

Data Perspectives on Cardiovascular Disease and Diabetes Disparities in Maryland

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Racial and Ethnic Breakdown of Maryland Population, 2014 estimates

<i>2014 estimates MD Dept of Planning</i>	<u>Total</u>	<u>Not Hispanic</u>	<u>Hispanic</u>
Total	5,976,407	5,419,036	557,371
White Alone	3,589,555	3,144,704	444,851
Black Alone	1,809,294	1,749,444	59,850
Amer Indian / Alaska Native Alone	33,413	14,506	18,907
Asian Alone	380,168	373,555	6,613
Native Hawaiian / Pacific Islander	6,319	3,047	3,272
Two or More Races	157,658	133,780	23,878

Racial and Ethnic % Breakdown of Maryland Population, 2014 estimates

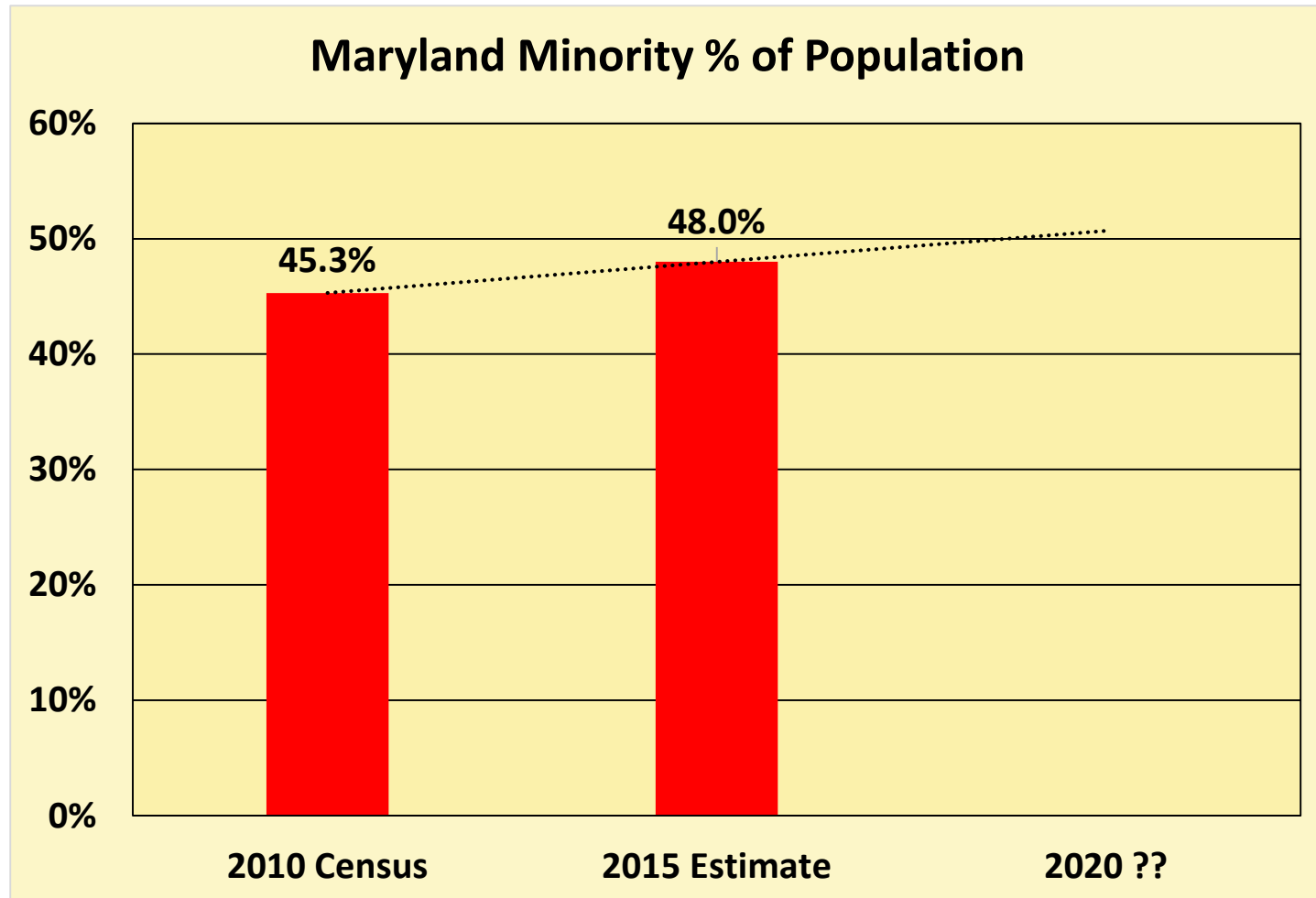
(all percents are percent of “total total”)

2014 estimates MD Dept of Planning

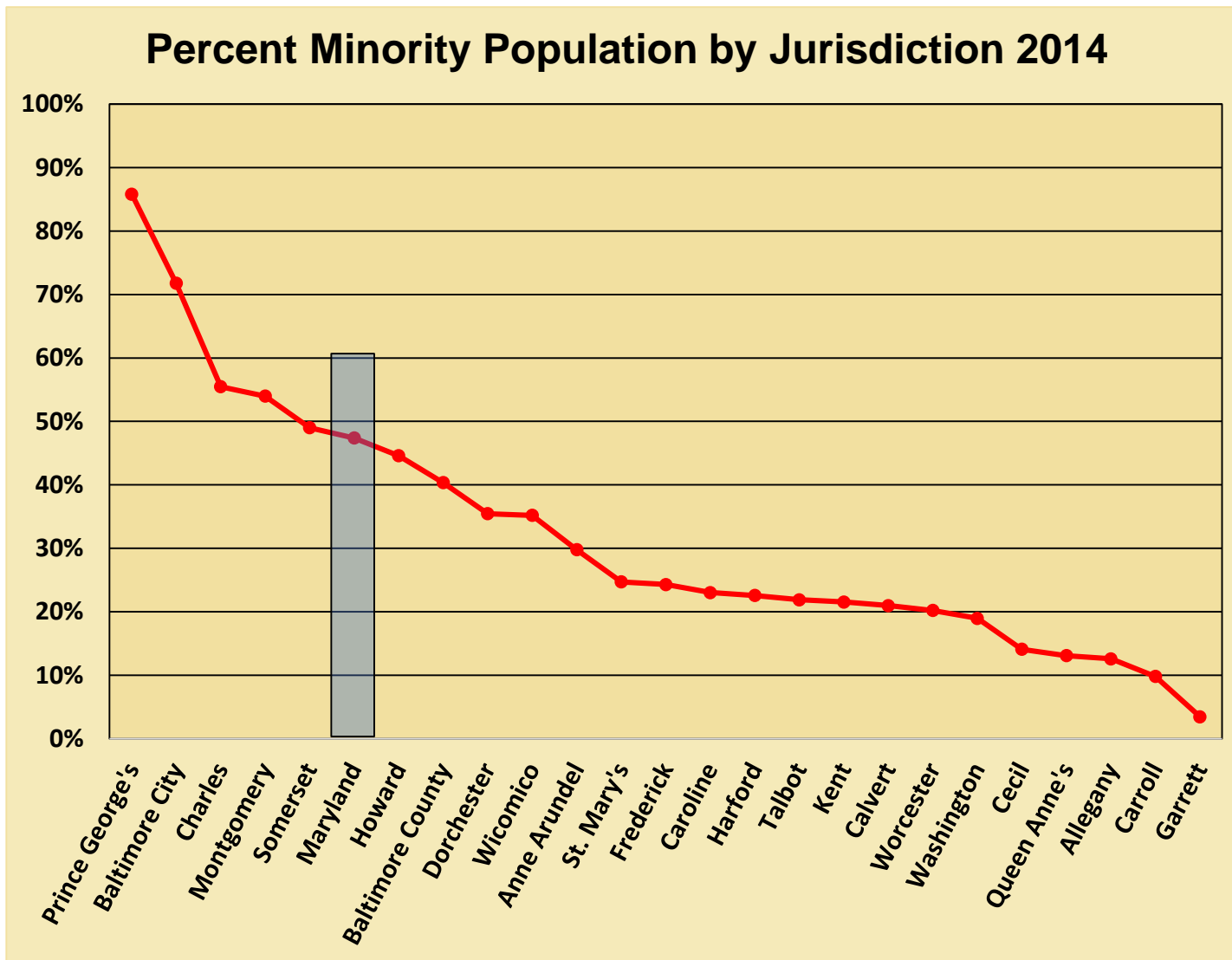
	Total	Not Hispanic	Hispanic
Total	100.0%	90.7%	9.3%
White Alone	60.1%	52.6%	7.4%
Black Alone	30.3%	29.3%	1.0%
Amer Indian / Alaska Native Alone	0.6%	0.2%	0.3%
Asian Alone	6.4%	6.3%	0.1%
Native Hawaiian / Pacific Islander	0.1%	0.1%	0.1%
Two or More Races	2.6%	2.2%	0.4%

Blacks are 64% of the Minority Population, Hispanics are 20% and Asians are 13%

Trend in Minority Population % in Maryland, 2010 to 2020



Percent of Population that is Minority by Jurisdiction, 2014



Roles of Data in Health Disparities

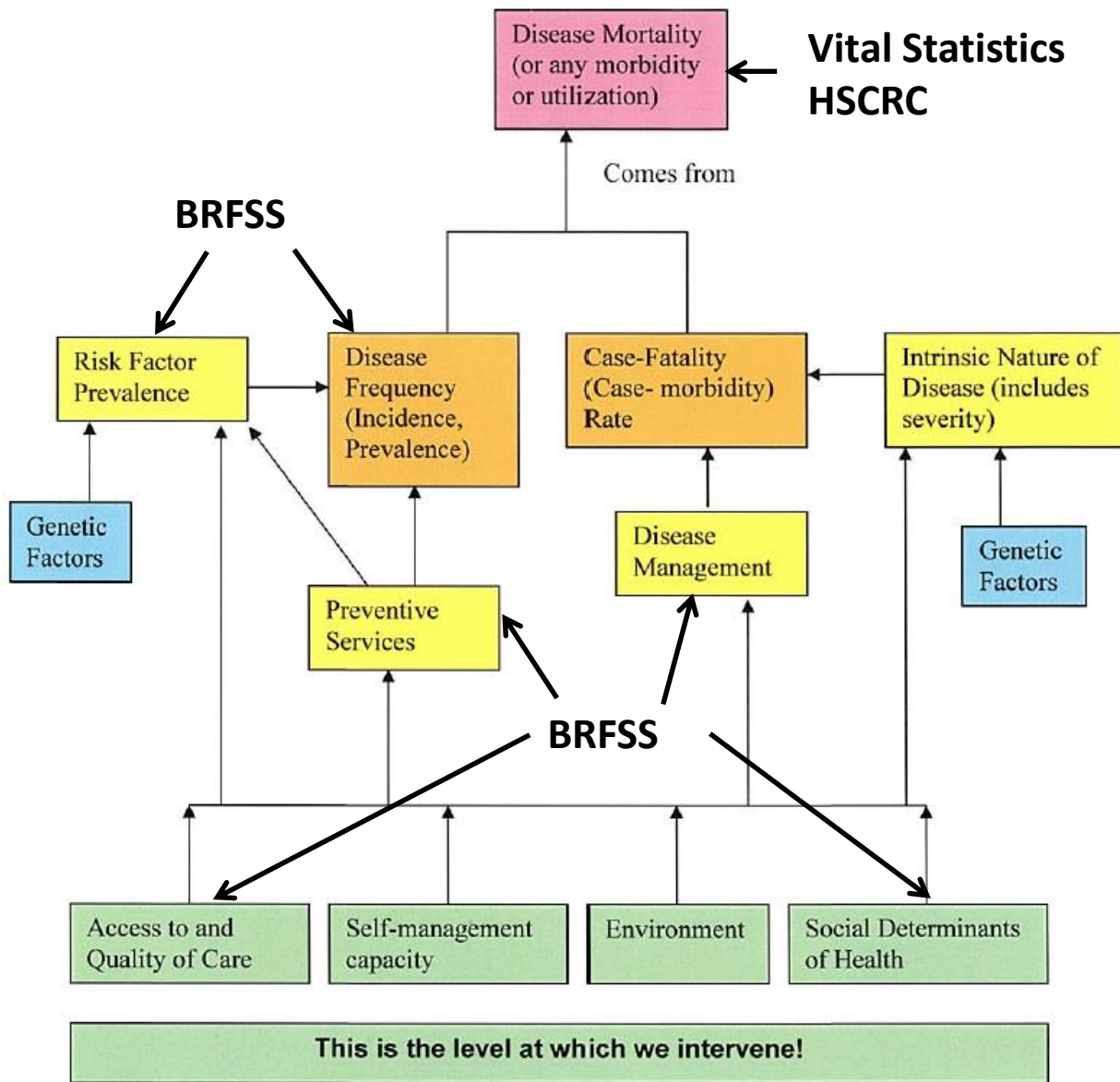
- 1. Identify, Quantify and Locate Health Disparities**
- 2. Identify causes and plan interventions**
- 3. Track Progress toward Elimination**

This is number 1 done serially over time

Types of Data for Describing Health Disparities

- *Ultimate outcomes of health:*
 - Mortality
 - Morbidity (*pain, suffering, disability*)
 - Health care use (*ED visits, hospital admissions*)
 - Cost (*closely related to health care use*)
- Mortality, as an example, is a product of:
 - Disease frequency (*how many cases?*)
 - Case-fatality rate (*how many deaths in cases?*)
- Other links in the chain:
 - Prevention and treatment health care services
 - Risk factors and Social Determinants of Health

Model of Data Interrelationships



Red = ultimate health Outcomes (death, morbidity, utilization)

