

Infant Mortality among African American & Rural Populations in Maryland

Lawrence D. Reid, PhD, MPH

Prevention and Health Promotion Administration

Maternal and Child Health Bureau

lawrence.reid@maryland.gov



MISSION AND VISION

MISSION

The mission of the Prevention and Health Promotion Administration is to protect, promote and improve the health and well-being of all Marylanders and their families through provision of public health leadership and through community-based public health efforts in partnership with local health departments, providers, community based organizations, and public and private sector agencies, giving special attention to at-risk and vulnerable populations.

VISION

The Prevention and Health Promotion Administration envisions a future in which all Marylanders and their families enjoy optimal health and well-being.

Overview

- Study Objectives
- Background on Maryland Infant Mortality Rates (IMR)
- IMR in rural and urban areas
- Conclusions

Study Question

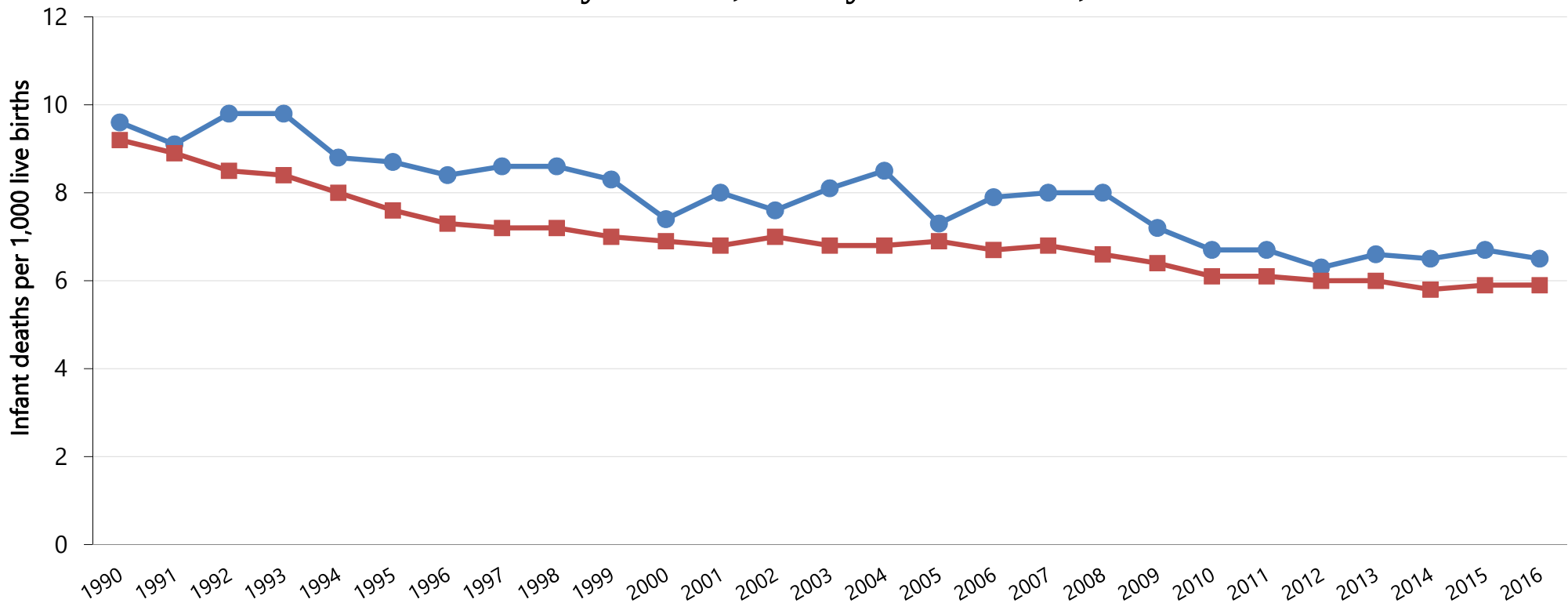
- Investigate infant mortality trends by race & rural residence areas.

Background

- Approximately 74,000 live births annually
 - More than half (58%) are non-White NH (national = 49% in 2016).
- An average of 525 infant deaths per year (478 deaths in 2016).
 - About 7 deaths for every 1,000 live births (Ranked 16th highest in 2016).
- About three-quarters (72%) of infant deaths are neonatal.
- Most occur in urban counties (78%), but some of highest rates are in rural counties.
- Leading causes of death (2011-2015)
 - Neonatal (<28 days old): preterm/low birth weight, maternal complications, congenital anomalies, placenta/cord complications
 - Postneonatal (28-364 days old): SIDS, congenital anomalies, accidents, infectious diseases

Background

Infant Mortality Rates, Maryland & US, 1990 - 2016



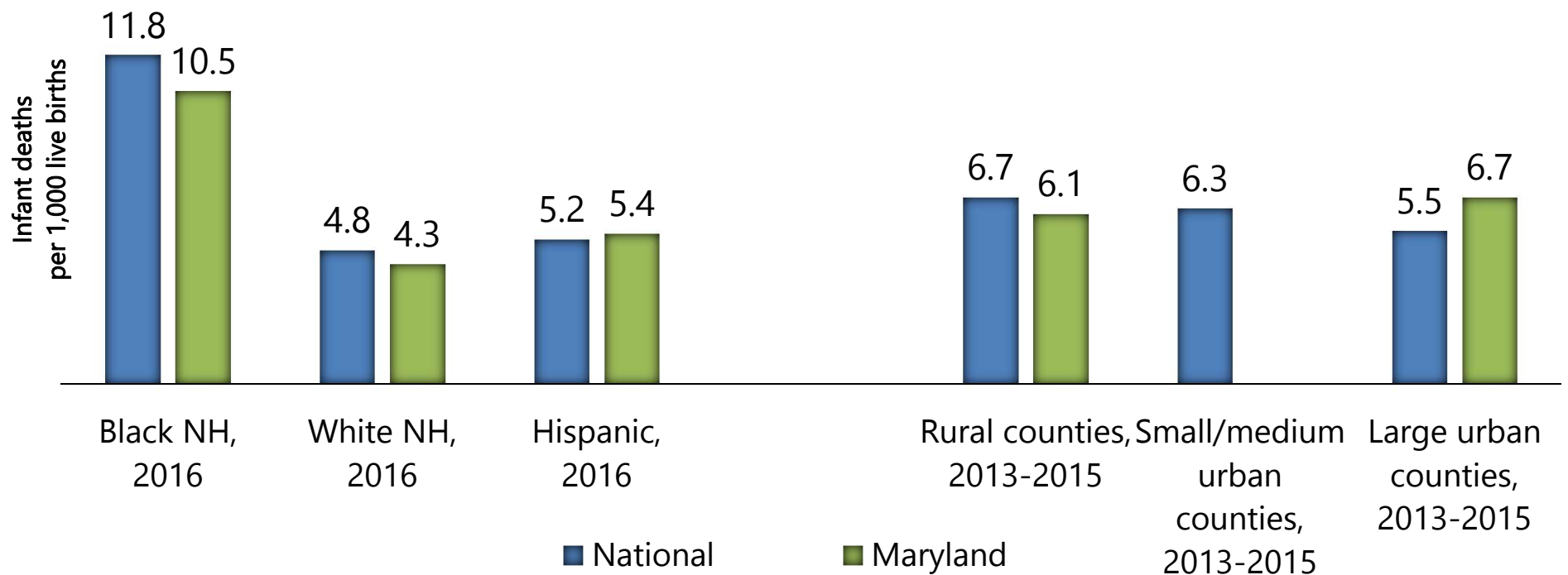
Maryland IMR's have decreased 32% since 1990



