

# Erin Kirwin

email: [erin.kirwin@postgrad.manchester.ac.uk](mailto:erin.kirwin@postgrad.manchester.ac.uk) website: [www.erinkirwin.net](http://www.erinkirwin.net) pronouns: she/her

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## Education

[Candidate, Expected 2024] University of Manchester, Manchester, United Kingdom

### PhD in Health Economics

Awards: Doctoral Academy Award

Thesis topic: Methods for the Economic Evaluation of Horizontal Health System Interventions

Supervisors: Matt Sutton, Rachel Meacock, Jeff Round

[2014] University of Alberta, Edmonton, Canada

### Master of Arts in Economics

[2010] McGill University, Montreal, Canada

### Bachelor of Arts (Honors) International Development Studies, Major Economics

Awards: Burgess Family Award, Quebec Youth Travel Forum Award

## Peer-Reviewed Publications

1. Rafferty E, Unsal A, **Kirwin E**. Healthcare Costs and Effects of Post-COVID-19 Condition in Canada. 2023. Canada Communicable Disease Report. [In press]
2. Akpınar I, **Kirwin E**, Chojecki D, Tjosvold L, Round J. *A systematic review of the accessibility, acceptability, safety, efficiency, clinical effectiveness and cost-effectiveness of private providers of elective surgical services compared with public providers*. 2023. International Journal of Health Technology Assessment.
3. **Kirwin E**, Meacock R, Round J, Sutton M. *The Diagonal Approach: A theoretic framework for the economic evaluation of vertical and horizontal interventions in healthcare*. 2022. Social Science & Medicine.
4. **Kirwin E**, Bond K, Round J, McCabe C. *A Conceptual Framework for Life-Cycle Health Technology Assessment*. 2022. Value in Health [Editor's Choice]
5. **Kirwin E**, Rafferty E, Harback K, Round J, McCabe C. *A Net Benefit Approach for the Optimal Allocation of a COVID-19 Vaccine*. 2021. PharmacoEconomics.
6. Mulberry N, Tupper P, **Kirwin E**, McCabe C, Colijn C. *Vaccine rollout strategies: The case for vaccinating essential workers early*. 2021. PLOS Global Public Health.
7. Briggs A, Goldstein D, **Kirwin E**, Meacock R, Pandya A, Vanness D, Wisloff T. *Estimating (quality-adjusted) life-year losses associated with deaths: with application to COVID-19*. 2020. Health Economics.
8. **Kirwin E**, Varughese M, Waldner D, Simmonds K, Joffe A, Smith S. *Comparing methods to estimate incremental inpatient costs and length of stay due to methicillin-resistant Staphylococcus aureus in Alberta, Canada*. 2019. BMC Health Services Research.
9. Barichello S, Nguyen T, Lu D, Ismond K, Loomes D, **Kirwin E**, Wang H, Chang D, Svenson L, Fedorak R. *Comparative Effectiveness and Cost-Effectiveness Analysis of a Urine Test versus Alternative Colorectal Cancer Screening Strategies*. 2018. American Journal of Gastroenterology.
10. Beilman C, **Kirwin E**, Ma C, McCabe C, Fedorak R, Halloran B. *Early Initiation of Anti-TNF Therapy is Cost-Saving Compared to Late Initiation for Patients with Crohn's Disease*. 2017. Clinical Gastroenterology & Hepatology.

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11. Dover D, **Kirwin E**, Hernandez N, Nelson K. *Pandemic Risk Assessment Model (PRAM): A Mathematical Modeling Approach to Pandemic Influenza Planning*. 2016. Epidemiology and Infection.

## Working Papers

12. **Kirwin E**, Paulden M, McCabe C, Round J, Sutton M, Meacock R. *The risk-based price: incorporating uncertainty and risk attitudes in health technology pricing*. [Pre-Print on SSRN]
13. **Kirwin E**, Meacock R, Round J, Sutton M. *Costs and Benefits of Incentivizing Physicians to Enhance Care of Patients with Complex Conditions: Econometric Evidence from Patient Migration*.
14. Round J, **Kirwin E**, van Katwyck S, McCabe C. *DAMed if you do: Improving Public Understanding of Decision Models Through the Application of Decision Analytic Models with Omitted Objects Displayed (DAMWOOD)*.
15. **Kirwin E**, Meacock R, Round J, Sutton M. *The impact of diagnostic imaging wait time on patient mortality and health system cost*.
16. Wiggins M, Pandey H, Round J, Waye A, Ueyama M, **Kirwin E**. *The cost-effectiveness of a diabetes prevention program in Alberta, Canada*
17. Wiggins M, Round J, Ueyama M, **Kirwin E**. *Optimizing diagnostic imaging wait times by scan urgency to improve health system outcomes*.

