

Chronic Diseases: Health Focus Area 2



Excerpted from Component A of *The Rhode Island State Health Improvement Plan*

July 28, 2017

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Definition

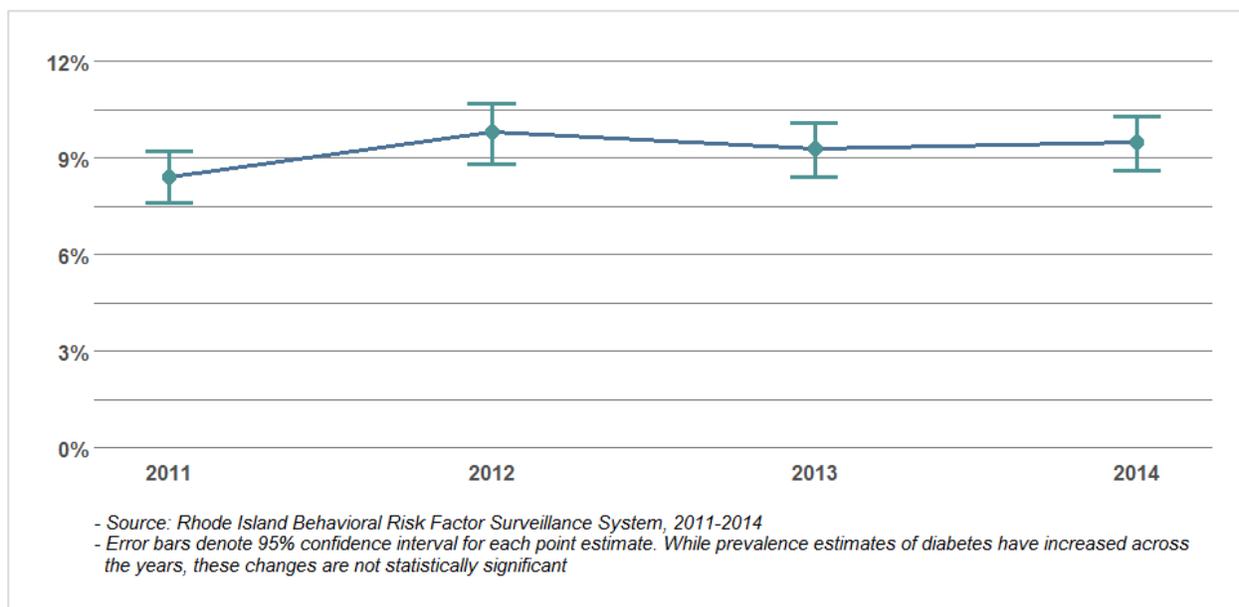
While there is no universally agreed upon definition for chronic disease, the United States National Center for Health Statistics defines a chronic disease as a condition that is either “not cured once acquired” or a condition that has “been present for three months or longer.”¹ Chronic diseases such as heart disease, stroke, and diabetes are among the most common, costly, and preventable of all health problems.² These chronic diseases, which are responsible for much of the illness and premature deaths, are associated with four modifiable risk factors: smoking, high blood pressure, overweight/obesity, and the lack of physical activity.³

Diabetes

Diabetes is a chronic disease marked by high levels of blood sugar (also called blood glucose). Diabetes occurs when the body has problems either making insulin (type 1) or using insulin (type 2). This Report used 2014 RI BRFSS data to calculate the prevalence of diabetes. Rhode Islanders were classified as having diabetes if they answered yes to the question: “Have you ever been told by a doctor that you have diabetes?” RI BRFSS does not distinguish between the types of diabetes. Overall, 9.5% of Rhode Islanders reported that they had been diagnosed with diabetes.⁴ Given that approximately one third of people with diabetes remain undiagnosed, the actual prevalence of diabetes in Rhode Island could be much higher.⁵

In the past five decades, the United States prevalence of diagnosed diabetes increased four-fold, and is projected to continue increasing.⁶ However, in Rhode Island between 2011 and 2014, the overall prevalence of diabetes stayed fairly constant, ranging from a low of 8.4% to a high of 9.8%. As seen in Figure 1, there have been slight variations in the rate of diabetes over time, but none of these changes are statistically significant. Appropriate interventions can prevent and/or delay the onset of type 2 diabetes.

Figure 1: Prevalence of Diabetes among Adults in Rhode Island, 2011-2014.