Gold = Disease Impact and Frequency

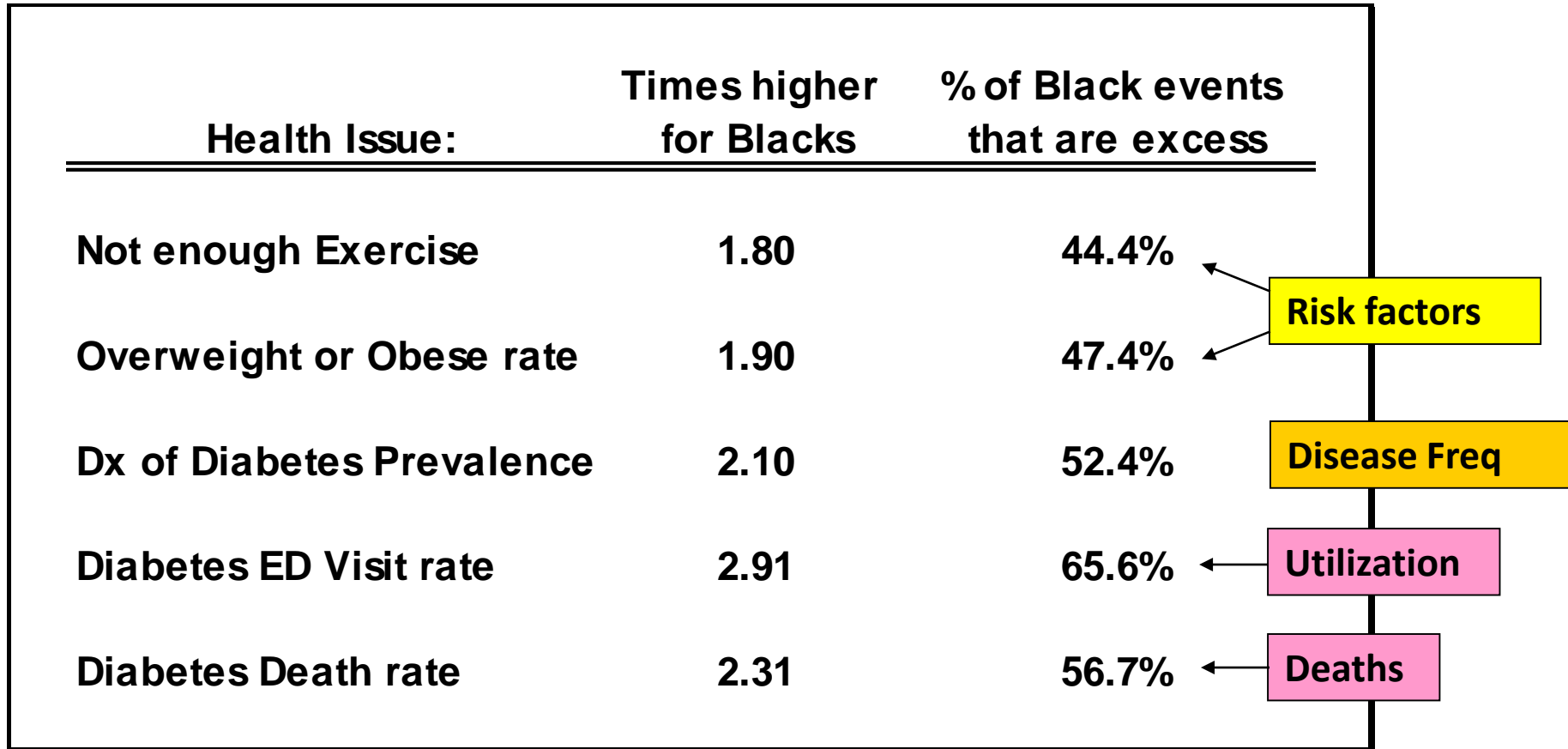
Yellow = patient characteristics we measure

Green = primordial factors that govern all the other issues.

This is where we intervene !

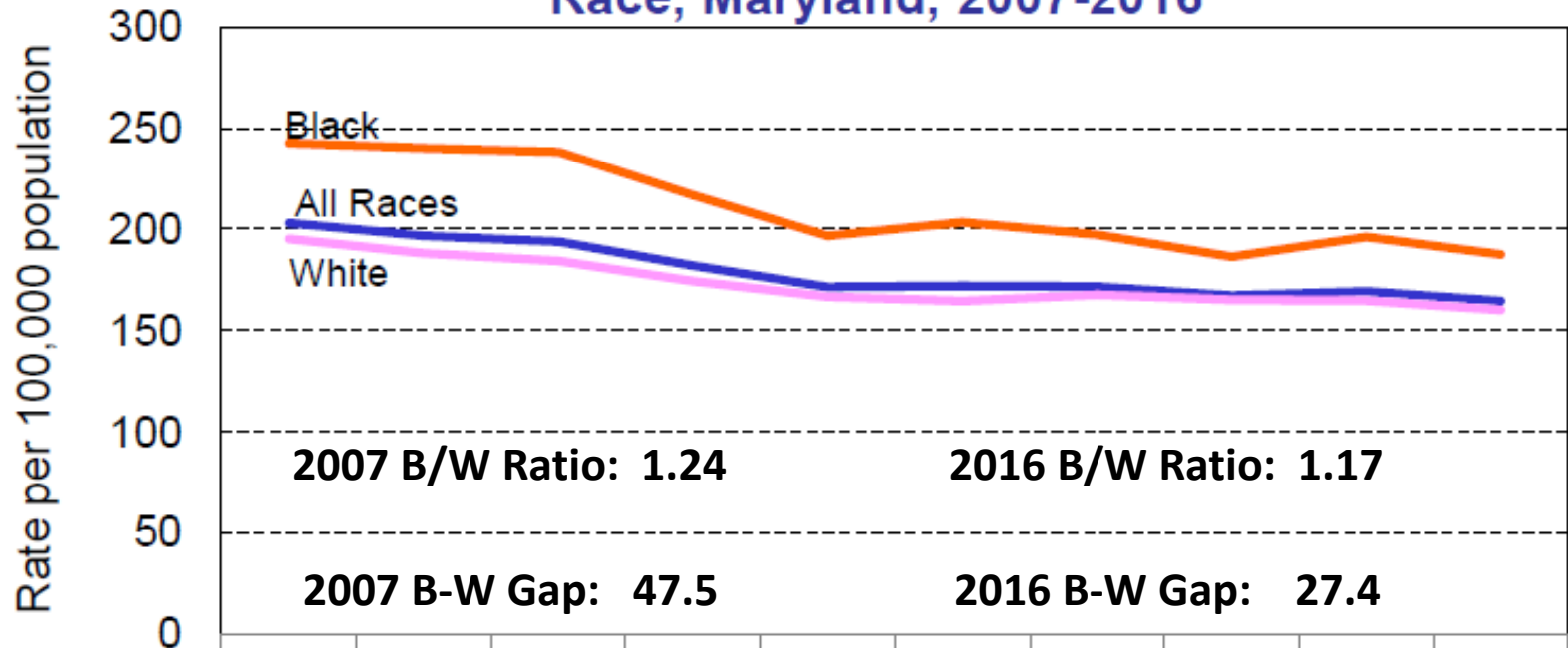
Chain of Disparities for Diabetes in Maryland

(2006-2010 data)



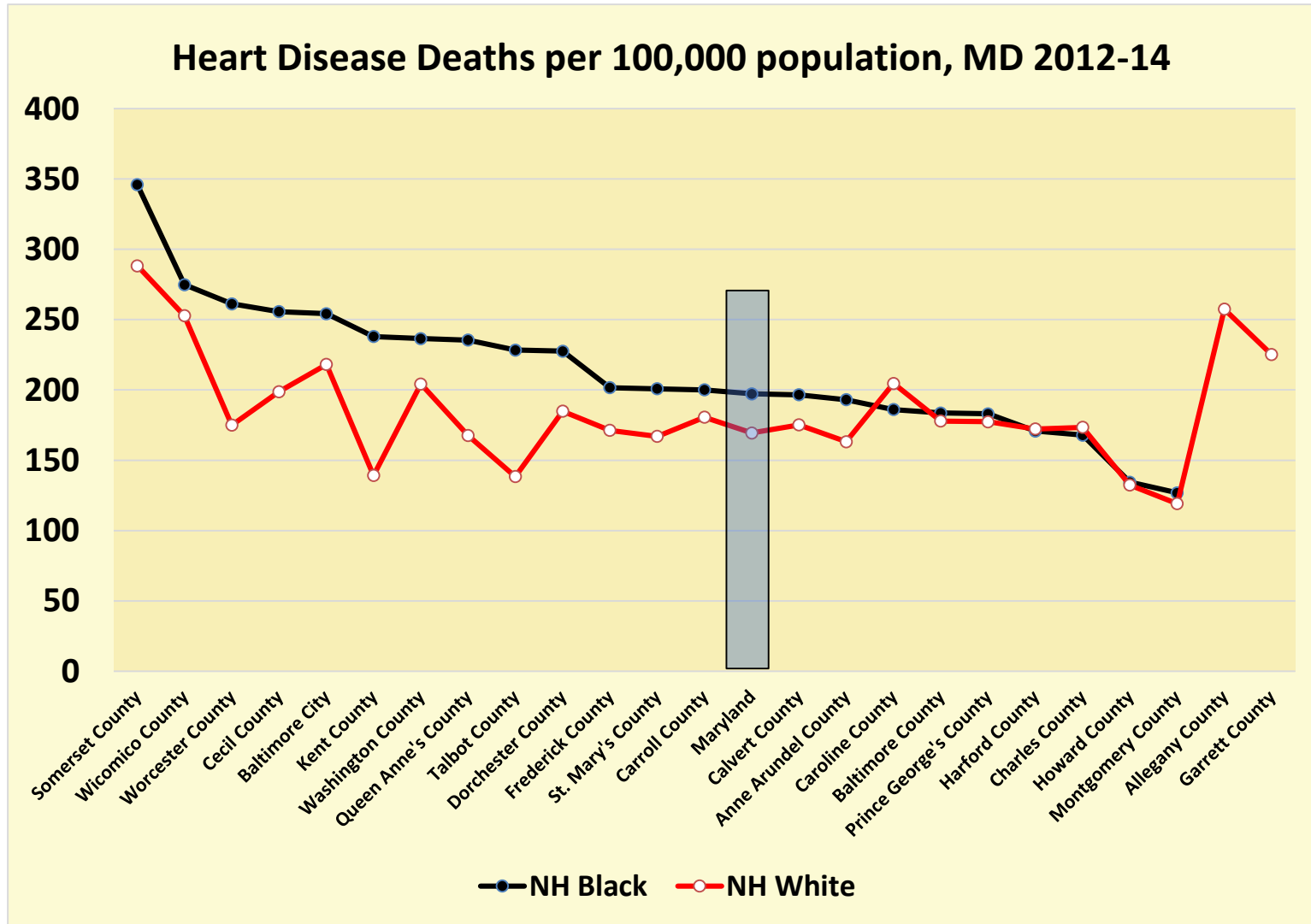
DISEASES OF THE HEART

Age-adjusted Death Rate* for Diseases of the Heart by Race, Maryland, 2007-2016



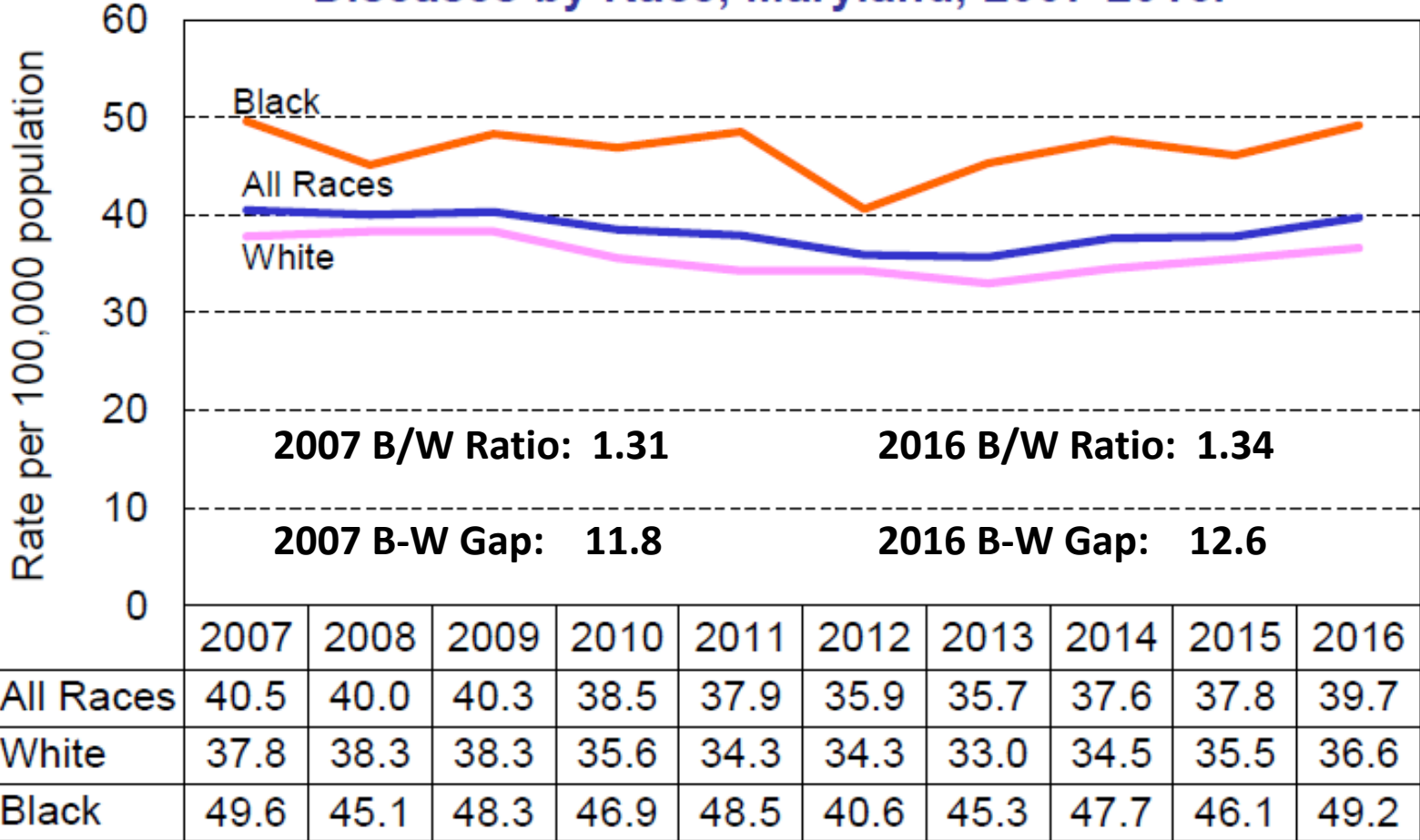
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
— All Races	203.0	196.7	193.9	182.0	171.4	171.9	171.7	167.2	169.3	164.6
— White	195.1	188.0	184.3	174.2	166.6	164.6	167.5	165.1	164.7	160.1
— Black	242.6	240.1	238.3	216.8	196.6	203.4	197.3	186.4	196.2	187.5

