

# Marcellus Shale Public Health Study Update

Marcellus Shale Safe Drilling Initiative Advisory Commission  
Meeting

Monday, April 14, 2014



SCHOOL OF  
PUBLIC HEALTH





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# Health Impact Assessment (HIA)

- HIA concept provides a framework for the public health study
  - National Academies of Science Report, Improving Health in the U.S.: The Role of Health Impact Assessment
  - HIA Stages:
    - Screening
    - Scoping
    - Assessment
    - Recommendations
    - Reporting
    - Monitoring & Evaluation
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# HIA & the Public Health Study

## **HIA**

- Screening
- Scoping
- Assessment
- Recommendations
- Reporting
- Monitoring & Evaluation

## **Public Health Study**

- Detailed Scoping
- Assessment
  - Baseline
  - Impact
- Final Report
  - Monitoring & assessment recommendations
  - Public health response and mitigation strategies



# Scoping Process

- Stakeholder engagement
  - Meeting September 24, 2013 at Frostburg State University
  - Website [www.marcellushealth.org](http://www.marcellushealth.org)
  - Meeting October 5, 2013 at Garrett College
- Purpose: to discuss natural gas drilling and extraction in the Marcellus Shale in Western Allegany and Garrett counties
- Participants included concerned community members and advocates





# Website



## Maryland Marcellus Shale Public Health Study

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### Detailed Scoping Report: Potential Public Health Impacts Of Natural Gas Development And Production In The Marcellus Shale In Western Maryland

Thank you to everyone who provided comments on the detailed scoping report. The comment period is now closed. We will be reviewing all the comments received over the next few weeks.

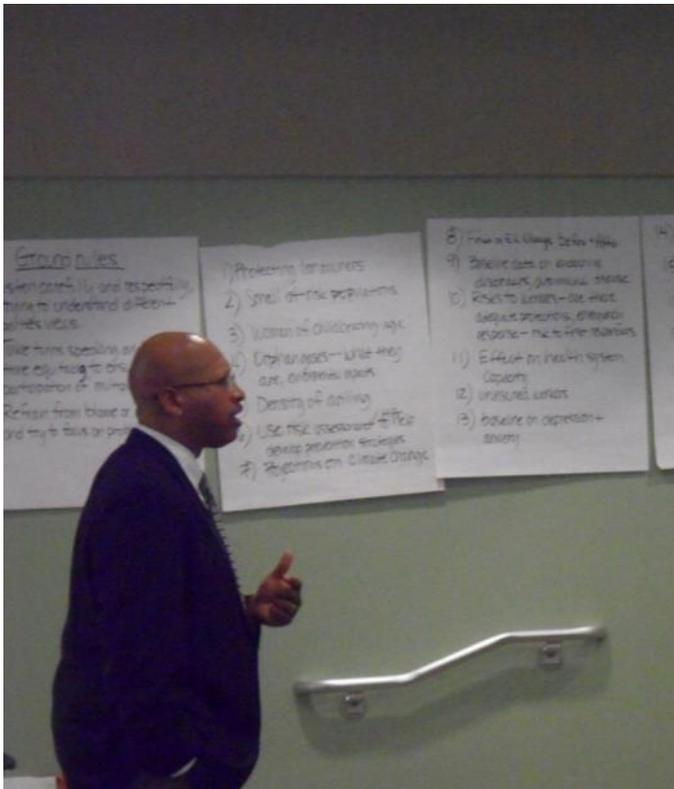
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Photograph by: Justin Woolford



# Scoping



- Ten themes emerged:
  - Air contamination
  - Baseline health assessment
  - Benefits
  - Healthcare infrastructure
  - Occupational issues
  - Secondary impacts
  - Vulnerable populations
  - Water contamination
  - Weather and climate change
  - Zoning



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# Scoping

- Review of public health-specific comments in response to the Best Management Practices Report forwarded by MDE in the Fall 2013
    - 113 comments were reviewed and categorized according to the ten key themes
    - Additional topics derived from these comments
      - Economic impact emerged as a new theme
      - Natural disasters were added to the climate change/weather theme
-



# Themes

<b>Theme</b>	<b>Total Number of Comments</b>
Water quality	99
Zoning	69
Baseline health assessment	67
Secondary impacts	65
Economic impact	63
Climate change, natural disasters, and weather	52
Air quality	43
Populations of concern	29
Occupational impacts	26
Healthcare infrastructure	25
Benefits	7



# Public Comments on Scoping

- Draft Scoping Report released for public comment on December 23, 2013 to January 23, 2014
- Received 46 comments from concerned residents, environmental advocacy organizations, and the industry
- Interim Scoping Report will be released in April
- Final will be released after the external reviewers provide feedback

DRAFT for Public Comment

Detailed Scoping Report: Potential Public Health Impacts of  
Natural Gas Development and Production in the  
Marcellus Shale in Western Maryland

December 2013

Maryland Institute for Applied Environmental Health  
School of Public Health  
University of Maryland, College Park





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# Baseline Assessment

- Baseline assessment of the population likely to be directly affected:
    - Assessment of the population's health
      - Demographics
      - Major causes of morbidity and mortality
      - Local health priorities
      - Considerations of vulnerable populations
    - Social determinants of health
      - Local healthcare infrastructure
      - Social infrastructure
      - Social support
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# Baseline Assessment Methodology

- Descriptive statistics
  - Mapping
    - 2012 American Community Survey 5-year estimates
    - 2013 Primary Medical Care Health Professional Shortage Areas
    - 2013 EPA-regulated facilities
    - 2012 ESRI USA landmark data
    - 1980 Basic Data Report No. 11, Garrett County Gas Well records
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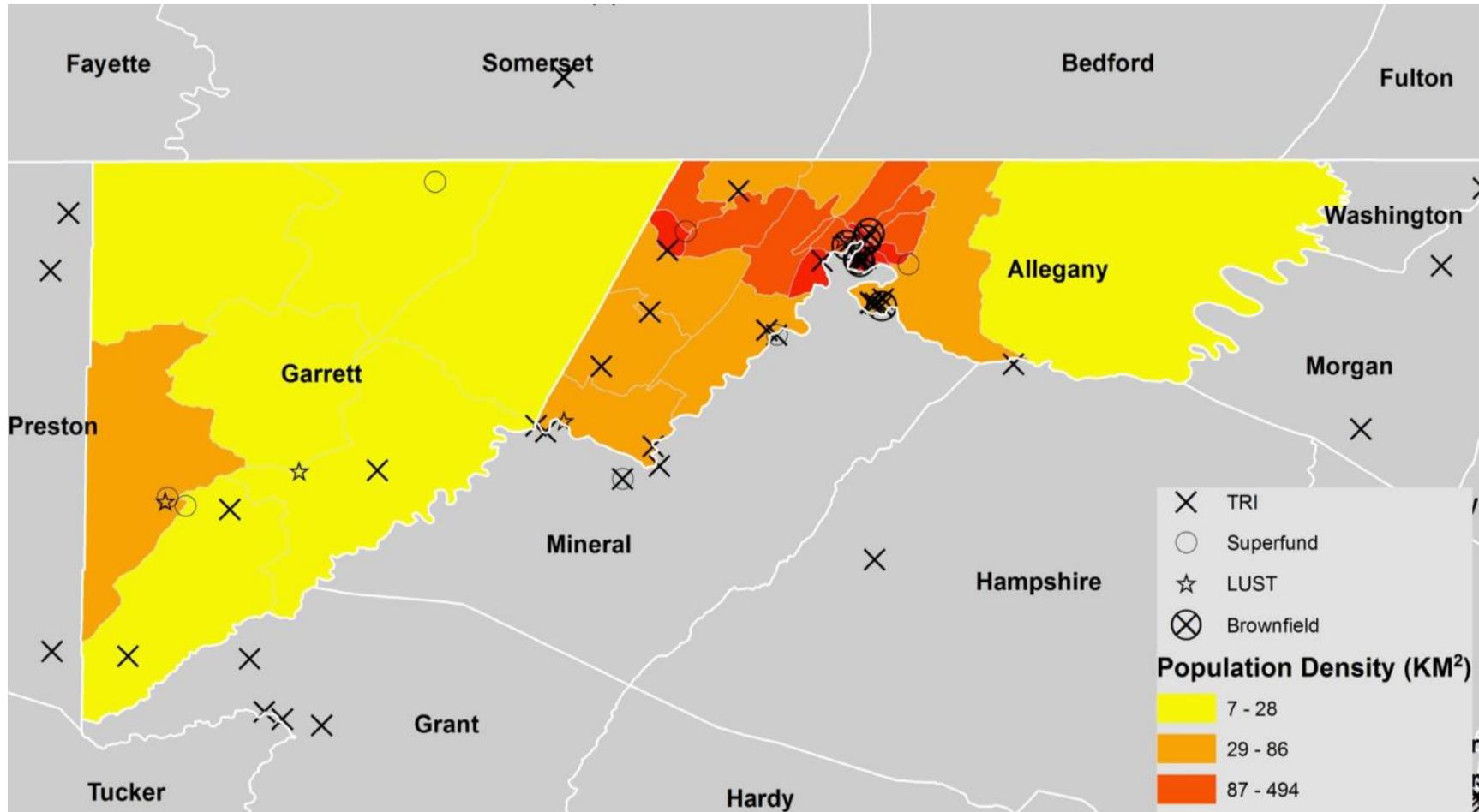


