

Statistical Advances in Health Economic Modelling

A Health Technology Assessment (HTA) is a multidisciplinary research process that collects and summarises information about a health technology. HTA agencies receive information such as clinical trial evidence in the form of a cost-effectiveness model to compare the costs and benefits of a new drug for example, to compare to the standard of care.

As healthcare budgets are finite, to invest in a new technology requires a choice of where to place limited resources. There are also data challenges as clinical trial evidence is based on several assumptions and extrapolation of longer-term assumptions need to be tested. Statistical methods such as survival analysis and multistate modelling can play a role in improving HTAs by better approximating how patients move between health states over time.

The National Centre for Pharmacoeconomics (NCPE) conducts the HTAs of pharmaceutical products for the Health Service Executive (HSE) in Ireland in collaboration with the HSE Corporate Pharmaceutical Unit (HSE-CPU). The aim of the centre is to promote expertise in Ireland for the advancement of the discipline of pharmacoeconomics through practice, research and education. The research conducted by the NCPE aims to support evidence-base decision making, and the NCPE has close collaborative links with international health economic academic centres. They are committed to research and development, and this project would offer significant expertise from the NCPE to Queen's University Belfast (QUB).

This PhD will consist of supervisors from Statistics and Health Economics from both QUB and the NCPE: Dr Felicity Lamrock, School of Mathematics and Physics, Queen's University Belfast; Professor Christopher McCabe, School of Medicine, Dentistry and Biomedical Sciences; Dr Lea Trela-Larsen National Centre for Pharmacoeconomics, Dublin, Ireland.

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Funding Information

Funded by the Department for the Economy (DfE) as part of a Collaborative Studentship. For UK domiciled students the value of an award includes the cost of approved tuition fees and maintenance support the 2025/26 rates are still to be confirmed (current rates for 2024/25 are Fees £4,786, Stipend £19,237). To be considered eligible you must have been ordinarily resident in the UK for the full 3-year period prior to the start of the studentship and you must be ordinarily resident in Northern Ireland on the first day of the start of the studentship. For further information about eligibility criteria please refer to <https://www.economy-ni.gov.uk/publications/student-finance-postgraduate-studentships-terms-and-conditions>