

Influenza-Related Research at RTI International

Since the emergence of avian influenza (H5N1) in China during the 1990s, health officials worldwide have expressed concern about the potential threat of pandemic illness. Tapping our broad expertise in the health, social, and statistical sciences, RTI International has conducted numerous studies involving influenza and other vaccine-related subjects for the Centers for Disease Control and Prevention (CDC), the National Institutes of Health, the U.S. Department of Agriculture, and other federal agencies.

The projects described here represent RTI's capabilities in the areas of community preparedness, public health surveillance, health communications, mathematical modeling, economic analysis, and international health.

Community Preparedness

Non-Pharmaceutical Interventions (NPI) for Pandemic Influenza (2006–2008)

In recognition of the need to rely upon layered non-pharmaceutical interventions once a pandemic strain of influenza initially emerges, RTI is assessing, developing, implementing, and evaluating community-level NPI strategies in nine counties in North Carolina. Following the baseline assessment, RTI will provide technical assistance and support to two intervention counties. Telephone surveys of a random sample of households will be used to provide key data to researchers on the number of daily social encounters a survey respondent has. Using these data, researchers will build mathematical models to predict the behavior of a pandemic strain of influenza.

Public Health Surveillance

The BioSense Initiative to Improve Early Event Detection (2005–2008)

With this grant from CDC, and in partnership with the University of North Carolina at Chapel Hill and in collaboration with the North Carolina Division of Public Health, RTI is working to improve situational awareness during disease outbreaks of public health significance.



[PHOTO: Myles Elledge, RTI International]

The objective of this research is to define, evaluate, and standardize a methodology for creating useful case definitions of influenza and other illnesses for use in syndromic surveillance systems. Syndrome case definitions are created and tested using emergency department data captured through North Carolina's NC DETECT network of over 100 hospitals throughout the state.

Health Communications

Formative and Summative Evaluation for Pandemic Influenza Information (2007–2008)

CDC recently awarded a contract to RTI to provide CDC with information about the pandemic influenza-related knowledge, attitudes, and behaviors of several vulnerable populations. This information will assist CDC's preparedness planning and enable CDC to enhance the effectiveness of risk communication efforts designed to protect the public from both influenza-related morbidity



and mortality and nonmedical consequences that may impact health. RTI will first investigate overt and underlying social, psychological, and environmental issues related to pandemic influenza. In the second phase of this contract, RTI will assess informational materials designed to inform the public about pandemic influenza and to influence related attitudes and behaviors.

Mathematical Modeling

Models of Infectious Disease Agent Study (MIDAS) (2004–2009)

The MIDAS research network will provide a Web-based portal, mathematical models, and a set of computational and analytical tools for use by researchers and public health officials to model emerging infectious diseases and appropriate public health responses. Multiple contracts were awarded for this program; seven were provided to support the creation of mathematical models to study various aspects of infectious disease epidemics and community responses. The Informatics Group (IG), led by RTI, has established a central catalog of models and results from the research groups and has developed computer modeling tools. During the past year, several of the groups focused on simulations of pandemic influenza and available response strategies. MIDAS is sponsored by the National Institute of General Medical Sciences, a part of the National Institutes of Health (NIH) with a strong interest in bioinformatics and computational biology.

Economic Analysis

Analysis of Economic Issues in Seasonal Influenza Vaccination (2006–2007)

The purpose of this study is to develop a model to estimate the net benefits or cost-effectiveness of seasonal influenza vaccination that incorporates the variability in vaccine effectiveness, influenza severity, and other key parameters both year to year and across subpopulations. This model

can help inform policy decisions about which population subgroups to recommend for vaccination, especially in the event of an influenza vaccine shortage. RTI researchers will review the literature to identify the most recent data on influenza attack rates, influenza vaccine effectiveness, and the impacts and costs of influenza for six population subgroups. This information will be used to populate a model of influenza vaccination that considers the costs and outcomes related to the decision to vaccinate, the decision to vaccinate with the inactivated influenza vaccine (IIV, the traditional injection), and the decision to vaccinate with the live-attenuated influenza vaccine (LAIV, administered as a nasal mist).

International Health

Global Logistics and Administration Support (2007–2012)

In this recently awarded CDC-funded task order contract, RTI has partnered with an international logistics support company to provide training, program evaluation, and technical assistance, as requested, to CDC-funded influenza programs in scores of countries worldwide. Typical tasks under this contract include short-term consultancies to assess the epidemiologic, laboratory, and medical care services related to pandemic influenza.

For more information about RTI's capabilities in influenza preparedness and response, contact

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