Source: Maryland Vital Statistics Administration

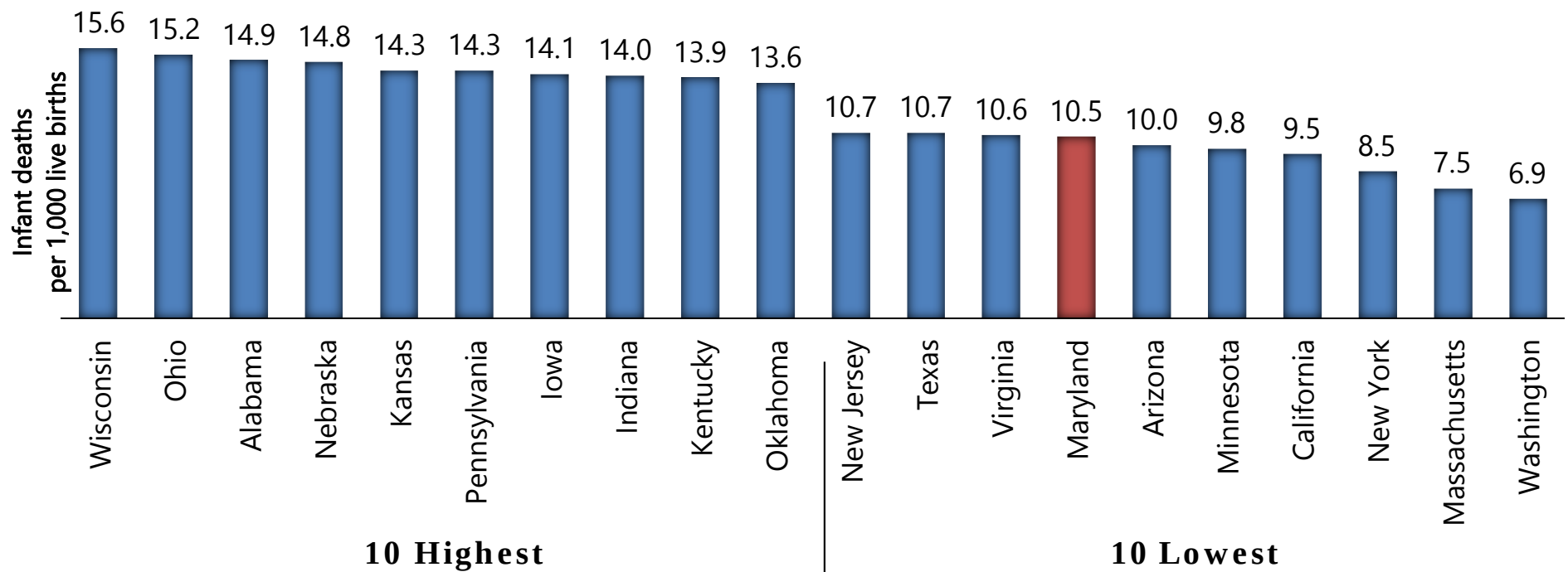
Background

National and Maryland Infant Mortality Comparisons



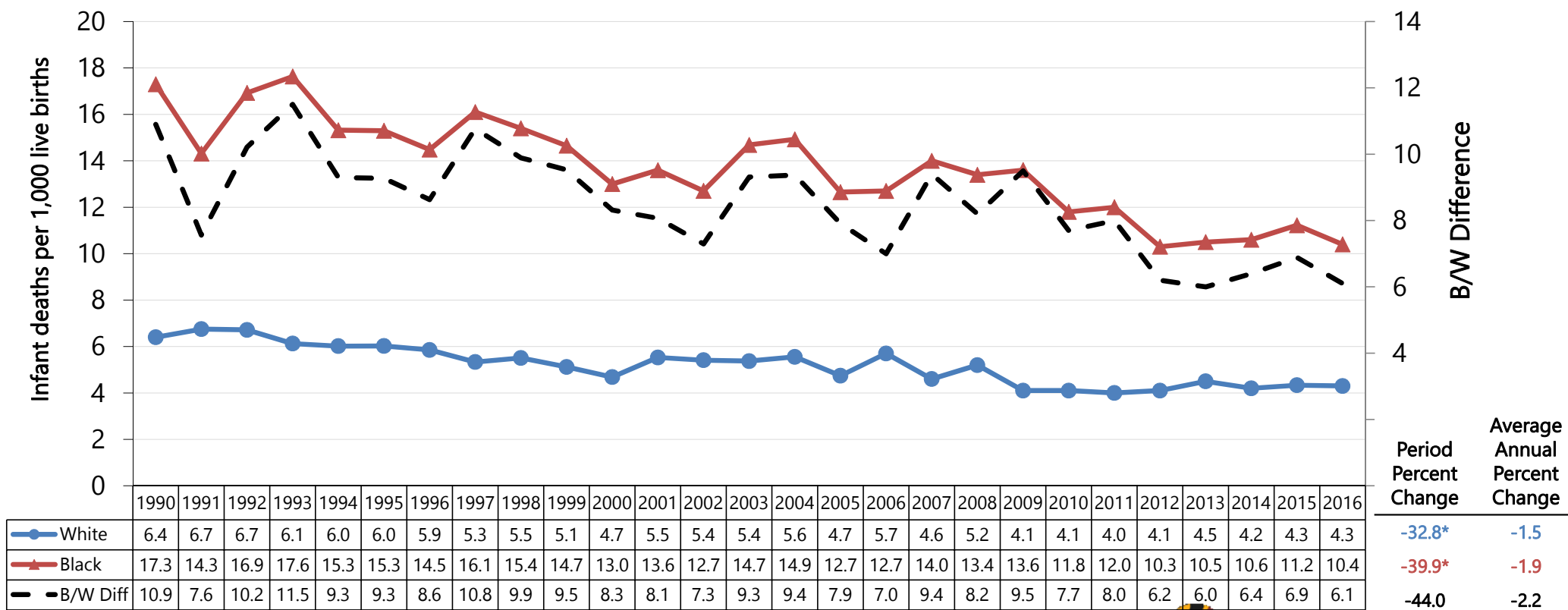
Background

Black NH Infant Mortality Rates by State, 2016

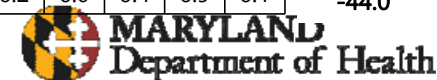


Background

Infant Mortality Rates by Race, Maryland, 1990 - 2016



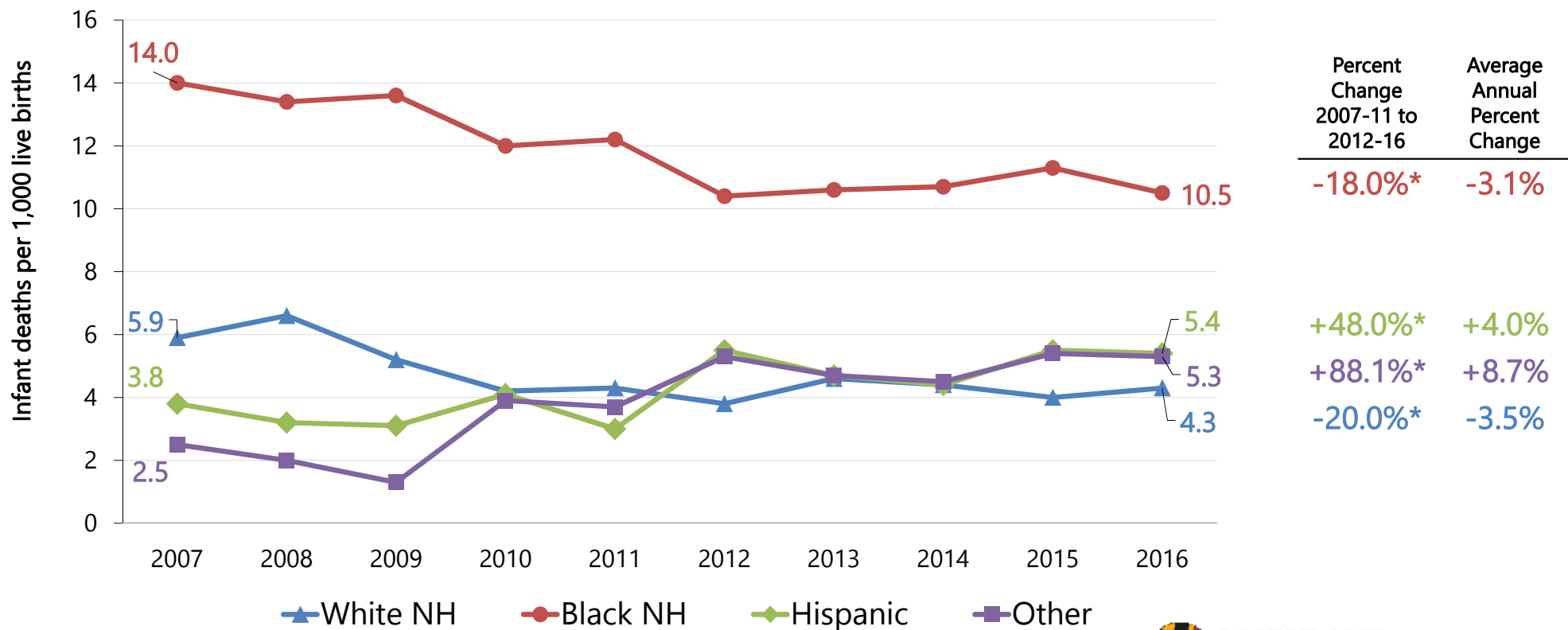
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Source: Maryland Vital Statistics Administration. * 2016 rate differs significantly from 1990 rate ($p < 0.05$).