Prevalence across the Life Span

Pregnant Women—Gestational Diabetes

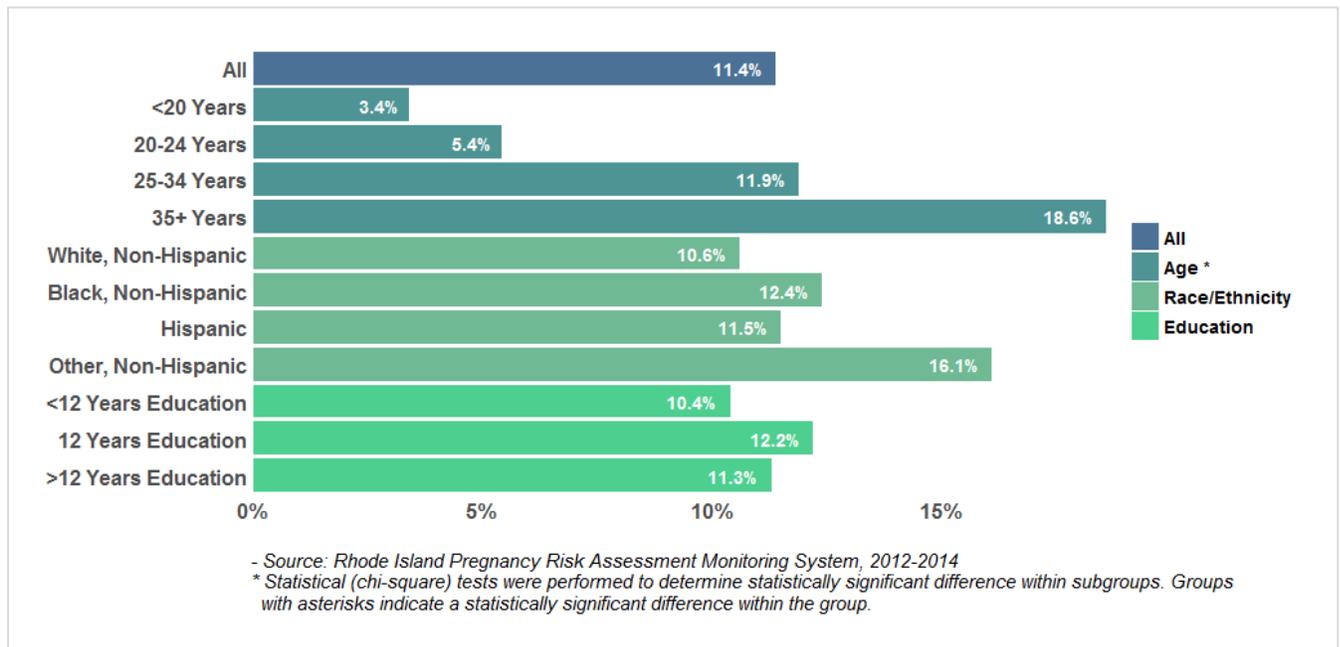
Gestational diabetes is diabetes that is first seen or diagnosed while a woman is pregnant. Although many women with gestational diabetes are overweight or obese before getting pregnant, women with healthy weights also can develop gestational diabetes. Other known risk factors for gestational diabetes include having a family history of gestational diabetes, being pregnant with twins, and being older than 25.⁷ Women with gestational diabetes are at higher risk of having high blood pressure, having cesarean delivery, and giving birth to babies that are large for their gestational age.⁸ Babies born to women with gestational diabetes are at higher risk for stillbirth, injury during birth, low blood sugar, and Type 2 diabetes later in life.⁹

According to data from the Pregnancy Risk Assessment Monitoring System (PRAMS) survey conducted between 2012 and 2014, 11.4% of pregnant mothers in Rhode Island were diagnosed with gestational diabetes, which exceeds the most recent national estimates of 9.2%.¹⁰ However, researchers from the Rhode Island Department of Health (RIDOH) note that the state might have a “more complete assessment of gestational diabetes compared to other states”, which may contribute to a higher rate of diagnosis. It is also difficult to determine whether mothers have gestational diabetes, or undiagnosed Type 2 diabetes, especially because women of childbearing age are not usually screened for diabetes before they become pregnant.¹¹

Figure 2 presents the rates of gestational diabetes by maternal age, race/ethnicity, and educational attainment. Analysis determined that maternal age was significantly associated with the presence of gestational diabetes, with increasing age being associated with an increased risk of developing gestational

diabetes. Between 2012 and 2014, pregnant women older than 35 had an 18.6% rate of gestational diabetes compared to a rate of 5.4% for pregnant women between age 20-24. Neither maternal race/ethnicity or education was associated with the presence of gestational diabetes; however, it is possible the lack of significance between gestational diabetes and other factors may be due to small sample sizes.