## Other Published Work

18. **Kirwin E**, Bond K, Round J, McCabe C. *Response to: Comments on A Conceptual Framework for Life-Cycle Health Technology Assessment*. 2023. Value in Health.
19. **Kirwin E**, MacDonald S, Simmonds K. *Profiles in Epidemiology: Dr. Larry Svenson*. 2022. American Journal of Epidemiology.

## Employment

[July 2019 – Present] Institute of Health Economics  
**Senior Principal Health Economist**

[July 2017 – July 2019] Alberta Health  
**Manager, Advanced Analytics**

[July 2011 – July 2017] Alberta Health  
**Public Health Economist**

## Research Funding

**Co-Primary Investigator.** *The Decision Uncertainty Toolkit: Estimating and communicating decision uncertainty within infectious disease models*. Canadian Network for Modelling Infectious Diseases. (\$70,000 from 2021-2022)

**Collaborator.** *One-society Network: Mathematical modelling of multi-sectoral impacts of pandemics and control policies*. Natural Sciences and Engineering Research

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Council (NSERC) Emerging Infectious Disease Modelling Initiative. (\$1,250,000 from 2021-2023)

**Co-Investigator.** *Estimation of long-term COVID-19 health state utility values.* Canadian Institutes for Health Research. Vaccine Readiness Grant: Modelling and Economics Research Network. (\$115,165 from 2021-2022)

**Trainee.** *Canadian Immunization Research Network (CIRN).* Public Health Agency of Canada. Canadian Institutes for Health Research. (\$6,600,000 from 2014-2017; \$10,083,000 from 2017-2022)

## Additional Funding

Conference support. **University of Manchester Doctoral Academy Conference Support Fund.** Society for Medical Decision Making Annual Meeting, Philadelphia, USA. (October 2023, £500) [Upcoming]

Conference support. **HTAi.** HTAi Annual Meeting, Adelaide, Australia. (June 2023, \$2,800 USD)

Conference support. **University of Manchester Doctoral Academy Conference Support Fund.** European Health Economics Association (EuHEA) PhD and Early Career Research Meeting, Galway, Ireland. (August 2022, £500)

Conference support. **Health Economics Study Group.** Health Economics Study Group Meeting Summer 2022, Sheffield UK. (June 2022, approx. £400)

Travel Support. **Quebec Youth Travel Forum.** World Youth Congress, Canadian Delegate, Istanbul, Turkey. (June 2010, \$600 CAD)

Stipend. **Burgess Family Award, McGill Arts Internship Office.** Field Assistant Intern, Hatua Kenya, Kisumu, Kenya. (Summer 2009, \$3000 CAD)

## Conference Papers and Presentations

**Kirwin E,** Paulden M, McCabe C, Round J, Sutton M, Meacock R. *The Risk-Based Price: incorporating uncertainty and risk attitudes in health technology pricing.* 2023. Vancouver Health Economics Methods Meeting [Accepted oral presentation, Upcoming]

**Kirwin E,** McCabe C, Round J. *The Decision Uncertainty Toolkit: Risk Measures and Visual Outputs to Support Health Technology Decision-making During Public Health Crises.* 2023. HTAi Annual Meeting [Accepted oral presentation, Upcoming]

**Kirwin E,** Paulden M, McCabe C, Round J, Sutton M, Meacock R. *The Risk-Based Price.* 2023. HTAi Annual Meeting [Accepted oral presentation, Upcoming]

**Kirwin E,** Meacock R, Round J, Sutton M. *Costs and Benefits of Incentivizing Physicians to Enhance Care of Patients with Complex Conditions: Econometric*

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*Evidence from Patient Migration*. 2022. European Health Economics Association PhD Student and Early Career Researcher Conference, Ireland. [Paper discussed in dedicated session]

**Kirwin E**, Meacock R, Round J, Sutton M. *Costs and Benefits of Incentivizing Physicians to Enhance Care of Patients with Complex Conditions: Econometric Evidence from Patient Migration*. 2022. Sheffield Health Economics Study Group. [Paper discussed in dedicated session]

Round J, **Kirwin E**, van Katwyck S, McCabe C. *The Morals of Models: Improving Public Understanding of Decision Models Through the Application of Decision Analytic Models With Omitted Objects Displayed (DAMWOOD)*. Sheffield Health Economics Study Group. [Paper discussed in dedicated session]

**Kirwin E**, Paulden M, McCabe C, Round J, Sutton M, Meacock R. *The Risk-Based Price*. 2021. CADTH [Oral presentation]

**Kirwin E**, Paulden M, McCabe C, Round J, Sutton M, Meacock R. *The Risk-based Price*. 2021. Cambridge Health Economics Study Group. [Paper discussed in dedicated session]

**Kirwin E**, Hopkin G, Bond K, Round J, McCabe C. *Health Technology Assessment Methods for Research Oriented Market Access*. 2020. Society for Medical Decision Making North American Meeting. Watch [here](#). [Oral hybrid presentation]

## Conference Posters

**Kirwin E**, Paulden M, McCabe C, Round J, Sutton M, Meacock R. *The Risk-Based Price: incorporating uncertainty and risk attitudes in health technology pricing*. 2022. ISPOR.

