

American Heart  
Stroke  
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**INTRODUCTION** .....

**ABOUT THIS STUDY**.....

**WHAT IS CVD?** .....

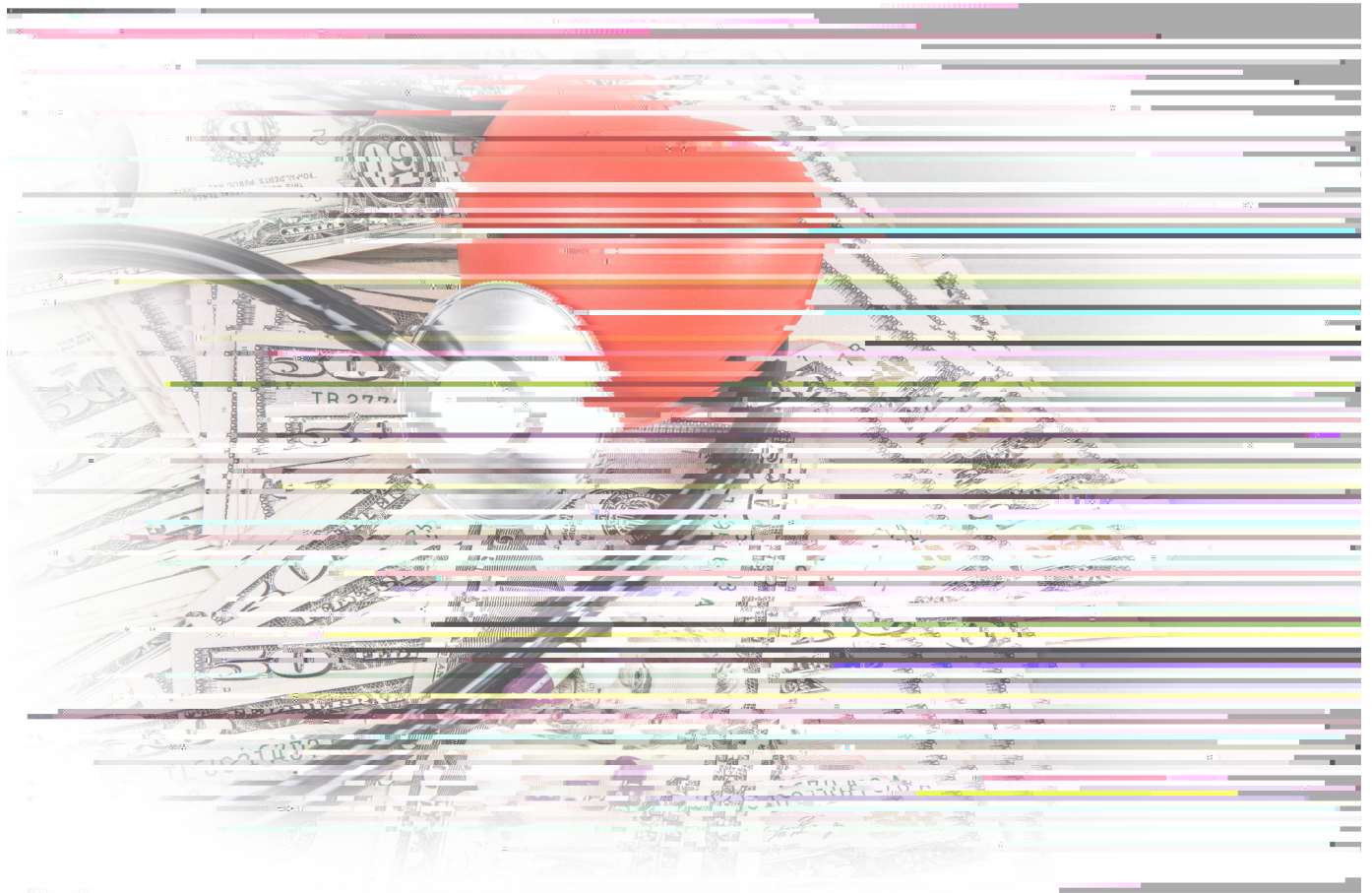
- Atrial Fibrillation
- Congestive Heart Failure
- Coronary Heart Disease
- High Blood Pressure
- Stroke

**PROJECTIONS: PREVALENCE OF CVD** ..... **7**

- Latest Projections
- Age, Race, Sex – Differences That Matter

**PROJECTIONS: COSTS OF CVD** ..... **8-11**

- The Cost Generators: Aging Baby Boomers







## About this Study

The association commissioned this **study**, and it was conducted by RTI International. The goal was to project the prevalence and medical costs of cardiovascular disease from the present through 2035. These new projections update similar ones made by the American Heart Association in 2011.