Figure 2: Rates of Gestational Diabetes in Rhode Island by Mother's Age, Race/Ethnicity and Education, 2012 - 2014.



Children and Adolescents

Children with diabetes are not examined in this *Health Assessment Report*. Although type 2 diabetes is the most common form of diabetes, it is fairly uncommon in children. Also, there is a scarcity of data on children with either type of diabetes, making it difficult to accurately represent or analyze this population. Future versions of this Report may be better able to capture and examine the presence of diabetes among Rhode Islanders younger than 18.

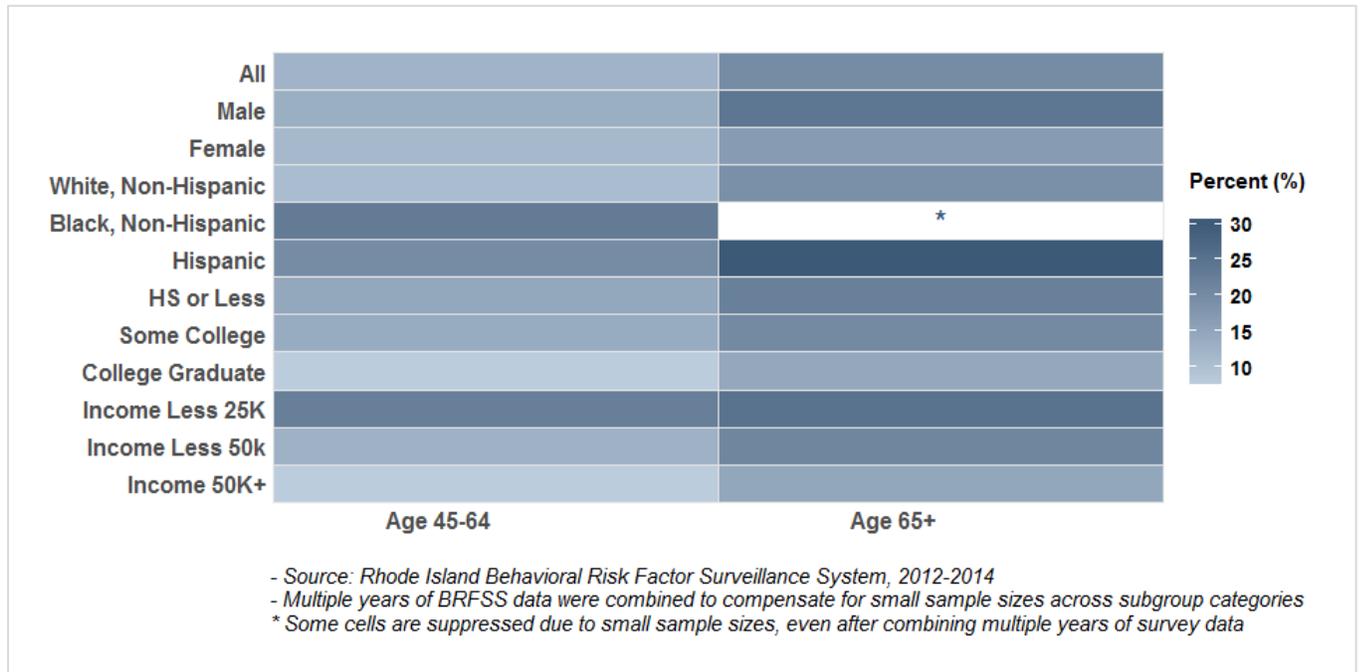
Adults

Among Rhode Island adults, the prevalence of diabetes increases with age. BRFSS data from 2012 and 2014 estimates that 5% of adults age 35-44 have been diagnosed with diabetes compared to 12.3% of adults age 45-64.

Older Adults

Diabetes rates are even higher among older adults. Across all Rhode Island adults age 65 or older, 19.9% of adults reported being told they had diabetes. Figure 3 illustrates higher reported rates of diabetes among Rhode Islanders who are 65 or older and among some subgroups of Rhode Islanders age 45-64.

