

# Investment in research saves lives and money



facts about:

## Vaccines

*"If you think research is expensive, try disease."*  
— Mary Lasker 1901–1994

### Today:

- ⌘ About 2.2 million children worldwide die every year from vaccine-preventable diseases.\*
- ⌘ Wider use of the HPV vaccine could reduce the approximately 11,000 cases and 4,000 deaths from cervical cancer that occur in the U.S. each year.\*\*
- ⌘ More than 50,000 American adults die each year from vaccine-preventable diseases, such as flu, pneumonia and hepatitis B.\*\*\*
- ⌘ The U.S. recently had the largest outbreak of measles in more than 10 years. Most cases were associated with international travel of unvaccinated individuals, emphasizing the importance of global vaccination.\*\*\*\*
- ⌘ Without vaccination, whooping cough (pertussis) can spread quickly as seen in the recent California epidemic, which is expected to be the worst in 50 years.\*\*\*\*\*

SOURCES: \*WORLD HEALTH ORGANIZATION (WWW.WHO.INT)  
 \*\*NATIONAL CANCER INSTITUTE (WWW.CANCER.GOV)  
 \*\*\*U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (WWW.HHS.GOV)  
 \*\*\*\*CENTERS FOR DISEASE CONTROL AND PREVENTION (WWW.CDC.GOV)  
 \*\*\*\*\*WINTER, K. ET AL. MORBIDITY AND MORTALITY WEEKLY REPORT. 2010; 59(26): 817.

### The Cost:

- ⌘ Despite preventive efforts, every year the seasonal flu causes around 200,000 hospitalizations and 36,000 deaths and costs the U.S. about \$87.1 billion.

SOURCE: MOLINARI, N.M., ET AL. VACCINE. 2007; 25: 5086-5096.

### U.S. survivor:

NAME: MICHELLE PANGILINAN,  
 ISAIAH AND AALIYAH  
 DISEASE: CHICKENPOX



Like most Americans her age, Michelle Pangilinan of Woodbridge, VA, got the chickenpox as a child. She had a fever and an extremely itchy rash and blisters for about a week. Thanks to the introduction of a chickenpox vaccine in 1995, Michelle's children, Isaiah and Aaliyah, will likely never experience the disease.

Michelle values the vaccine. "I'm glad that Isaiah and Aaliyah won't have to suffer through the itchiness and discomfort that I did. And if they stay healthy, I can go to work and keep up with my other responsibilities. It's amazing the difference that research and prevention can make in a single generation."

### GLOBAL survivor:

NAME: NATALIE WILLIAMS  
 DISEASE: DENGUE FEVER



Natalie Williams of Porterville, CA, spent two years in Honduras as a Peace Corps Volunteer. While living and working in Honduras, Natalie contracted dengue fever, a virus spread by mosquitoes. She had a severe headache, body aches and a fever for four days. "I wanted to die my body hurt so bad."

The only current treatment for dengue is staying hydrated and taking acetaminophen to keep the fever down. However, a dengue vaccine is in clinical trials in Latin America. Dengue is a growing public health problem, and a vaccine would help prevent the disease in the 230 million people infected annually worldwide.

SAVING LIVES  
 SAVING MONEY

### HOW RESEARCH SAVES LIVES:

- ⌘ Every year, vaccines prevent at least 3 million deaths and save 750,000 children from disability worldwide.\*
- ⌘ The CDC has estimated that 70 million Americans received the H1N1 flu vaccine, reducing the number of infections and related hospitalizations and deaths.\*\*
- ⌘ In the early 1950s, 50 million cases of smallpox occurred annually with a mortality rate of about 30%. However, the institution of a global vaccination program led to the eradication of the disease in 1979.\*\*\*

SOURCES: \*TAYLOR, K. ET AL. VACCINE. 2009; 275: 63-68.  
 \*\*CENTERS FOR DISEASE CONTROL AND PREVENTION  
 \*\*\*WORLD HEALTH ORGANIZATION

### HOW RESEARCH SAVES MONEY:

- ⌘ The series of seven vaccines given to children in the U.S. is estimated to save \$53 billion in direct and societal costs over the lifetime of those born in a single year.\*
- ⌘ Introduction of the polio vaccine has saved the U.S. an estimated \$180 billion in treatment costs for the disease.\*\*

SOURCES: \*RODEWALD, L.E., MARKOWITZ, L.E. ARCHIVES OF PEDIATRICS & ADOLESCENT MEDICINE. 2009; 163: 487-488.  
 \*\*THOMPSON, K.M., DUINTJER TEBBENS, R.J. RISK ANALYSIS. 2006; 26(6): 1423-1440.

*“Vaccines are a miracle...”*

**BILL GATES,**  
Co-chair, Bill & Melinda Gates Foundation

## Hope for the Future:

- ▣ The U.S. government funded a clinical trial on a combination of vaccines to protect against HIV that lowered the rate of infection by 31.2%. This is first time a vaccine against HIV has been shown to work.\*
- ▣ A promising new therapeutic vaccine is being tested for treating lung cancer, the most deadly type of cancer in the U.S. Initial clinical trials have demonstrated that the vaccine can extend survival by nearly 16 months.\*\*
- ▣ NIH-funded researchers have made a discovery that could lead to a universal flu vaccine that would eliminate the need to develop a new vaccine for the flu each year and protect against emerging flu pandemics.\*\*\*

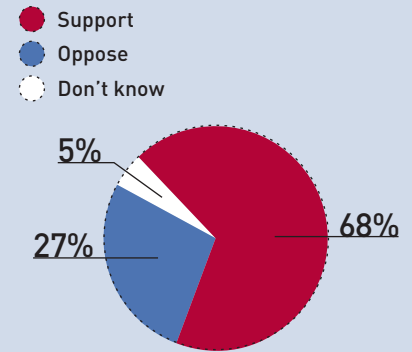
SOURCES: \*RERKS-NGARM, S., ET AL. THE NEW ENGLAND JOURNAL OF MEDICINE. 2009; 361: 2209-2220.