Heart Death Rate By Jurisdiction 2014



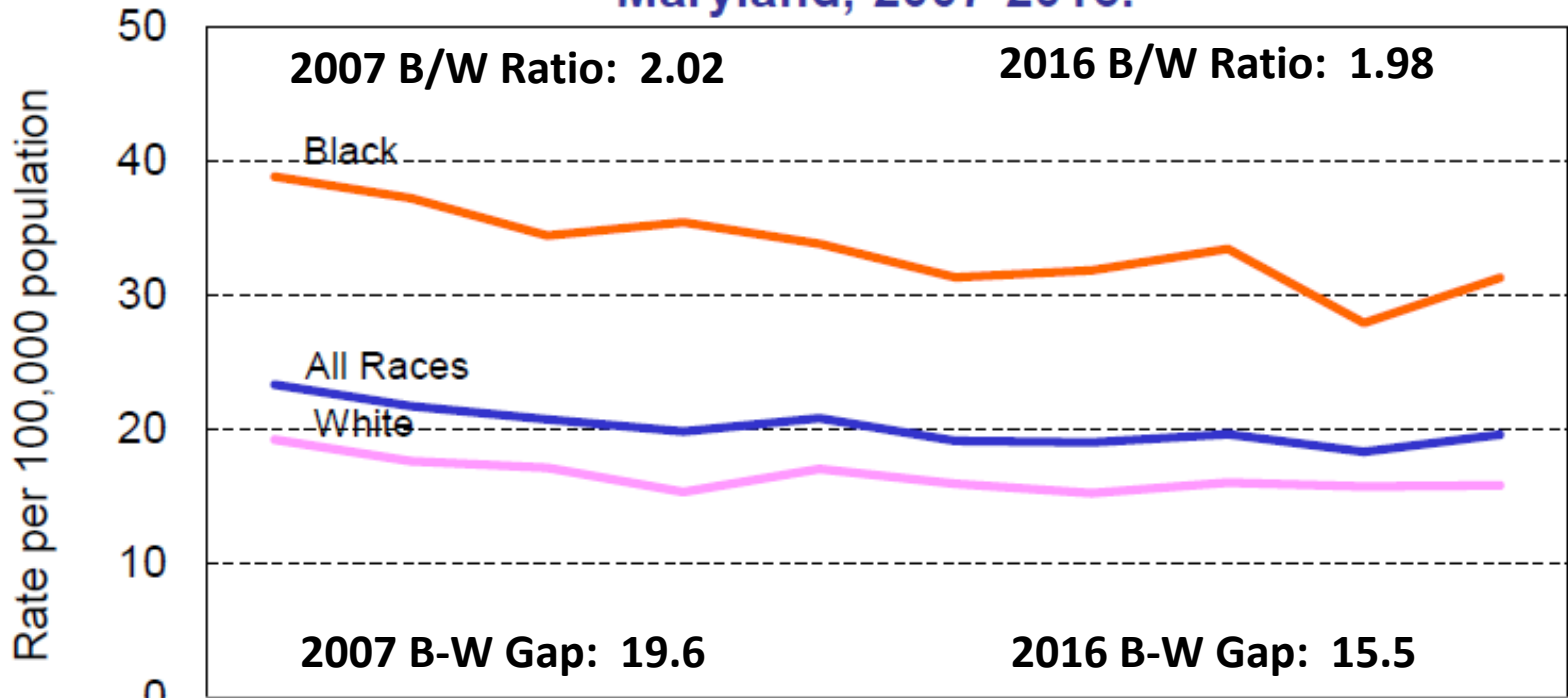
CEREBROVASCULAR DISEASES

Age-adjusted Death Rate* for Cerebrovascular Diseases by Race, Maryland, 2007-2016.



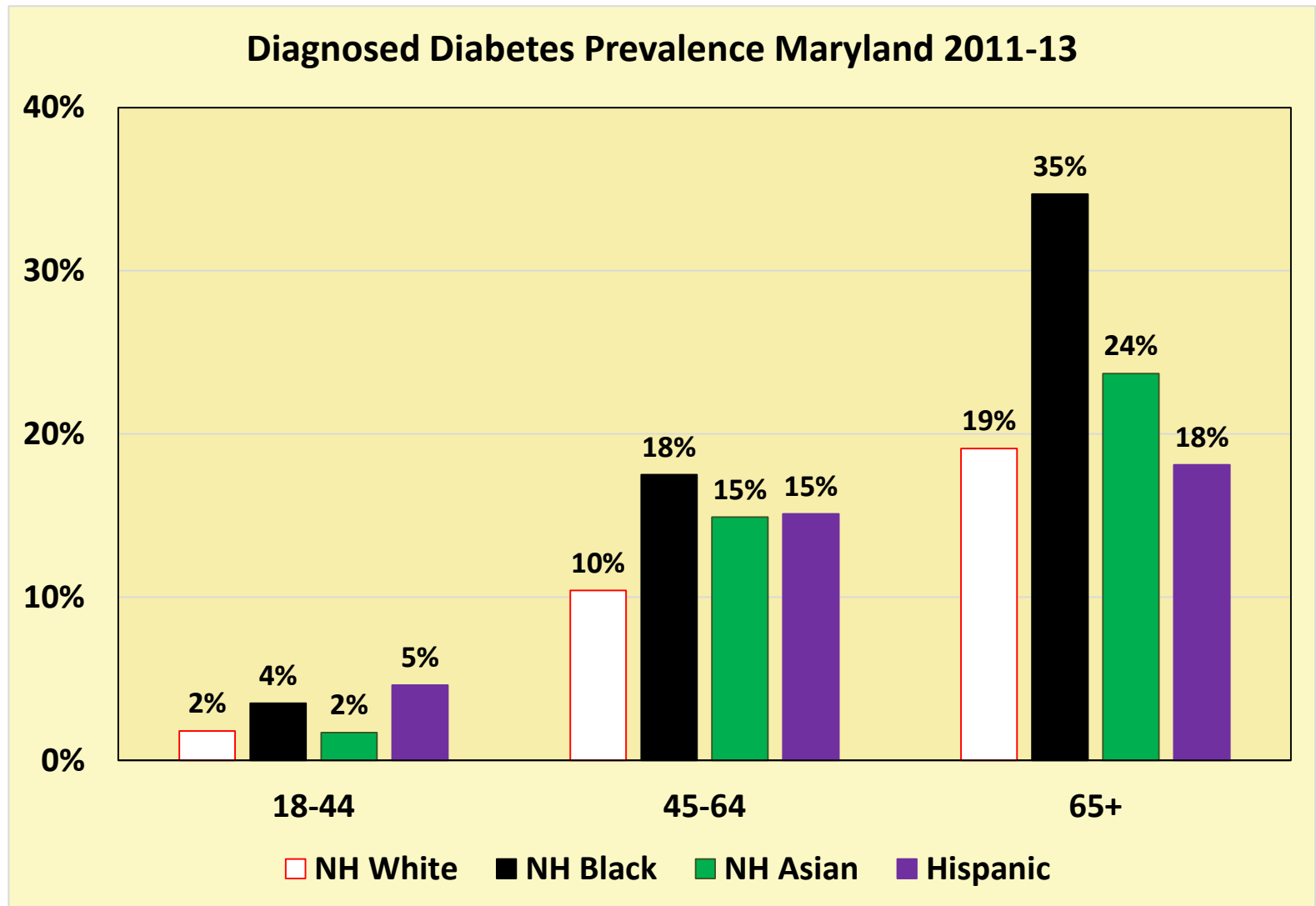
DIABETES MELLITUS

Age-adjusted Death Rate* for Diabetes by Race, Maryland, 2007-2016.

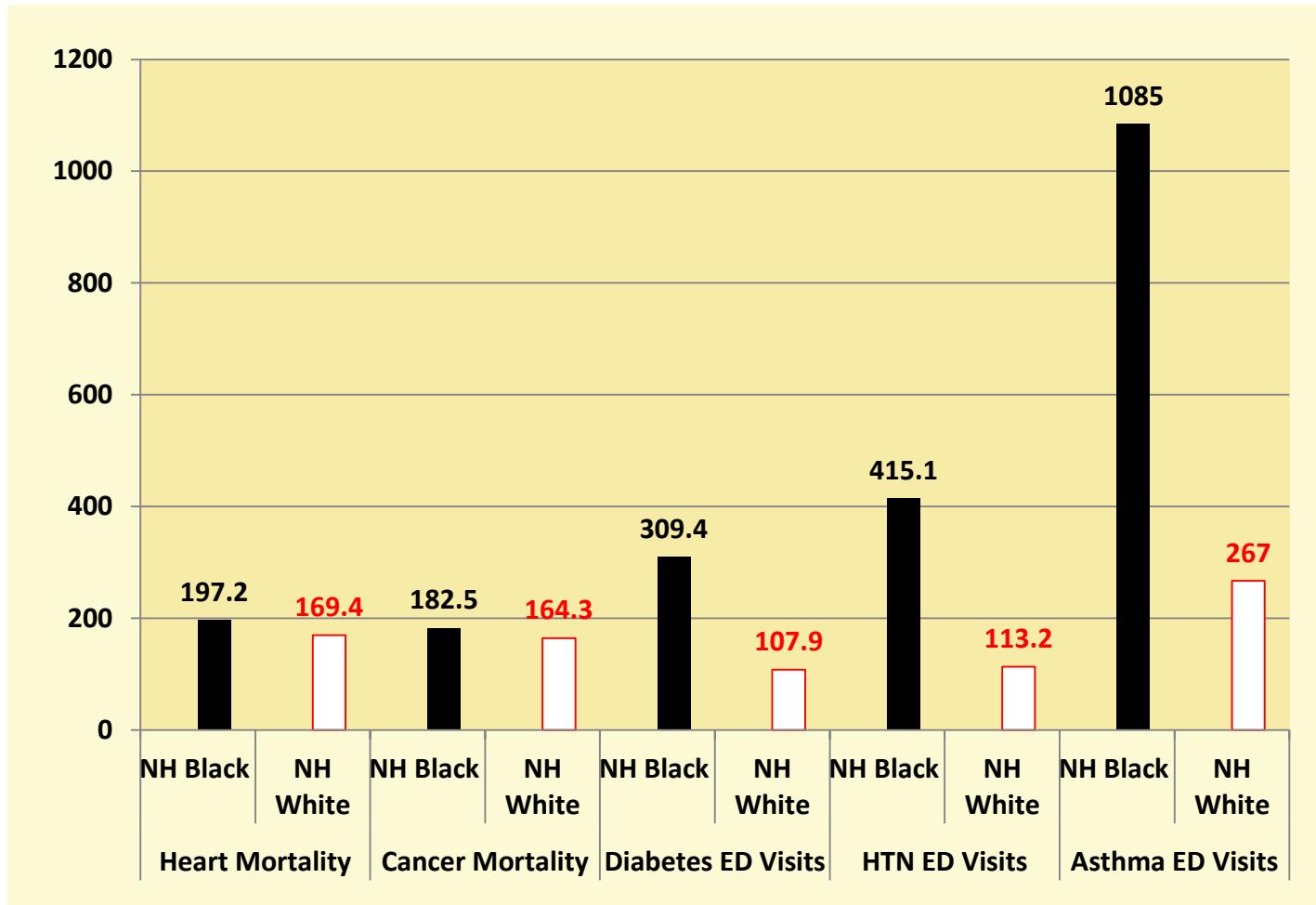


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
— All Races	23.3	21.7	20.7	19.8	20.8	19.1	19.0	19.6	18.3	19.6
— White	19.2	17.6	17.1	15.3	17.0	15.9	15.2	16.0	15.7	15.8
— Black	38.8	37.2	34.4	35.4	33.8	31.3	31.8	33.4	27.9	31.3

Diabetes Prevalence by Race and Ethnicity



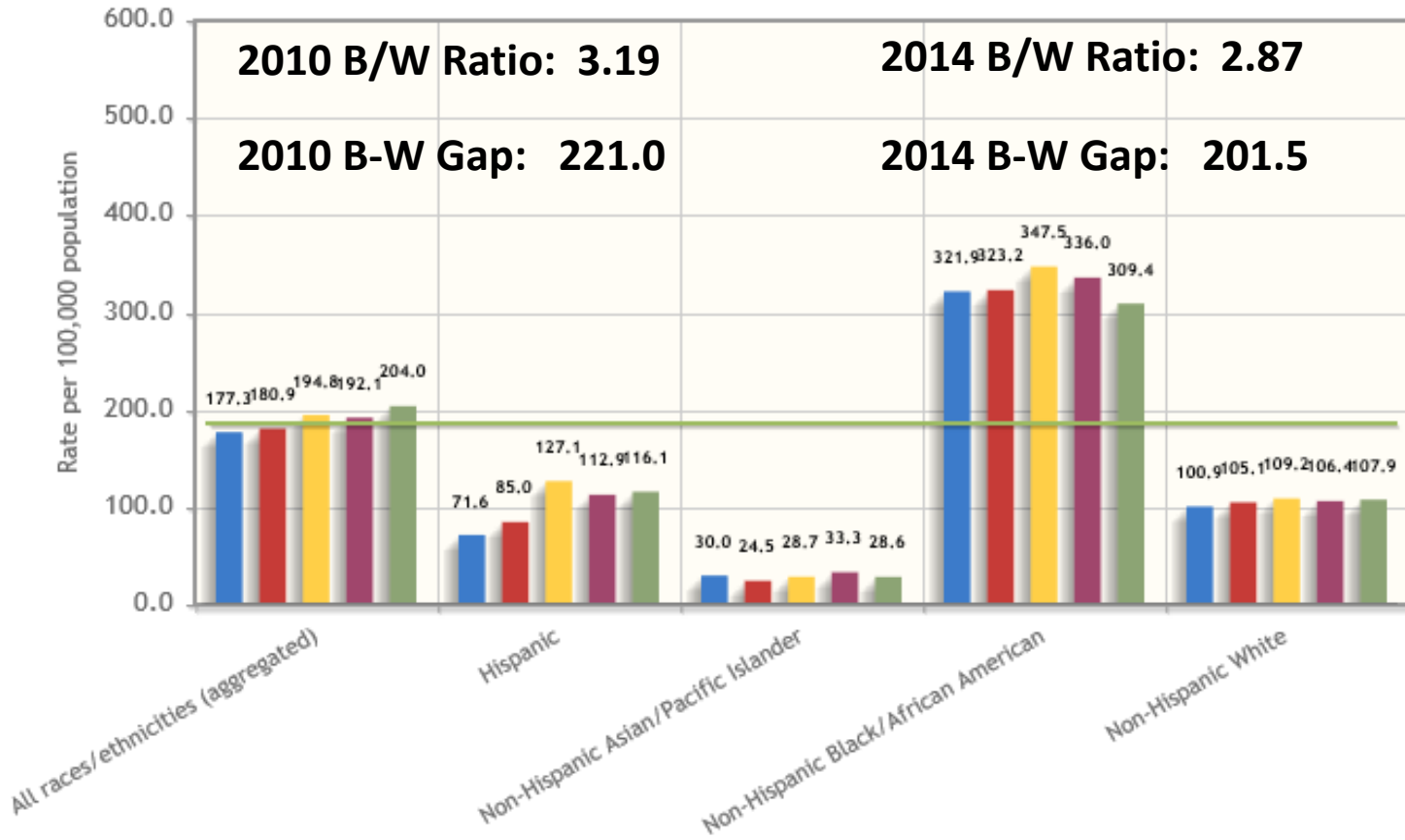
Events (Deaths or ED visits) per 100,000, Maryland, 2012-14 (deaths) or 2014 (ED)