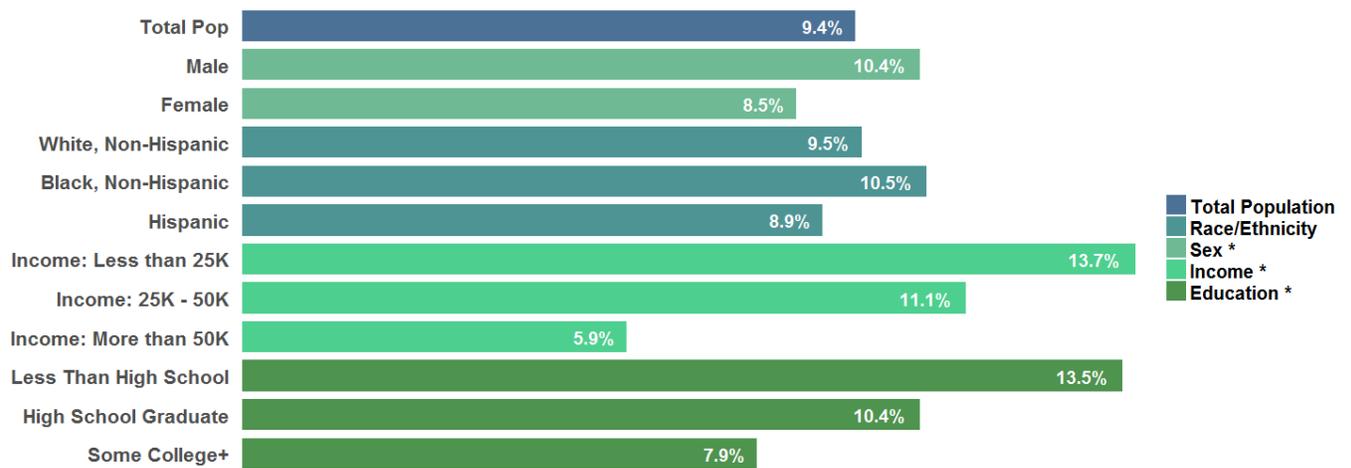
Figure 3: Diabetes Prevalence, by Age, Sex, Race/Ethnicity, Education, and Income, 2012 - 2014.



At-Risk Populations and Disparities

Data on diabetes among racial and ethnic subgroups are unreliable due to small sample sizes. However, there is statistically significant difference in diabetes prevalence among Rhode Islanders by gender, income, and education. Figure 4 illustrates that as income and educational levels increase, rates of diabetes decrease. Males also have higher rates of diabetes than females.¹²

Figure 4: Diabetes Prevalence among Rhode Island Adults by Sex, Race/Ethnicity and Education, 2014.



- Source: Rhode Island Behavioral Risk Factor Surveillance System, 2014
 - Estimates above demonstrate crude prevalence and have not been adjusted for age
 * Statistical (chi-square) tests were performed to determine statistically significant differences within subgroups. Groups with asterisks indicate a statistically significant difference within the group.

Co-Morbidities

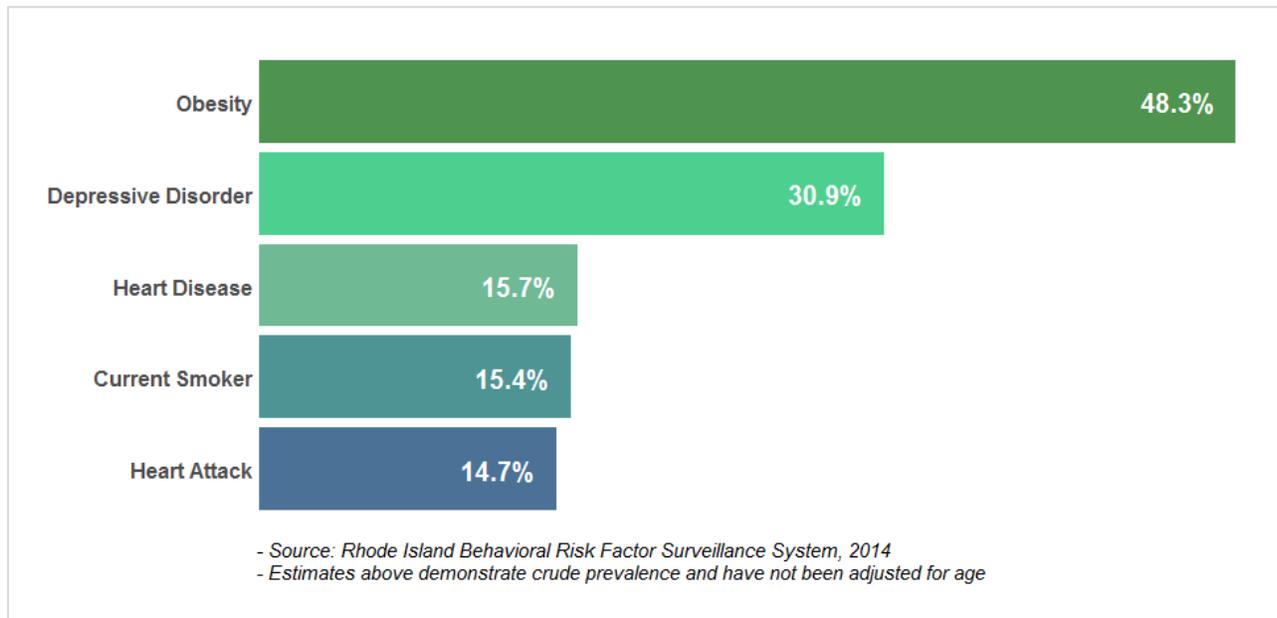
Analysis of RI BRFSS data collected in 2012- 2014 reveal that a variety of conditions and behaviors co-occur with diabetes:

- Approximately 48.3% of respondents with diabetes are obese.
- Around 15.7% of those with diabetes have been told they have heart disease.
- Approximately 14.7% have been told they had a heart attack.
- About 15.4% of respondents with diabetes also identified as ‘current smokers’.
- Approximately 30.9% of respondents with diabetes have been told they have a depressive disorder.

Furthermore, the cost of treating diabetes is as much as four times higher for individuals with an untreated co-occurring condition such as depression or alcohol addiction.¹³

Figure 5 illustrates the co-occurrence of some of the health focus areas in this report with diabetes.

Figure 5: Prevalence of Conditions Co-Occurring with Diabetes, Rhode Island Adults, 2014.

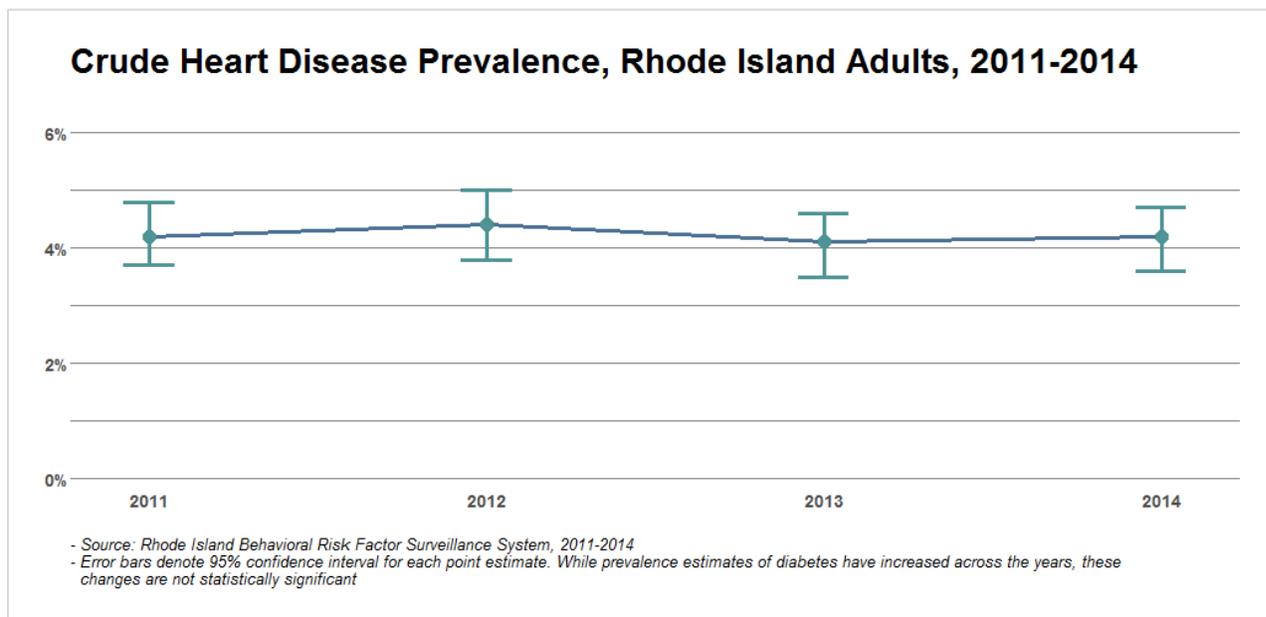


Heart Disease and Stroke (Cardiovascular Diseases)

