

# Investment in research saves lives and money



facts about:

## Heart Disease & Stroke » 2011 update

*“If you think research is expensive, try disease.”*

— Mary Lasker 1901–1994

### Today:

- Heart disease is the leading cause of death for Americans and stroke is the third; together they account for nearly one third of all deaths in the U.S.\*
- Each year, approximately 795,000 Americans will suffer a stroke. Many of the 5.7 million U.S. stroke survivors are coping with permanent stroke-related disabilities.\*\*
- Every day, nearly 2,300 Americans die from cardiovascular disease.\*\*
- 51% of the estimated 82.6 million Americans with at least one type of cardiovascular disease are under the age of 60.\*\*

\*SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION (WWW.CDC.GOV)

\*\*SOURCE: AMERICAN HEART ASSOCIATION (WWW.HEART.ORG)

### The Cost:

- For 2010, the total direct and indirect cost of cardiovascular disease—including heart disease and stroke—is estimated to have been \$503.2 billion. Of that, hospital costs alone accounted for an estimated \$155.7 billion, and indirect costs due to lost productivity from death and sickness are estimated at nearly \$180 billion.

SOURCE: AMERICAN HEART ASSOCIATION (WWW.HEART.ORG)

SAVING LIVES  
SAVING MONEY

### survivor



NAME: MARIO SIGNORILE  
 AGE: 90  
 DISEASE: HEART DISEASE

In 1991, Mario Signorile of Margate, Florida, knew something was wrong when he suddenly lost feeling in his left arm. After some tests, Mario’s doctor told him that he had blockages in his heart and, without treatment, he only had a few weeks to live.

Mario underwent a triple bypass and within weeks was back to his normal activities—including going on cruises with his wife Mary.

Eleven years later, Mario suffered a heart attack that permanently damaged a third of his heart. He received an implantable defibrillator that monitors his heartbeat and administers an electric shock to his heart when there are dangerous irregularities.

In 2008, Mario’s defibrillator was replaced with a newer model. The new defibrillator makes it possible for Mario’s doctors to remotely download information about his heartbeat and calibrate the defibrillator without making an incision.

Since his first defibrillator was implanted, Mario has had only one heart attack, in 2010. He was able to go home after a brief hospital stay and, a month later, celebrated his 90th birthday with his family.

Twenty years after his initial diagnosis, Mario and Mary have watched their family grow and now enjoy visits from their great-grandchildren. “Without medical research, I wouldn’t be here today,” Mario says. “It prolonged my life.”

### HOW RESEARCH SAVES LIVES:

- From 1968 to 2006, death rates from heart disease have declined by 65% and death rates from stroke have decreased by 73%.\*
- Implantable defibrillators are an effective treatment for life-threatening irregular heartbeats and can lower the risk of death by up to 50% in some patients with heart disease.\*
- The Framingham Heart Study, first sponsored by the National Institutes of Health in 1948, has greatly enhanced understanding of heart disease. In 2009, a new genetic risk factor was identified for atrial fibrillation, which affects 2.2 million Americans.\*\*

\*SOURCE: NATIONAL INSTITUTES OF HEALTH (WWW.NIH.GOV)

\*\*SOURCE: BENJAMIN EJ, ET AL. NATURE GENETICS. 2009. 41(8): 879-881.

### HOW RESEARCH SAVES MONEY:

- The NIH-funded clinical trial for the drug t-PA in stroke patients is estimated to save the U.S. \$6.47 billion over 10 years.\*
- By decreasing hospitalizations, beta-blockers developed by the life sciences industry reduce the societal cost of treatment by \$3,900 over five years\*\* and reduce Medicare expenditures by \$6,000 per patient.\*\*\*
- Research in robotics has advanced minimally invasive heart surgery techniques that can cut recovery time in half, helping patients return to work and other activities sooner.\*\*\*\*

\*SOURCE: JOHNSTON SC, ET AL. LANCET. 2006. 367: 1319-1327.

\*\*SOURCE: PHRMA (WWW.INNOVATION.ORG)

\*\*\*SOURCE: COWPER PA, ET AL. AMERICAN JOURNAL OF MEDICINE. 2004. 116: 104-111.

\*\*\*\*SOURCE: JOHNS HOPKINS MEDICINE (WWW.HOPKINSMEDICINE.ORG)

# facts about: } Heart Disease & Stroke

## Hope for the Future:

- Through the Cardiovascular Cell Therapy Clinical Research Network, the NIH is funding clinical trials to determine the effectiveness of stem cells for heart disease patients. Early studies indicate that transplanting a patient's own stem cells into the heart can improve cardiac function and reduce mortality following a heart attack.\*
- Scientists from Harvard and MIT are developing tiny particles, called nanoburrs, which identify and stick to damaged vessels where they slowly release drugs to prevent the growth of scar tissue that can clog arteries. Use of these nanoparticles could reduce the necessity of surgically invasive treatments for heart disease.\*\*

\*SOURCE: NATIONAL INSTITUTES OF HEALTH (WWW.NIH.GOV)

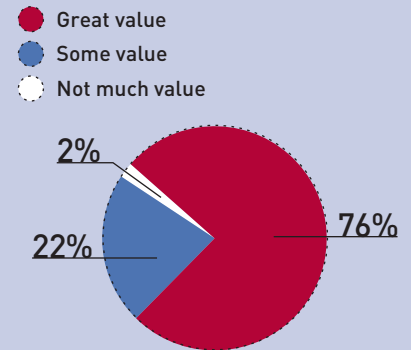
\*\*SOURCE: CHAN JM, ET AL. PNAS. 2010. 107(5):2213-8.