Measurement Period: 2014

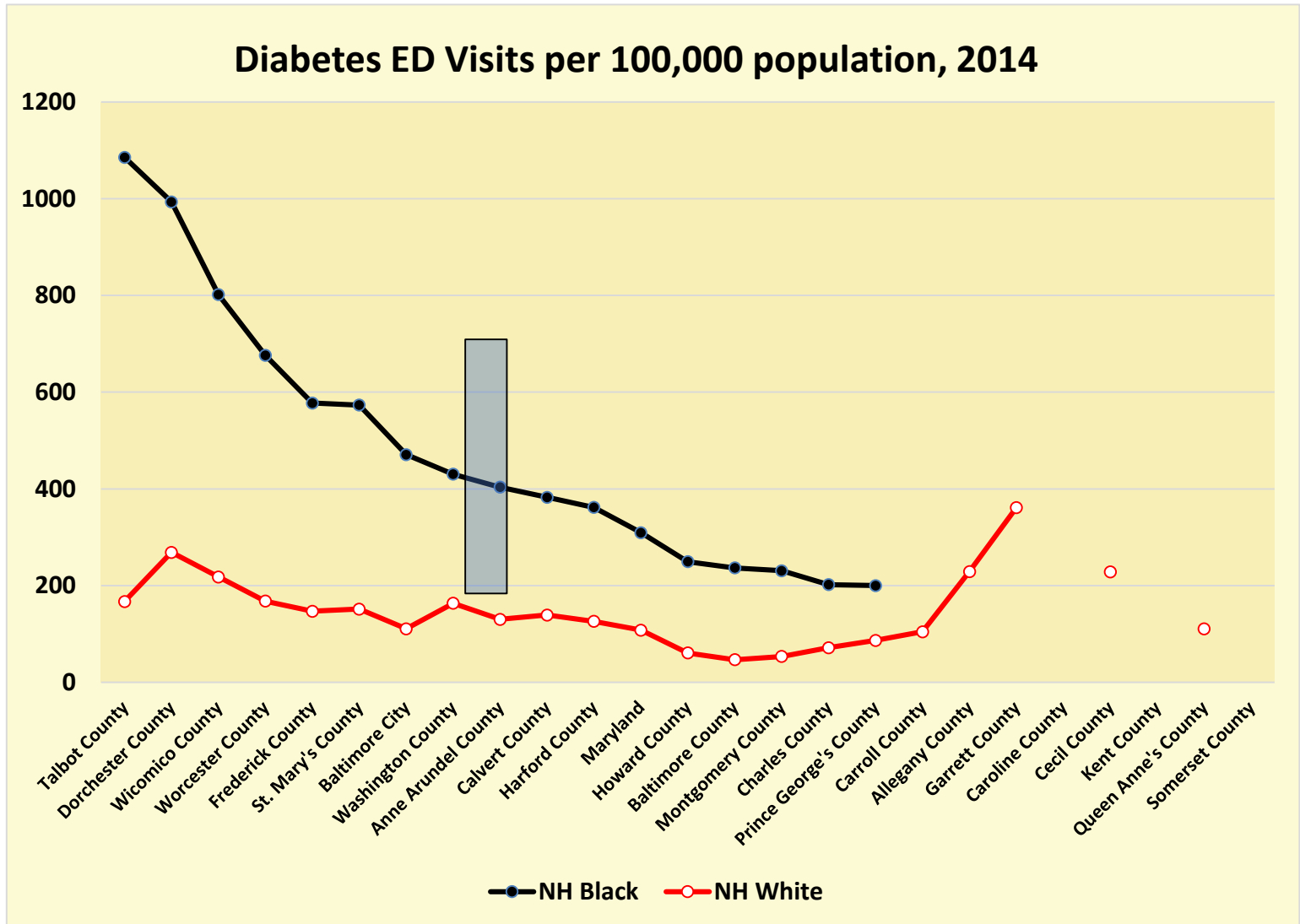
Diabetes ED Visits

State Chart | State Historic Chart | County Chart | All Charts



Diabetes ED Visit Rate By Jurisdiction

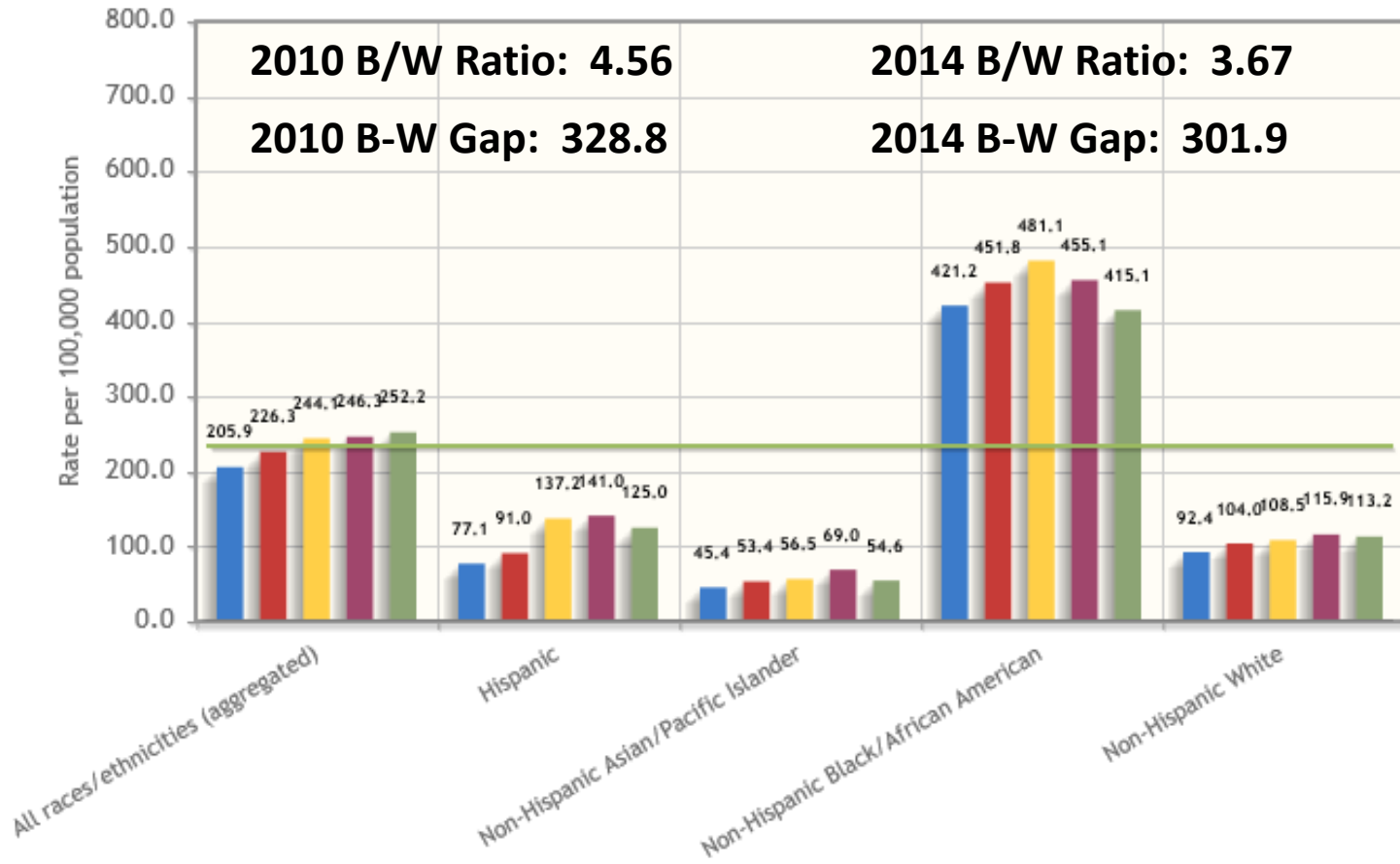
2014



Measurement Period: 2014

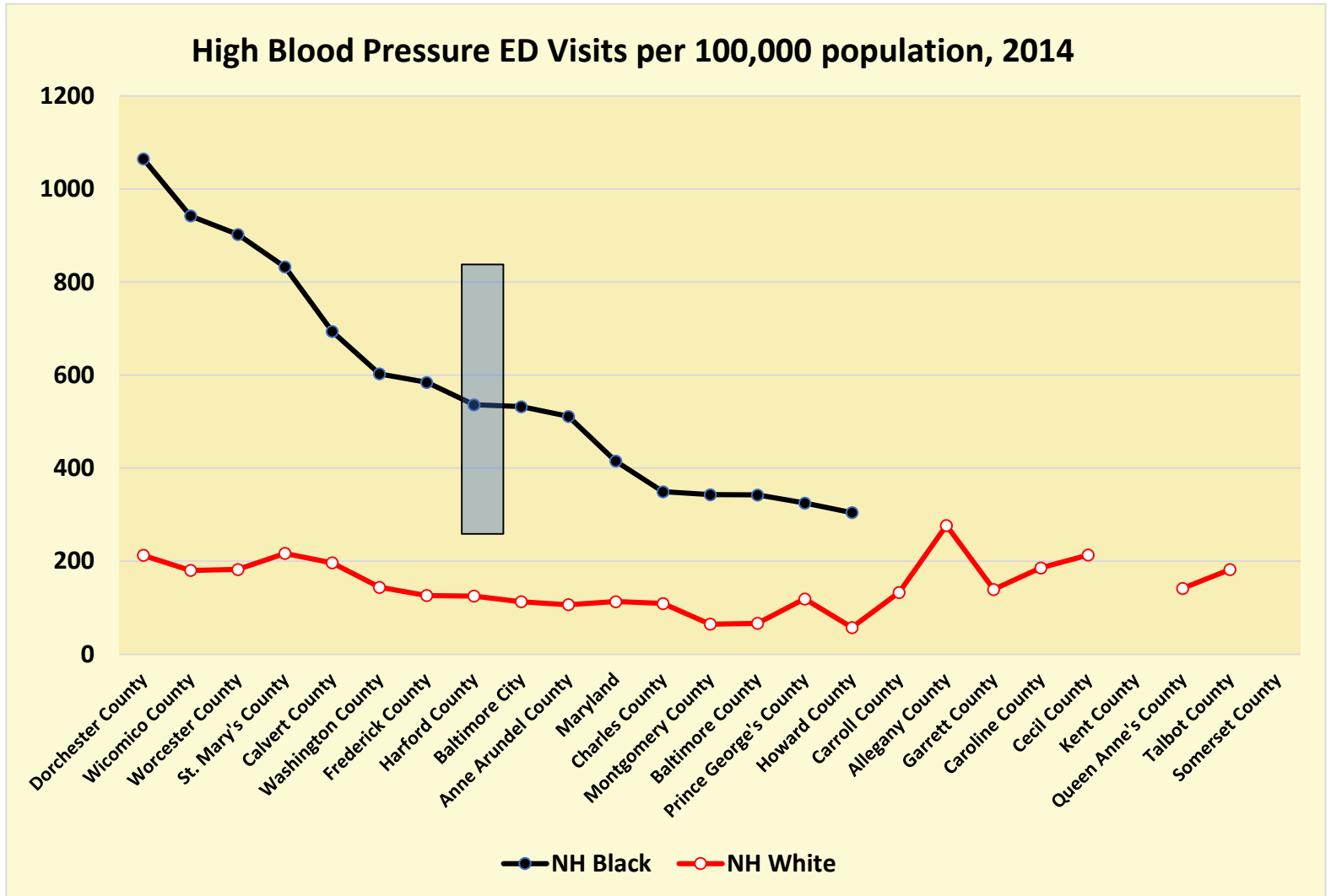
High BP ED Visits

State Chart State Historic Chart County Chart All Charts



High BP ED Visit Rate By Jurisdiction

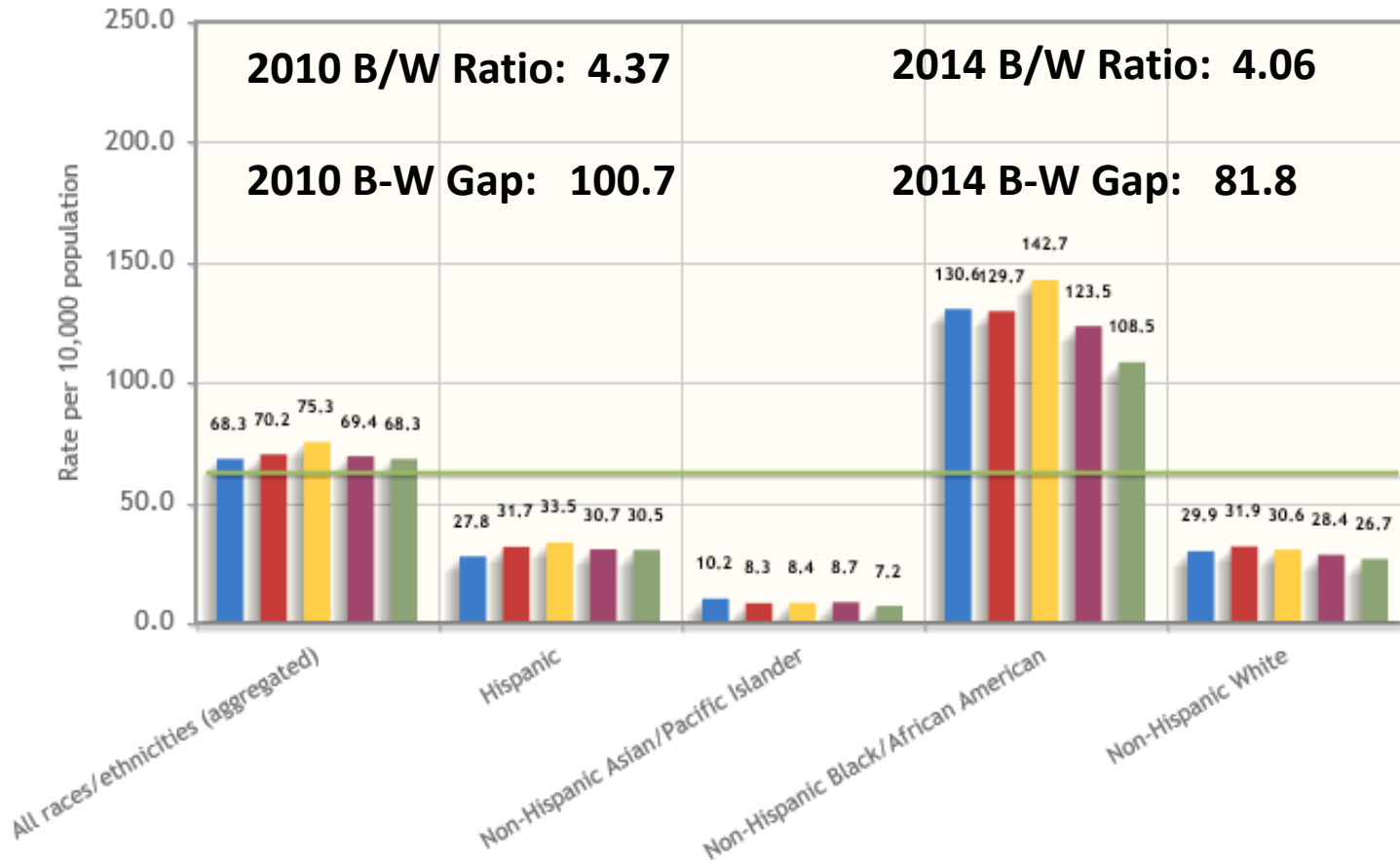
2014



Measurement Period: 2014

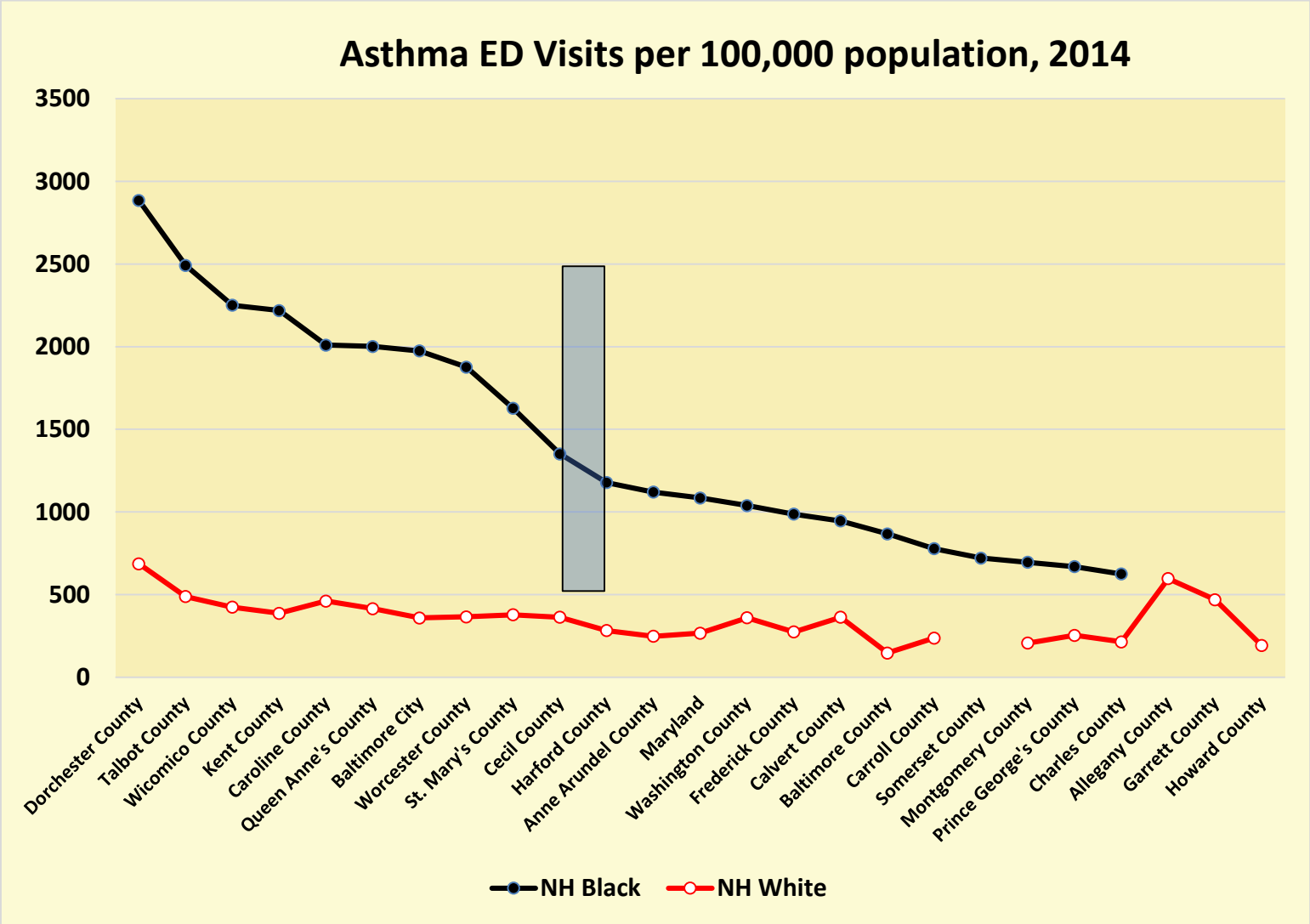
Asthma ED Visits

State Chart State Historic Chart County Chart All Charts



