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Billions of dollars saved in US by polio vaccination

Boston, MA -- A new study by researchers at the Harvard School of Public Health (HSPH) finds that polio vaccination in the United States has resulted in a net savings of over \$180 billion, even without including the large, intangible benefits associated with avoided fear and suffering. This first study to retrospectively demonstrate the enormous benefits of polio vaccination appears as part of a special issue on polio in the December 2006 issue of Risk Analysis.

The history of polio vaccination in the U.S. spans over 50 years and includes different phases of the disease, multiple vaccines, and a sustained significant commitment of financial resources. Lead author of the study, Kimberly Thompson, associate professor of risk analysis and decision science at HSPH, emphasized that this study "should help people understand and better appreciate the huge economic savings that can come from investments in public health interventions."

The researchers, Professor Thompson and Dr. Radboud Duintjer Tebbens, a research associate at HSPH, estimated the costs and the effectiveness of historical polio vaccination strategies. They found that the U.S. invested over \$35 billion between 1955 and 2005 and will continue to invest billions into the future to pay for polio vaccination. They estimated that these historical and future investments translate into over 1.7 billion vaccinations that prevent approximately 1.1 million cases of paralytic polio and over 160,000 deaths, thus saving Americans hundreds of billions of dollars in treatment costs.

Dr. Stephen Cochi, U.S. Centers for Disease Control and Prevention Global Immunization Division Senior Advisor and an expert on polio said, "This study documents the extraordinary power of vaccines not only as highly effective tools to prevent disease, disability, and death, but to provide enormous economic savings to society."

Although the last case of paralytic polio from wild poliovirus occurred in the U.S. in 1979, poliovirus outbreaks currently still occur around the world and American children continue to receive polio vaccinations. Dr. Bruce Aylward, Director of the Global Polio Eradication Initiative at the World Health Organization, stated that, "as we stand on the brink of eliminating wild

polioviruses around the world, these results provide a glimpse of the massive economic benefits of global polio eradication." To date, the Global Polio Eradication Initiative has succeeded in reducing the annual cases of paralytic polio from an estimated 350,000 cases in 1988 to less than 2,000 cases in 2006. The only remaining areas of the world that have not yet disrupted transmission include regions in four countries (Afghanistan, India, Nigeria, and Pakistan).

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Thompson and Duintjer Tebbens also co-authored several other articles in the same issue that characterize the risks and costs of future options for polio risk management, the costs and value of global surveillance, and the trade-offs associated with different choices related to outbreak response.

Link to abstract:

<http://www.blackwell-synergy.com/doi/abs/10.1111/j.1539-6924.2006.00831.x>

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<http://www.kidsrisk.harvard.edu/>. Support for other studies by the authors in the special issue was provided by the U.S. Centers for Disease Control and Prevention.

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