## What is CVD?

Cardiovascular disease represents a number of heart and blood vessel diseases. Specifically, this study incorporates the prevalence and medical costs of high blood pressure, coronary heart disease (CHD), congestive heart failure (CHF), stroke, atrial fibrillation (AFib) and other heart diseases from the present through 2035. Below are definitions of each of these conditions:

**Atrial Fibrillation:** Atrial fibrillation is a disorder of the heart's internal electrical system affecting heart rate and rhythm. Also commonly abbreviated as AF or AFib, it occurs when the heart's two small, upper chambers (atria) beat in a fast and irregular manner and empty blood into the heart's lower chambers (ventricles) in a disorganized manner instead of beating effectively. Blood that isn't pumped completely out of the atria when the heart beats may pool and clot. If a piece of a clot enters the bloodstream, it may lodge in the brain, causing a stroke. Causes of atrial fibrillation include dysfunction of the sinus node (the heart's pace-making area in the right atrium), coronary artery disease, rheumatic heart disease, high blood pressure and hyperthyroidism.

**Congestive Heart Failure:** Also called heart failure, congestive heart failure is when the heart can't pump enough blood to the organs. The heart works, but not as well as it should. Heart failure is almost always a chronic, long-term condition. The older you are, the more common congestive heart failure becomes. Your risk also increases if you are overweight, diabetic, smoke, abuse alcohol or use

cocaine. When a heart begins to fail, fluid can pool in the body; this manifests as swelling (edema), usually in the lower legs and ankles. Fluid also may collect in the lungs, causing shortness of breath.

**Coronary Heart Disease:** Also called coronary artery disease, coronary heart disease is the most common type of heart disease. It occurs when plaque builds up in the heart's arteries, a condition called atherosclerosis. As plaque builds up, the arteries narrow, making it more difficult for blood to flow to the heart. If blood flow becomes reduced or blocked, angina (chest pain) or a heart attack may occur. Over time, coronary artery disease can also lead to heart failure and arrhythmias.

**High Blood Pressure:** Blood pressure is the pressure of the blood against the walls of the arteries. When that pressure is consistently above the normal range, it is considered hypertension, or high blood pressure. This increases the heart's workload, putting a person at a greater risk for heart attack, angina, stroke, kidney failure and peripheral artery disease.

**Stroke:** A stroke is an interruption of blood flow to the brain, causing paralysis, slurred speech and/or altered brain function. About nine of every 10 strokes are caused by a blockage in a blood vessel that carries blood to the brain; this is known as an ischemic stroke. The other type of stroke is known as hemorrhagic, caused by a blood vessel bursting. Warning signs include sudden numbness or weakness of the face, arm or leg (especially on one side); sudden confusion, trouble speaking or understanding (aphasia); sudden trouble seeing in one or both eyes; sudden trouble walking, dizziness, loss of balance or coordination; and sudden, severe headache with no known cause. Call 9-1-1 if you think you or someone else is having a stroke.

For more information on CVD, please see the American Heart Association's Heart and Stroke Encyclopedia at [heart.org/encyclopedia](http://heart.org/encyclopedia).