Asthma ED Visit Rate By Jurisdiction

2014



Where Do the Solutions Lie?

- **Must go beyond health care access**
 - **Similar rates of usual source of primary care**
 - **Closing gap in health un-insurance**
- **Look to quality and effectiveness of care**
- **Look to health behaviors**
- **Look to social determinants of health**
 - **“SEE Equity”**: Social, Economic, Environmental Equity

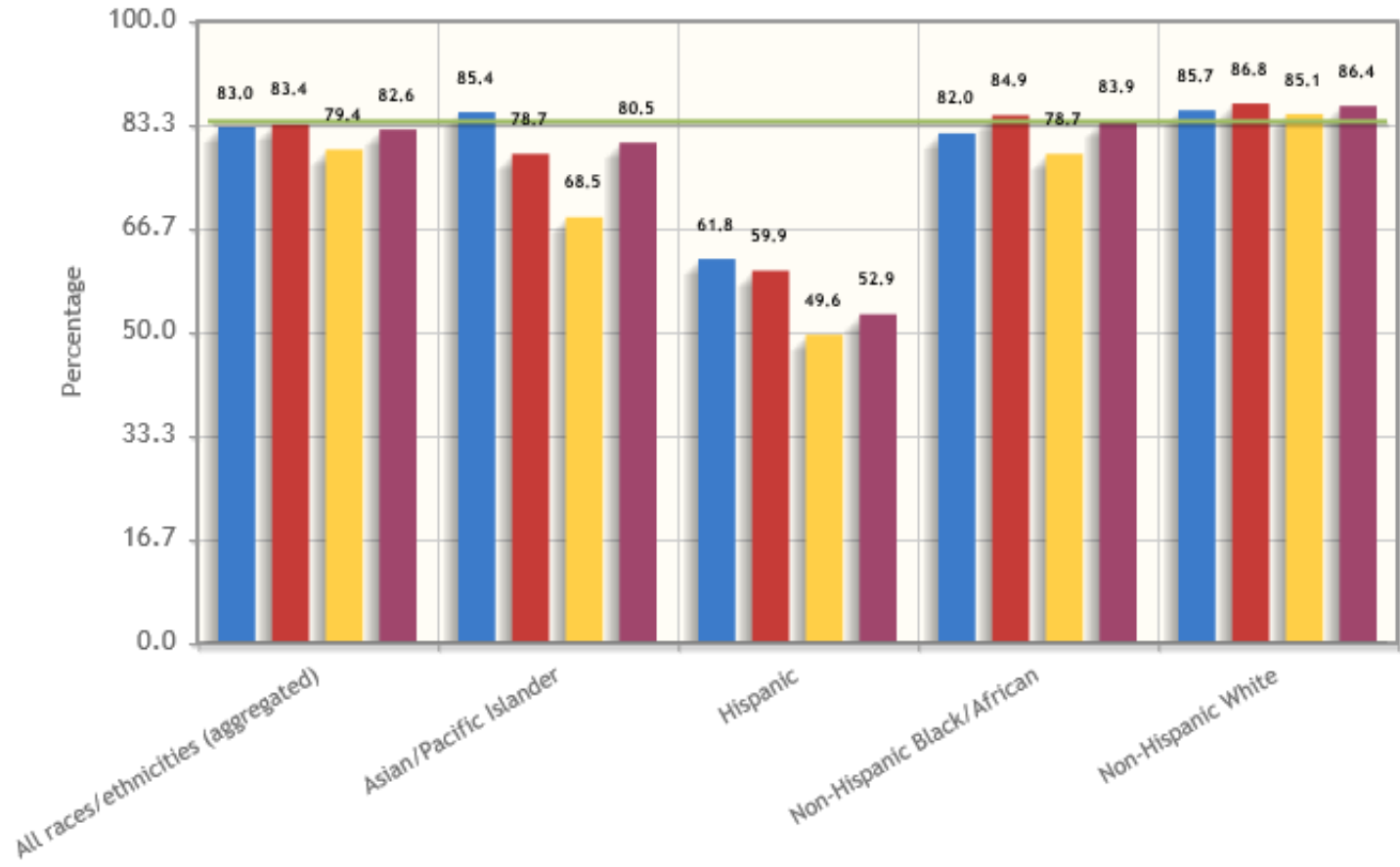
Usual Primary Care Provider

Measurement Period: 2014

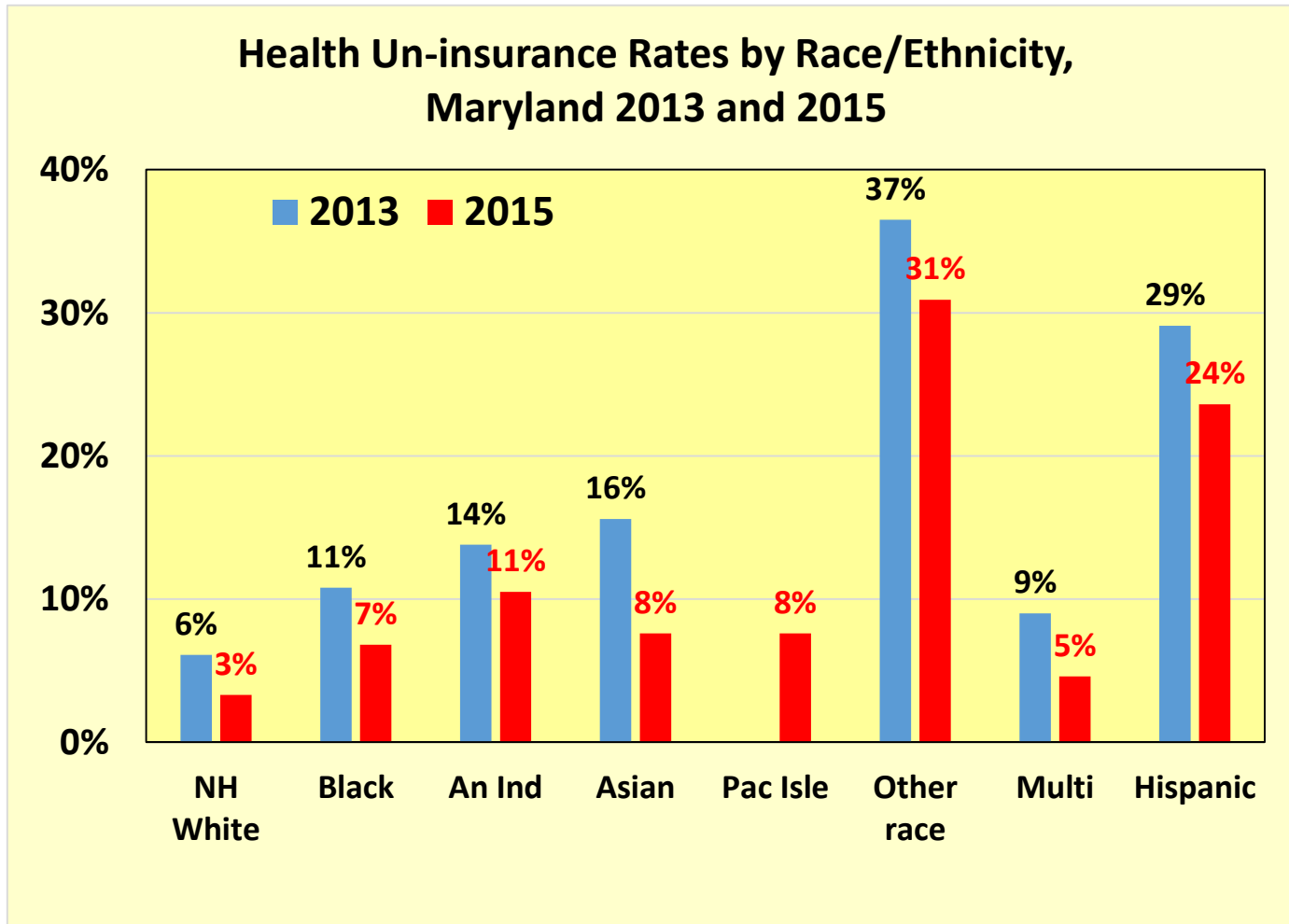
State Chart State Historic Chart County Chart All Charts

