

CNS and Neurology Experience

More than 15 staff with experience in CNS projects including

Stephanie Earnshaw, PhD
VP, Health Economics, US
searnshaw@rti.org

Sean Candrilli, PhD
Head, Health Economics Data Analytics
scandrilli@rti.org

Keith Davis, MA
Sr. Director, Health Economics
kldavis@rti.org

Brett Hauber, PhD
Sr. Economist and Global Head,
Health Preference Assessment
abhauber@rti.org

Contact

RTI Health Solutions
Research Triangle Park, NC, USA
+1.800.262.3011

Ann Arbor, MI, USA
+1.734.213.5372

Barcelona, Spain
+34.93.241.7766

Lund, Sweden
+46.706.58.3442

Manchester, UK
+44(0)161.447.6000

Sheffield, UK
+44(0)114.213.3390

Waltham, MA, USA
+1.781.434.1700

rtihealthsolutions@rti.org
www.rtihs.org

A Wealth of Experience

At RTI Health Solutions, we have collaborated with our clients on more than 175 projects researching central nervous system (CNS) and neurological diseases, CNS and neurologic treatment and treatment trials, and complications of CNS and neurological diseases. Our experience includes:

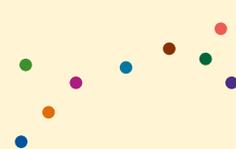
- Alzheimer's
- Diabetic peripheral neuropathy
- Epilepsy
- Fibromyalgia
- Head trauma
- Insomnia
- Meningitis
- Migraine
- Multiple sclerosis
- Overactive bladder
- Pain
 - Acute
 - Chronic
- Parkinson's
- Restless legs syndrome
- Stroke

Types of Projects

We have implemented studies to help our clients develop strategies in the CNS and neurology markets and to develop and commercialize products to treat CNS and neurological diseases and complications arising from treatment of CNS and neurological illnesses. Recent projects have included:

- Health economic models, including
 - Cost-effectiveness
 - Budget impact models
 - Markov models
- Benefit-risk preference studies
- Treatment preference studies
- Database analyses using cross-sectional and longitudinal databases
- Preparation of HTA submissions
- Systematic literature reviews
- Economic burden of illness studies
- Economic feasibility studies
- Qualitative payer research
- Meta-analysis studies
- Development of reimbursement and value communication strategies
- Epidemiology of disease
- Retrospective observational studies
- Patient-reported outcomes (PRO) instrument development, evaluation, and validation
- Psychometric evaluations of patient instruments
- Health-related quality-of-life studies
- Consulting on drug development
- Abstract and manuscript development

(continued)



See How We've Helped Others

Stated Preference Study for Multiple Sclerosis (MS) Treatment Outcomes

We conducted a stated preference study to estimate the willingness of MS patients to accept the risk of treatment in exchange for improvements in their MS symptoms. As part of the study, MS patients completed a survey questionnaire that included a series of choice-format conjoint tradeoff tasks. The study showed that MS patients have a high tolerance for risk of life-threatening events in exchange for delaying disability progression. Study results were published in *Journal of Neurology* 2009;256(4):554-62.

Epilepsy Retrospective Database Study

Using claims data from PharMetrics, we assessed the prevalence of nonadherence with antiepileptic drugs and the potential impact on health care costs in an adult population. The study showed an increase in total annual health care costs despite a reduction in prescription drug expenditures. Study results were published in *Epilepsia* 2008;49(3):446-54.

Stroke Cost-Effectiveness and Cost-Utility Analysis

We conducted a cost-utility analysis to estimate the cost-effectiveness of adding penumbral-based MRI to usual computed tomography (CT)-based methods to identify patients for intravenous tissue plasminogen activator (IV tPA) treatment. The analysis showed favorable clinical outcomes when penumbral-based MRIs were added to identify patients for IV tPA treatment, even though overall costs increased. This economic analysis lends further support to the consideration of a paradigm shift in acute stroke evaluation. Study results were published in *Stroke* 2009;40(5):1710-20.

Literature Review: Economic Burden and Treatment of Chronic Low Back Pain (CLBP)

We conducted a 10-year review of the literature on the epidemiology, economic burden, and treatment of chronic low back pain in France, Germany, Italy, Spain, and the UK.

Little is known about CLBP's economic burden. Germany was the only country where annual direct costs were available. Work absenteeism in Germany accounted for 75% of the total per-patient cost. Treatment guidelines across these countries recommend a multimodal approach for patients with CLBP. Study results were published in *Expert Opinion on Pharmacotherapy* 2009;10(16):2581-92.

Fibromyalgia Cost-Effectiveness Study

We developed a health economic Markov model to estimate the cost-effectiveness of duloxetine, a drug for the treatment of fibromyalgia. The goal of the study was to evaluate the FDA-approved dose of 60 mg per day, when assessed from the perspective of the US health care payer. The study concluded that when used as a second-line therapy, duloxetine provides additional benefits at a level of cost that would be considered favorable. Study results were presented at the ISPOR 13th Annual European Congress, November 6-9, 2010.

Selected Recent Publications By Our Staff

Bell C, **Graham JB**, **Earnshaw S**, Oleen-Burkey MK, Castelli-Haley J, Johnson K. Cost-effectiveness of four immunomodulatory therapies for relapsing-remitting multiple sclerosis: a Markov model based on long-term clinical data. *J Manag Care Pharm* 2007;13(3):245-61.

Candrilli SD, **Davis KL**, Kan HJ, Lucero MA, Rousculp MD. Prevalence and the associated burden of illness of symptoms of diabetic peripheral neuropathy and diabetic retinopathy. *J Diabetes Complications* 2007;21(5):306-14.

Davis KL, **Candrilli SD**, Edin HM. Prevalence and cost of nonadherence with antiepileptic drugs in an adult managed care population. *Epilepsia* 2008;49(3):446-54.

Davis KL, Edin HM, Allen JK. Prevalence and cost of medication nonadherence in Parkinson's disease: evidence from administrative claims data. *Mov Disord* 2010;25(4):474-80.

Earnshaw SR, Graham J, Oleen-Burkey M, Castelli-Haley J, Johnson K. Cost effectiveness of glatiramer acetate and natalizumab in relapsing-remitting multiple sclerosis. *Appl Health Econ Health Policy* 2009;7(2):91-108.

Earnshaw SR, Jackson D, Farkouh R, Schwamm L. Cost-effectiveness of patient selection using penumbral-based MRI for intravenous thrombolysis. *Stroke* 2009;40(5):1710-20.

Hauber AB, **Johnson FR**, Fillit H, **Mohamed AF**, Leibman C, Arrighi HM, Grundman M, Townsend RJ. Older Americans' risk-benefit preferences for modifying the course of Alzheimer disease. *Alzheimer Dis Assoc Disord* 2009;23(1):23-32.

Juniper M, LeTK, **Mladi D**. The epidemiology, economic burden, and pharmacological treatment of chronic low back pain in France, Germany, Italy, Spain and the UK: a literature-based review. *Expert Opin Pharmacother* 2009;10(16):2581-92.

Levine DA, Neidecker MV, Kiefe CI, **Karve S**, Williams LS, Allison JJ. Racial/ethnic disparities in access to physician care and medications among US stroke survivors. *Neurology* 2011;76(1):53-61.

Manjunath RY, **Davis KL**, **Candrilli SD**, Ettinger AE. Association of antiepileptic drug nonadherence with risk of seizures in adults with epilepsy. *Epilepsy Behav* 2009 Feb;14(2):372-8. Epub 2009 Jan 4.