Cardiovascular diseases include diseases of the heart and hypertension (high blood pressure), as well as cerebrovascular diseases, such as stroke. Modifiable risk factors that increase the risk of developing and dying from cardiovascular diseases include tobacco use, physical inactivity, an unhealthy diet, high blood pressure, high cholesterol, overweight or obesity, and type 2 diabetes.¹⁴

Heart disease and stroke are major causes of disability and cardiovascular diseases remain the leading cause of death in the United States.¹⁵ This Report measures the prevalence of heart disease and stroke using self-reported data from the RI BRFSS which asks, “Has a nurse, doctor, or other healthcare professional ever told you that you had the following...” and allows respondents to select among a series of health conditions. Three of those conditions are heart disease/angina, heart attack/myocardial infarction, and stroke. In 2014, 4.2% of Rhode Islanders reported being told they had heart disease/angina, 4.3% reported being told they have had a heart attack/myocardial infarction, and 2.5% reported being told they had a stroke¹⁶. As seen in Figure 6, the rates of heart disease, heart attacks, and stroke have remained fairly stable in Rhode Island between 2011 and 2014.

Figure 6: Heart Disease/Angina Prevalence among Rhode Island Adults, 2011-2014.



Prevalence across the Life Span

Rates of heart disease vary across the life span in Rhode Island, with higher rates being observed among individuals age 65 or older. The number of individuals who report having been told they had a stroke is too few to accurately estimate prevalence among different age categories.

Children and Adolescents

Data on heart disease among children in Rhode Island were not available for this Report.

Older Adults

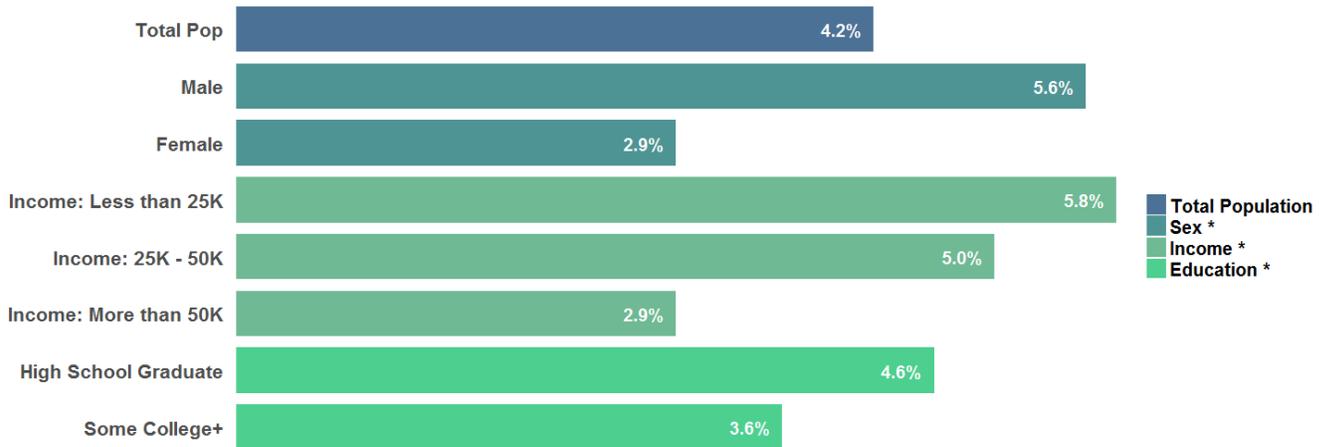
Between 2012 and 2014, 12.2% of Rhode Islanders age 65 years or older reported being told they had heart disease/angina, 12.1% reported being told they have had a heart attack, and nearly 7% reported being told they have had a stroke. In the 65+ age group, males reported statistically significant higher rates of heart attack (17.4% vs. 8.5%) and heart disease (17.7% vs. 8.2%) than their female counterparts. Across income groups in adults age 65 or older, the prevalence of all three heart disease conditions decreases as income increases.

