

News Release, May 2016

2015-16 Research Milestones

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New publications

Ungar WJ. **A further examination of the problem of double-counting in incremental cost-utility analysis.** In press in *Expert Review of Pharmacoeconomics and Outcomes Research*, 2016.

Zur RM, Roy L, Ito S, Beyene J, Carew C, Ungar WJ. **Thiopurine s-methyltransferase testing for averting drug toxicity: A meta-analysis of diagnostic test accuracy.** In press in *The Pharmacogenomics Journal*, 2016.

Zlotnik Shaul R, Ungar WJ. **Maximizing the benefit and mitigating the risks of moral hazard.** In press in *American Journal of Bioethics*, 2016

Luca NJ, Burnett HF, Ungar WJ, Moretti ME, Beukelman T, Feldman BM, Schwartz G, Bayoumi AM. **Cost-effectiveness analysis of early biologic treatment in polyarticular juvenile idiopathic arthritis.** In press in *Arthritis Care and Research*, 2016

From the Director

Dear friends and colleagues,
2015-16 has been a highly productive year for TASK – the only research unit devoted to the development of methods for and the conduct of technology assessment in child health. We are excited to fill you in on the changes and new faces, including some of our recent activity and our upcoming plans. Thank you for your ongoing support!

Wendy

Wendy J. Ungar, PhD
Director, TASK

Focus on genomics

Genomics and precision medicine are being increasingly integrated into clinical practice. However, it is not yet clear how such technologies can offer value for money. Recent and upcoming work by TASK force members generate evidence to inform implementation.

Dr. Myla Moretti conducted a [cost-effectiveness analysis of genotyping program for post-partum women requiring analgesia](#). Dr. Richard Zur and Lilla Roy compared the diagnostic accuracy of genotype and phenotype tests that measure thiopurine S-methyltransferase levels using [meta-analysis](#) and [systematic review](#) techniques.

TASK team (Dr. Richard Zur and Kate Tsiplova) used [micro-costing to estimate the precise costs of chromosomal microarray analysis, whole exome and whole genome sequencing for children with autism spectrum disorder \(ASD\)](#). This project included a cost-consequence analysis to look at the incremental cost per additional pathologic variant found for alternative genome testing strategies

Tracy Yuen, PhD candidate, is using a discrete event simulation model to measure the cost-effectiveness of alternative genome sequencing approaches in the diagnostic pathway for children at high risk for ASD.

Drs. Wendy Ungar and Robin Hayeems are spearheading a prospective study on clinical utility and cost-effectiveness of whole genome sequencing for children with cardiomyopathy. Data collection is set to start in the spring of 2016.

New publications

Roy L, Zur RM, Uleryk E, Carew C, Ito S, Ungar WJ. **Thiopurine s-methyltransferase testing for averting drug toxicity in patients receiving thiopurines: A systematic review.** In press in *Pharmacogenomics*, 2016

Payakachat N, Tilford JM, Ungar WJ. **National Database for Autism Research (NDAR): Big Data opportunities for health services research and health technology assessment.** In press *Pharmacoeconomics*, 2016.

Bashir N, Ungar WJ. **The 3-I Framework: A framework for developing public policies regarding pharmacogenomics (PGx) testing in Canada.** *Genome*, 58(12): 527-540, 2015.

Ungar WJ, Hadioonzadeh A, Najafzadeh M, Tsao NW, Dell S, Lynd LD. **Parents and adolescents preferences for asthma control: A best-worst scaling choice experiment using an orthogonal main effects design.** *BMC Pulmonary Medicine*, Nov 17;15:146, 2015

Ungar WJ. **Next generation sequencing and health technology assessment in autism spectrum disorder.** *Canadian Journal of Child and Adolescent Psychiatry*, 24(2): 123-127, 2015

Burnett HF, Lambley R, West SK, Ungar WJ, Mireskandari, K. **Cost-effectiveness analysis of clinic-based chloral hydrate sedation versus general anaesthesia for paediatric ophthalmological procedures.** *British Journal of Ophthalmology*, 99:1565-1570, 2015

Cost effectiveness of influenza vaccine

Currently no national seasonal influenza immunization program exists. Eon Ting, M.Sc. conducted a systematic review of cost-effectiveness studies of influenza immunization programs. He found that from a societal perspective, vaccination was cost-effective for children, adolescents, pregnant and postpartum women, high risk groups, and to a limited degree, healthy adults. The report [Systematic review of the cost-effectiveness of influenza immunization programs: A Canadian perspective](#) is currently being used by national and provincial decision-makers to inform influenza policy in Canada.