# ENVIRONMENTAL FACTORS

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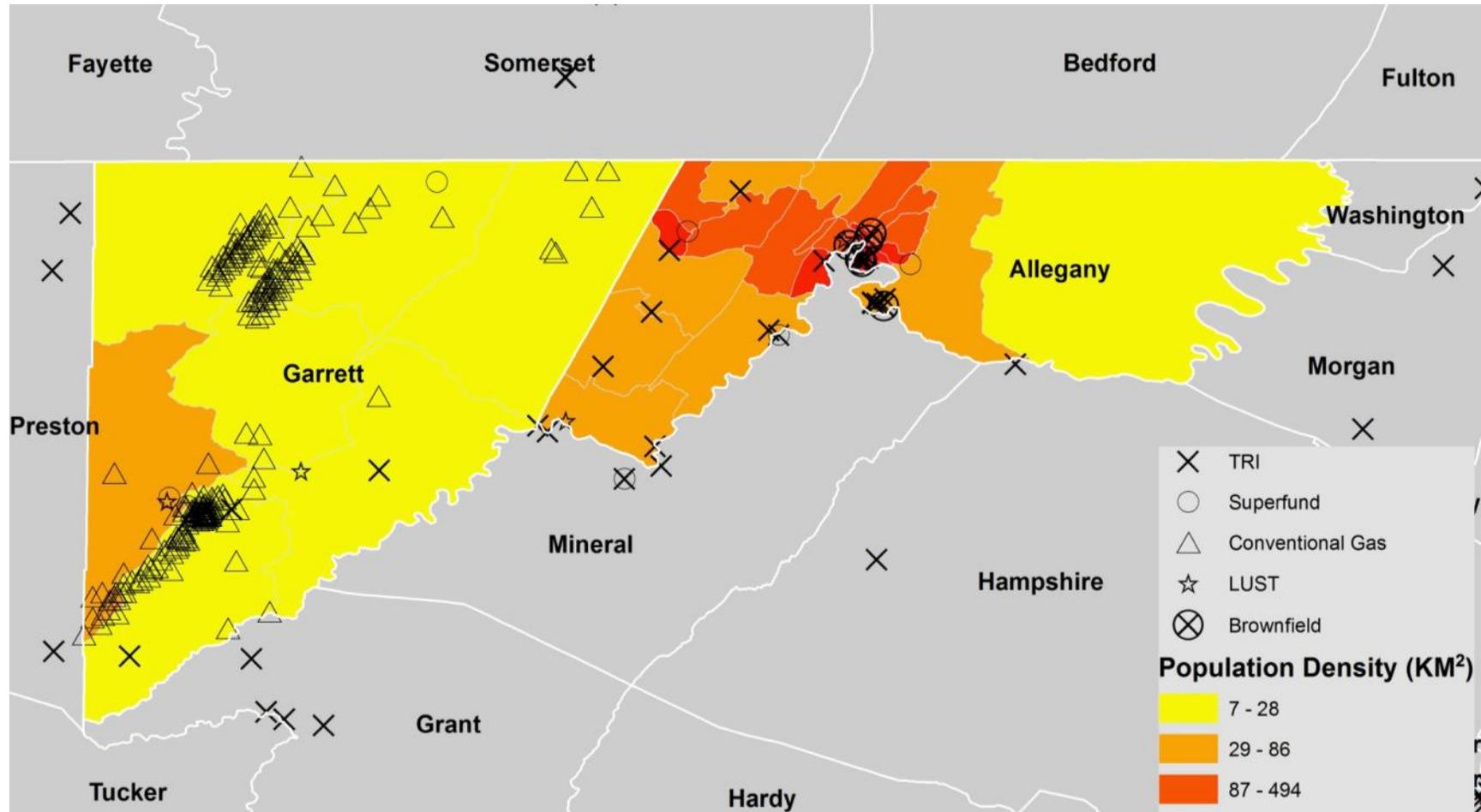