Background

Infant Mortality Rates by Race/Ethnicity, Maryland, 2007 - 2016

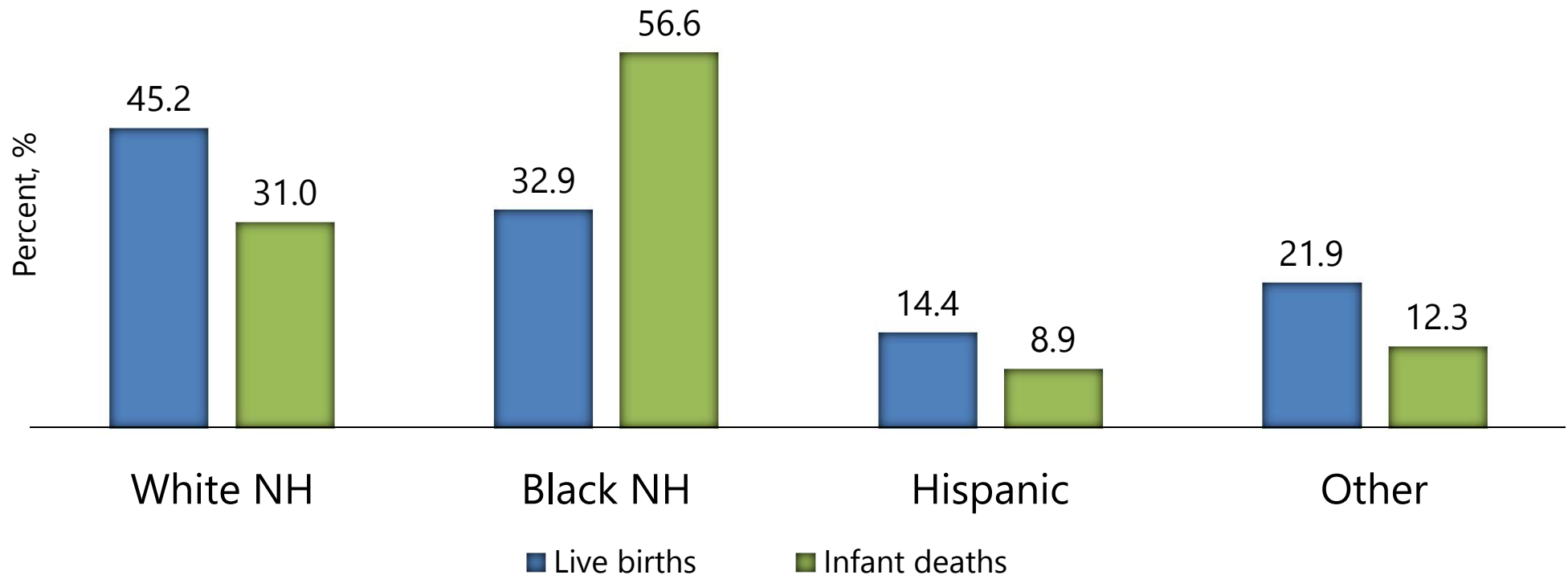


¹⁰ Source: Maryland Vital Statistics Administration. NH: non-Hispanic years 2010 and on. * denotes 2012-2016 IMR differs significantly from 2007-2011 IMR ($p < 0.05$). Other includes Asian Pacific Islanders & American Indians/Alaskan Natives



Background

Distribution of Live Births and Infant Deaths by Race/Ethnicity, Maryland, 2007 - 2016



Infant Mortality Trends by Rural/Urban Residence

Urban Counties

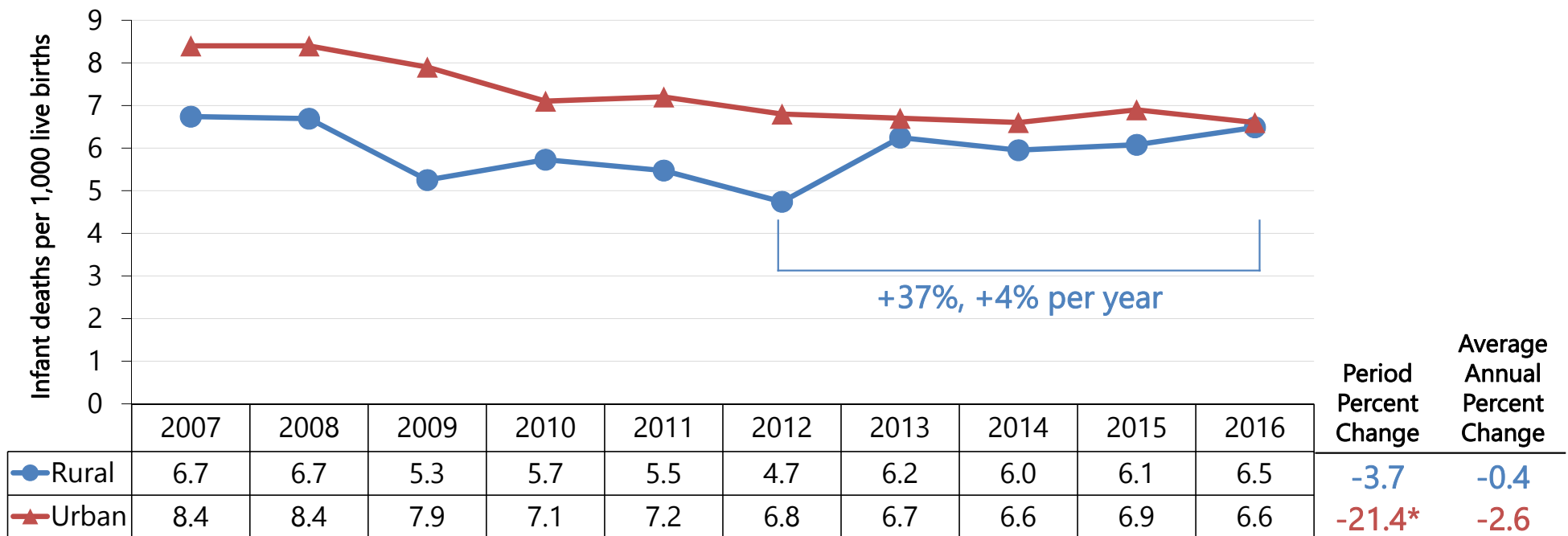
Anne Arundel
Baltimore City
Baltimore County
Howard
Montgomery
Prince George's

Rural Counties

Region	County
Northwest	Allegany, Garrett Washington
Eastern Shore	Caroline, Cecil Dorchester, Kent Queen Anne's Somerset, Talbot Wicomico, Worcester
Central Maryland	Calvert, Carroll Charles, Frederick Harford, St. Mary's

Background

Infant Mortality Rates by Rural/Urban Counties, Maryland, 2007 - 2016

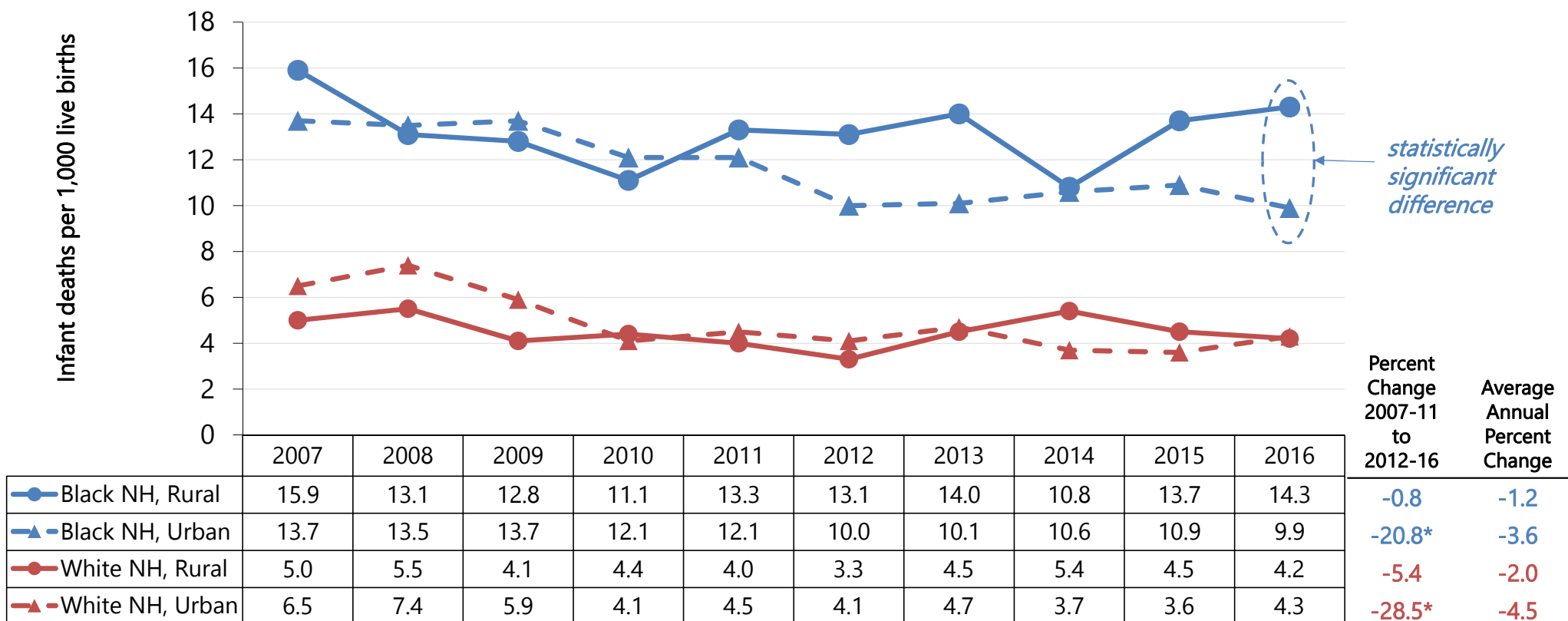


Source: Maryland Vital Statistics Administration. * denotes 2016 rate differs significantly from 2005 rate ($p < 0.05$).