At-Risk Populations and Disparities

Data on stroke occurrence in Rhode Island are too few to produce reliable prevalence estimates among any subgroups, as are data on heart disease among race and ethnic subgroups. However, there is a statistically

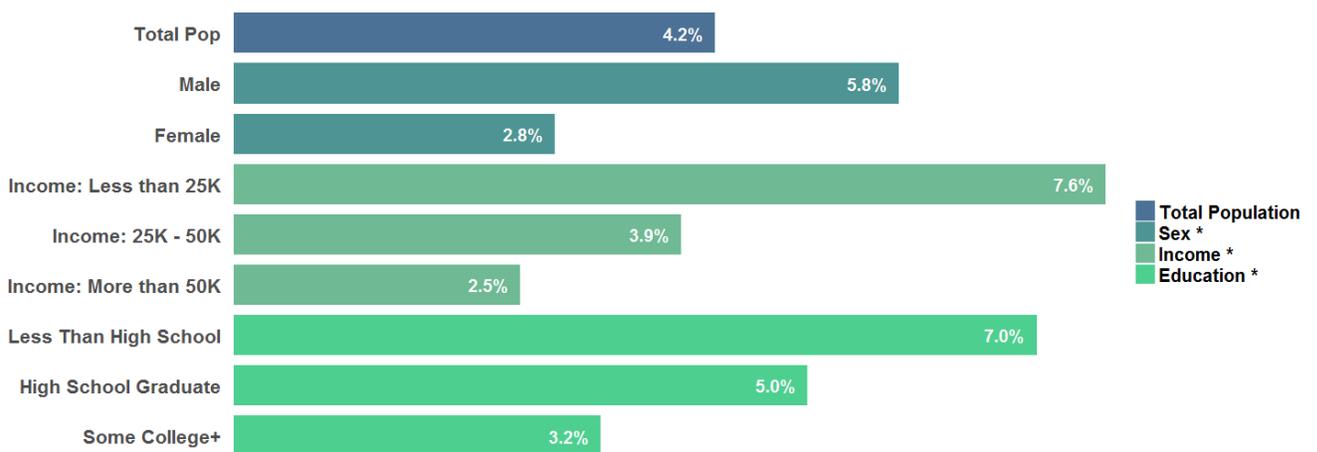
significant difference between males and females, with males having higher rates of stroke and heart disease. Rates of heart attack also decrease as income and educational levels increase. Figure 7 shows the presence of heart disease and heart attacks among various subgroups.

Figure 7: Coronary Heart Disease Prevalence among Rhode Island Adults, by Sex, Income, and Education, 2014.



- Source: Rhode Island Behavioral Risk Factor Surveillance System, 2014
 - Estimates above demonstrate crude prevalence and have not been adjusted for age
 * Statistical (chi-square) tests were performed to determine statistically significant differences within subgroups. Groups with asterisks indicate a statistically significant difference within the group.

Figure 8: Heart Attack Prevalence among Rhode Island Adults, by Sex, Income, and Education, 2014.



- Source: Rhode Island Behavioral Risk Factor Surveillance System, 2014
 - Estimates above demonstrate crude prevalence and have not been adjusted for age
 * Statistical (chi-square) tests were performed to determine statistically significant differences within subgroups. Groups with asterisks indicate a statistically significant difference within the group.

Co-Morbidities

Analysis of RI BRFSS data collected in 2012- 2014 reveal that a variety of conditions and behaviors co-occur with heart disease and stroke.

Of those who have been told they have heart disease:

- Approximately 38.0% are obese;
- Around 35.7% have been told they have diabetes;
- Approximately 49.3% have been told they had a heart attack; and
- Approximately 33.1% have been told they have a depressive disorder.

Of those who have been told they had a heart attack:

- Approximately 34.7% are obese;
- Around 32.7% have been told they have diabetes;
- Approximately 48.5% have been told they have heart disease;
- Around 21.0% identified as 'current smokers'; and
- Approximately 28.3% have been told they have a depressive disorder.

Of those who have been told they had a stroke:

- Approximately 34.3% have been told they have a depressive disorder.

In addition, chronic medical conditions, including heart disease and stroke, can result from persistent, long-term heavy drinking.¹⁷ Figures 9 and 10 illustrate the co-occurrence of some of the health focus areas in this report with heart disease and heart attacks.

Figure 9: Prevalence of Conditions Co-Occurring with Heart Disease, Rhode Island Adults, 2014