# EPA-regulated Facilities



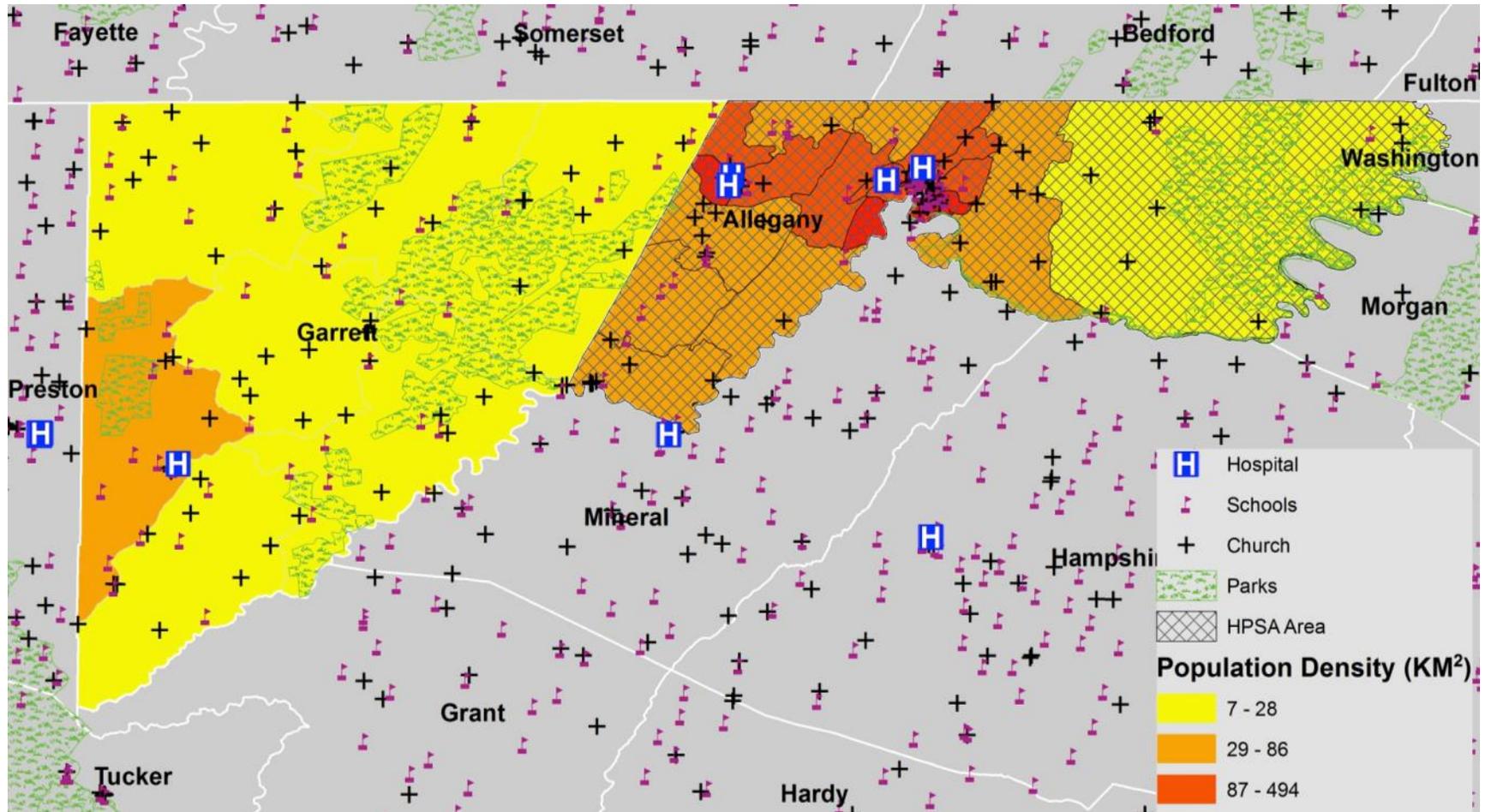


# EPA-regulated Facilities & Conventional Gas Wells



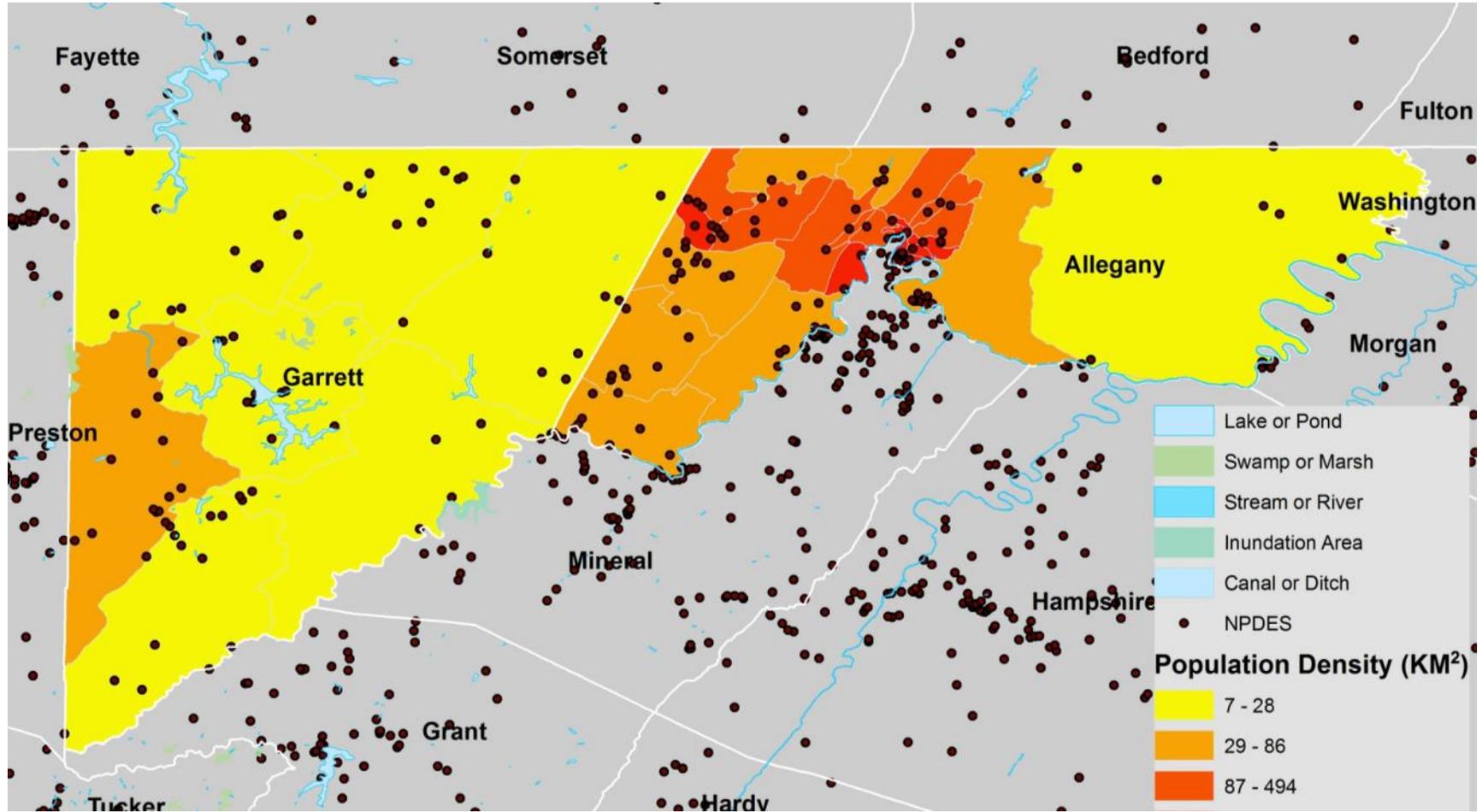


# Facilities



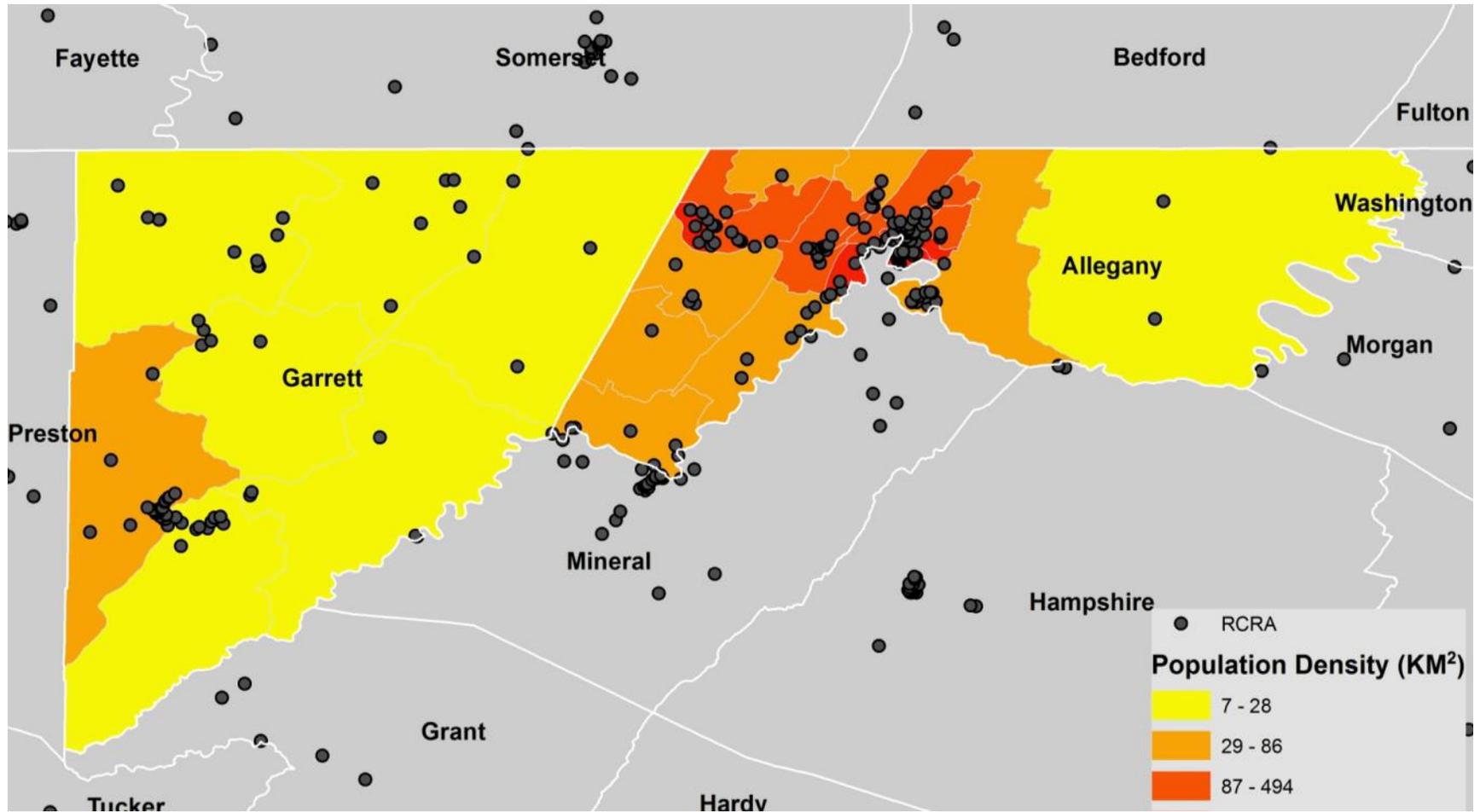