Rural includes Allegany, Calvert, Caroline, Carroll, Cecil, Charles, Dorchester, Frederick, Garrett, Harford, Kent, Queen Anne's, Somerset, Saint Mary's, Talbot, Washington, Wicomico, and Worcester counties. Urban includes Baltimore County and City, Anne Arundel, Howard, Montgomery, and Prince George's Counties.



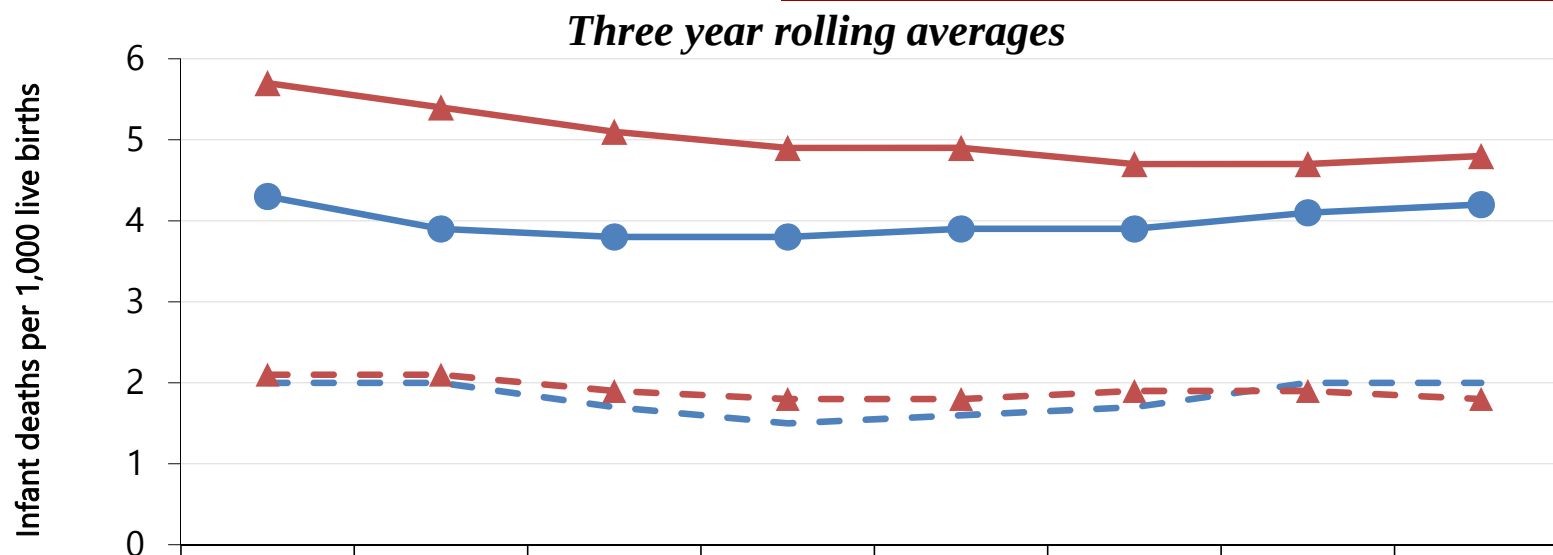
Infant Mortality Rates by Race & Rural/Urban Counties, Maryland, 2007 - 2016



15 Source: Maryland Vital Statistics Administration. NH: non-Hispanic years 2010 and on. * denotes 2016 rate differs significantly from 2005 rate ($p < 0.05$). Rural includes Allegany, Calvert, Caroline, Carroll, Cecil, Charles, Dorchester, Frederick, Garrett, Harford, Kent, Queen Anne's, Somerset, Saint Mary's, Talbot, Washington, Wicomico, and Worcester counties.



Infant Mortality Rates by Age at Death and Rural/Urban Counties, Maryland, 2007 - 2016



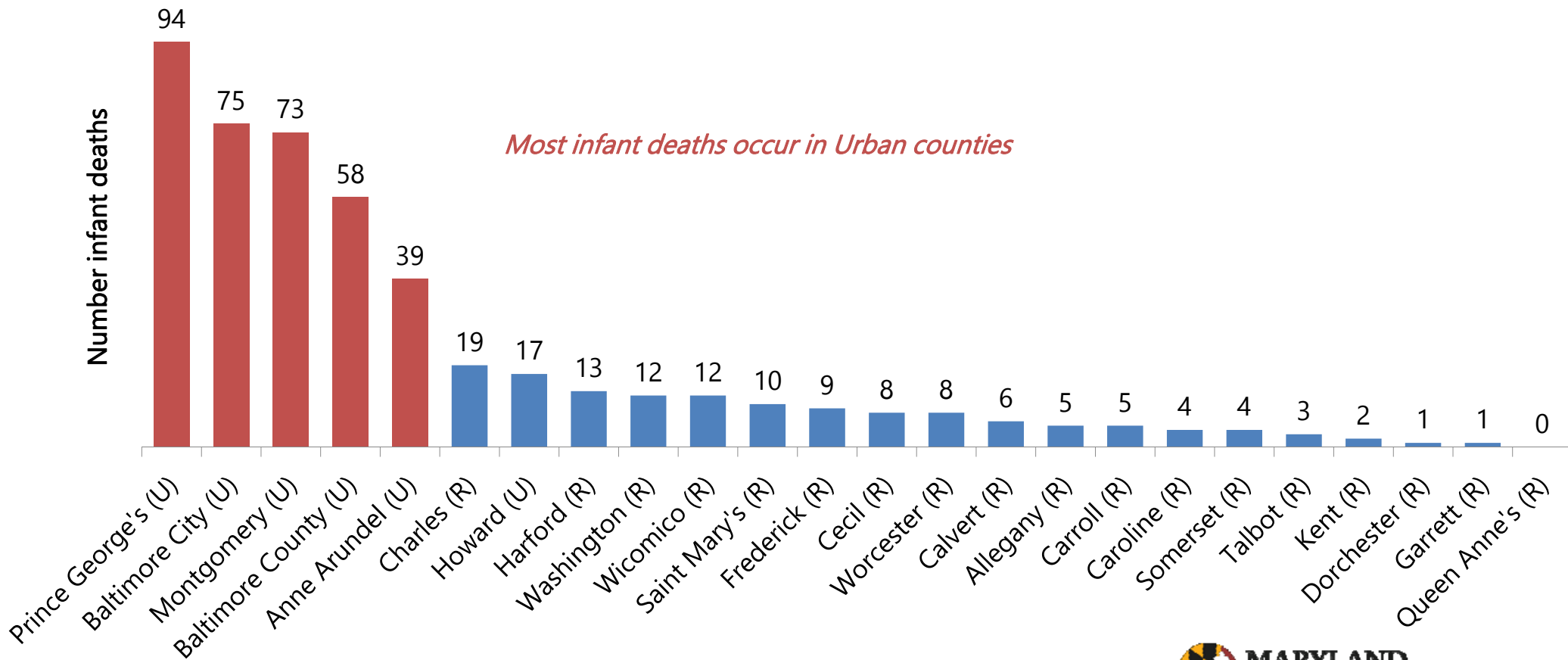
	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	Period Percent Change	Average Interval Percent Change
—●— Rural - Neonatal	4.3	3.9	3.8	3.8	3.9	3.9	4.1	4.2	-2.3	-0.3
- - - Rural - Postneonatal	2.0	2.0	1.7	1.5	1.6	1.7	2.0	2.0	0.0	0.0
—▲— Urban - Neonatal	5.7	5.4	5.1	4.9	4.9	4.7	4.7	4.8	-15.8	-2.4
- - - Urban - Postneonatal	2.1	2.1	1.9	1.8	1.8	1.9	1.9	1.8	-14.3	-2.2

Source: Maryland Vital Statistics Administration. NH: non-Hispanic years 2010 and on.