\*\*NEMUNAITIS, J., ET AL. CANCER GENE THERAPY. 2009; 16: 620-624.

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

## Americans Support Increased Federal Spending on Vaccine Research

*Do you support or oppose increased federal spending on research to improve and find new vaccines?*

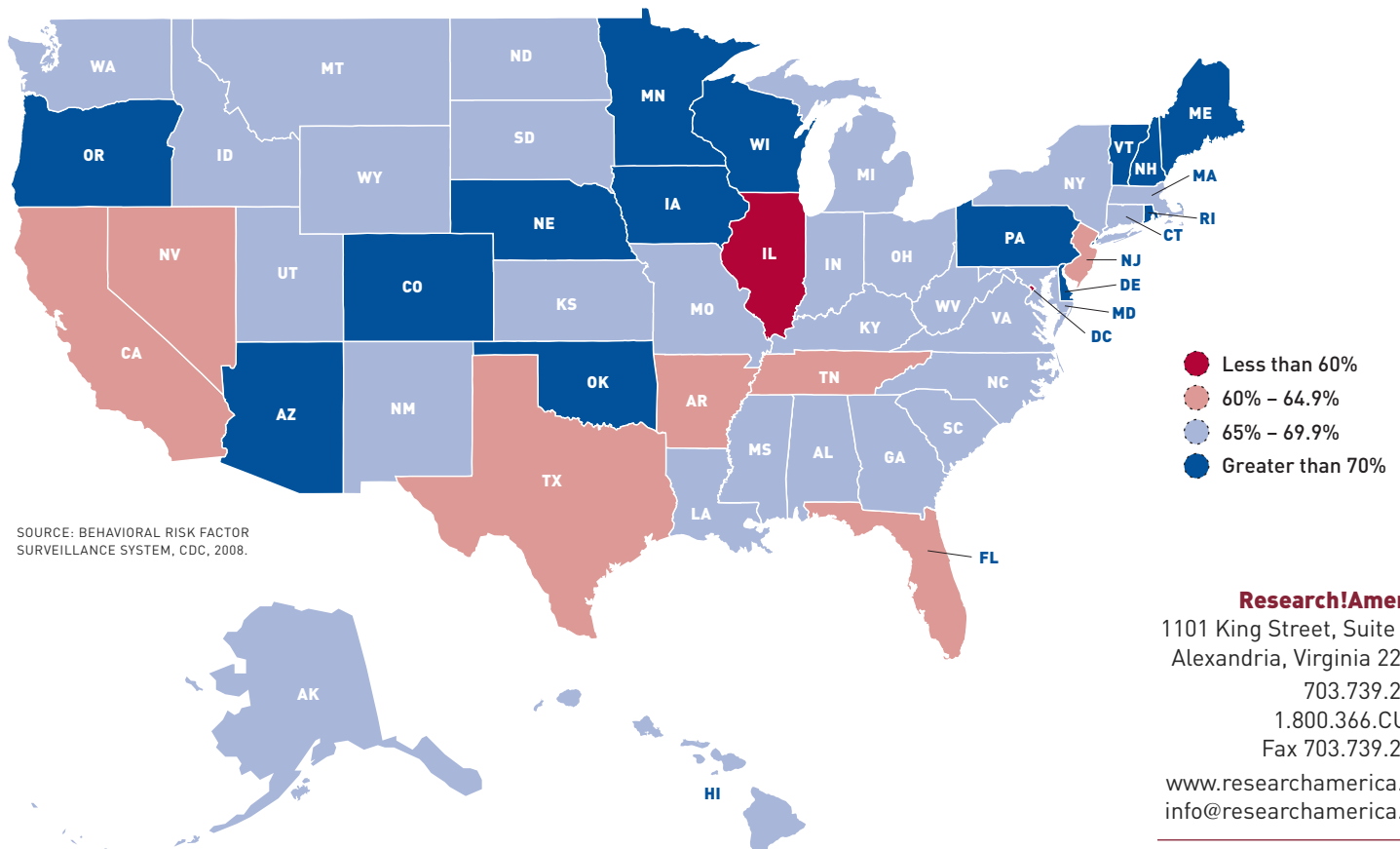


SOURCE: VACCINES NATIONAL POLL, NOVEMBER 2008  
CHARLTON RESEARCH COMPANY FOR RESEARCH!AMERICA

## The Bottom Line:

*Vaccines are proven to prevent disease, ultimately saving lives and treatment costs. The U.S. must invest in research on continued development of vaccines to prevent and treat diseases, which will improve the health of Americans and people worldwide.*

## Americans Aged 65+ Who Had a Pneumonia Vaccination, 2008



SOURCE: BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, CDC, 2008.

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For additional information, contact the Centers for Disease Control and Prevention at 1.800.CDC.INFO; www.cdc.gov.

The Albert and Mary Lasker Foundation is a founding partner in this series of fact sheets. [www.laskerfoundation.org](http://www.laskerfoundation.org)