# NPDES





# RCRA Facilities



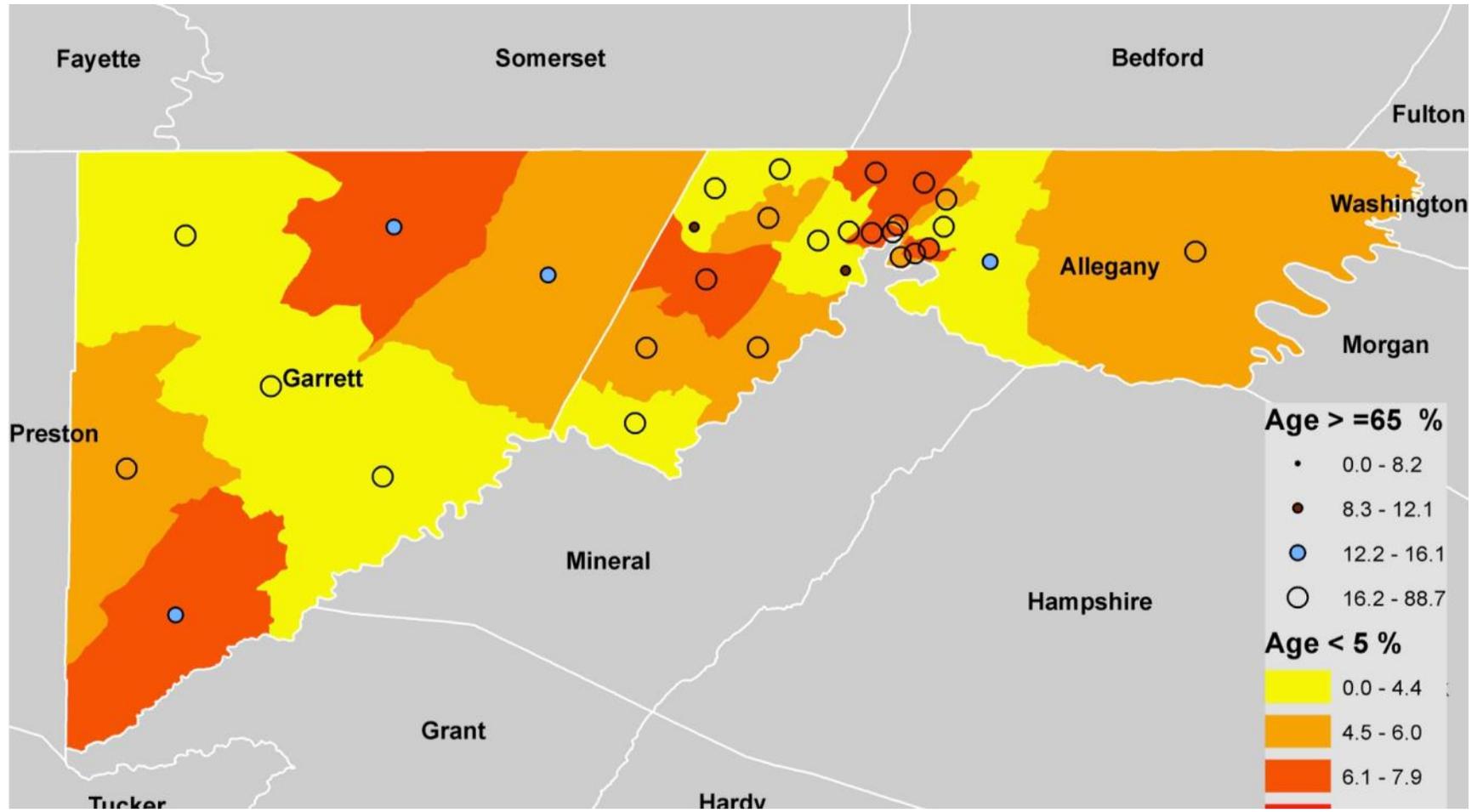


# DEMOGRAPHICS

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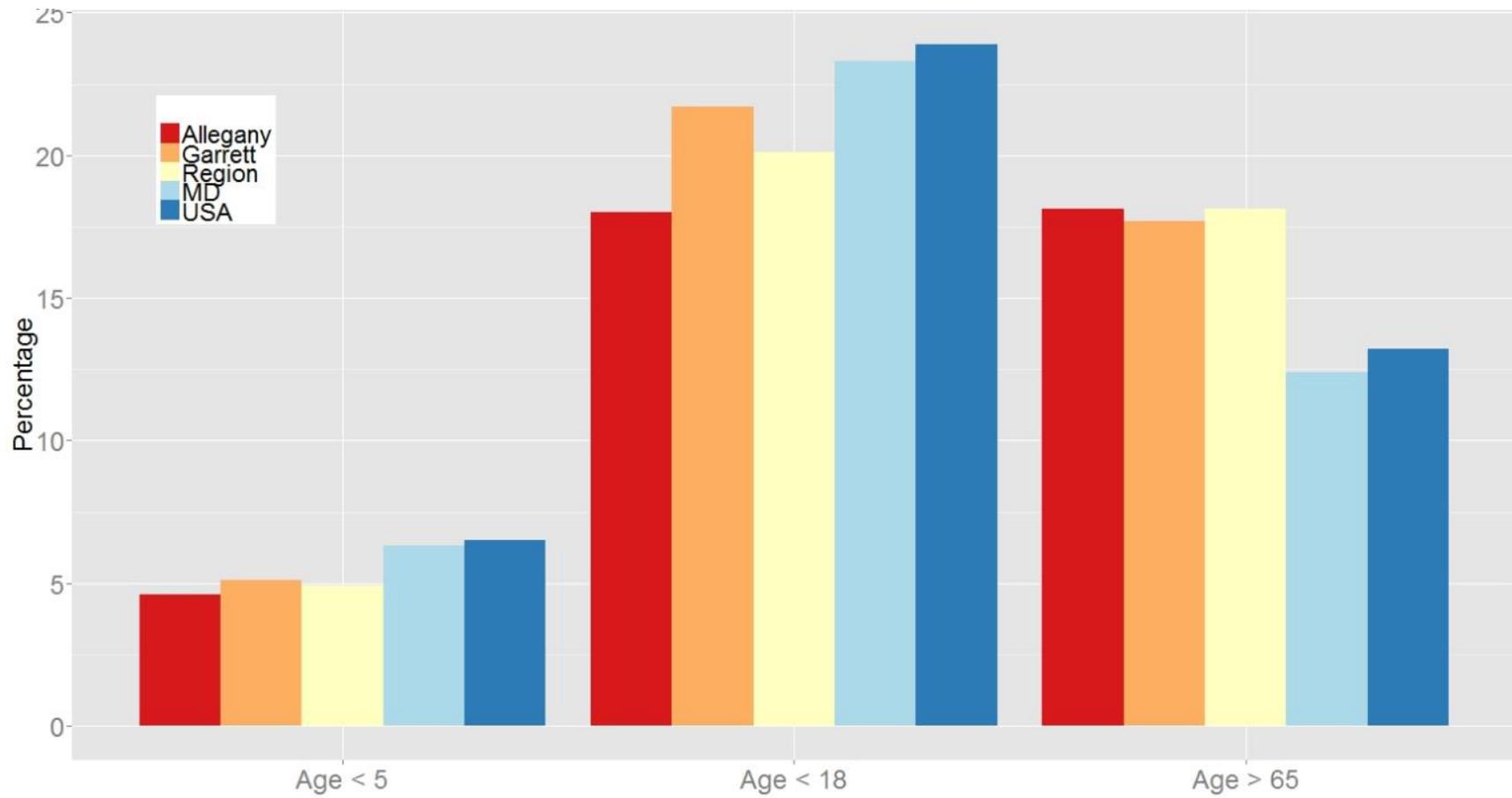