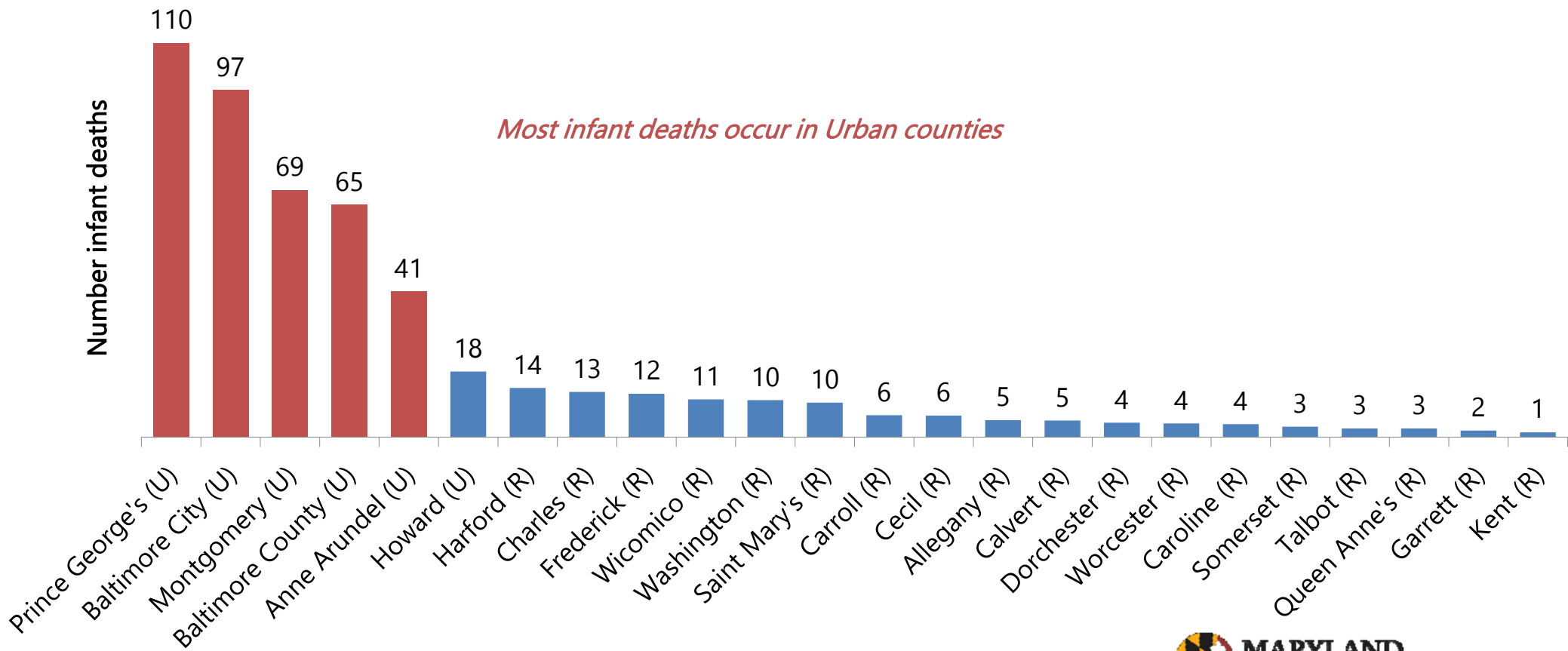
16 Rural includes Allegany, Calvert, Caroline, Carroll, Cecil, Charles, Dorchester, Frederick, Garrett, Harford, Kent, Queen Anne's, Somerset, Saint Mary's, Talbot, Washington, Wicomico, and Worcester counties.



Number of Infant Deaths, 2016



Average Annual Number of Infant Deaths, 2007-2016

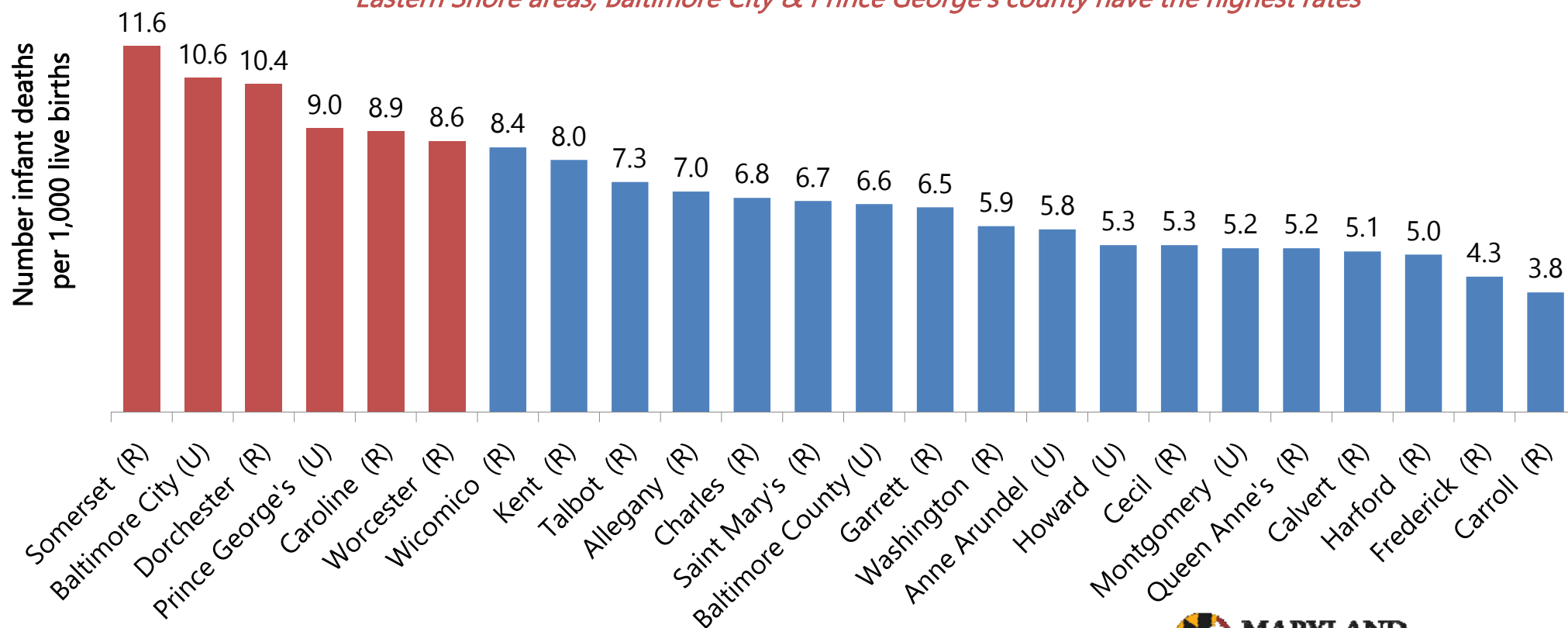


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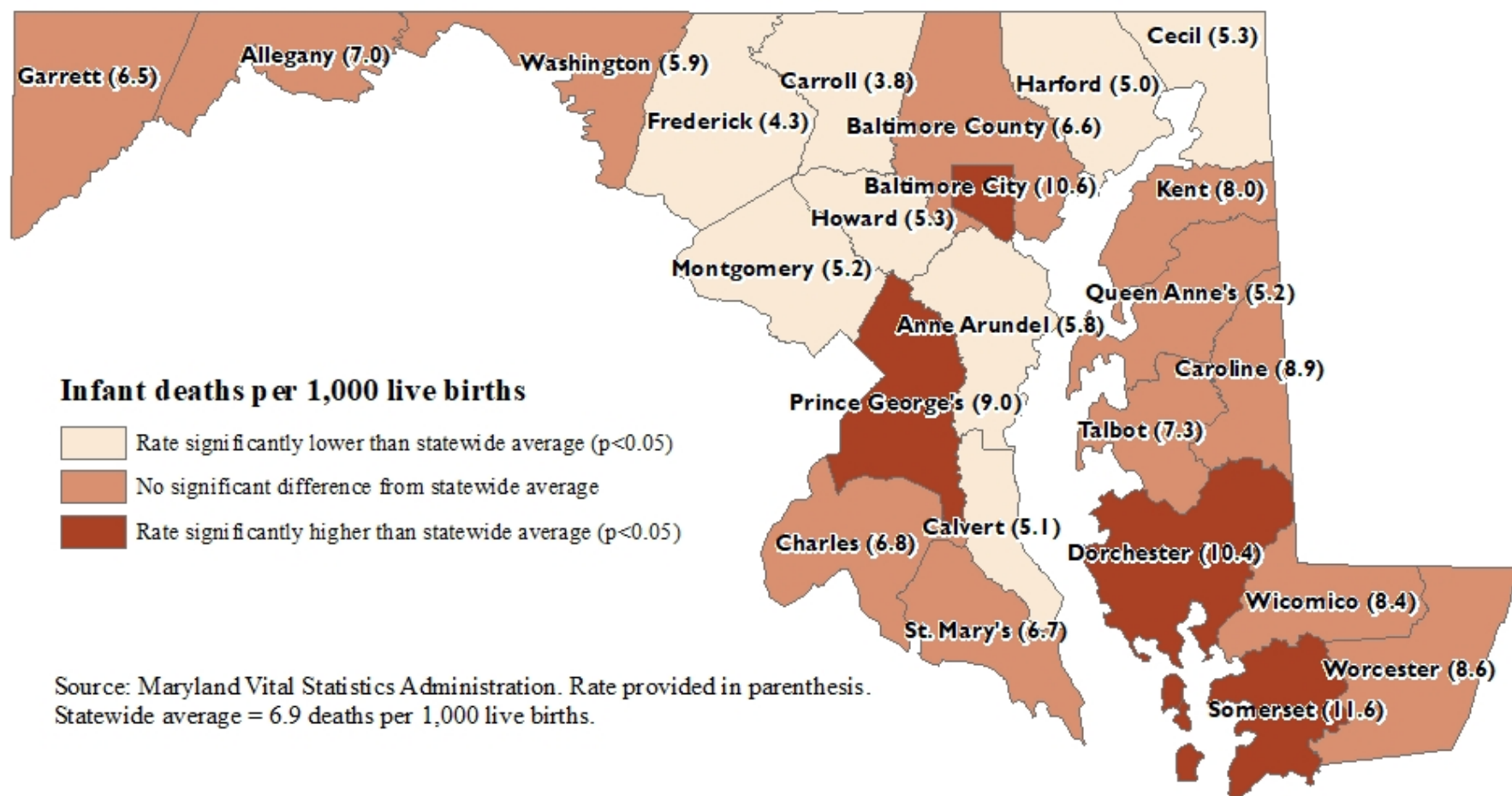
Source: Maryland Vital Statistics Administration. U: urban R: rural