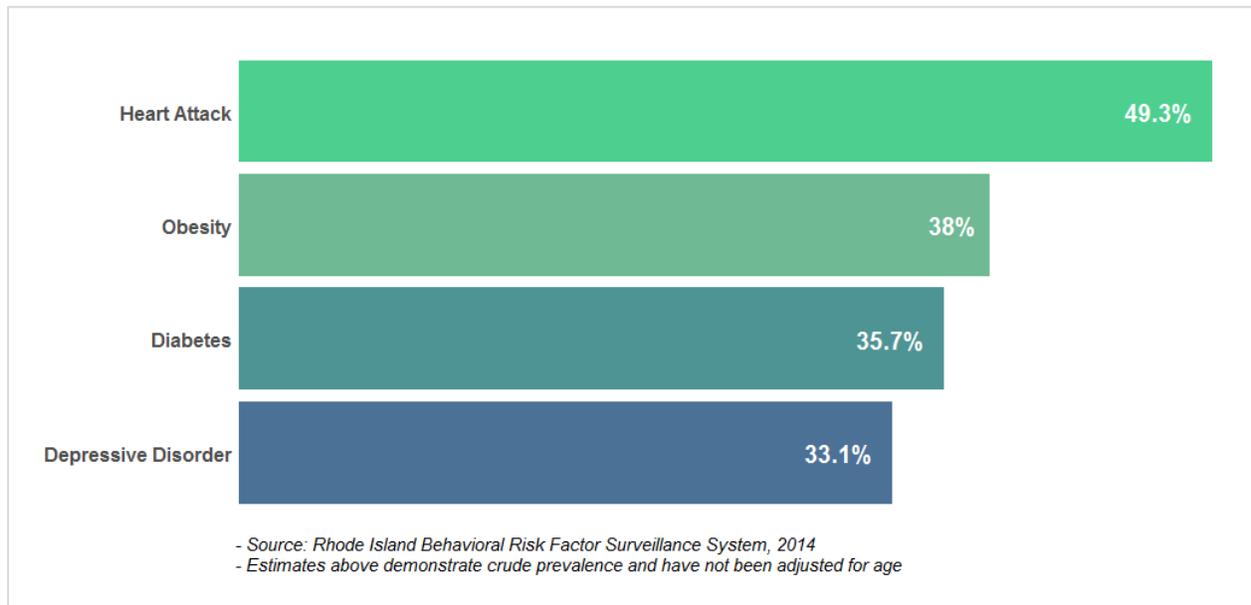
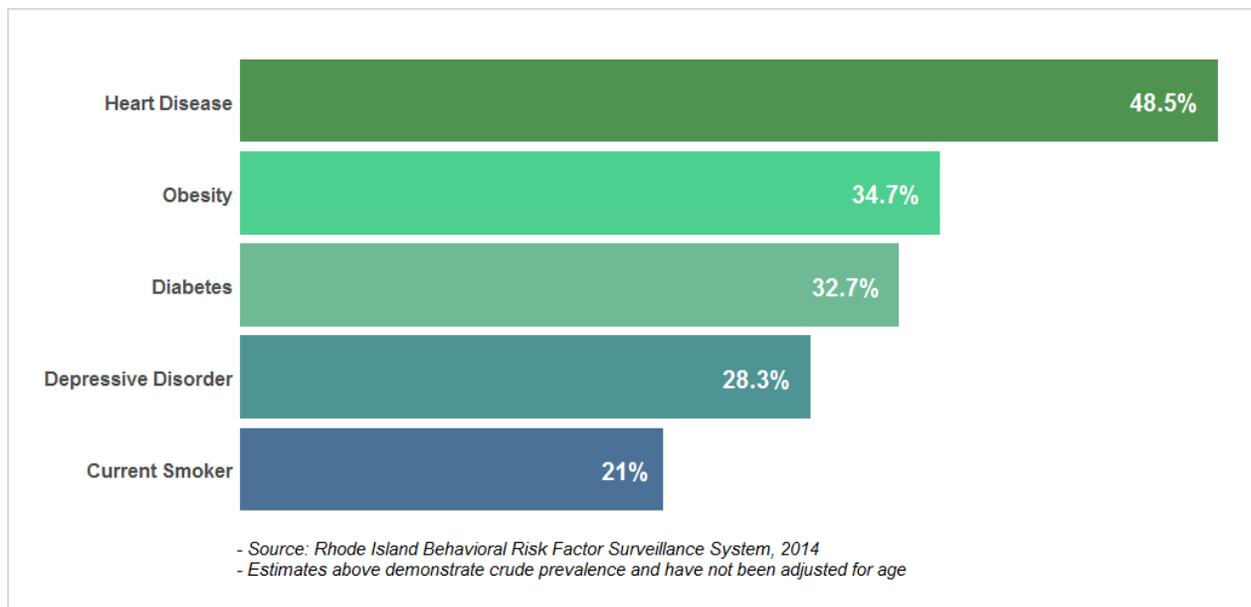


Figure 10: Prevalence of Conditions Co-Occurring with Heart Attack, Rhode Island Adults, 2014.



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