**Kirwin E**, Rafferty E, Round J, McCabe C. *The COVID-19 Risk Assessment Model: an Interactive Epidemiologic Modelling Platform*. 2020. Canadian Association for Population Therapeutics (CAPT) Conference.

**Kirwin E**, Rafferty E, MacDonald S. *Choice of Influenza Immunization Provider and Impact on Immunization Coverage in Alberta, Canada*. 2019. ISPOR Europe.

## Conference Course Instruction

**Kirwin E**, van Katwyck S, McCabe C, Round J. *Research Oriented Market Access for High-Cost Therapies, Principles and Practice*. 2022, 2023. Health Technology Assessment international (HTAi) Conference.

## Guest Lectures

**McGill University** Quantitative Life Sciences. November 2023 [Upcoming]

**University of York** Centre for Health Economics. September 2023

**University of Alberta** Department of Mathematics. March 2023

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## Invited Oral Presentations (Selected)

**Kirwin E.** 2022. University of York Centre for Health Economics. *The Risk-Based Price: incorporating uncertainty and risk attitudes in health technology pricing.*

**Kirwin E.** 2022. University of Alberta Department of Economics. *The Diagonal Approach: A Theoretic Framework for the Economic Evaluation of Vertical and Horizontal Interventions in Healthcare.*

**Kirwin E.** 2021. Pennsylvania State University Health Services Research Colloquium. *The Diagonal Approach.*

**Kirwin E.** 2021. Pennsylvania State University, Seminar to the Medical School at Hershey. *The Risk-Based Price: incorporating uncertainty and risk attitudes in health technology pricing.*

**Kirwin E.** 2021. NOAHE Rounds V. *The Diagonal Approach: A Theoretic Framework for the Economic Evaluation of Vertical and Horizontal Interventions in Healthcare.*

**Kirwin E.** 2021. The United Kingdom Office of Health Economics. *The Risk-Based Price: incorporating uncertainty and risk attitudes in health technology pricing.*

**Kirwin E.** 2020. Alberta Health Economics Study Group. *Real Time Epidemiological Modelling to inform the COVID-19 Pandemic Response.* **Keynote.**

**Kirwin E.** 2019. NOAHE Rounds III. *Administrative Data Analytics at Alberta Health.*

**Kirwin E** and Varughese M. 2018. Alberta Advisory Committee on Immunization. *Cost Effectiveness Analysis of Shingrix Vaccine.*

**Kirwin E.** 2017. Alberta Health Services Respiratory Strategic Clinical Network. *Costing Chronic Disease with Administrative Data.*

**Kirwin E.** 2016. Canadian Chronic Disease Surveillance System Economic Committee National Meeting. *Using Economic and Epidemiologic Data for Chronic Disease Surveillance.*

**Kirwin E.** 2014. Western Canada Immunization Forum. *HPV Vaccine for Boys: A Cost Effectiveness Analysis.* Watch [here](#).

**Kirwin E.** 2013. Alberta Advisory Committee on Immunization. *HPV Immunization in Alberta: A Cost Utility Analysis.*

## Journal Refereeing

Health Economics, Pharmacoeconomics, PLOS One, International Journal of Health Technology Assessment

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## Additional Training

[2020] Michigan State University, Professor Jeff Wooldridge, Virtual

### **ÊSTIMATE: The Reduced Form**

Econometrics course with a focus on understanding when various models and estimation methods are appropriate as well as how to conduct proper inference in a variety of settings.

[2015] Health Economics Research Unit (HERU), University of Aberdeen  
and O'Brien Institute for Public Health, University of Calgary, Banff, Canada

### **Using Discrete Choice Experiments in Health Economics: Theoretical and Practical Issues**

Introduction to discrete choice experiments with hands-on experience of the design, questionnaire development, data input, analysis and interpretation.

[2014] SAS Institute, Virtual

### **Programming I, II, Macro Language**

Programming Essentials, Data Management Techniques, Macro Language

[2012] PIMS-Mprime-CDM Summer School, University of Alberta, Edmonton, Canada

### **Mathematical Modeling of Infectious Diseases**

Theory and methods for modeling infectious diseases with MATLAB and Mathematica.

## Software

R, SAS, Mathematica, Stata

## Conference/Meeting Organization

Alberta Health Economics Study Group, Calgary, Alberta, 2022

## Memberships

Network of Alberta Health Economists: Working Group Chair, Current

UK Health Economics Study Group. Member, Current

Professional Society for Health Economics and Outcomes Research: Member, Current

Society for Medical Decision Making: Member, Current

Canadian Chronic Disease Surveillance System Economic Committee: Alberta Delegate

Alberta PROMs and EQ-5D Research and Support Unit: Scientific Advisory Committee Member