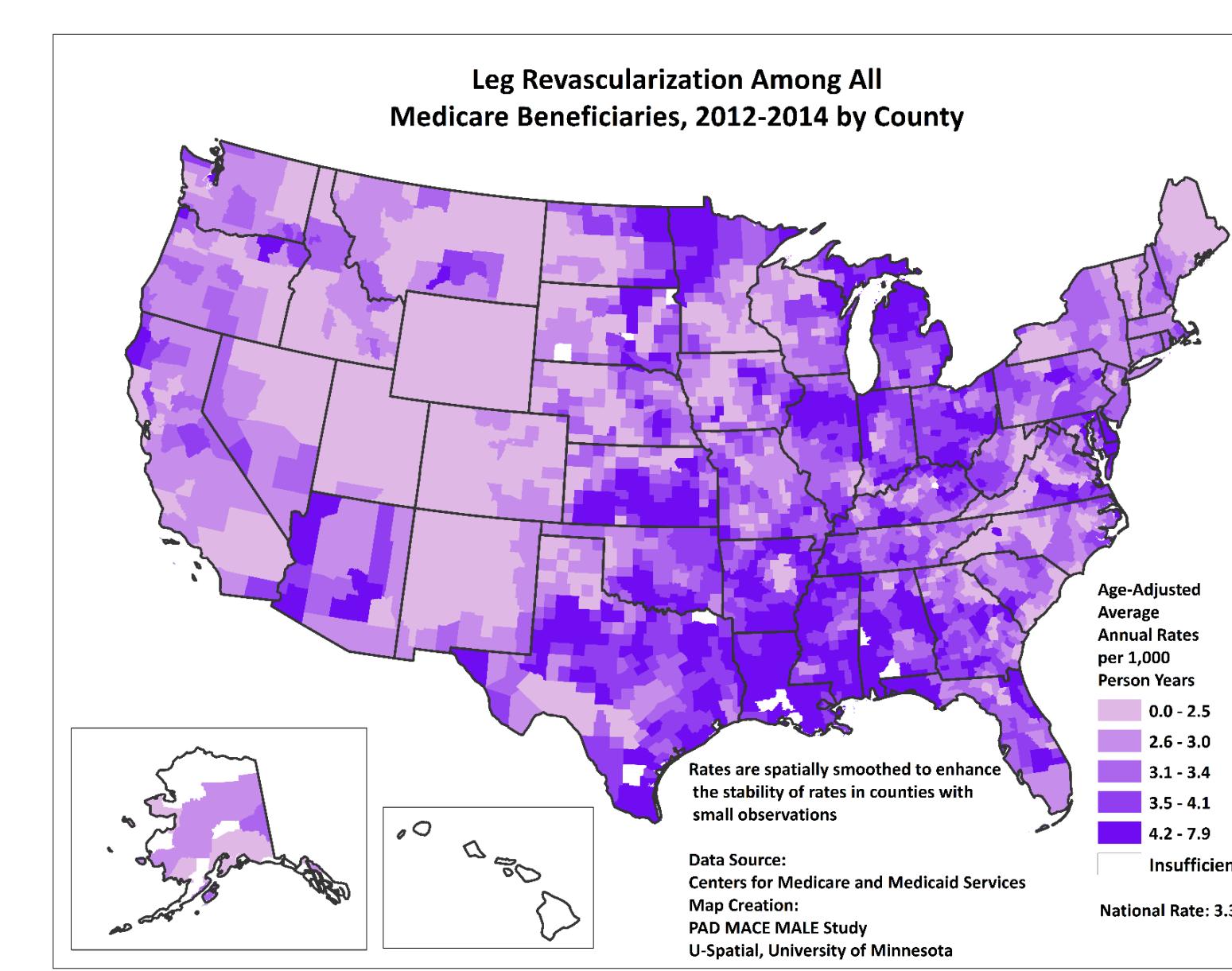


MALE in the Medicare FFS population follow previously described patterns while MACE in the PAD population is more homogeneous. Minnesota and Wisconsin have much higher rates of MACE than the rest of the Midwest.



Amputation rates in the PAD population are 10x that of the Medicare FFS population but the pattern of distribution is similar. The pattern is similar to that seen in MACE. Minnesota, Wisconsin and North Dakota have high rates of amputation compared to the rest of the Midwest.

All cause death in the PAD population is triple that of the Medicare FFS population. Death rates are more homogenous in the PAD population and notably low in several areas with a high prevalence of PAD (Iowa, mid-Atlantic, California).



Revascularization is homogenous in the PAD population. Rates are low in several states with a high prevalence of PAD (Iowa, California, mid-Atlantic states).

CONCLUSION

This study highlights the large geographic variations in PAD as well as MACE and MALE events in Medicare beneficiaries with and without PAD.

Vascular Medicine, Quality Outcomes and Population Health

