

Investment in research saves lives and money



facts about:

Influenza

"If you think research is expensive, try disease."

- Mary Lasker 1901-1994

Today:

- ❑ Depending on the seasonal strain, 5 to 20% of the U.S. population is infected with the flu every year.*
- ❑ In 2013, influenza and pneumonia infections were the 8th leading cause of death in the U.S., resulting in the deaths of nearly 57-thousand Americans.*
- ❑ Despite generally being widely available, only 46.2% of Americans received an influenza vaccine during the 2013-2014 season.*
- ❑ As of May 2015, 141 pediatric deaths were recorded in the U.S. during the 2014-2015 influenza season.*

* CENTERS FOR DISEASE CONTROL AND PREVENTION <WWW.CDC.GOV>

^ MOLINARI, N., ET. AL. VACCINE, 2007. 28(2007):5086-5096.

SAVING LIVES
SAVING MONEY

HOW RESEARCH SAVES LIVES:

- ❑ On average, influenza vaccinations reduce the likelihood of serious hospitalizations from the flu by over 70%. In 2013, approximately 45% of the U.S. population received a vaccination. Despite many people remaining unprotected, vaccination still prevented 6.6 million flu infections.*
- ❑ A study published in 2010 found that receiving a flu vaccine during pregnancy reduced the likelihood of flu related hospitalizations of infants in the 6 months following their birth by over 90%. Additionally, vaccinations during childhood reduce the likelihood of life-threatening flu infections by 75%.[‡]

HOW RESEARCH SAVES MONEY:

- ❑ Researchers have found an incredibly positive economic and societal outcome associated with the use of high-dose trivalent influenza vaccines for seniors. Compared to the inactivated form of the vaccine, the high-dose form is estimated to prevent nearly 200-thousand cases of influenza, over 20-thousand flu related hospitalizations, and 5,423 deaths per year. Additionally, the overall economic impact of a switch to the high-dose trivalent vaccine would be a net increase of \$154 million per year in direct and indirect costs.[°]
- ❑ In 2010, the average cost of a hospital stay was \$9,700 per person. Between 2005 and 2011, the flu vaccine prevented 5.8 million medical visits, and 112,900 hospitalizations, greatly reducing the overall economic burden of the flu.^{^+}

* CENTERS FOR DISEASE CONTROL AND PREVENTION <WWW.CDC.GOV>

‡ BENOWITZ, I., ET. AL. CLIN INFECT DIS, 2010. 51(12):1355-1361.

° FERDINANDS, J.M., ET. AL. J INFECT DIS, 2014. 210(5):674-683.

^ CHIT, A., ET. AL. VACCINE, 2015. 33(5):734-741.

^ KOSTOVA, D., ET. AL. PLOS ONE, 2013. 8(6):E66312.

+ HEALTHCARE COST AND UTILIZATION REPORT #146, AHRQ, 2013.

The Cost:

- ❑ Studies show parents can spend as much as \$4,000 in out-of-pocket medical costs when their children become infected with the flu. Additionally, on average parents missed as many as 73 hours of work caring for their sick child.*
- ❑ The total economic burden of the flu, which includes direct medical costs, lost productivity, loss of life, and other indirect costs, is estimated to be approximately \$87.1 billion annually.[^]
- ❑ In 2007, the flu resulted in \$10.4 billion in direct medical costs in the U.S.[^]

advocate:

NAME: Serese Marotta
SON: Joseph Marotta
AGE: 5
CONDITION: Fatal H1N1 Flu



Joseph Marotta, a playful, happy, healthy, and opinionated 5-year-old, was on the school bus in October 2009 when he fell ill. His parents took him to the children's hospital where he was diagnosed with pneumonia after a flu test came back negative and transferred to the ICU. A week into his hospital stay, Joseph was finally diagnosed with the H1N1 flu virus and put on antiviral therapy. By the ninth day, his condition was stable overall, though he suffered from unexplained stomach pain and very low blood pressure.

Serese Marotta was by her son's side as the doctors prepared to put him on a respirator as a precautionary measure to make breathing easier. Never failing to express his opinion, Joseph was telling his mother he wanted a last-minute drink of Gatorade instead of the hospital-provided chicken broth. They were talking about what costume he wanted to wear for Halloween when Joseph suddenly lost consciousness. The doctors tried unsuccessfully to revive him for over half an hour. An autopsy later revealed the H1N1 virus had eroded the lining of his small intestine, causing fatal internal bleeding.

Though Joseph received the seasonal flu shot, it didn't provide protection against the H1N1 strain at the time. Serese is now part of Families Fighting Flu, a volunteer-based organization that advocates for vaccination. Serese tells her story at healthcare conferences, where people often admit to her afterwards that they were not vaccinated against the flu. She says it is important to raise awareness because "I had never heard of children dying from the flu, especially healthy children, but it happens all the time. I track the CDC statistics and every time a child dies from a vaccine-preventable disease like the flu, it breaks my heart."

facts about: } Influenza

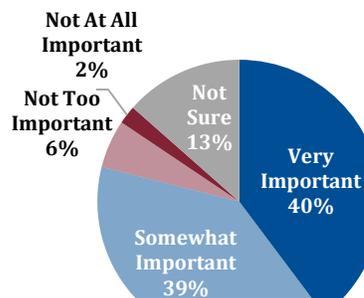
Hope for the Future:

- ❑ The flu virus uses existing biological systems in the host's body to aid in its replication and infection processes. The National Institute of Allergy and Infectious Diseases (NIAID) is currently funding basic research aimed at exploring, understanding and mapping the path of the flu virus through human cells. With this knowledge, a more direct approach to creating vaccines and treatments can be carried out as scientists better grasp the relationship between the virus and the body.*
- ❑ The universal flu vaccine has eluded researchers and scientists for decades. However, with a promising contender entering clinical trials, researchers are hopeful that it will be available to the public as early as 2020. Scientists at the Icahn School of Medicine at Mount Sinai have carried out pre-clinical trials with very promising results. In 2015, the U.S. Food and Drug Administration also announced positive findings after collaborating with Italian researchers to test their potential vaccine. With continued funding for research, more breakthroughs can bring this long sought after vaccine to people around the world.^+
- ❑ NIAID is currently recruiting participants for a phase 2 clinical trial to test the effectiveness of a new flu intervention meant specifically for high risk individuals. The elderly, infants, and individuals with a compromised immune system, are more likely to suffer from the life-threatening complications of the flu. Researchers are comparing the current standard of treatment with a cocktail of antivirals in hopes that the antivirals will lead to a quicker and more complete recovery.*

* NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES <WWW.NIAID.NIH.GOV>

^ U.S. FOOD AND DRUG ADMINISTRATION <WWW.FDA.GOV>

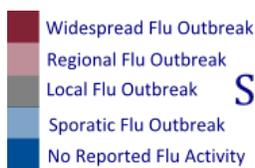
+ SMITHSONIAN <WWW.SMITHSONIANMAG.COM>



National Poll: Americans Believe Research is an Investment in the Future

How important is investing in research to job creation, technological breakthroughs and economic growth?

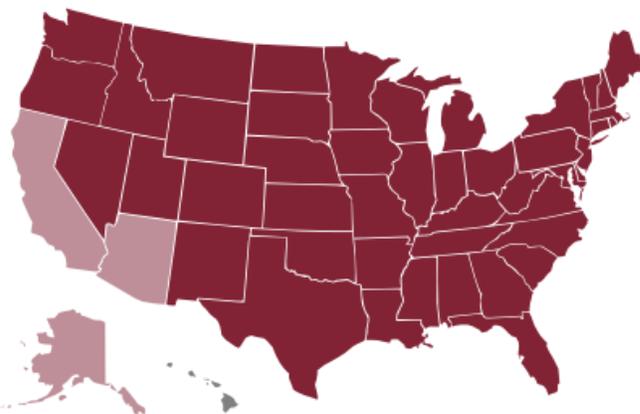
RESEARCH!AMERICA POLL CONDUCTED IN PARTNERSHIP WITH ZOGBY ANALYTICS IN JANUARY 2015



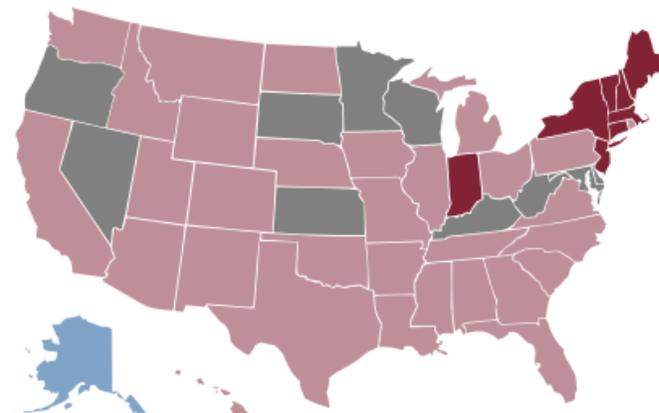
Seasonal Flu Outbreak Activity, 2015

SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION

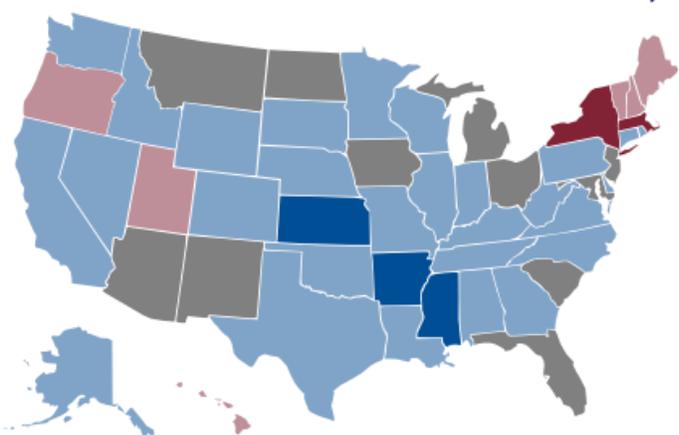
January 2015



March 2015



May 2015



The Bottom Line:

Influenza is a widely spread and contagious virus, which can become life-threatening for all individuals, especially the elderly, infants, and those with suppressed immune systems. While the current vaccines are very effective at preventing many of the infections, tens of thousands of Americans still suffer from the flu every year. New vaccines must be made every year to combat the current strains of the virus. Robust funding for research is needed for scientists to continue in their search for a universal vaccine, especially for those most vulnerable to the infection.

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