## Projections: Prevalence of CVD

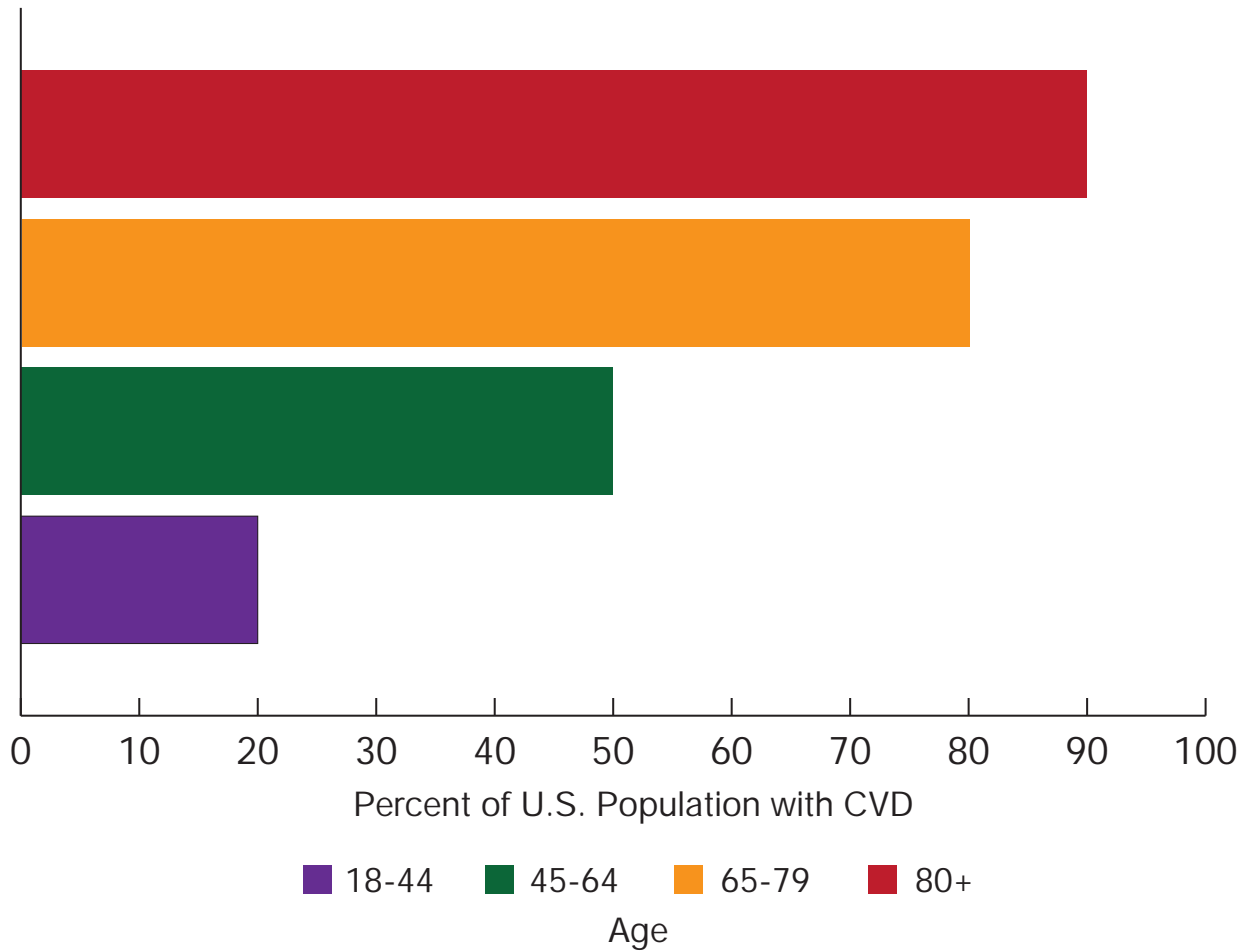
Cardiovascular disease has been the No. 1 killer of Americans since 1920. Your great-grandparents or another member of your family tree probably died from it. What's more disturbing, however, is your great-grandchildren could die from CVD, too, if we don't take deliberate and focused action now.

In our 2011 projections, the American Heart Association predicted that by 2030, upwards of 40 percent of the U.S. population – or more than 100 million Americans – would suffer from some form of CVD. Disturbingly, we reached that benchmark in 2015 – almost 15 years sooner than anticipated.

**Our Latest Projections on the Prevalence of CVD Reveal:**



### Prevalence of CVD by Age (2015)



CVD and its associated risk factors exact a disproportionate toll on many racial and ethnic groups, accounting for nearly 40 percent of the disparity in life expectancy, for example, between blacks and whites.

