FACTS

Breaking Our Hearts: Still America’s No. 1 Killer
NIH Funding for Heart and Stroke Research

OVERVIEW
Cardiovascular disease (CVD), including heart disease and stroke, places the highest burden on our nation’s health and economy, and it will only get worse. More than 1 in 3 American adults (nearly 86 million) suffer from cardiovascular disease. These life-threatening conditions include coronary heart disease, heart failure, stroke, high blood pressure and congenital heart defects. CVD was the cause of over 30% of all U.S. deaths and an underlying or contributing cause for about 54% of deaths in 2013. About 2,200 people die of CVD each day - 1 death every 40 seconds. However, due in large part to NIH-funded research, over the past decade, CVD death rates have declined by nearly 30%.

AS BABY BOOMERS AGE, CVD WILL COST MORE LIVES AND MONEY
In the U.S. today, heart disease and stroke are the first and fifth highest causes of death, respectively. The lifetime risk for developing CVD in those free of known disease at age 45 is 2 in 3 for men and greater than 1 in 2 for women. Current direct and indirect costs for CVD are nearly $317 billion.

- Nearly 44% of the U.S. adult population is projected to have some form of CVD by 2030, with total costs reaching more than $1 trillion.
- Between 2012 and 2030, total direct stroke-related costs are expected to triple from $71.6 billion to $184 billion. Prevalence of stroke is expected to increase by nearly 21% over this time as well.

CVF FUNDING COMPARED TO BURDEN
Despite the significant return on investment, the National Institutes of Health (NIH) invests a highly-disproportionate 4% of its budget on heart research, a mere 1% on stroke research, and only 2% on other CVD research [see chart]. This funding level is not commensurate with scientific opportunities, the number of people afflicted with CVD, or the physical and economic toll exacted upon our nation.

Heart Disease, Stroke, and Other CVD Research Funding as a Percent of Total NIH Funding
FY 2014

Source: NIH Budget and Appropriations

NIH HEART AND STROKE RESEARCH CAN REDUCE HEALTHCARE COSTS
Advances in CVD care can help reduce costs:
- Research on treating CVD is worth the cost. For every $1 spent, the return on investment has been $30.
- Diuretics, a traditional, less expensive medication, tested as well as newer medicines in treating high blood pressure and preventing some forms of heart disease in the largest hypertension clinical trial (ALLHAT-LLT).
- NIH research has shown that ordinary aspirin, with or without other anti-platelet drugs, can reduce the risk of recurrent stroke.
- Tissue plasminogen activator (tPA) is the only FDA-approved acute treatment for the most common type of stroke (ischemic stroke). Patients treated with tPA within up to 4.5 hours of onset of stroke symptoms are 40% more likely to have excellent outcomes and reduced post stroke disability.
- A study estimates the original National Institute of Neurological Disorders and Stroke-funded tPA trial resulted in a 10-year net benefit of $6.47 billion.
FACT SHEET: NIH Funding for Heart and Stroke Research

- NINDS’s Stroke Prevention in Atrial Fibrillation (AF) Trial 1 showed treatment with aspirin or warfarin could reduce stroke in AF victims by 80%, resulting in a 10-year net benefit of $1.27 billion, with a savings of 35,000 quality-adjusted life years.\(^8\)
- The NIH’s Women’s Health Initiative resulted in a total economic return of $140 for every $1 invested in the trial and led to 76,000 fewer cases of cardiovascular disease.\(^14\)

NIH HEART AND STROKE RESEARCH HAS REVOLUTIONIZED PATIENT CARE

Some of the major advances in heart disease and stroke treatments include the following:

- Adults over the age of 50 have a reduced risk for cardiovascular events such as heart attack, heart failure, and stroke by 25%, and cut risk of death by 27% if they maintain a systolic blood pressure of less than 120 mm Hg compared to the previous standard of 140 mm Hg.\(^15\)
- Genetic testing can be used to identify people at higher risk for coronary heart disease and those who stand to benefit most from cholesterol-lowering statin therapy.\(^16\)
- A revolutionary clot-busting drug which reduces disability from heart attack or stroke by dissolving the blood clots that cause the attacks.\(^17\)
- Identification of 29 genetic variants that influence blood pressure, providing new clues on blood pressure control.\(^18\)
- The use of drugs to lower cholesterol has reduced the average cholesterol level in the U.S. to the ideal range for the first time in 50 years.\(^19\)
- Constraint-Induced Movement Therapy, a rehabilitative method forcing use of a partially paralyzed arm, can help stroke survivors regain arm function.\(^20\)
- Stent system removes clot in large blood vessels in some ischemic stroke patients to prevent brain damage.\(^21\)

NEED SUSTAINED AND PREDICTABLE FUNDING TO STIMULATE RESEARCH

Although much has been accomplished, cardiovascular disease is not “cured.” As the population ages, the demand will increase for more and better ways to allow Americans to live healthy and productive lives before and with CVD. Some promising new research opportunities include:

- Discovering molecules that help identify the components of robust brain repair after stroke.\(^22\)
- Developing biomarkers to show which patients may need defibrillators to treat erratic heart rhythms.\(^23\)
- Using genetics to intervene before heart disease starts, speed drug development to reduce the risk of heart attack, and to develop personalized strategies to treat, slow or prevent heart failure.\(^24\)

- Development of a wireless mobile health patch that can potentially replace the Holter Monitor in terms of accurately detecting cardiac arrhythmia.\(^25\)
- Genomic analysis that can potentially predict 20% more cases of congenital heart defects.\(^26\)

THE ASSOCIATION ADVOCATES

The American Heart Association joins the medical research community in seeking sustainable and predictable funding for the NIH. Moreover, we are working to support and promote funding for NIH heart and stroke research. This will capitalize on the investment in NIH to improve Americans’ health, spur economic growth and innovation, and preserve U.S. leadership in pharmaceuticals and biotechnology.

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2 National Health and Nutrition Examination Survey 2009 to 2012, National Center for Health Statistics (NCHS) and National Heart, Lung, and Blood Institute (NHLBI).