Ten-Year Infant Mortality Rates by Jurisdiction, Maryland, 2007-2016

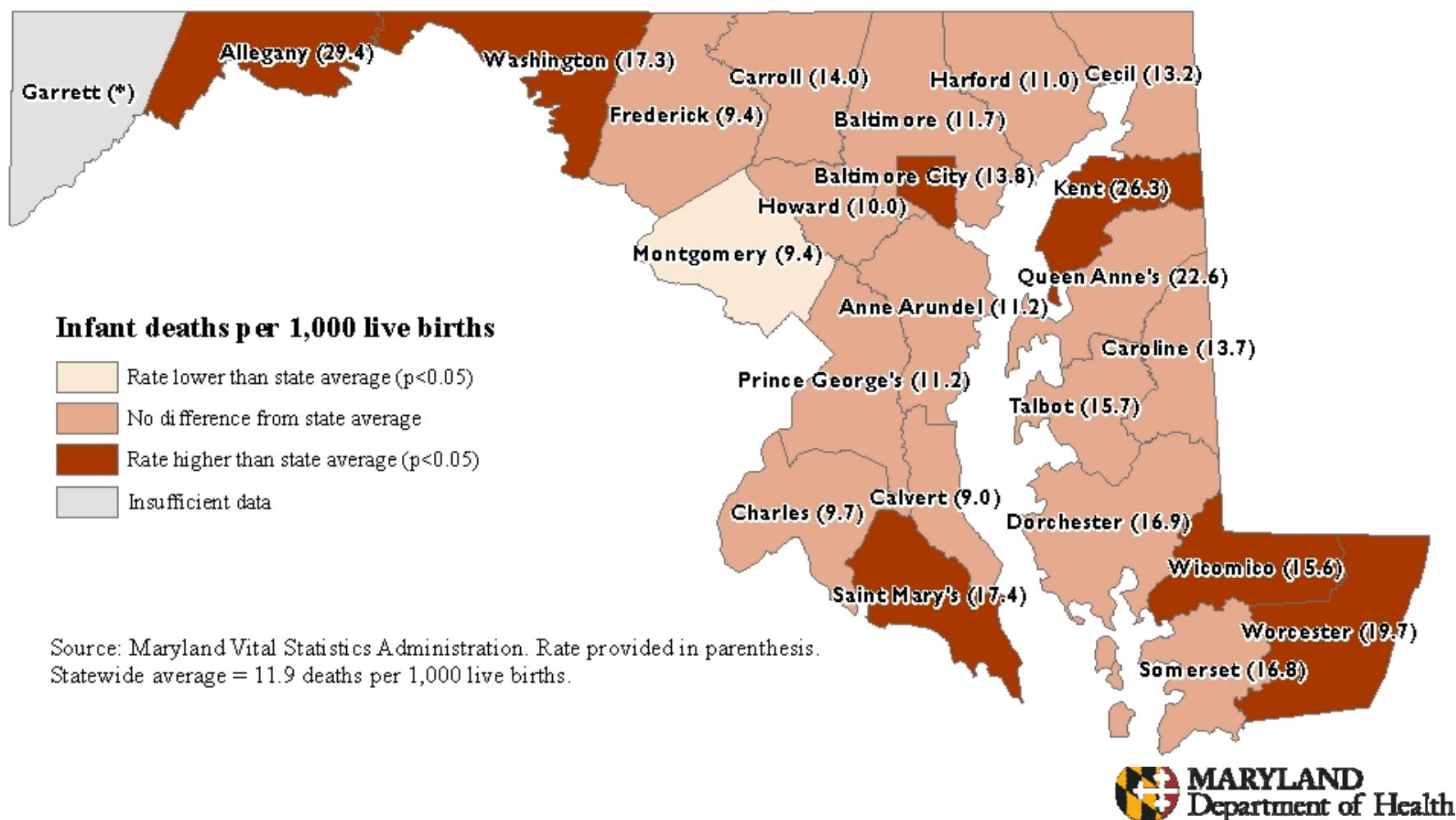
Eastern Shore areas, Baltimore City & Prince George's county have the highest rates



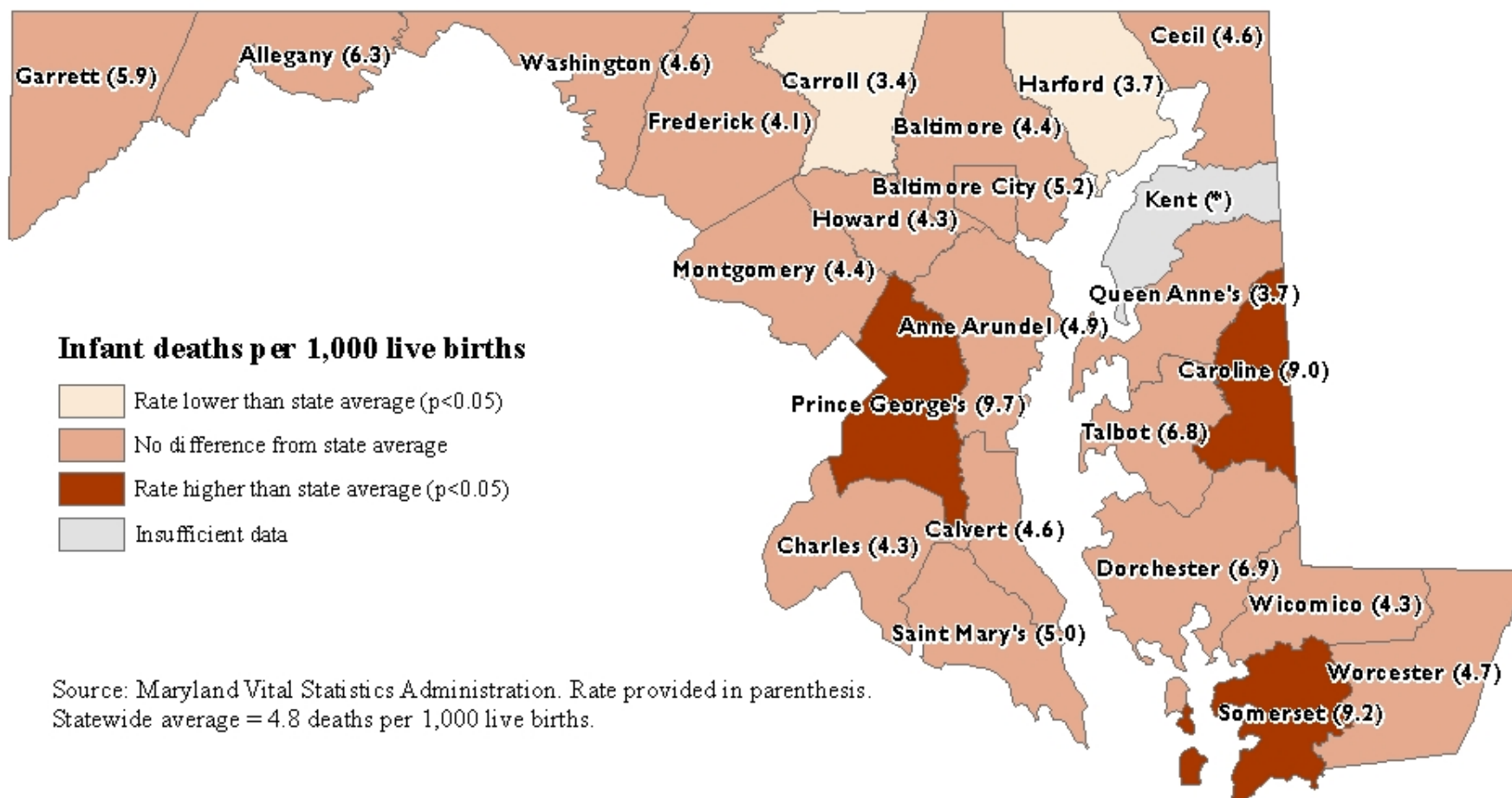
Infant Mortality Rate by County, Maryland, 2007-2016