# Age



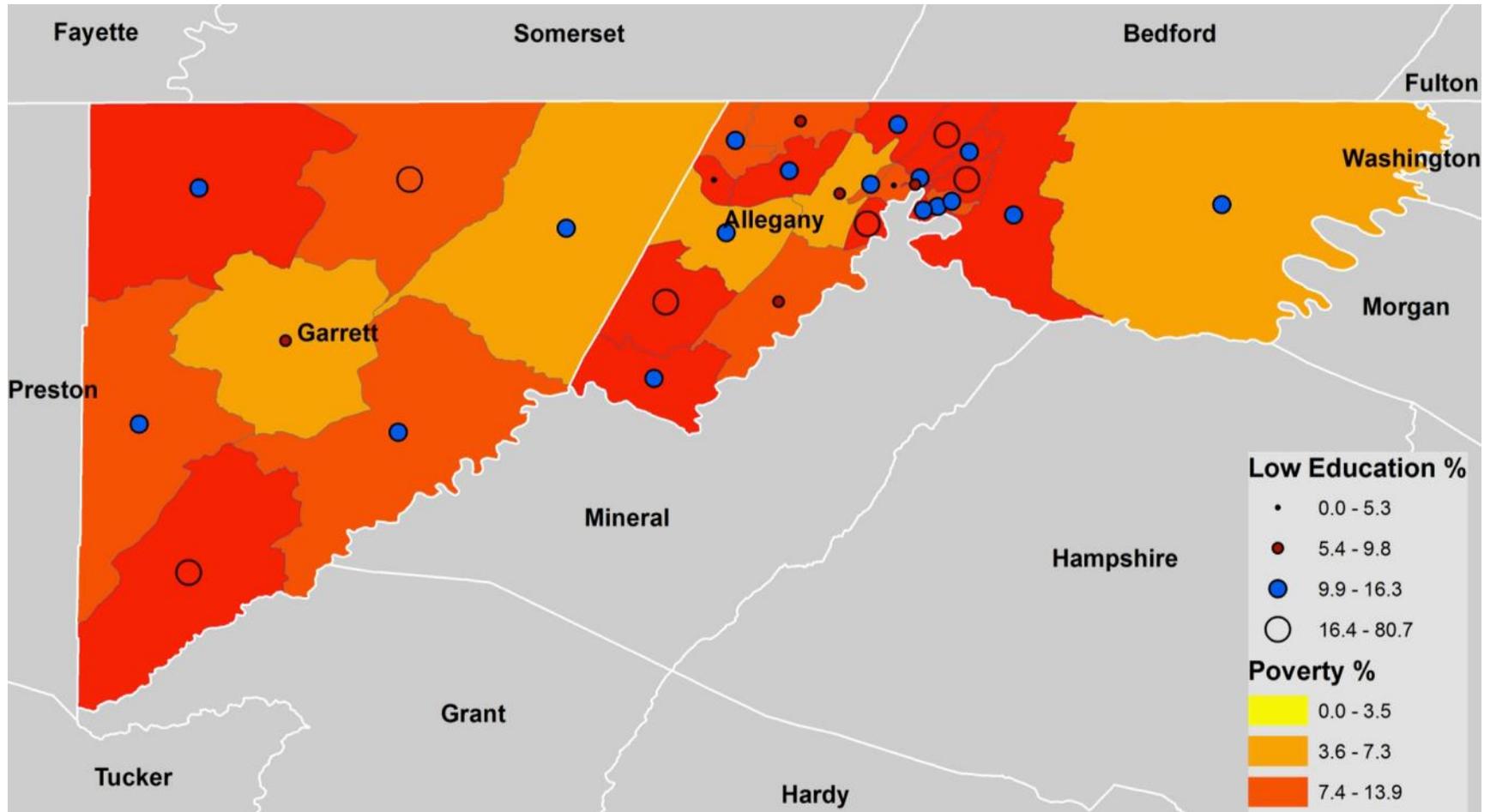


# Age



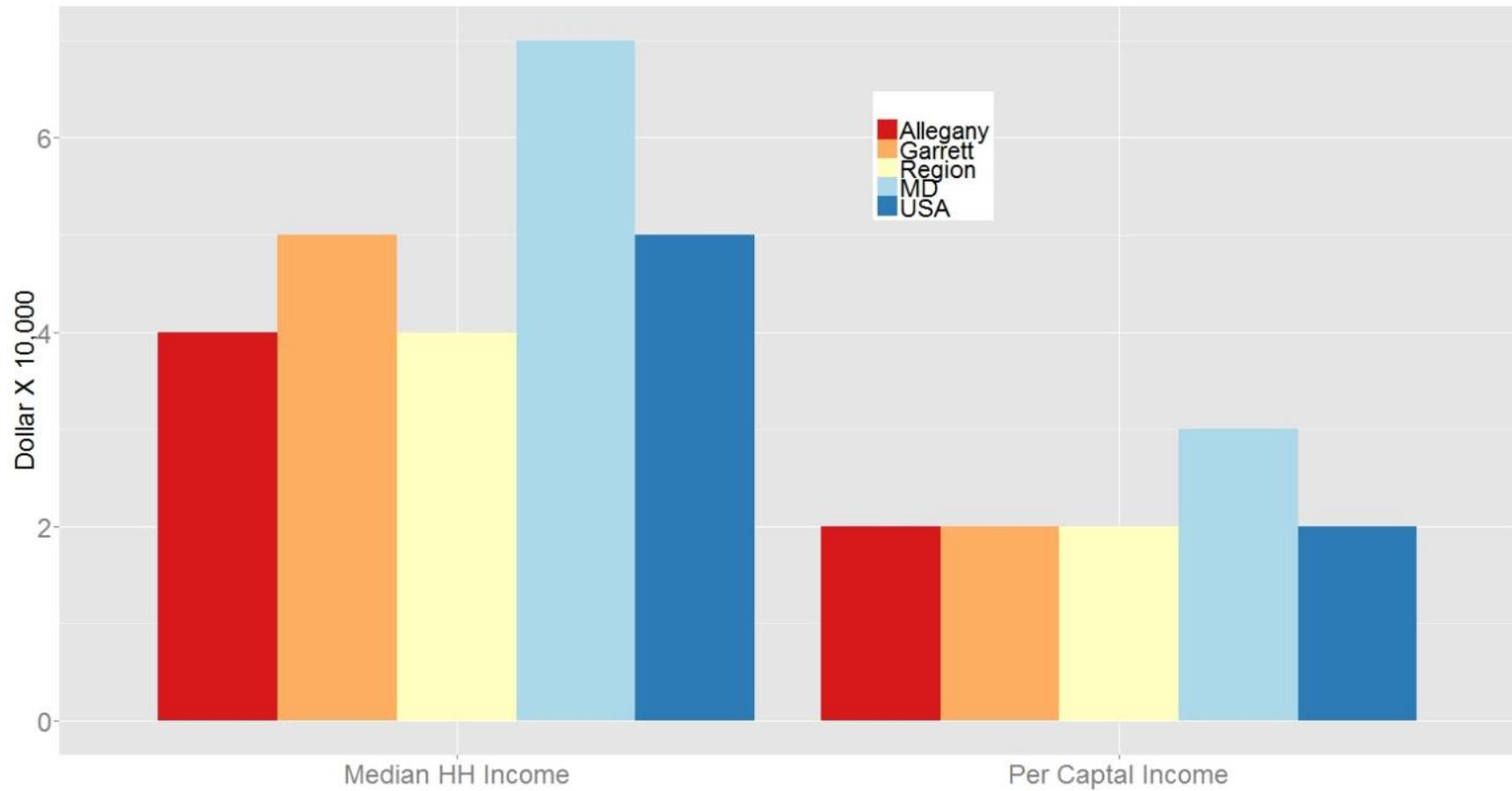


# Poverty & Education



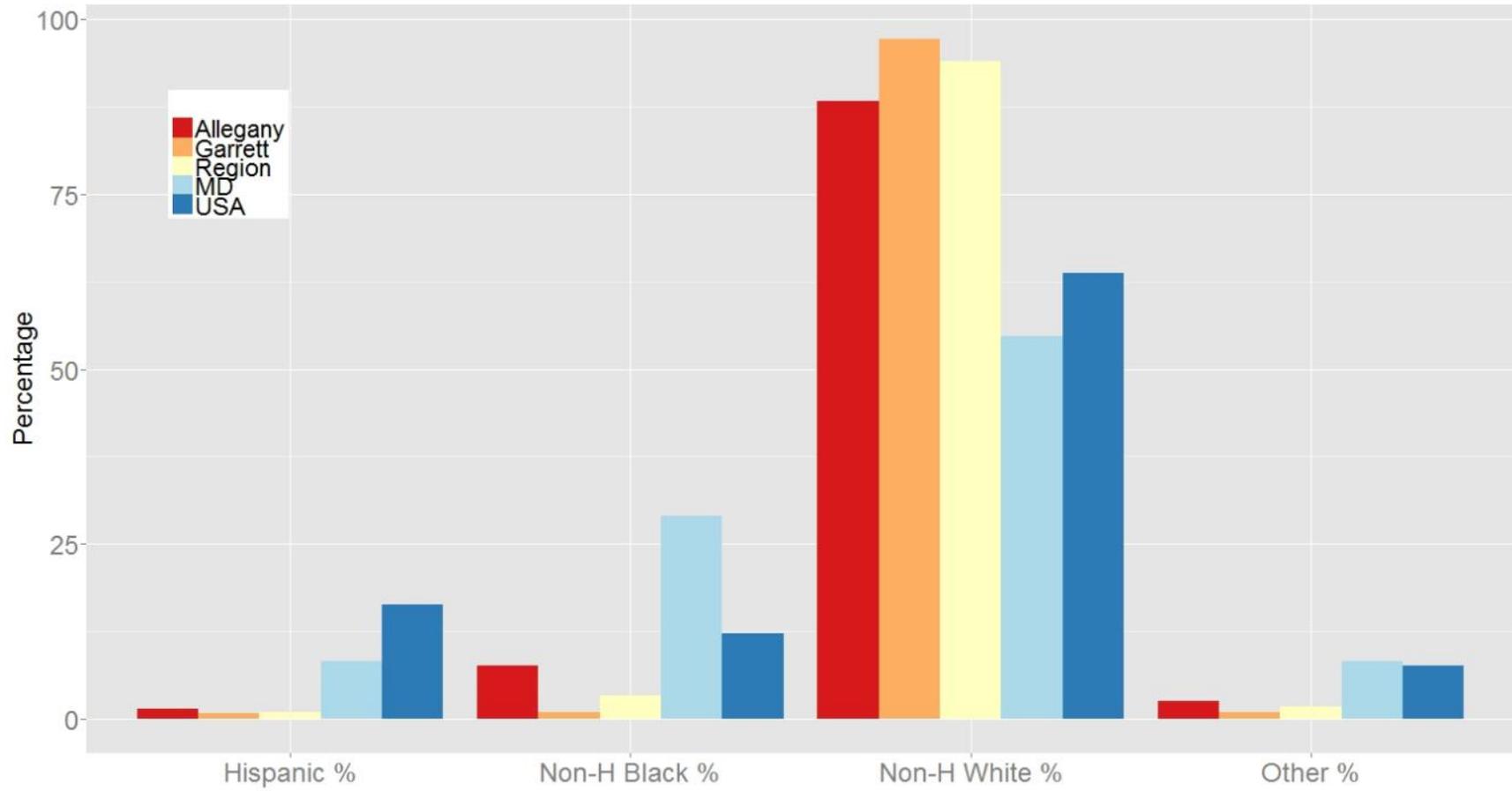


