Immunization and Vaccinology Research

RTI International has the multifaceted knowledge and experience to help public health officials, policy makers, and other stakeholders in the field of immunization and vaccinology unravel the complicated network of factors that affect vaccine development and use in real-world settings. Our capabilities span the basic sciences, policy and program evaluation, economics, epidemiology, statistics, and surveys. We have analyzed the economic impact of specific vaccines on various populations, evaluated policies and programs to improve immunization rates, and investigated factors associated with vaccine use.

Advances in immunology, virology, and genetics have sparked renewed interest in vaccine research. Yet despite the success of vaccines in preventing death and disability from infectious diseases, the immunization system faces continuing challenges. An unprecedented number of vaccines are available, and the populations they are intended for are expanding. Immunization funding mechanisms are extremely complicated, while increasingly individuals question the utility, cost, and safety of vaccines.

At RTI, we have been exploring various aspects of immunization for more than a decade. Today, we conduct programmatic and economic studies of immunization programs, vaccine safety concerns, and genetic influences on immune response. Our researchers also study the influence of media reports and other information sources on the perception of risks associated with vaccines in order to promote informed decisions among diverse populations.

Select Project Experience

RTI's broad expertise enables us to create multidisciplinary teams to serve the needs of various agencies. We have conducted studies for the U.S. Department of Health and Human Services, working with the Centers for Disease Control and Prevention (CDC), National Institutes of Health, and the Assistant Secretary for Planning and Evaluation (ASPE).

Research Expertise

- Health promotion
- Surveys and statistics
- Program evaluation
- Economic analysis and evaluation
- Modeling and medical decision-making
- Genetics and proteomics
- Epidemiology
- Biology and chemistry
- Technology transfer

Strengthening the Evidence Base: Monitoring Vaccination Coverage and Exemptions among Kindergarteners (CDC). RTI is working to improve immunization and exemption rates by supporting immunization grantees' school assessment activities regarding kindergarteners. This project includes providing technical assistance to immunization grantees, evaluation of current practices, and development of and training to apply best practices.

Estimating the Economic Value of New and Future Vaccines Using Conjoint Analysis Methods (CDC). RTI is developing a stated preference survey to rigorously quantify parent preferences for pediatric and adolescent vaccines from a national sample. The study will generate a general model to estimate willingness-to-pay (for cost-benefit analysis) and predict vaccine uptake for current and future vaccines under a variety of policy scenarios.

Estimation of Vaccination Clinic Costs (CDC). RTI is developing standardized tools for estimating vaccination clinic costs from clinic, public health department, and societal perspectives. These tools may be of use to public health departments as they prepare to respond to recent recommendations for universal influenza vaccination. We also expect to use these tools to assess 2009 H1N1 vaccination clinic costs.

A Business Case for Health Plan Provider Incentives as Documented by an Immunization Information System to Achieve Select Health Plan Performance Measures for Childhood Immunizations (CDC). RTI documented the savings associated with a health plan's use of immunization information system data as part of a physician incentive program. Research showed that the health plan achieved cost savings and improved data sharing between public and private health organizations.

Economic Issues in Seasonal Influenza Vaccination (ASPE). RTI developed a model to estimate the impacts, cost-effectiveness, and net benefits of annual influenza vaccination using either the traditional flu shot or the nasal mist vaccine. The model provides outcomes by age and risk group and accounts for the uncertainty in key factors that affect impact (e.g., vaccination costs, vaccination effectiveness, illness attack rates). RTI is modifying the model to assess the likely economic impacts of recent recommendations to expand seasonal influenza vaccination to include healthy school-aged children (5–17 years) and adults (18–49 years).

Vaccine Supply, Demand, and Economic Factors: Causes of Vaccine Shortages (ASPE). RTI identified factors associated with vaccine shortages in the United States and created a database that included all vaccines licensed by the Food and Drug Administration between 1985 and 2005.

References from Past Projects

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