MD 2017 Goal 83.9

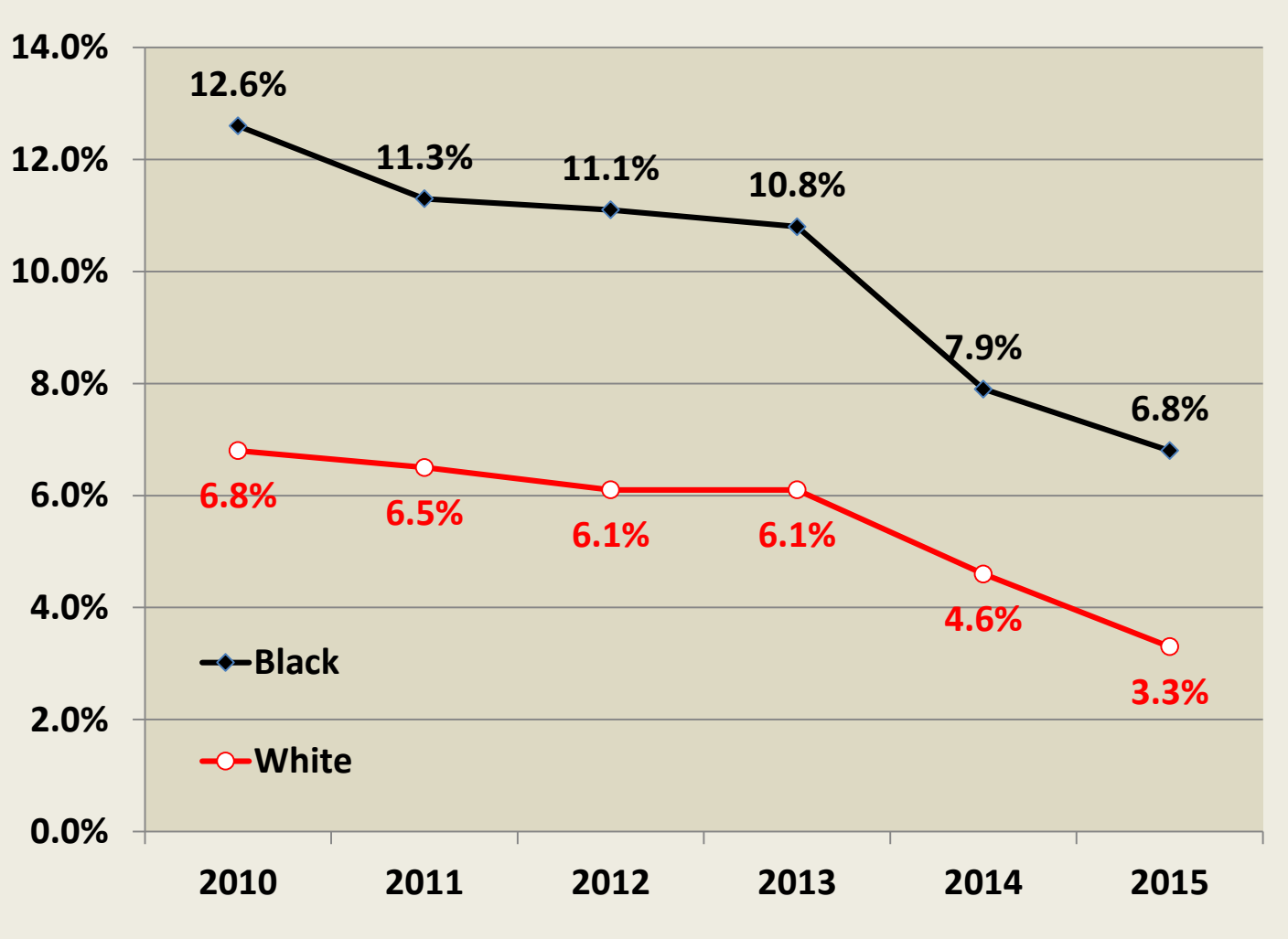
2011 2012 2013 2014



Health Un-insurance by Race and Ethnicity, Maryland 2013 and 2015



Maryland Health Un-insurance Rates By Race

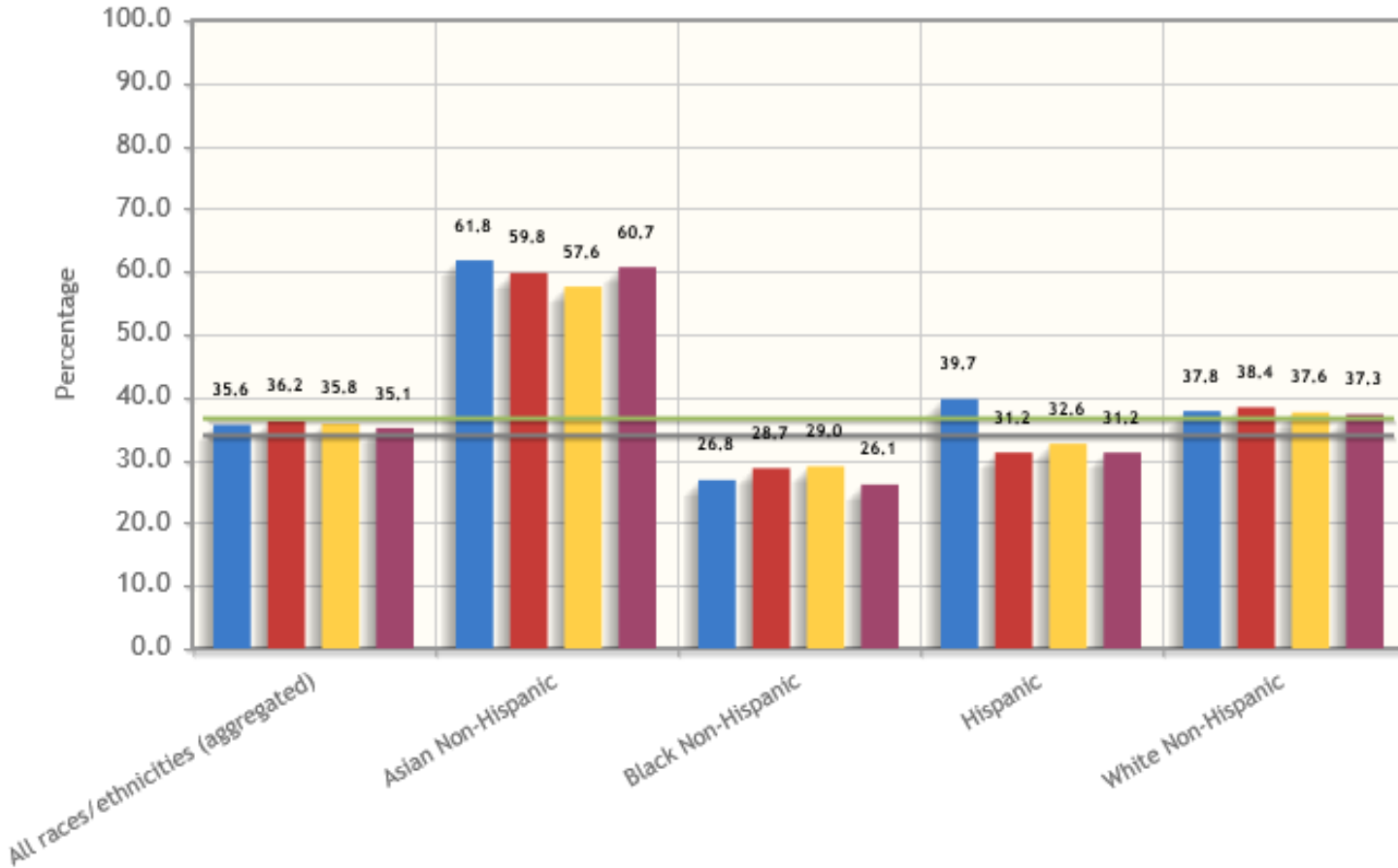


Measurement Period: 2014

Not Overweight or Obese

State Chart | State Historic Chart | County Chart | All Charts

HP 2020: 33.9 | MD 2017 Goal: 36.6 | 2011 | 2012 | 2013 | 2014



Adequate Physical Activity

Measurement Period: 2013

State Chart

State Historic Chart

County Chart

All Charts

HP 2020:

47.9

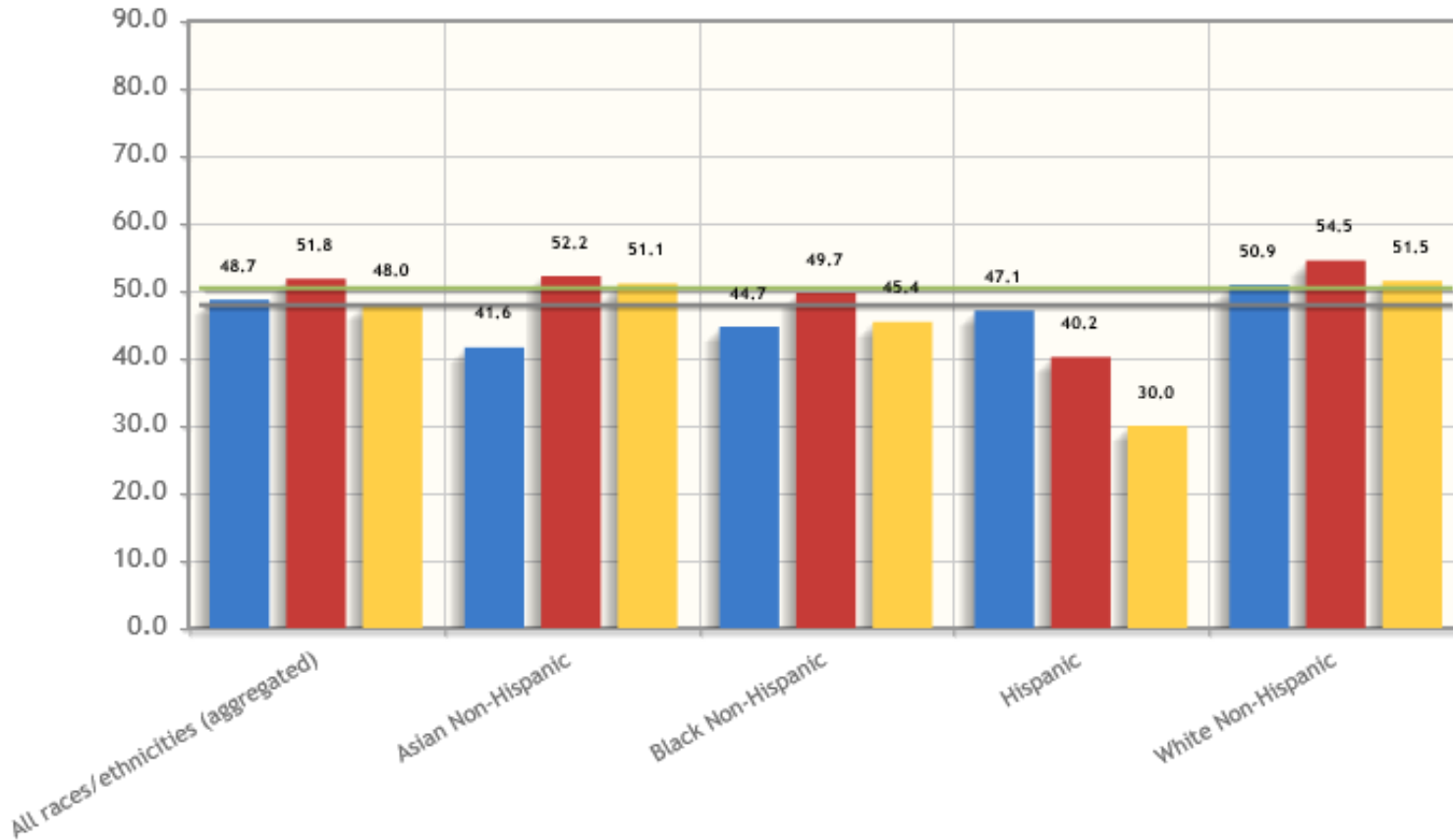
MD 2017 Goal

50.4

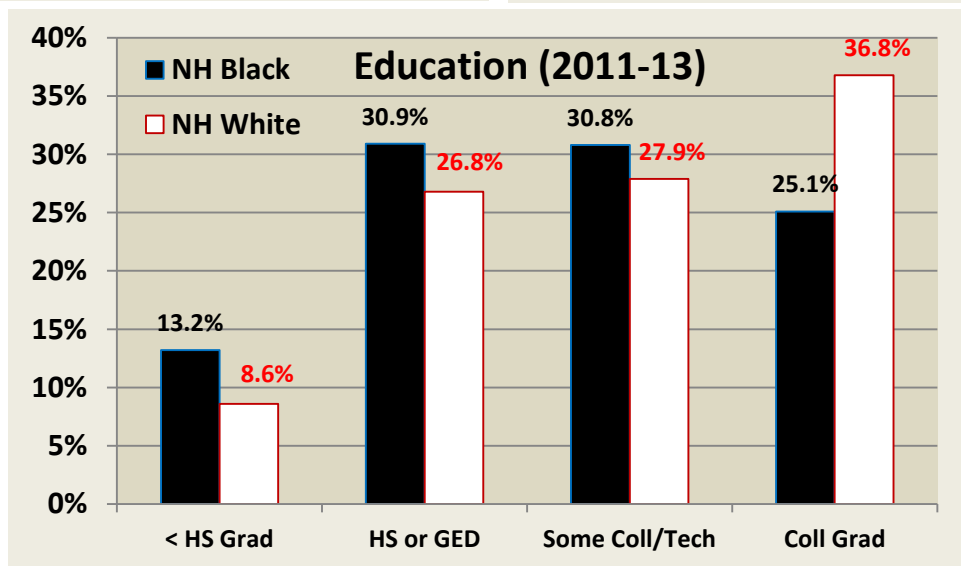
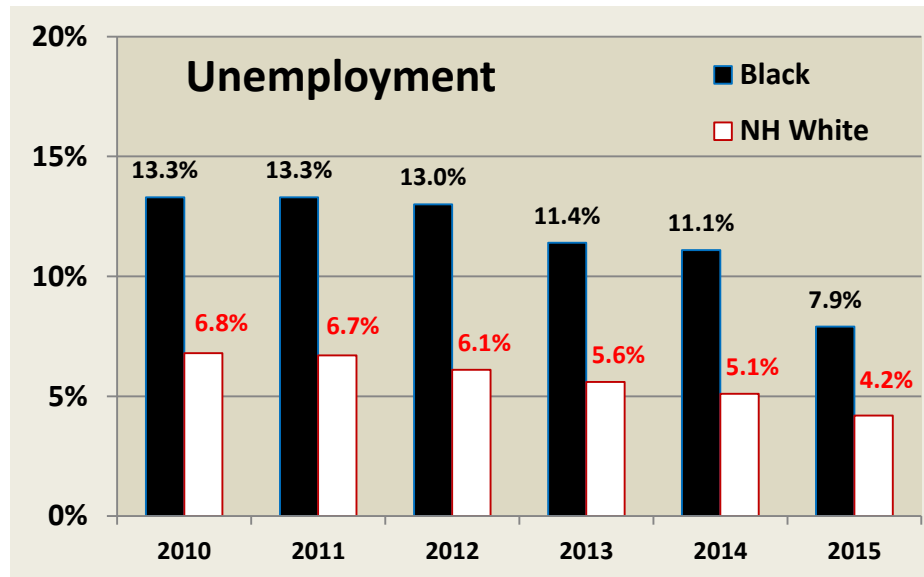
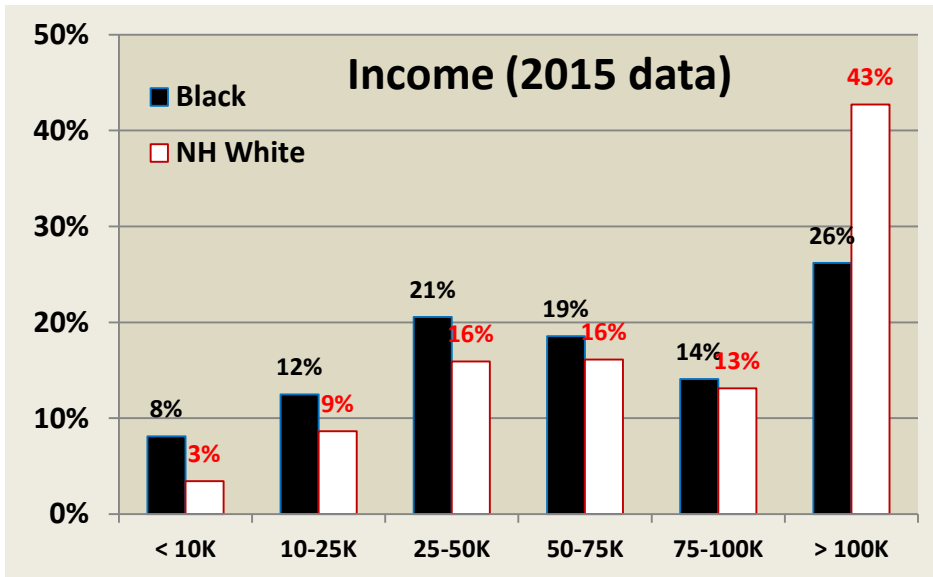
2011