# Income



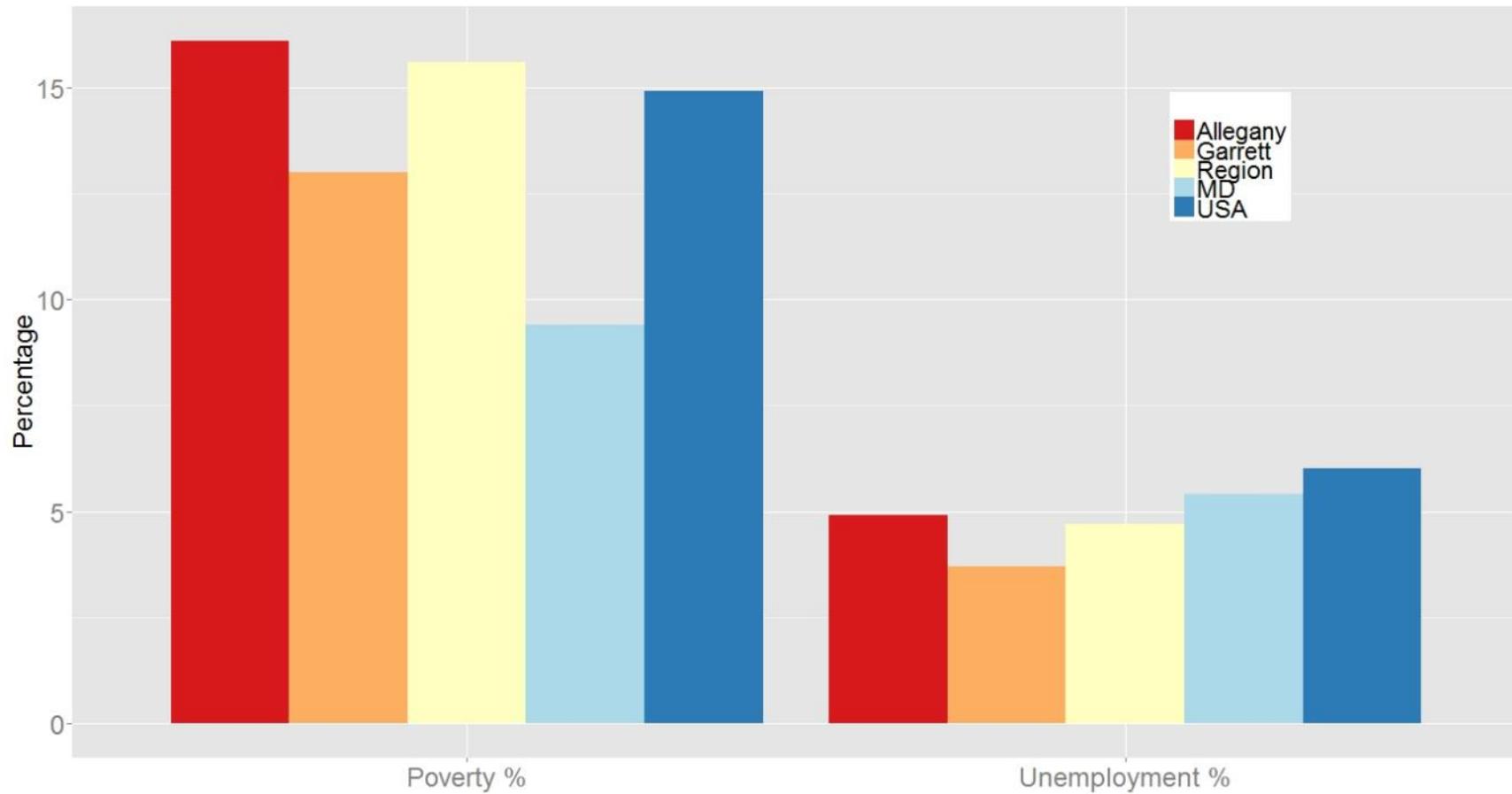


# Race



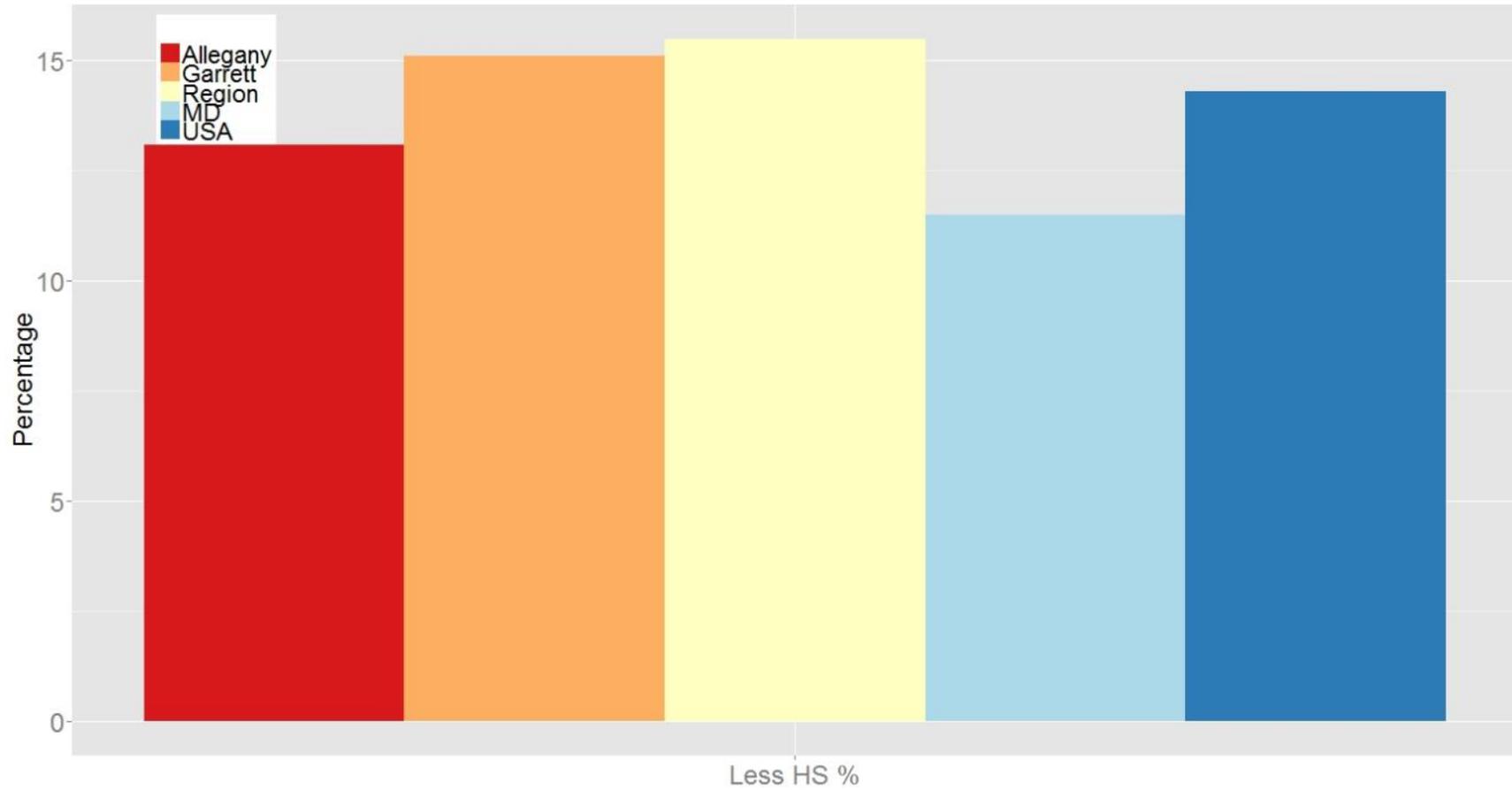


# Socioeconomic Status



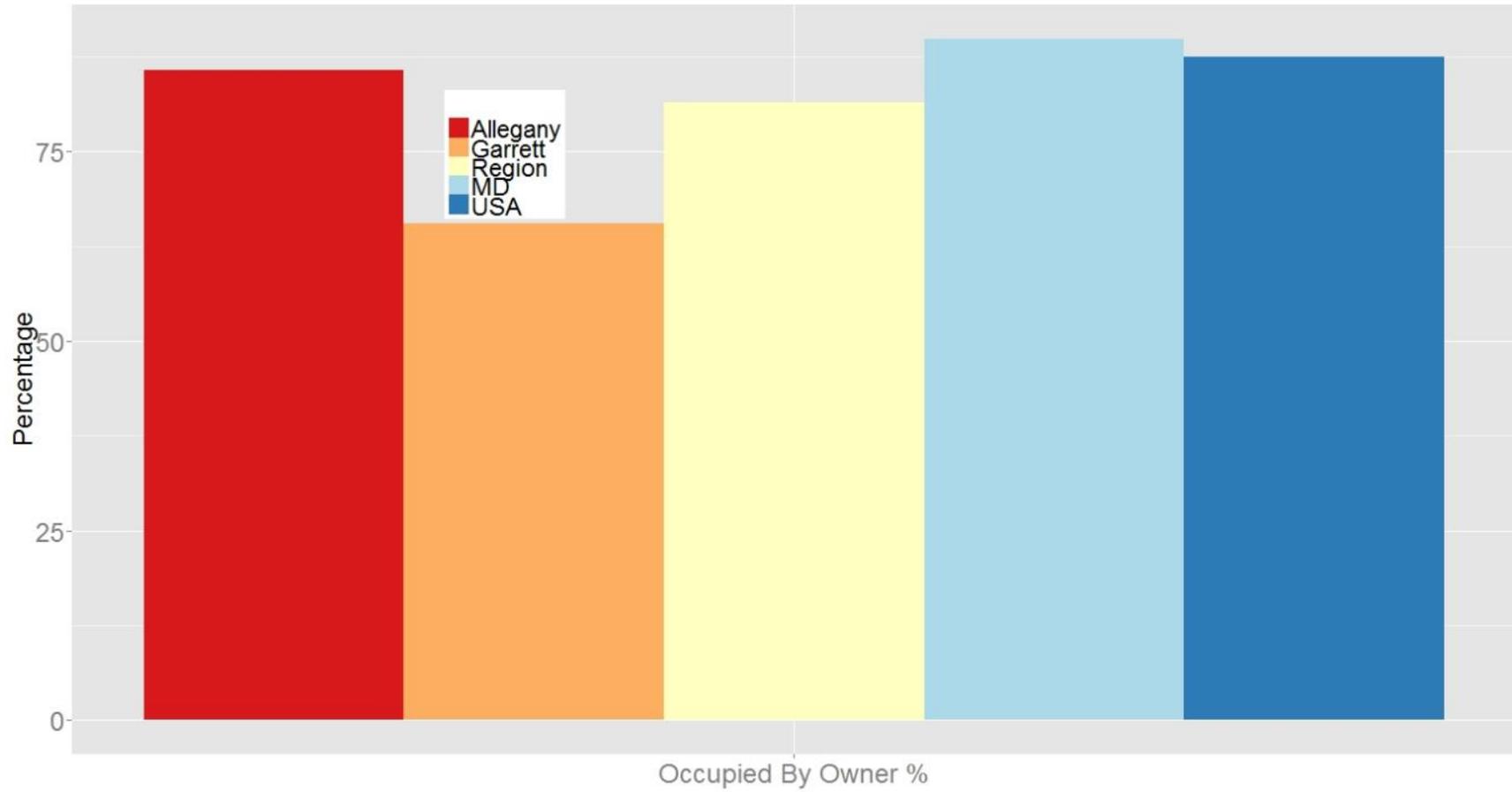


# Education



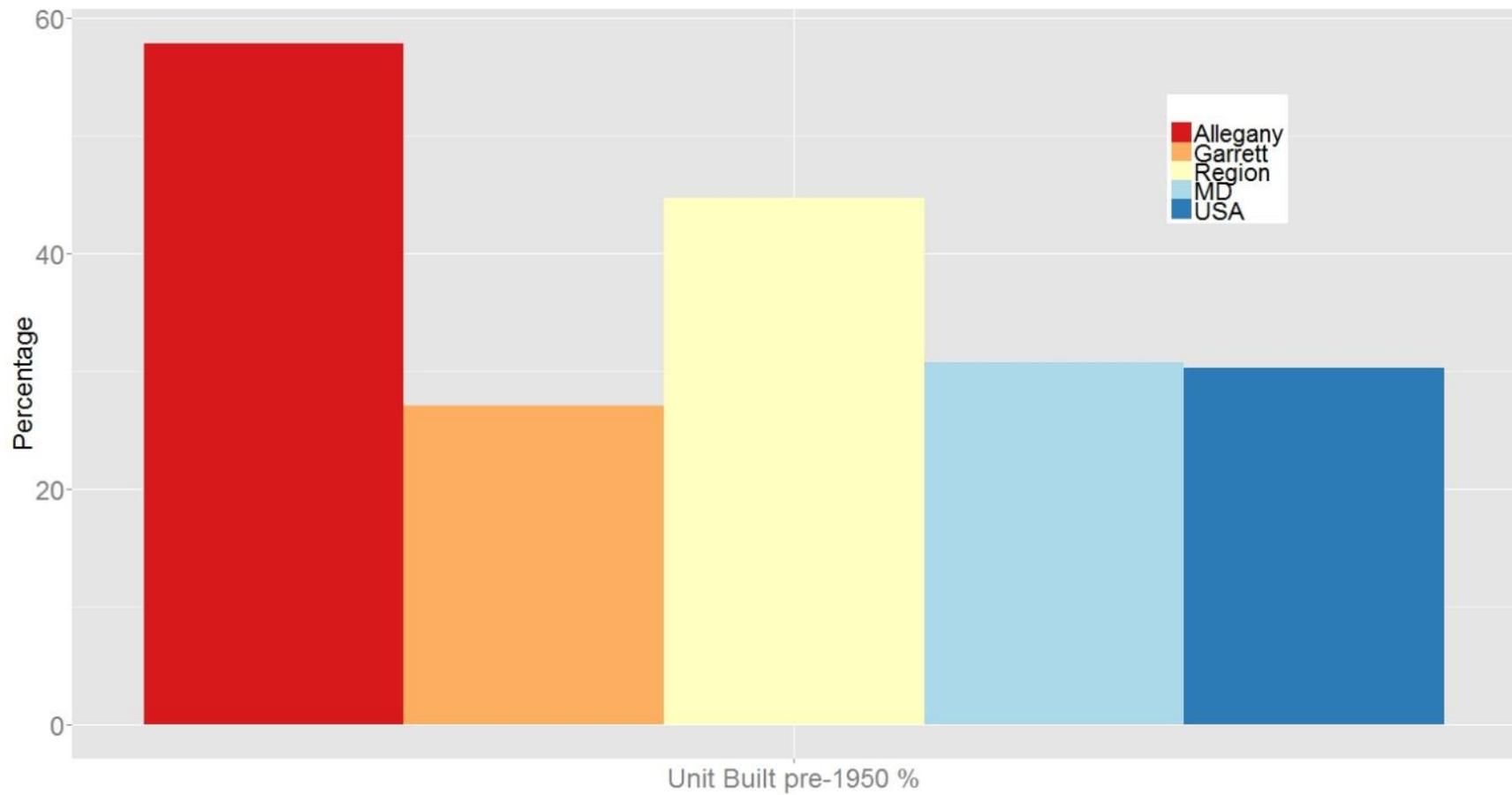