## The Bottom Line:

Research has identified innovative strategies to prevent, diagnose and treat heart disease and stroke. These advances have enabled patients to live longer, healthier and more productive lives. Increasing investment in heart disease and stroke research today will help ensure a healthy America tomorrow.

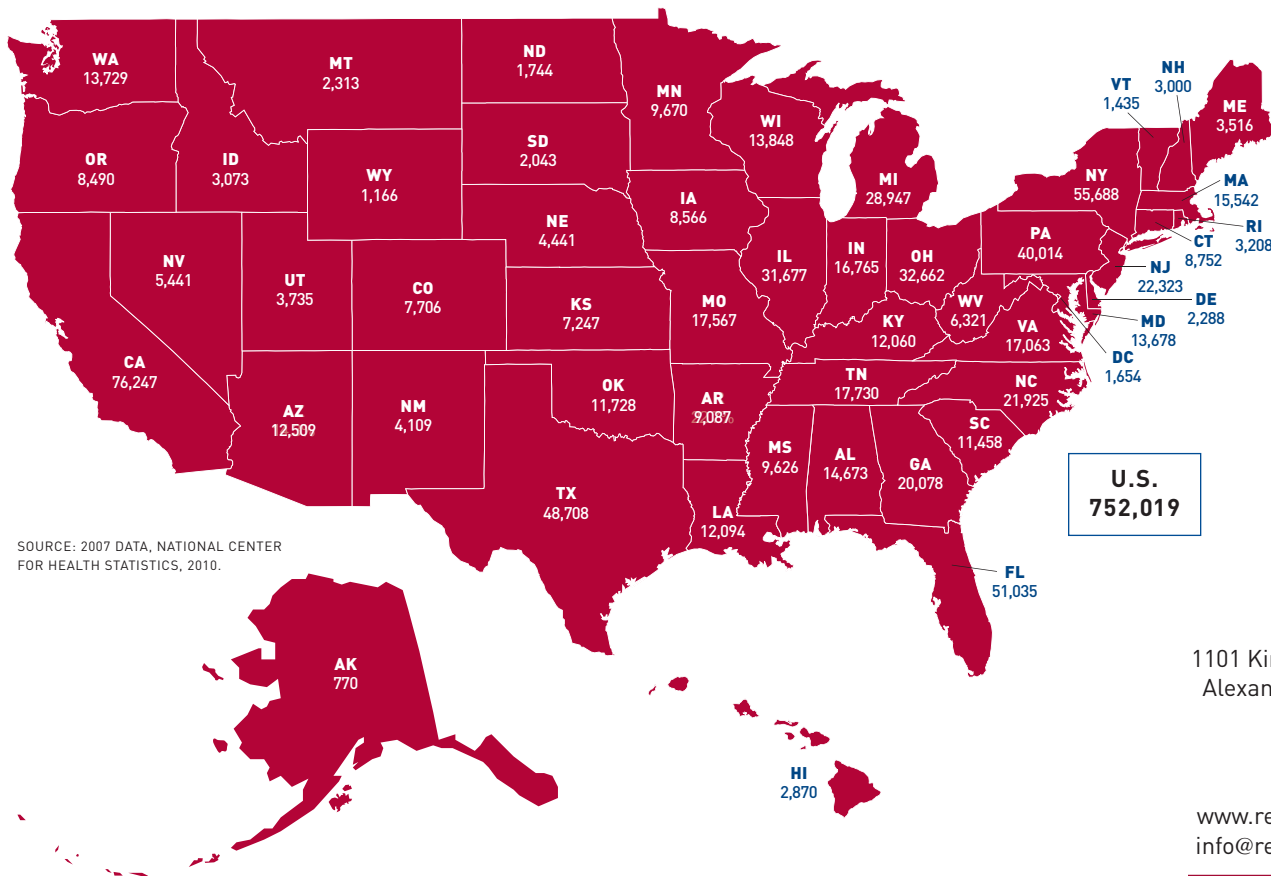
### Clinical Research is a Great Value

One kind of research, often referred to as clinical trials, is clinical research. In this, patients choose to participate to test the safety and effectiveness of certain treatments, drugs or devices. How important is this kind of research? Would you say it is a...



SOURCE: RESEARCH ENTERPRISE POLL, 2010. CHARLTON RESEARCH COMPANY FOR RESEARCH!AMERICA.

## Number of Deaths Due to Heart Disease and Stroke



SOURCE: 2007 DATA, NATIONAL CENTER FOR HEALTH STATISTICS, 2010.

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 OR the American Stroke Association at 888.4-STROKE