Resource use and costs for children with Autism Spectrum Disorder

TASK is involved in multi-disciplinary national studies that are following families with children with Autism Spectrum Disorder (ASD) and are collecting developmental outcome, resource use and cost data. Such studies include PATI-ITAP, a cohort study of preschoolers in Nova Scotia and New Brunswick and [Pathways in ASD study](#), the largest longitudinal multi-site study of children with ASD in Canada. Data collected from these studies will be used in cost-effectiveness analyses of ASD diagnostic strategies and treatment interventions, the first of their kind to be conducted in Canada.

Paediatric Economic Database Evaluation (PEDE) Project

[The Paediatric Economic Database Evaluation \(PEDE\)](#) database is a searchable repository that houses detailed information on over 2,700 paediatric economic evaluations published since 1980. It also contains 1,656 health state utility weights which have been collected from the cost-utility analyses included in PEDE. The PEDE database has been updated with 151 economic evaluations from 2014. Stay tuned for the 2015 update coming up in the fall of 2016.

A report examining the PEDE trends lead by Shannon Sullivan [Will the growth spurt continue? Trends in child health economic evaluation: 1980 to 2013](#) has been released on the TASK website. The report showed that the field of pediatric economic evaluations continues to grow, especially cost-utility analyses, but research can better align with child health priorities.

The database is freely accessible on the internet with a user-friendly search engine. **Search PEDE today at:** <http://pede.ccb.sickkids.ca/pede/search.jsp>

New publications

Lipstein EA, Brinkman WB, Fiks AG, Hendrix KS, Kryworuchko J, Miller VA, Prosser LA, Ungar WJ, Fox D. **An emerging field of research: Challenges in pediatric decision making.** *Medical Decision Making*, 35:403-408, 2015

Schuh S, Freedman S, Coates A, Allen U, Parkin P, Stephens D, Ungar W, Da Silva Z, Willan A. **Impact of oximetry on hospitalization in bronchiolitis - a randomized trial.** *JAMA*, 312(7):712-718, 2014.

Burnett HF, Tanoshima R, Chandranipapongse W, Madadi P, Ito S, Ungar WJ. **Testing for thiopurine methyltransferase status for safe and effective administration of thiopurines: A systematic review of clinical guidance documents.** *The Pharmacogenomics Journal*, 14(6):493-502, 2014.

Burnett HF, Ungar WJ, Regier DA, Feldman BM, Miller FA. **Parent willingness-to-pay for biologic treatments in juvenile idiopathic arthritis.** *Value in Health*, 17(8):830-837, 2014

Ungar WJ, Hadioonzadeh A, Najafzadeh M, Tsao NW, Dell S, Lynd LD. **Preferences for asthma control in parents and adolescents using a best-worst scaling experiment.** *Respiratory Medicine* 108:842-851, 2014

Regier DA, Watson V, Burnett H, Ungar WJ. **Task complexity and response certainty in discrete choice experiments: An application to drug treatments for juvenile idiopathic arthritis.** *Journal of Behavioral and Experimental Economics*, 50:40-49, 2014.

Funding Awards

TASK is leading the Integrated GE3LS study, **Health technology assessment of genetic testing in Autism Spectrum Disorder diagnosis**, funded by a Large Scale Applied Genome Canada grant. This study is assessing the cost-effectiveness of whole-genome sequencing (WGS) to identify genetic risk factors in patients with developmental delay and suspected autism. Results from this economic evaluation will help hospitals and health ministries in deciding how to best deploy this new technology.

New TASK Force members

Tracy Yuen, M.Sc. and **Naaz Bashir**, M.Sc. are PhD candidates in Health Technology Assessment in the Institute for health Policy, Management & Evaluation at the University of Toronto.

Eon Ting, M.Sc. graduated from the international MSc in Health Technology Assessment & Management program at University of Toronto. With experience in the bio-pharmaceutical industry and HTA, Eon focuses on finding collaborative new models for technology innovation.

Melanie Penner, MD, MSc completed her MSc in HTA in 2015 and is Assistant Professor and a developmental paediatrician at Bloorview Hospital, studying how the health care system can best serve the needs of children with ASD.

Myla Moretti is a Health Economist at The Hospital for Sick Children, holding a PhD in health services research from the University of Toronto's Institute of Health Policy Management & Evaluation. She also completed a master's degree in Clinical Pharmacology. Dr. Moretti's research focuses on economic evaluations in maternal-child health.

Kate Tsiplova, M.Sc. is the TASK research project manager. She joined TASK in June 2015. Prior to arriving at TASK Tsiplova obtained her Master of Science degree in biostatistics with additional expertise in economics and environmental sciences.

For more information on TASK, contact:

Kate Tsiplova, M.Sc.

Research Project Manager
Technology Assessment at SickKids (TASK)
Child Health Evaluative Sciences,
The Hospital for Sick Children Research Institute
Toronto, Ontario, Canada
kateryna.tsiplova@sickkids.ca

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