# Homeownership





# Age of House



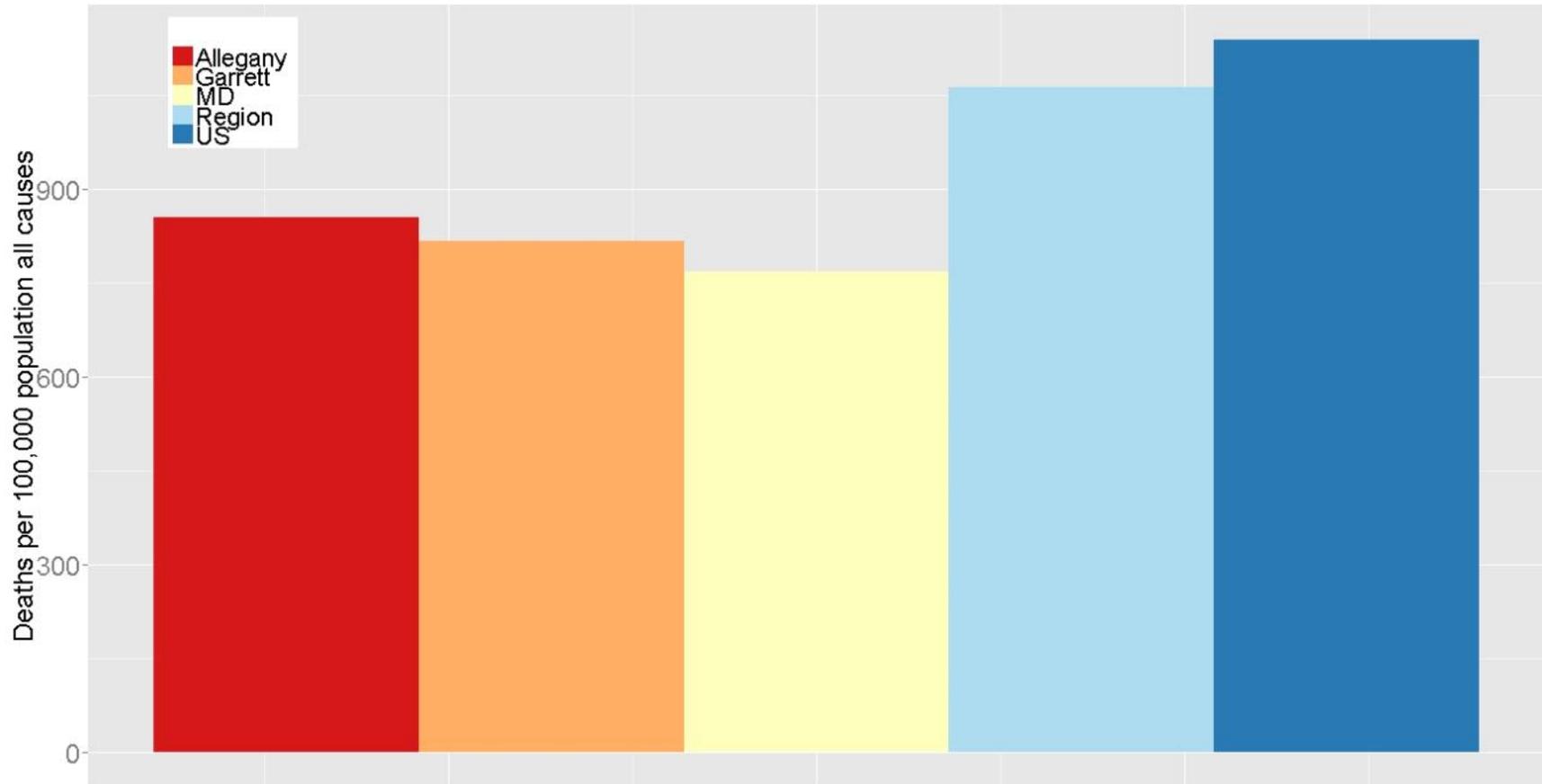


**HEALTH**

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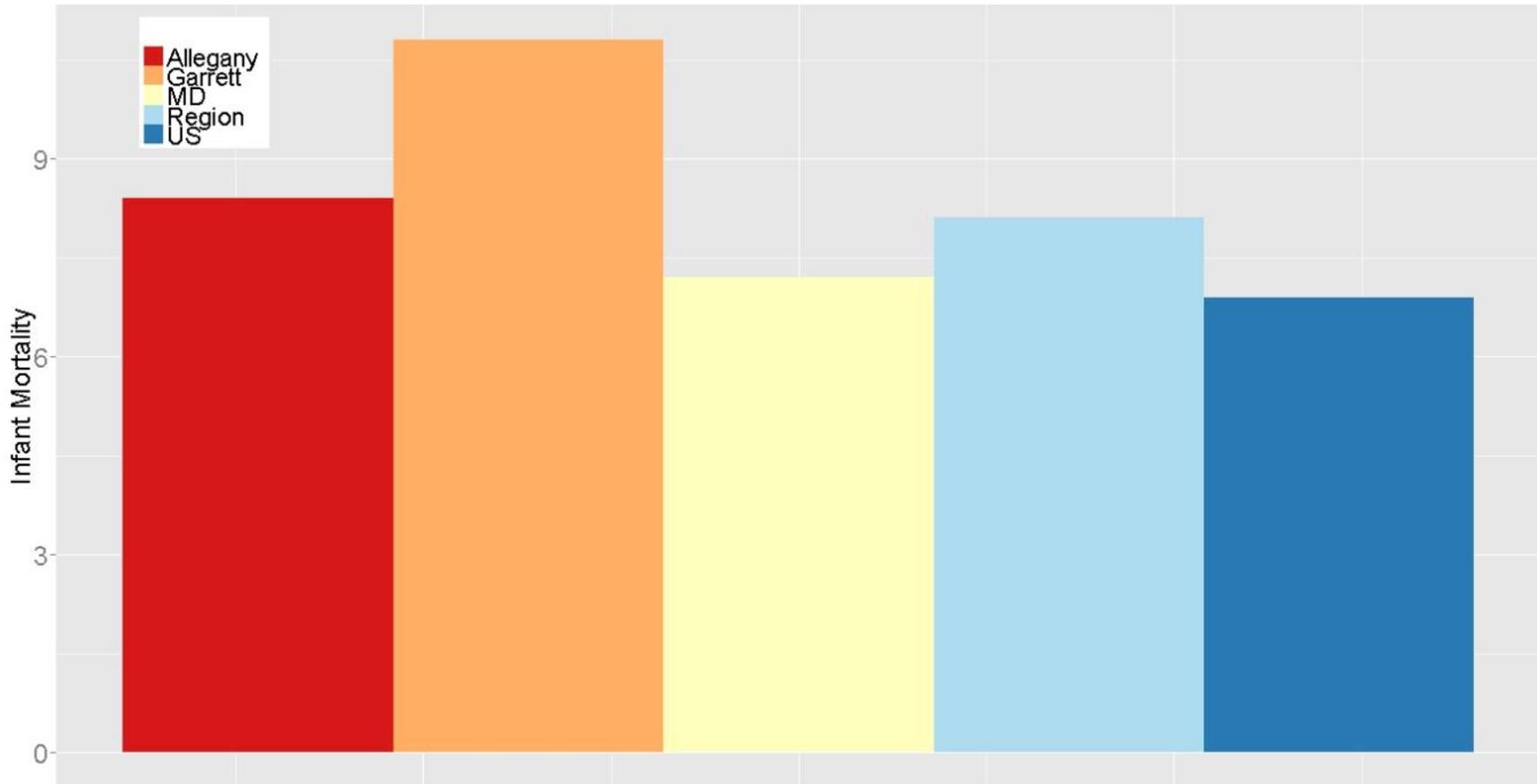