Racial and ethnic minority populations also confront more barriers to CVD diagnosis and care, receive lower quality treatment and experience worse health outcomes than their white counterparts.

Such disparities are linked to a number of complex factors, such as income and education, residential neighborhood and physical environment, access to care, social support, culture and communication barriers. To illustrate just one of these factors – life expectancy for low-income men in the United States is 14.6 years lower than men in the highest income category and for women, the difference is 10.1 years. These disparities have tremendous implications for diminished earnings potential, labor productivity and stress on our health care system.

Men are projected to suffer from cardiovascular disease at a greater rate than women between now and 2035, but women appear to be catching up. Rates of high blood pressure, coronary heart disease, congestive heart failure, stroke and AFib among women are projected to see a huge upsurge. According to the CDC, heart disease is the leading cause of death for women in the United States.

#### Projections: Costs of CVD

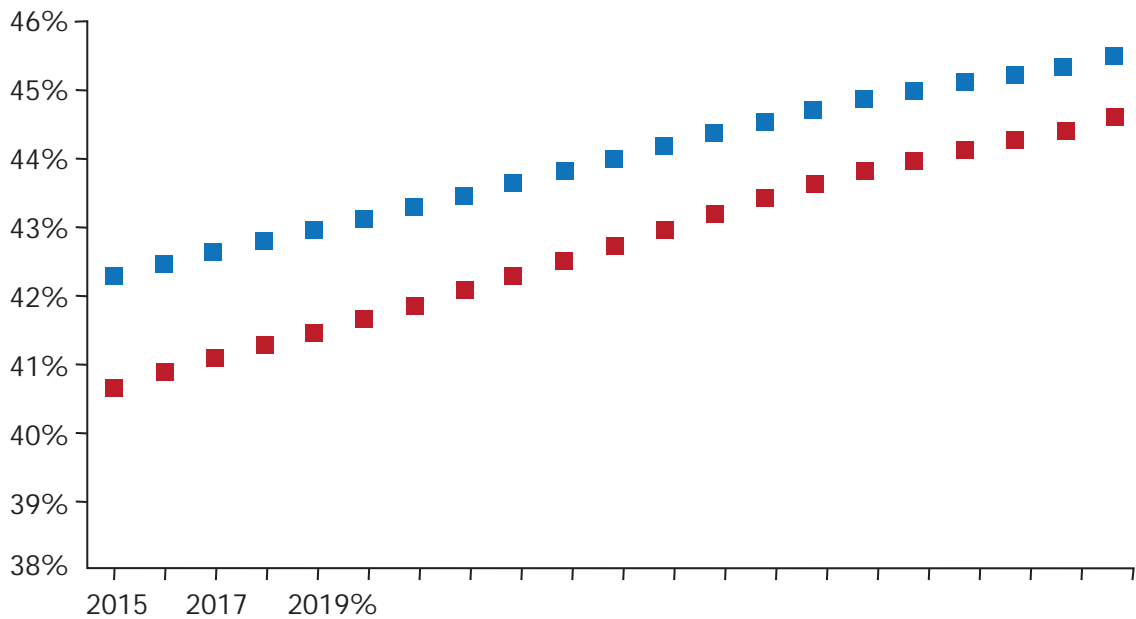
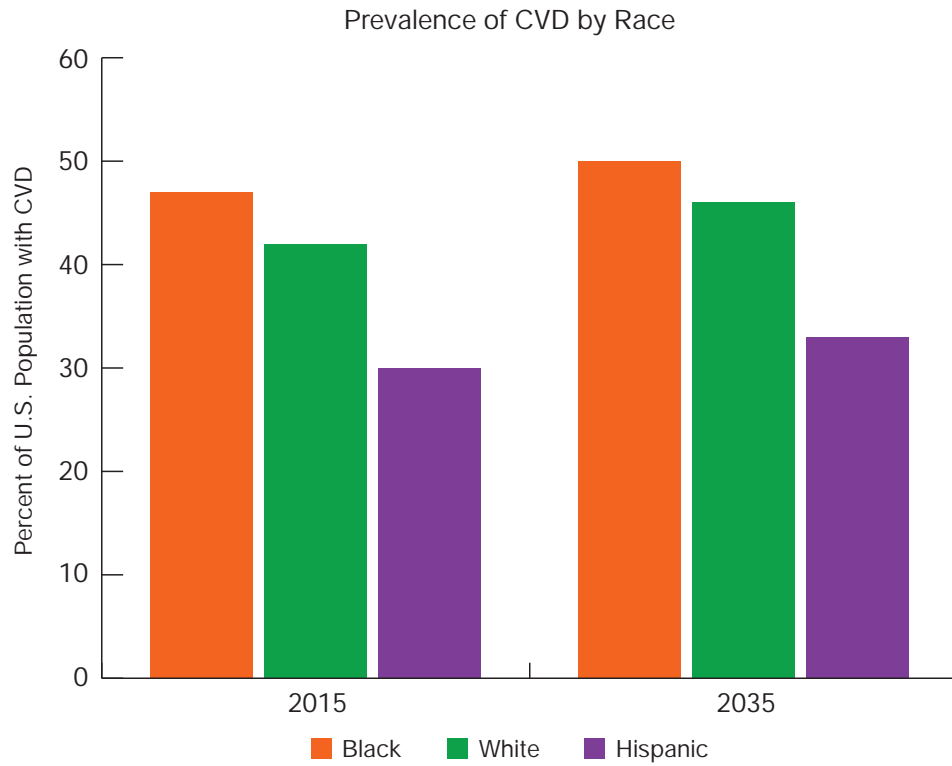
*“In 2016, CVD cost America \$555 billion. By 2035, the cost will skyrocket to \$1.1 trillion.”*