2012

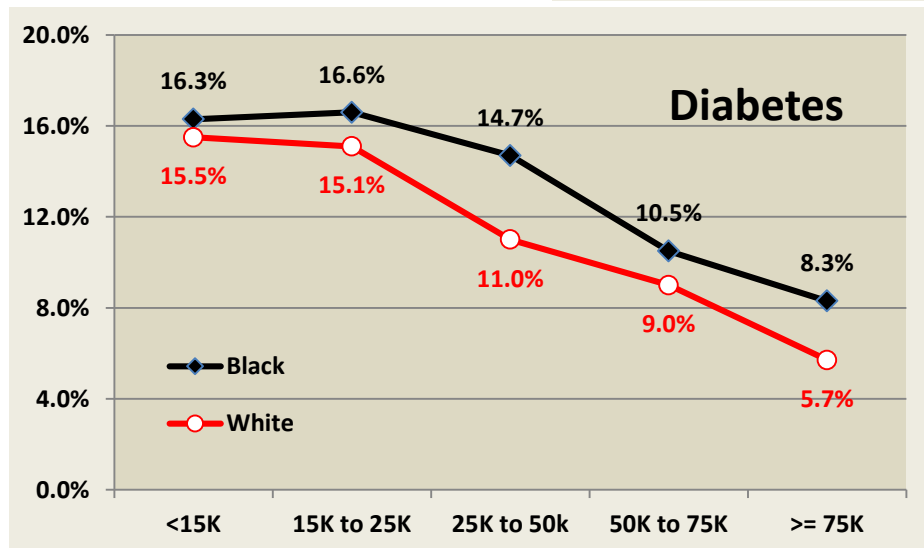
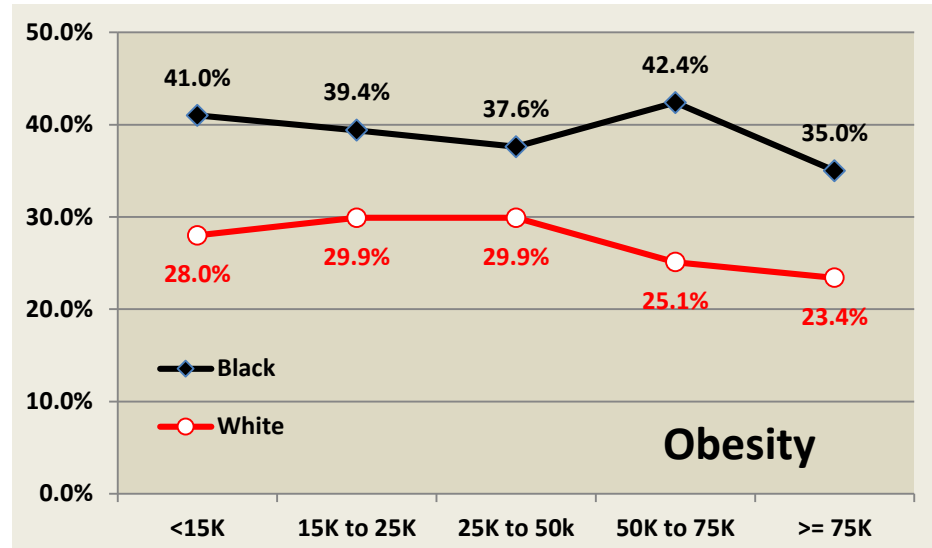
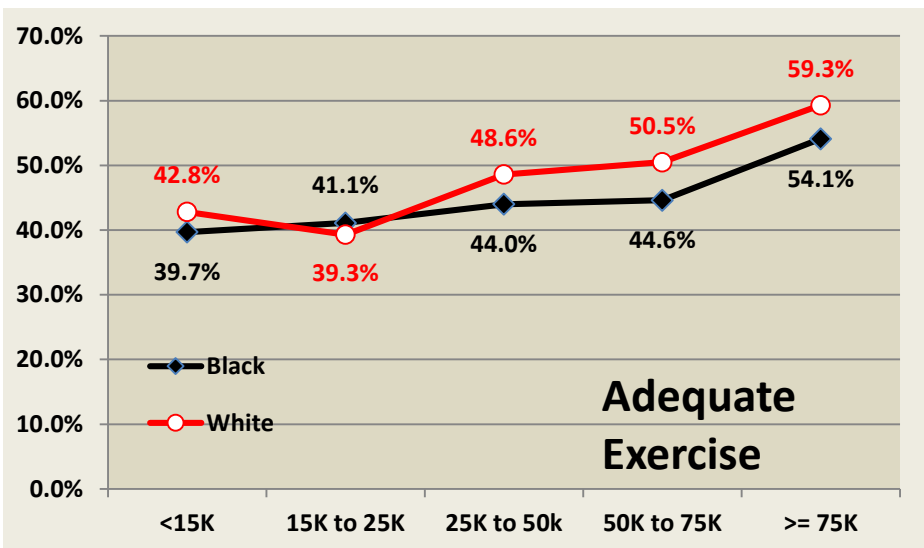
2013



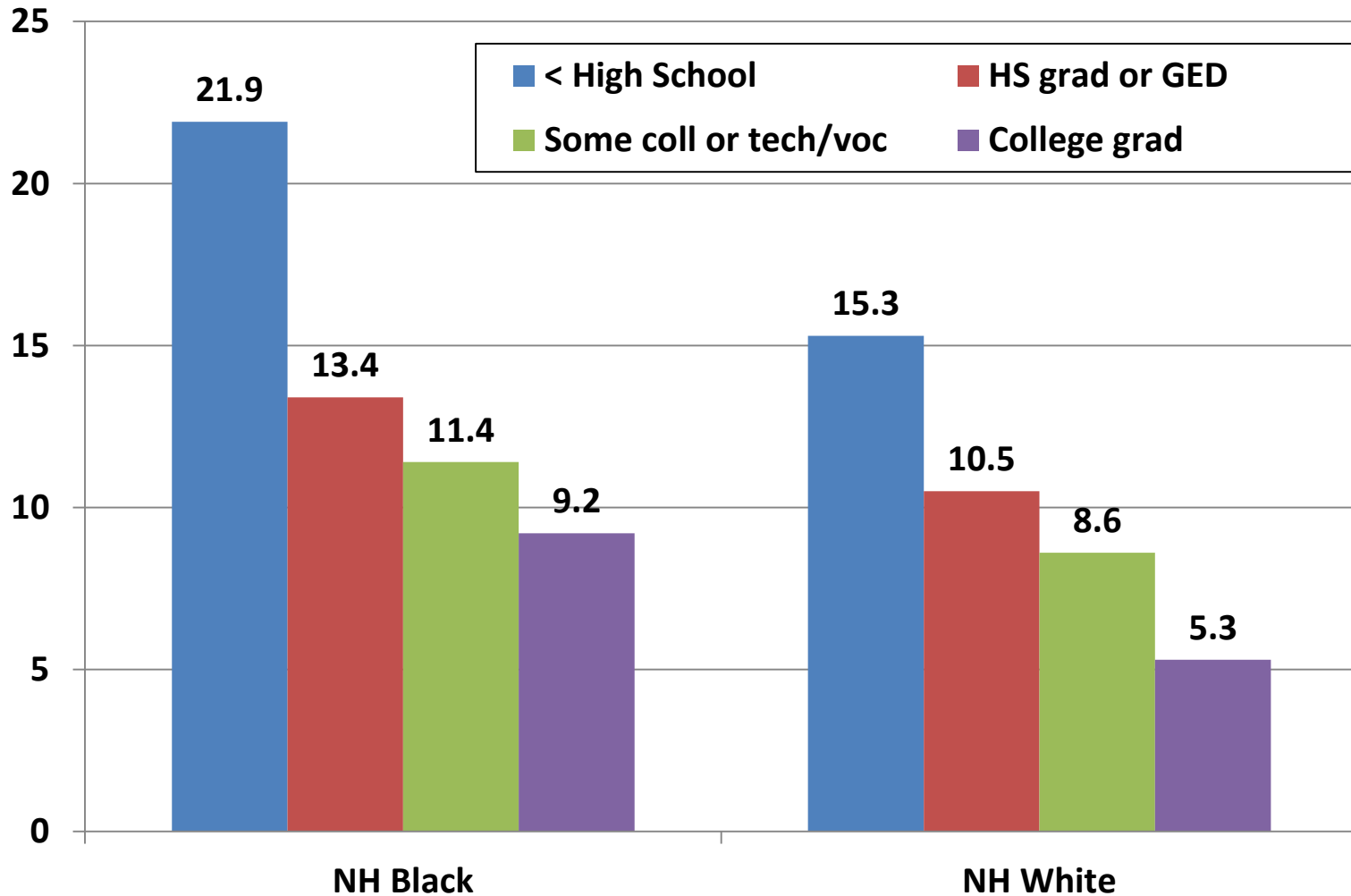
Education, Income, Unemployment in Maryland



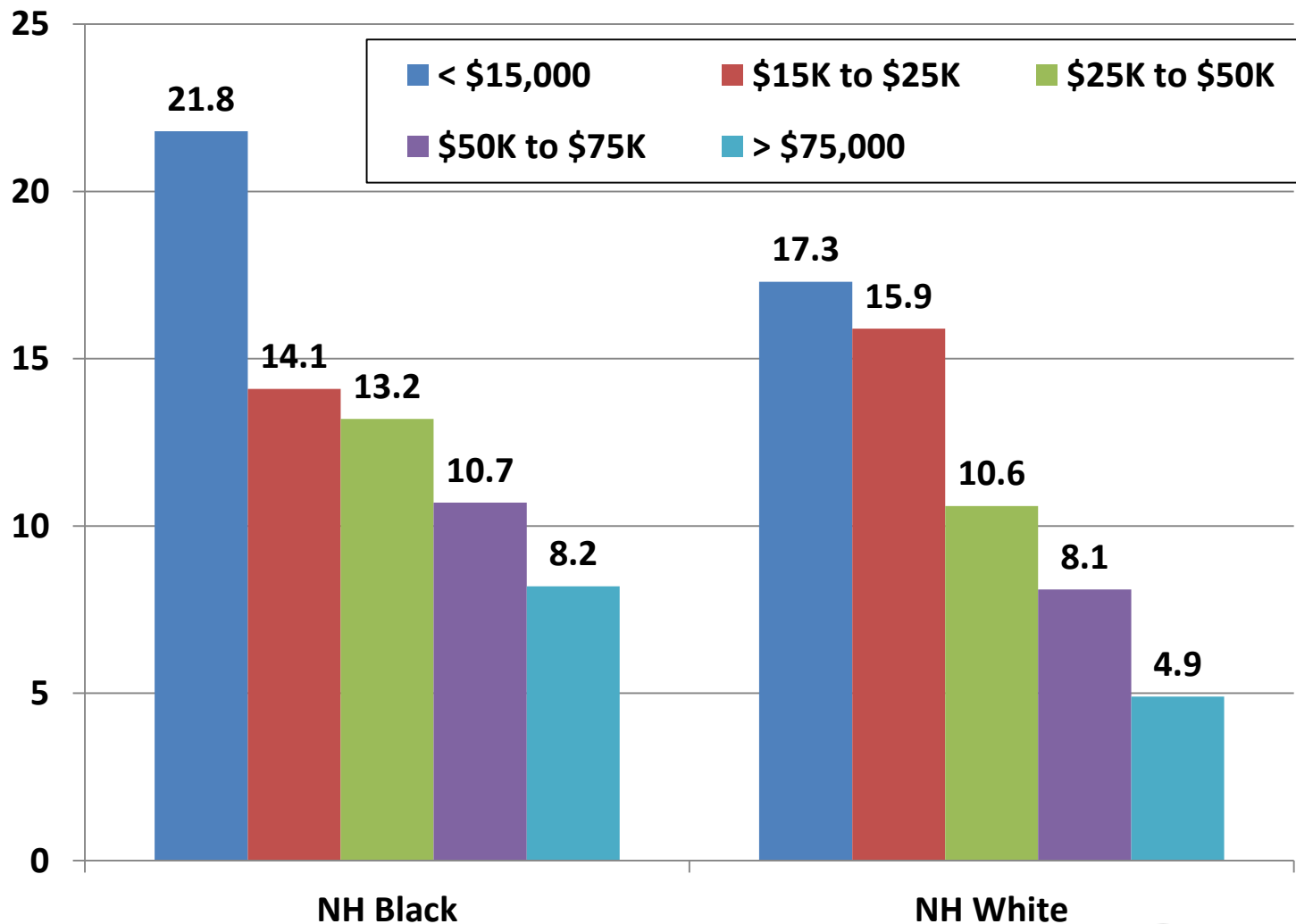
Income and Exercise, Obesity, Diabetes in Maryland (2011-2013 data)



Diabetes Prevalence by Educational Attainment And Race Maryland BRFSS 2006-2010 Combined



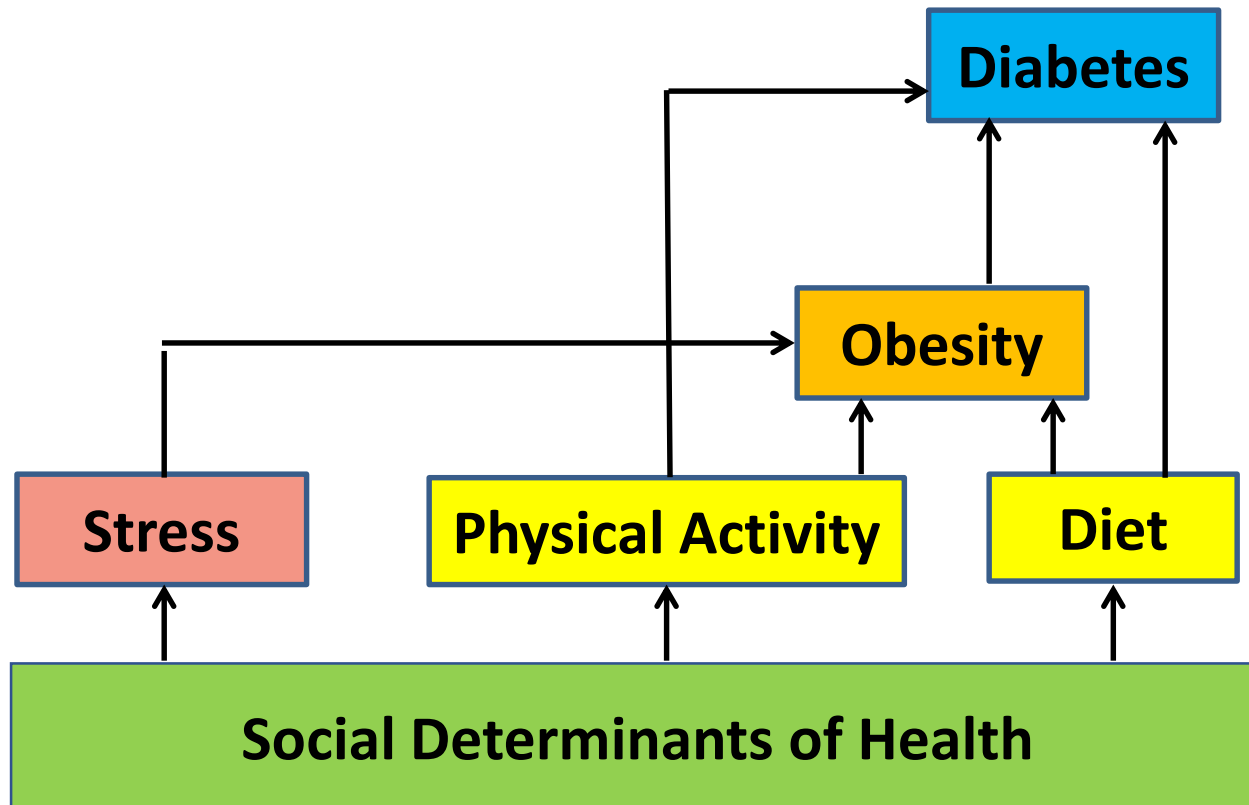
Diabetes Prevalence by Income and Race Maryland BRFSS 2006-2010 Combined



How Do Social Factors Determine Health?

