

# Vaccine Experience

Over 10 staff with experience in vaccine research projects including

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## A Wealth of Experience

At RTI Health Solutions, we have collaborated with clients on over 40 projects researching vaccines for various diseases. Our experience includes:

- Cholera
- Dengue fever
- Hepatitis
- Human papillomavirus (HPV)
- Influenza (including H1N1)
- Malaria
- Measles
- Meningococcal, conjugate (including MCV4)
- Meningococcal, polysaccharide (MPSV4)
- Mumps
- Pertussis
- Pneumococcal conjugate (PCV)
- Pneumococcal polysaccharide (PPSV)
- Respiratory syncytial virus (RSV)
- Rotavirus
- Rubella
- *Staphylococcus aureus*
- Tetanus, diphtheria (Td)
- Tetanus, diphtheria, and pertussis (Tdap)
- Typhoid
- Typhoid fever
- Varicella
- Zoster

## Types of Projects

We have implemented studies to help our clients develop strategies in the vaccines market and to develop and commercialize products to prevent multiple diseases. Recent project types have included:

- Dynamic disease transmission modeling
- Incidence, prevalence, and natural history estimation
- Burden of illness studies
- Linear and non-linear programming studies to estimate the impact of vaccination programs
- Cost-effectiveness and budget impact studies of vaccination programs (based on static and dynamic disease models)
- Observational cohort studies
- Conjoint analyses
- Patient-reported outcomes studies
- Literature reviews
- Benefit-risk preference studies
- Decision-analytic modeling to predict disease prevalence and the budget impact and cost-effectiveness of prevention options
- Health economics dossiers and product value and access kits
- Surveys to evaluate vaccine program implementation

## Contact

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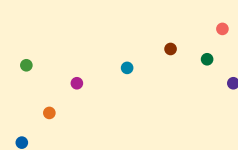
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## See How We've Helped Others

### Dynamic Transmission Models Estimate the Cost-Effectiveness of Vaccines

We compared the differences in the methods used to estimate the cost-effectiveness of vaccination programs using the clinical outcomes from dynamic transmission models. A targeted literature search reviewed cost-effectiveness analyses of influenza, HPV, varicella virus, pertussis, meningococcal meningitis, rotavirus, *H. pylori*, and hepatitis A programs. We identified four types of methods for estimating and presenting a cost-effectiveness ratio. The variability of the estimation framework (population or cohort), time horizon, and other input parameters observed in the review illustrate the challenges that may be encountered in comparing cost-effectiveness of different vaccination programs among themselves as well as with other prevention or treatment interventions. Study results were published in *Expert Review of Pharmacoeconomics & Outcomes Research*, 2012;12(3):357-71.

### Rates of Influenza Complications by High-Risk Group

RTI-HS performed a literature review on the incidence, complication rates, and health services use associated with clinical influenza to address the unmet need for new effective treatments and/or management strategies for influenza in high-risk groups. Key findings could be used to evaluate new therapies, including better influenza vaccines, chemoprophylaxis, and/or treatment strategies for different high-risk groups. Study results were published in *Journal of Medical Economics*, 2013;16(2):264-77.

### Survey of Elementary School-Based Influenza Vaccine Programs

We surveyed key stakeholders to elicit information about school-based influenza vaccination programs—including funding, logistics, schedule disruptions, benefits, and potential barriers. The results fully support the feasibility of school-based influenza vaccination programs for the prevention of childhood influenza illnesses. Study results were published in *Journal of School Nursing*, 2012; 28(4):256-67.

### Conjoint Analysis to Elicit Health-State Utilities for Rotavirus

We designed a web-based stated-choice survey to elicit preferences associated with rotavirus in children 5 years old or younger. Health-state quality weights were developed to populate a health economics model. The study found that, overall, the attribute that is of greatest importance to parents of small children is vomiting for 14 days; the least important attribute is behavioral changes for 1 day. Study results were published in *Vaccine*, 2011;29(45):8086-93.

## Selected Publications By Our Staff

Jackson ML, Rothman KJ. Effects of imperfect test sensitivity and specificity on observational studies of influenza vaccine effectiveness. *Vaccine*. 2015 Mar 10;33(11):1313-6.

McGrath LJ, Brookhart MA. On-label and off-label use of high-dose influenza vaccine in the United States, 2010-2012. *Hum Vaccin Immunother*. 2015 Mar 4;11(3):537-44.

Poulos C, Johnson FR, Krishnarajah F, Anonychuk A, Misurski D. Pediatricians' preferences for infant meningococcal vaccination. *Value in Health*. 2015 Jan;18(1):67-77.

Standaert B, Ethgen O, Emerson R, Postma M, Mauskopf J. Comparing cost-effectiveness results for a vaccine across different countries worldwide: What can we learn? *Adv Ther*. 2014 Oct;10:1095-108.

Naleway AL, Kurosky S, Henninger ML, Gold R, Nordin JD, Kharbanda EO, Irving S, Craig Cheatham T, Nakasato C, Glanz JM, Hambidge SJ, Davis RL, Klein NP, McCarthy NL, Weintraub E. Vaccinations given during pregnancy, 2002-2009: a descriptive study. *Am J Prev Med*. 2014 Feb;46(2):150-7.

Karve SJ, Krishnarajah G, Korsnes JS, Cassidy A, Candrilli SD. Burden of acute gastroenteritis, norovirus and rotavirus in a managed care population. *Hum Vaccin Immunother*. 2014 Apr;10:1544-66.

Thompson MG, Li DK, Shifflet P, Sokolow LZ, Ferber JR, Kurosky S, Bozeman S, Reynolds SB, Odouli R, Henninger ML, Kauffman TL, Avalos LA, Ball S, Irving SA, Shay DK, Naleway AL, for the Pregnancy and Influenza Project Workgroup. Effectiveness of seasonal trivalent influenza vaccine for preventing influenza virus illness among pregnant women: a population-based case-control study during the 2010-2011 and 2011-2012 influenza seasons. *Clin Infect Dis*. 2014 Feb;58(4):449-57.

Earnshaw SR, McDade CL, Zanotti G, Farkouh RA, Strutton D. Cost-effectiveness of 2 + 1 dosing of 13-valent and 10-valent pneumococcal conjugate vaccines in Canada. *BMC Infectious Diseases*. 2012;12:101.

Hauber AB, Itzler R, Johnson FR, Mohamed AF, Gonzalez JM, Cook JR, Walter EB. Healthy-days time equivalents for outcomes of acute rotavirus infections. *Vaccine*. 2011;29(45):8086-93.

Strutton DR, Farkouh RA, Earnshaw SR, Hwang S, Theidel U, Kontodimas S, Klok R, Papanicolaou S. Cost-effectiveness of 13-valent pneumococcal conjugate vaccine: Germany, Greece, and The Netherlands. *Journal of Infection*. 2012;64(1):54-67.

Tennis P, Toback SL, Andrews EB, McQuay LB, Ambrose CS. A US postmarketing evaluation of the frequency and safety of live attenuated influenza vaccine use in nonrecommended children younger than 5 years: 2009-2010 season. *Vaccine*. 2012;30(42):6099-102.