Cardiovascular disease not only exacts a heavy toll on the health of Americans, its economic burden is enormous. Right now it is America’s costliest disease, and this price tag will soar in the coming decades.





*“In the next two decades, black Americans will have the highest rates of cardiovascular disease.”*



42%

cent of U.S. Population with CVD.591 64561 w 0 0 1 122.5293 283.10 C





### Projections – CVD Total Costs Through 2035

	Current	2035
Medical costs up 135 percent	\$318 billion	\$749 billion
Indirect costs up 55 percent (Lost productivity)	\$237 billion	\$368 billion
<b>TOTAL COSTS</b>	<b>\$555 billion</b>	<b>\$1.1 trillion</b>

#### The Cost Generators: Aging Baby Boomers

As Baby Boomers age, costs for CVD will shift from middle-aged Americans to individuals ages 65 and over. By 2035, Boomers who are 80 and older will be the source of the largest cost increases for CVD.

Direct costs will continue to rise for white, black and Hispanic Americans with CVD. As the nation's black and Hispanic populations increase, costs for both groups over the next two decades are expected to surpass costs of white Americans.

Regardless of the condition, medical costs will likely triple over the next 20 years for Hispanics, more than double among blacks and be higher for women than men.

### Projections – CVD Medical Costs Through 2035

	Current	2035
High Blood Pressure	\$68 billion	\$154 billion
CHD	\$89 billion	\$215 billion
CHF	\$18 billion	\$45 billion
Stroke	\$37 billion	\$94 billion
AFib	\$24 billion	\$55 billion
Other	\$83 billion	\$187 billion
<b>TOTAL MEDICAL COSTS</b>	<b>\$318 billion</b>	<b>\$749 billion</b>

## Medical Costs Breakdown

### Direct Costs

Direct medical costs related to CVD are more extensive than medical costs related to any other disease, including Alzheimer's and diabetes.

Such costs include money spent on medical services via a physician, hospital or health care system, and corresponding or follow-up costs, such as prescription drugs, home health or nursing home care.