# Mortality



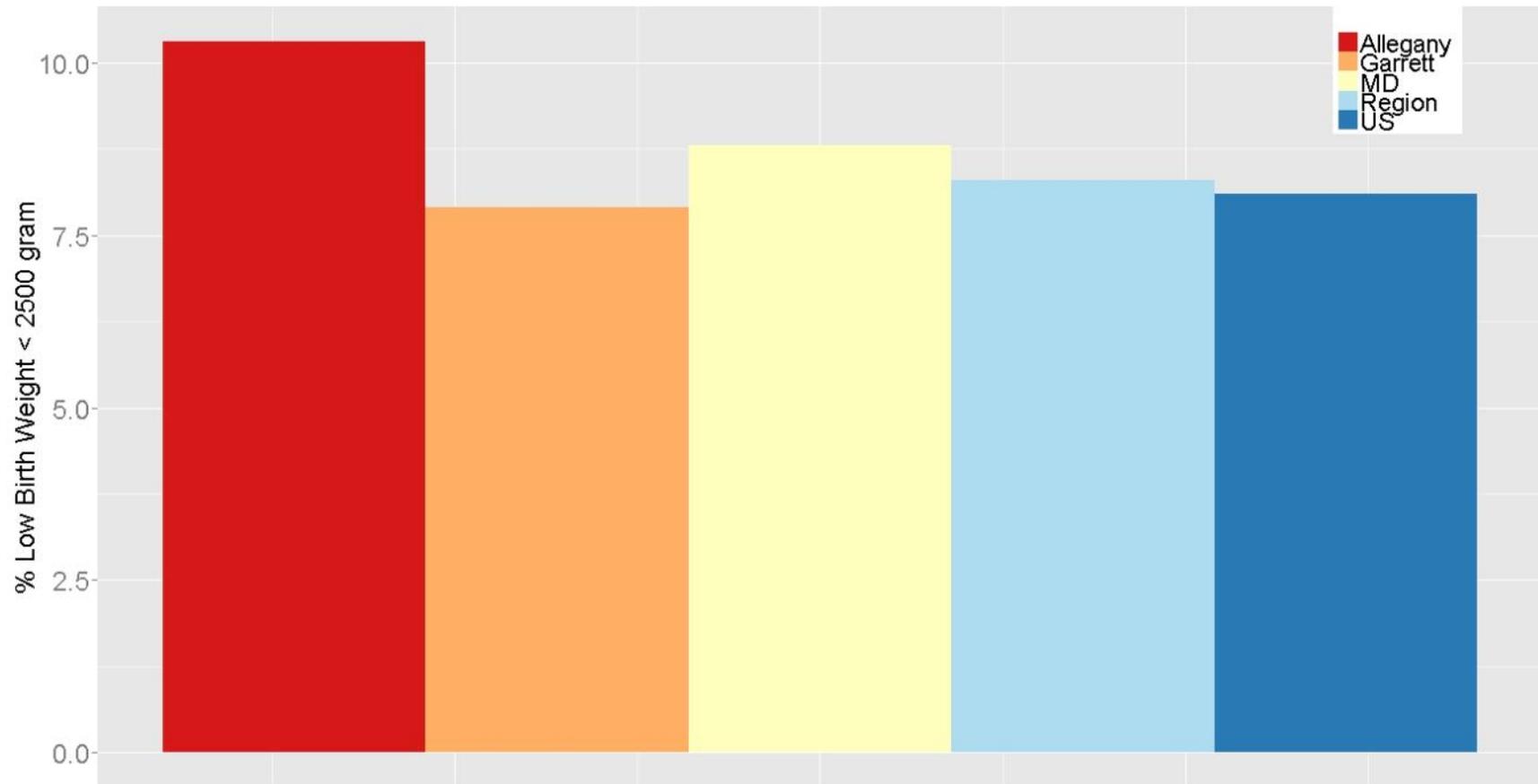


# Infant Mortality



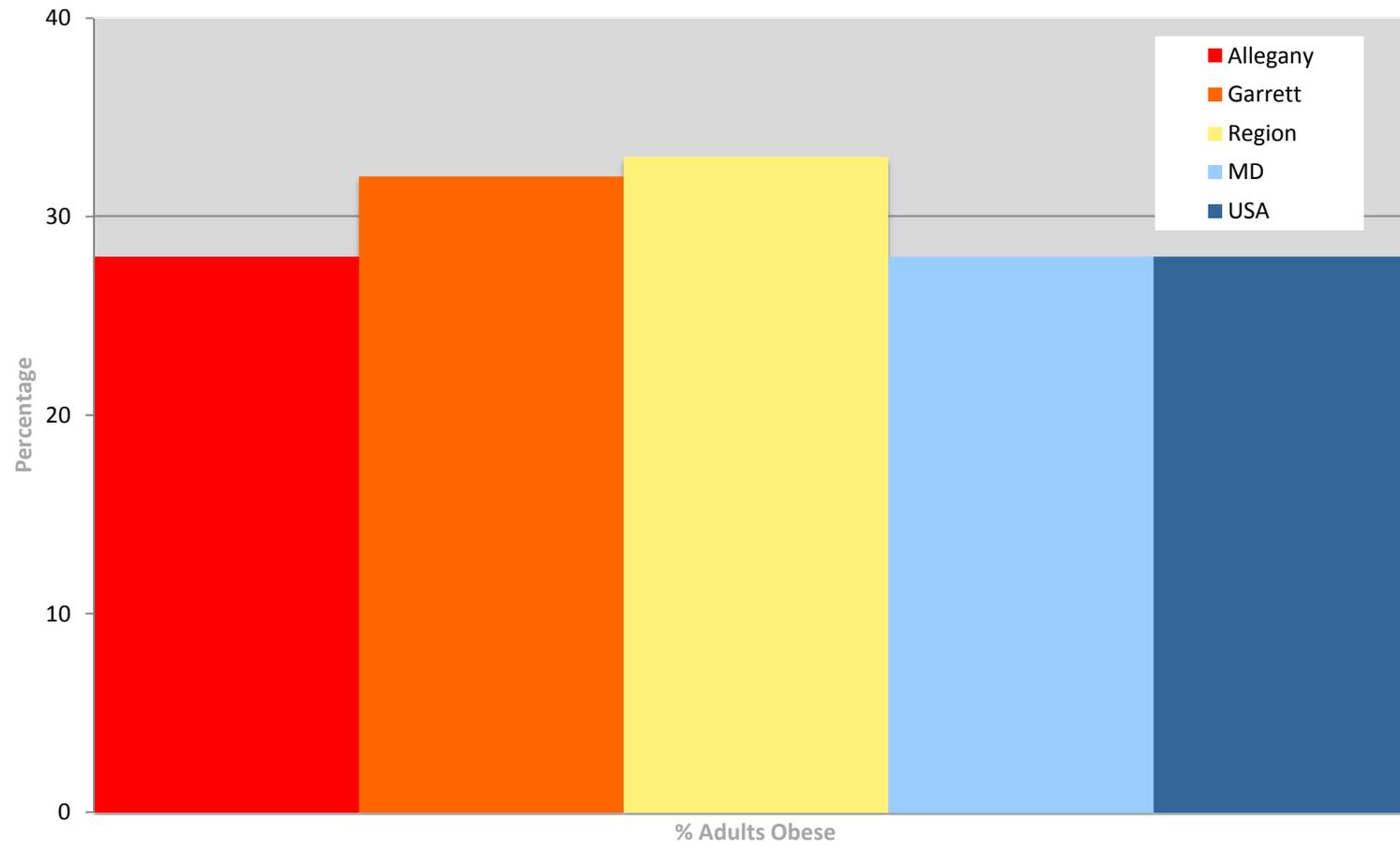


# Low Birth Weight



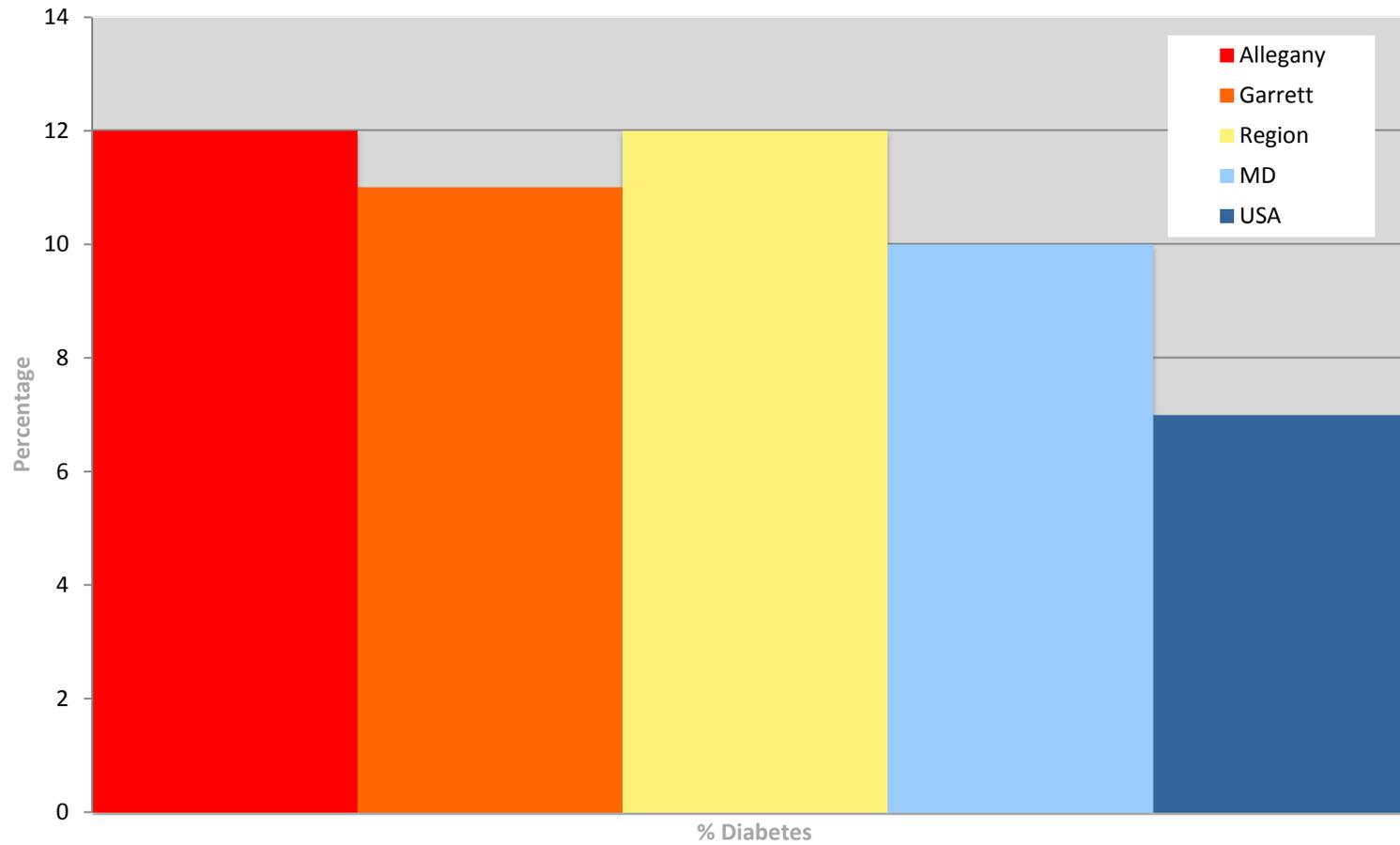


# Obesity





# Diabetes





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# Baseline Current Tasks

- Create buffer zones around sensitive areas using the Best Management Practices (BMPs)
- Develop visualization tools available to the community through a link on our website



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# Next Steps

- Impact Assessment
- Recommendations
- Final Report



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# Impact Assessment

- Compiling U.S. pre- and post-fracking air, water, and soil data
  - Compiling lists of chemicals used during hydraulic fracturing
  - Reviewing all relevant literature for health effects
  - Compiling and collecting data on other factors (e.g. noise, traffic, other impacts on social determinants of health)
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