- Access to Healthcare
- Capacity for Self-Care
 - Education
 - Income
 - Available healthy food and safe exercise
- Safety and Risk
 - Violence
 - Toxins
 - Housing stock
- Chronic Stress
 - Racism
 - Poverty
 - Housing, food, utilities, health care insecurity

How Do Social Factors Determine Diabetes ?



MARYLAND DEPARTMENT OF HEALTH

Diabetes Prevention and Cardiovascular Wellness in African Americans

Sadie Peters, MD, MHS

Center for Chronic Disease Prevention and Control

February 27, 2018

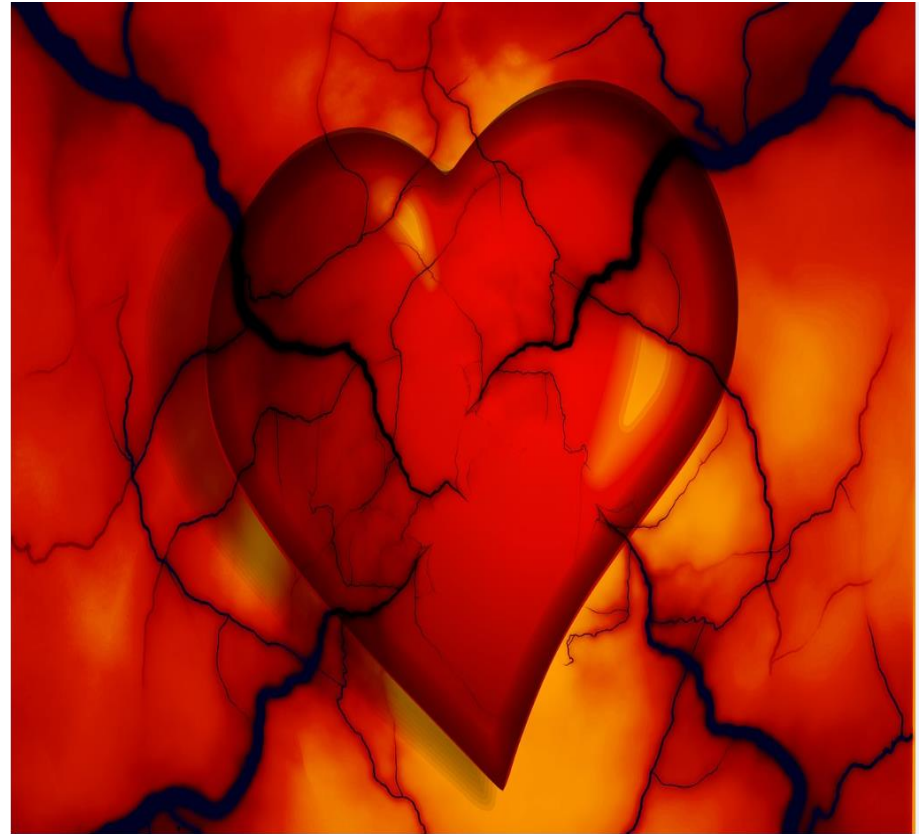
Objectives:

- Review the risks for diabetes and heart disease and their distribution by race in Maryland
- Understand how to lower the modifiable risks
- Learn about evidence-based programs that provide support for individuals with heart disease and diabetes, as well as individuals who are at risk for these health conditions

Risk Factors for Heart Disease

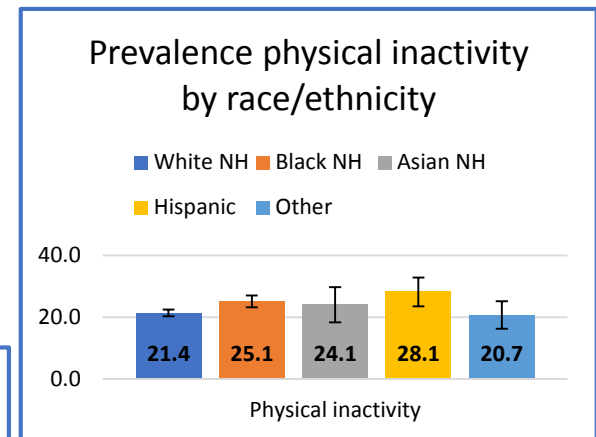
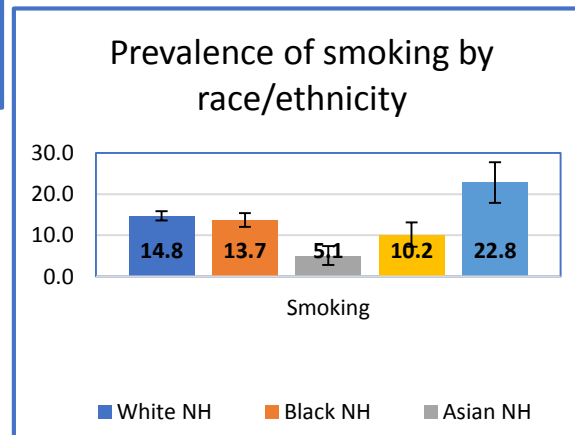
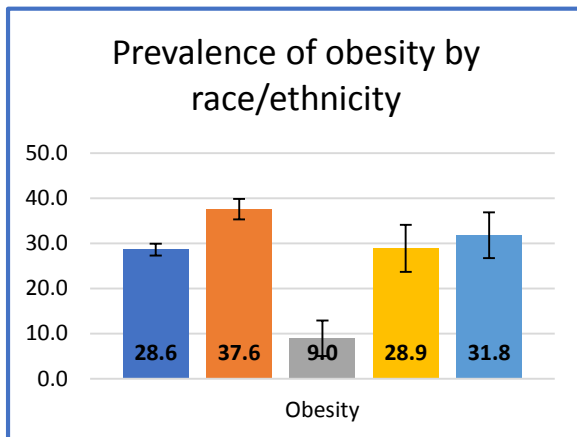
- High blood pressure
- High blood cholesterol
- Diabetes and prediabetes
- Smoking
- Being overweight or obese
- Being physically inactive
- Unhealthy diet

- Family history of early heart disease
 - Father/brother before age 55, mother/sister before 65
- History of preeclampsia during pregnancy
- Age
 - 45 or older, men
 - 55 or older, women



Source: <https://pixabay.com/en/photos/heart%20disease/>

Obesity, Smoking, & Physical Inactivity



Source:
2016 Maryland Behavioral Risk Factor Surveillance System (BRFSS)

Lower Your Risk for Heart Disease—7 Things You Can Do

1. Move more



- 30 minutes of moderate physical activity (like brisk walking) 5 days each week.
 - 150 minutes each week
- Fidget more
- Exercise buddies
- Parks and community recreation
- Walking tours of parts of your city/town

2. Control cholesterol

- 30 minutes of moderate physical activity 5 days each week.
- Eat a heart healthy diet
 - Whole grain foods, including bran and oats
 - Fruits and vegetables
 - Fatty fish 2x/week
 - Food with plant sterols, like walnuts and almonds
 - Food high in omega-3 fatty acids like avocado

Adapted from AHA
www.goredforwomen.org

Lower Your Risk for Heart Disease—7 Things You Can Do

3. Eat better

- Choose healthy foods over those that don't help your health
 - Decrease simple carbohydrates like sweetened beverages, white bread and white rice
 - Increase potassium rich foods, like spinach, watermelon, butternut squash, and black beans
 - Choose “whole” and unrefined foods
 - Frozen is okay too



maxpixel.freegreatpicture.com

4. Manage blood pressure

- Eat a heart healthy diet
 - A variety of whole grain foods, including bran and oats
 - A variety of fruits and vegetables
 - Fatty fish twice a week
 - Food with plant sterols, like walnuts and almonds
 - Food high in omega-3 fatty acids like avocado
 - **Reduce sodium in the diet**
 - **Beware the SALTY SIX**

Beware the Salty Six



Lower Your Risk for Heart Disease—7 Things You Can Do

5. Lose weight

- Eat better and exercise every day

6. Stop smoking

- Cigarette smokers have a higher risk for heart disease



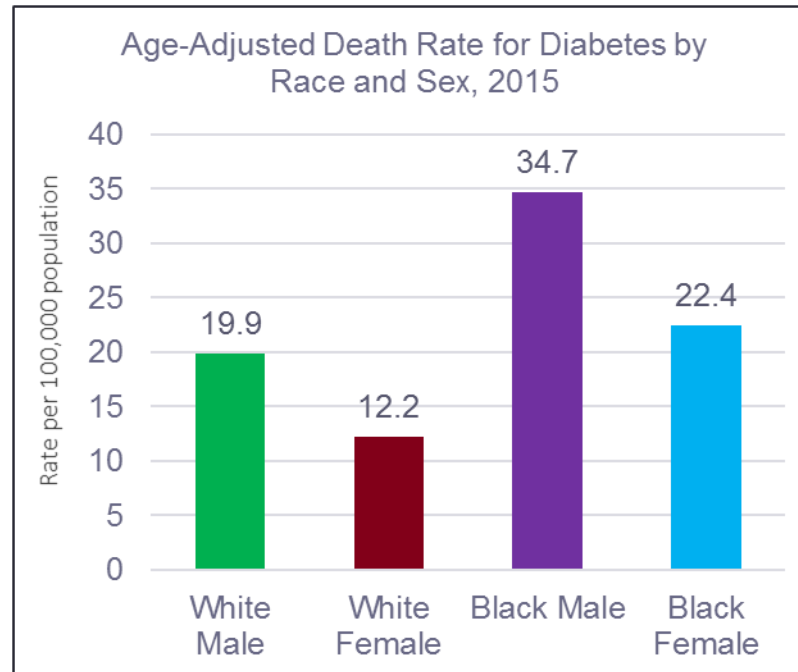
7. Reduce blood sugar

- Excess blood sugar damages blood vessels and nerves that help control the heart

Lower Your Risk for Heart Disease— What Else Can You Do?

- Get help to manage stress
- Aim for 7-8 hours of sleep each night
- Every day, make a plan for eating and exercising/moving more for the next day
- Plan for setbacks—don't give up
- Be sure to have periodic checkups with a health care provider with whom you establish a good relationship
 - Take your medicines if prescribed

Maryland Diabetes Mortality



Source: Maryland Behavioral Risk Factor Surveillance System, 2015;
Maryland Vital Statistics Administration, Maryland Vital Statistics
Annual Report, 2015

Diabetes Harms the Whole Body

- Greater risk of heart attack and stroke, and at a younger age
- Often also have high blood pressure and/or high blood cholesterol
- High risk of other health complications
 - Blindness
 - kidney disease
 - Stroke
 - Loss of toes, feet or legs

<https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/heart-disease-stroke>

Prediabetes

A **reversible** condition in which blood sugar levels are higher than normal, but not yet frank diabetes

Fasting blood sugar

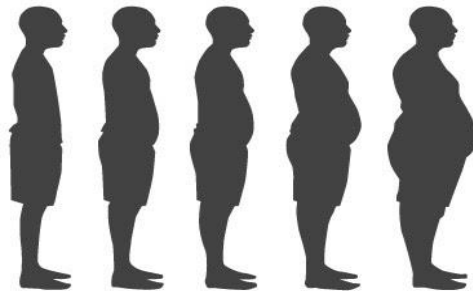
- 70-99 mg/dl =Normal
- 100-125mg/dl =Prediabetes Reversible with health behavior changes
- Higher than 126 on two or more occasions
=Diabetes

Hemoglobin A1c

- Less than 5.7% =Normal
- 5.7% - 6.4% =Prediabetes Reversible with health behavior changes
- 6.5% or higher =Diabetes

Risks for Diabetes and Prediabetes

- Overweight or obese
- Age 45 or older
- **African American**, Hispanic/Latino American, American Indian or Alaska Native, some Asian American populations
- Parent, brother, or sister with type 2 diabetes
- Exercise less than 3 times a week
- History of diabetes during pregnancy or had a baby weighing more than 9 pounds



Can Diabetes be Prevented?

- The Diabetes Prevention Program
 - 3,234 people with elevated glucose levels, non-diabetes
 - 3 Groups
 - Placebo
 - Metformin
 - Lifestyle changes (heart healthy diet, 150 minutes exercise weekly)
- Lifestyle change group had a 58% reduction in diabetes incidence (new diabetes diagnosis) over 2.8 years
- Metformin group had a 31% reduction

Diabetes Prevention Program Research Group, N Engl J Med, 2002

Key Concepts about the Diabetes Prevention Program

- Goal is 5-7% weight loss
- Moderate physical activity of 150 minutes a week
- 1 year program
 - 16 core sessions 1-2 hour sessions, for 4 months
 - 6-8 post-core sessions, 1 per month
- Nutrition and physical activity content
- Behavior change content, such as goal setting and problem solving

But What if You Already Have Diabetes?

- Have a healthy body weight
- Do regular physical exercise
- Quit smoking
- Go to the doctor regularly
 - Get your blood pressure checked at each visit
 - Get your blood glucose (sugar) checked twice a year
 - Get your cholesterol checked at least once a year
 - Get your kidney function checked at least once a year
 - Get an eye exam at least once a year
 - Get your feet checked for sores and nerve damage at each doctor visit
- Maintain healthy blood glucose levels
- Get a flu shot every year
- Go to the doctor when you are sick

Evidence-Based Programs to Address Diabetes and Diabetes Prevention

- National Diabetes Prevention Program (National DPP)
- Diabetes Self-Management Education (DSME)
- Stanford Chronic Disease or Diabetes Self-Management Programs (DSMP/CDSMP)
- Healthy behaviors make a big difference

What if You Already Have Heart Disease?

- Maintain regular visits with your health care providers
- Take all prescribed medicines
- Exercise as directed by your health care provider
- Choose a heart healthy diet as prescribed
- Stop smoking

- Chronic Disease Self-management Program

- Healthy behaviors make a big difference

Resources

- <http://dnr.maryland.gov/publiclands/Pages/HealthyParks.aspx>
- Behealthymaryland.org
- www.cdc.gov/diabetes
- www.niddk.nih.gov/health-information/diabetes/overview/risk-factors-type-2-diabetes
- <https://www.goredforwomen.org/fight-heart-disease-women-go-red-women-official-site/live-healthy/prevent-heart-disease/>

Questions?

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