### Indirect Costs

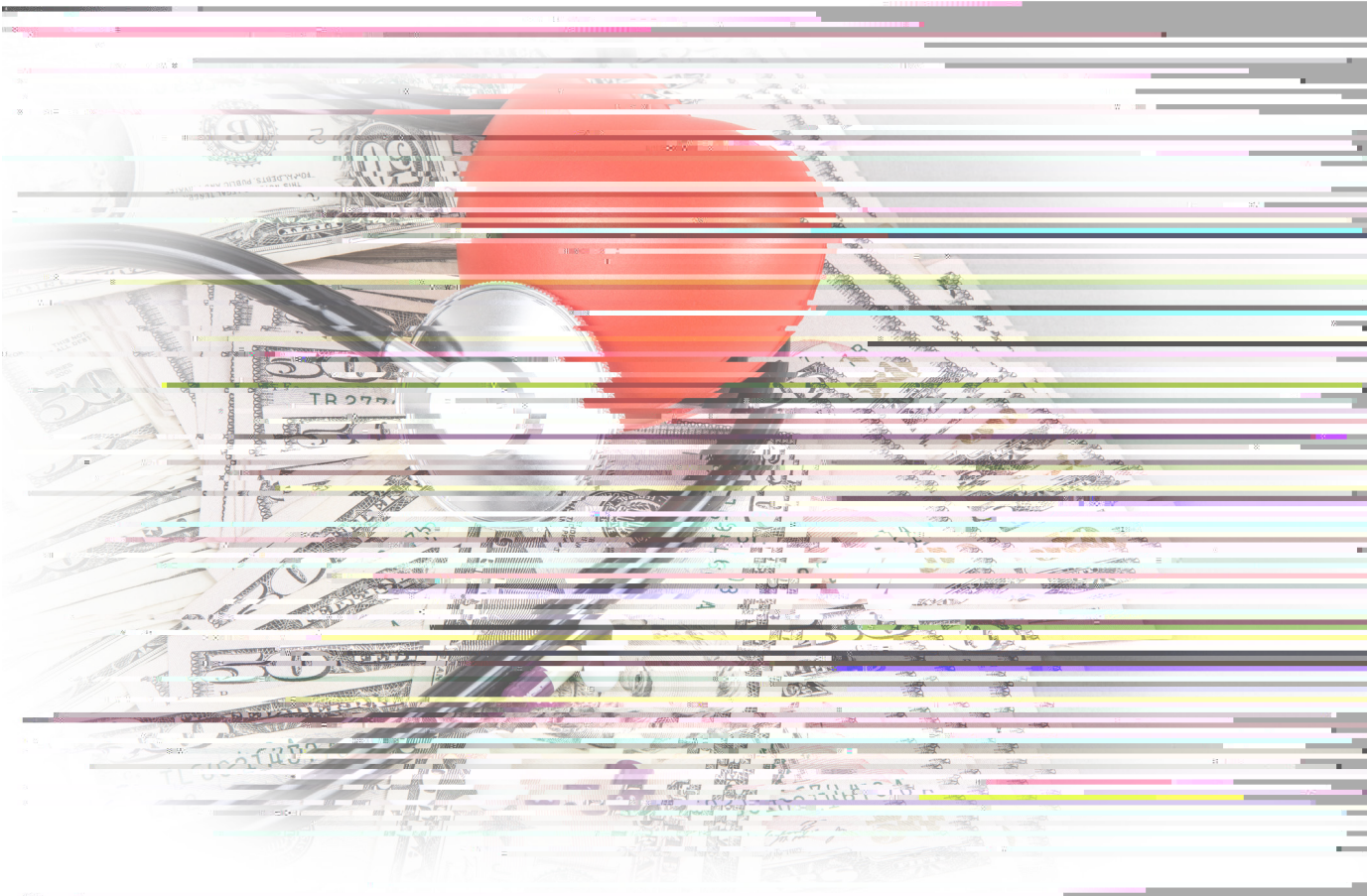
Indirect costs of CVD related to lost productivity in the workplace and at home can also have damaging consequences.

This study includes projections for two different types of indirect costs: morbidity and premature mortality.

Costs from morbidity include three components: days of work lost by employed individuals due to CVD, home productivity loss (days spent in bed due to CVD and the need to hire housekeeping services) and work loss among



Costs from mortality include the value of lost earnings and





## Recommendations

As the oldest and foremost organization dedicated to improving the cardiovascular health of all Americans,



### Affordable Health Care

The American Heart Association has long advocated for policies that expand access to meaningful and affordable health care coverage for all Americans. This report makes clear that if we do not address CVD risks for all Americans, we will fall short of our goals to eliminate heart disease and



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