Black NH Infant Mortality Rate by County, Maryland, 2007-2016

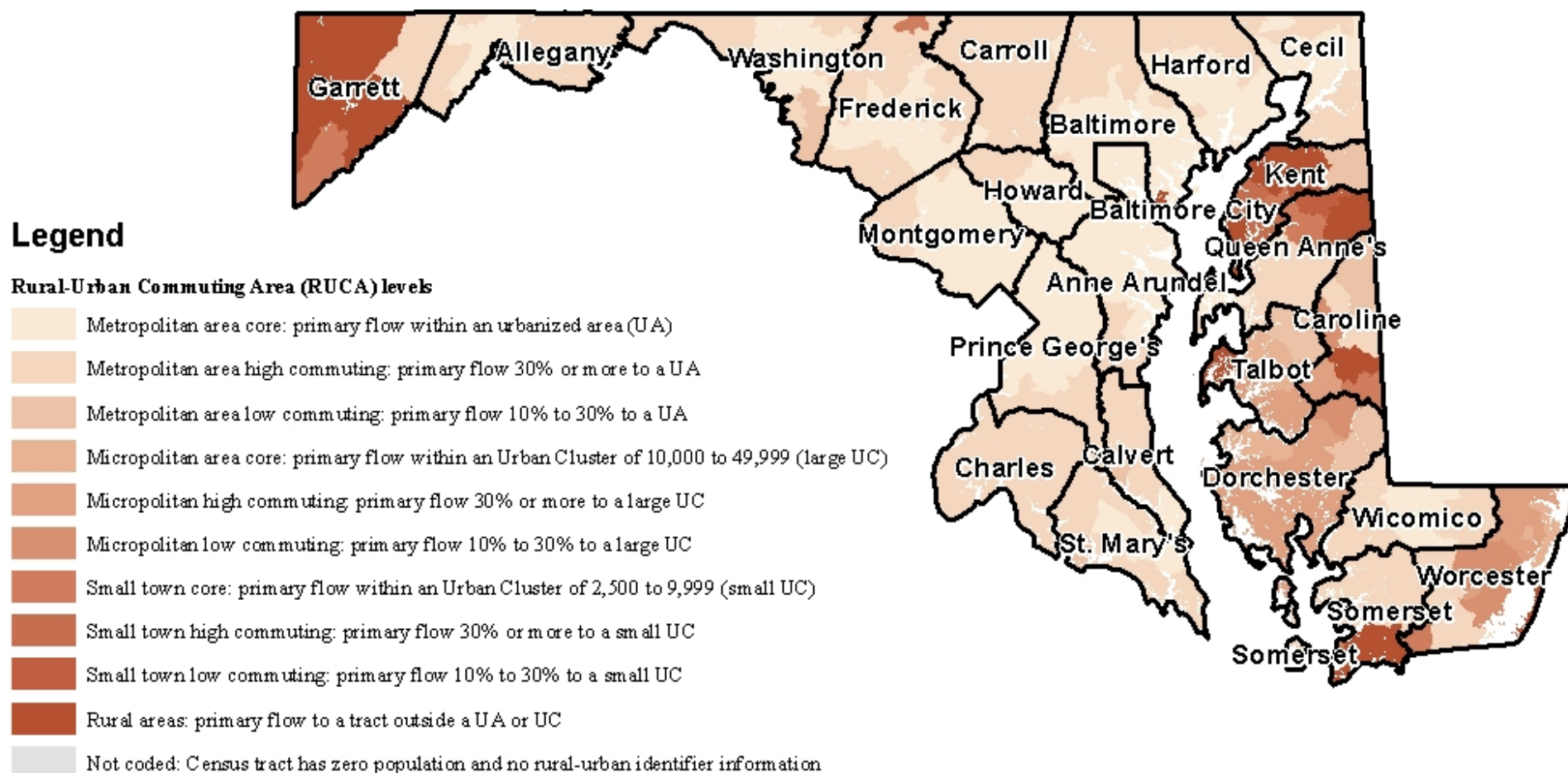


White NH Infant Mortality Rate by County, Maryland, 2007-2016

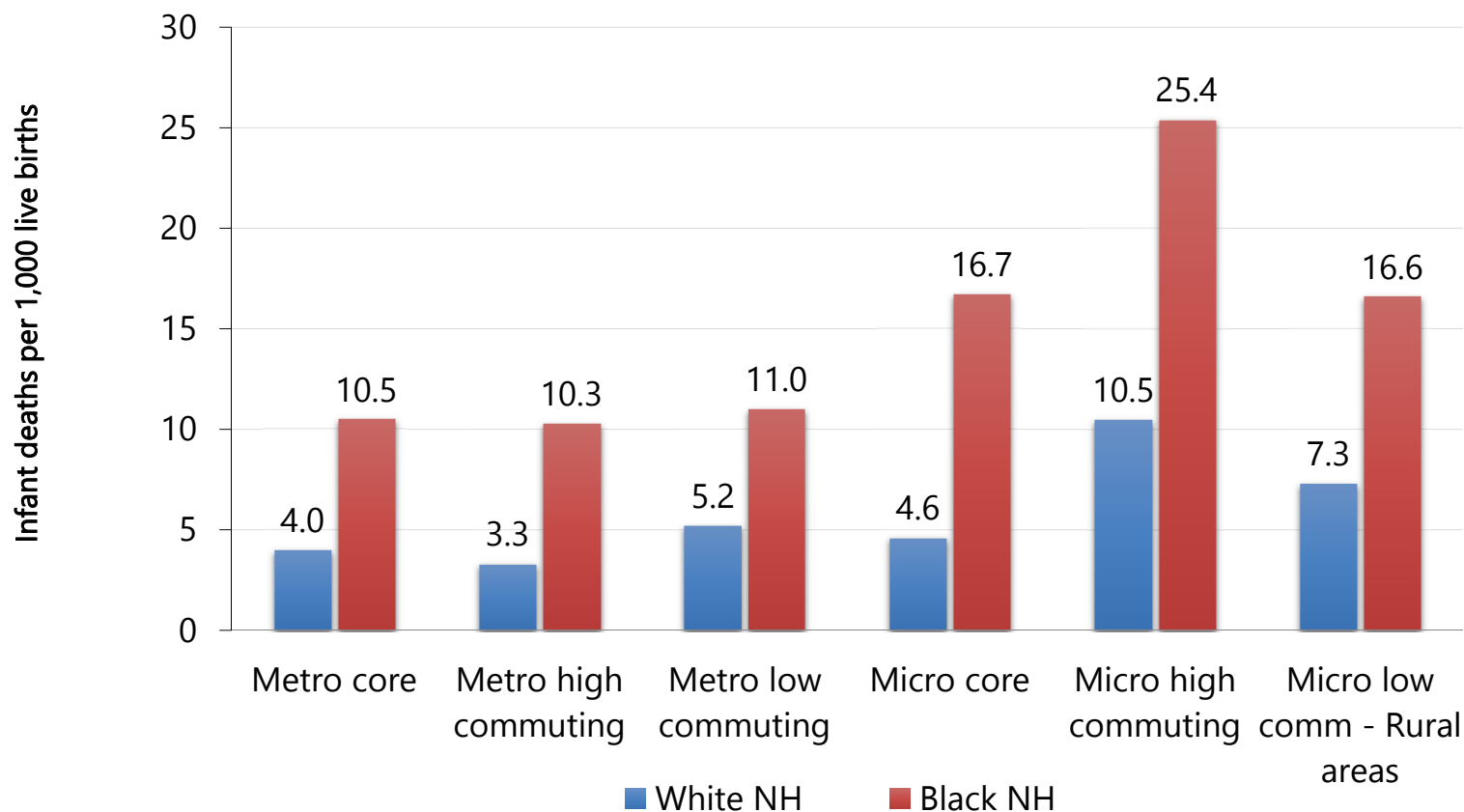


**Is a more specific rural definition
needed?**

Census tract specific rural areas, Maryland 2010 US Census

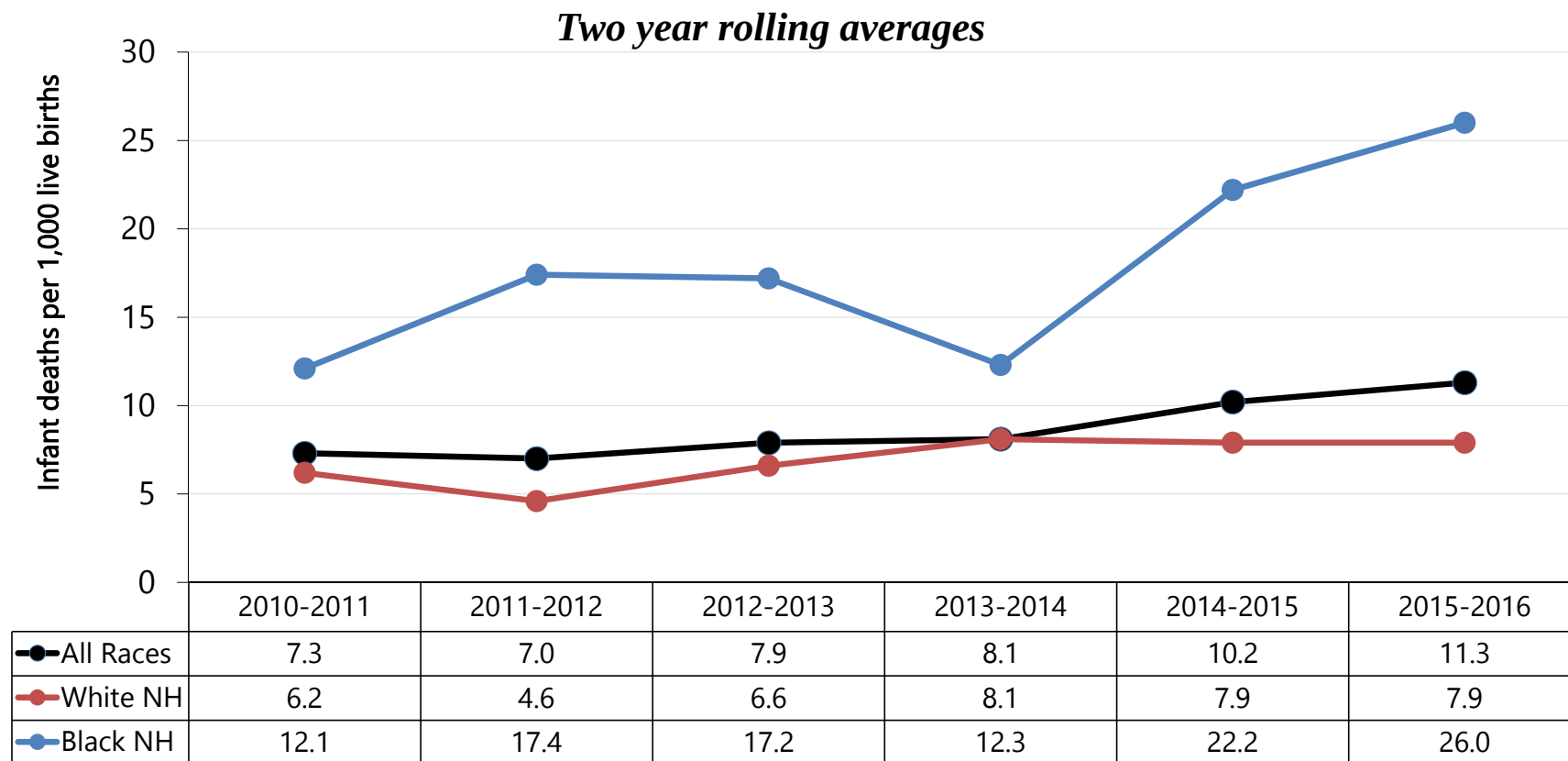


Cohort Infant Mortality Rates by Race and Community Rural Level, Maryland, 2010 - 2016



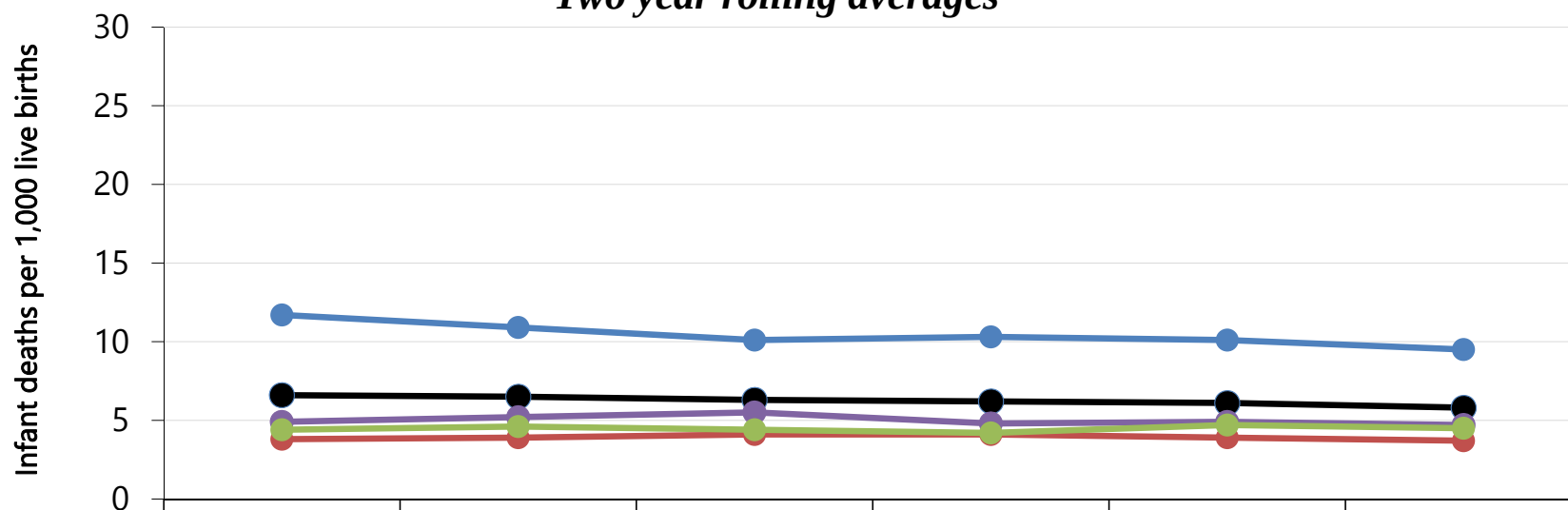
Sub-county level definitions of rural areas may be a better definition of rural settings

Micro and Rural area Cohort Infant Mortality Rates by Race, Maryland, 2010 - 2016



Metro and large Micro area Cohort Infant Mortality Rates by Race, Maryland, 2010 - 2016

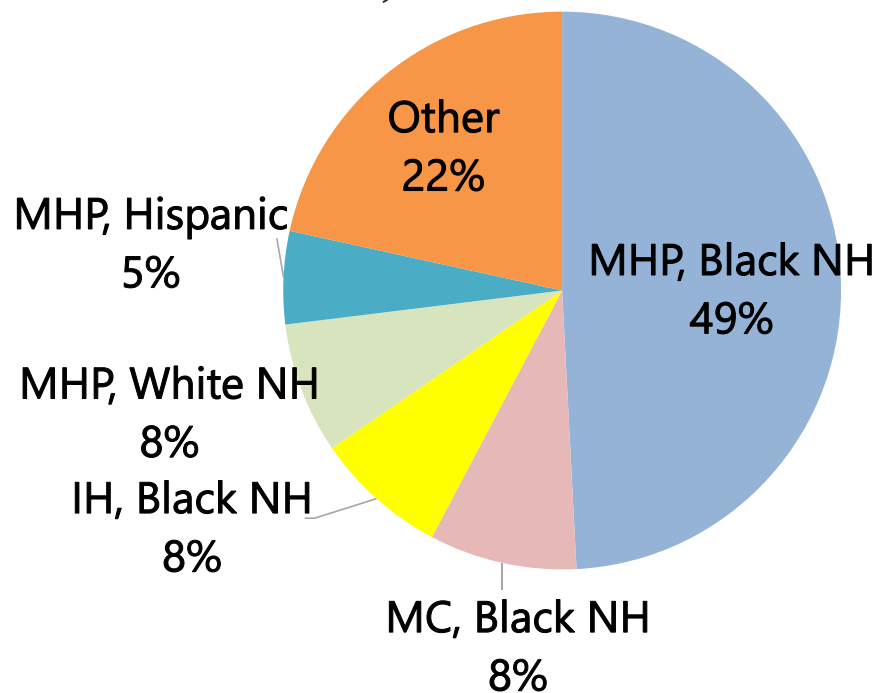
Two year rolling averages



	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
● All Races	6.6	6.5	6.3	6.2	6.1	5.8
● White NH	3.8	3.9	4.1	4.1	3.9	3.7
● Black NH	11.7	10.9	10.1	10.3	10.1	9.5
● Hispanic	4.9	5.2	5.5	4.8	4.9	4.7
● Other	4.4	4.6	4.4	4.2	4.7	4.5

PPOR Phase 1 Results

Excess Mortality
2,749 excess deaths



MHP: Maternal Health/Prematurity MC: Maternal Care IH: Infant Health

There were an estimated **2,749** excess (preventable) fetal/infant deaths in Maryland during 2010-2016. Half (**49%**) of these deaths were attributed to the MHP period of risk in Black NH mothers.

This suggests that approximately **1,352** fetal/infant deaths, or **193** deaths per year, could have been prevented if the preconception and maternal health status of NH Black mothers was similar to the reference group.

²⁸ Source: MD Vital Statistics Administration. Reference group: White NH mothers ages 20-34 with 13+ years of education in Maryland. Minimum 60 fetal and infant deaths.

Conclusions

Summary

- Infant mortality (IM) rates have decreased, but racial and geographic disparities persist
- Infant mortality among other minority women has increased in recent years, however
- Compared to other states, Maryland Black NH IM rates are among the lowest.
- Rural infant mortality rates were on the decline but have increased since 2012 (slide 12)
- The rural vs non-rural comparison depends on race
 - Rural IM is higher than non-rural if race-adjusted analysis, due to worse rural rate in Blacks
- Regardless of geographic area, IM's among Black NH infants consistently higher than other groups.
- Census tract specific definitions of rural areas should be considered

Findings to Address

- Black infant mortality is worse than White regardless of rural or non-rural.
- Black rural is worse than Black non-rural recently
- Black rural did not improve recently, while Black non-rural did
- The recent race-adjusted rural disadvantage is entirely due to the Black rural disadvantage (compared to Black non-rural)
- White rural and non-rural trends are essentially identical to each other.

The solution is to address rural and non-rural Black outcomes

THANK YOU