CHE
Centre For Health Economics

Health Economics *News*

issue 44 • July 2022
www.york.ac.uk/che

Welcome to the CHE Newsletter

If you are viewing this newsletter electronically and would like further details on particular topics, click on the icon marked www, or go to our website www.york.ac.uk/che/publications

Follow us on and and

Courses and Workshops

York Online Workshops in Health Economic Evaluation - 2022

Foundations of Economic Evaluation in Health Care

Advanced Methods for Cost-Effectiveness Analysis: Meeting Decision-Makers' Requirements

More details here www

Athena SWAN Silver Award

Assessing the population health impacts of new antibiotics

Project Team: Beth Woods, Laetitia Schmitt, Dina Jankovic, Claire Rothery, Laura Bojke, Mark Sculpher (CHE), Ben Kearns, Alison Scope, Kate Ren, Ruth Wong, Tushar Srivastava, Chu Chang Ku, Jean Hamilton, Sue Harnan (University of Sheffield)

Growing resistance to antibiotics is a worldwide public health problem and concerns have been raised about the limited number of new antibiotics being developed. Following the 2016 O'Neill Report on antimicrobial resistance, schemes to incentivise the development of new antibiotics have been introduced internationally. NHS England and Improvement has introduced a novel funding arrangement where the NHS pays a periodic 'rent' to use a product that is 'delinked' from the volume used. The aim is to provide predictable and sufficient revenue to manufacturers when good stewardship might restrict the product's use until resistance to existing products makes this necessary.

This funding scheme requires an understanding of the expected long-term value of the new product so NHSE&I can agree on a suitable payment. As part of a pilot of a NICE evaluation programme, a team from CHE and the University of Sheffield (collaborating through EEPRU) undertook evaluations of two products: ceftazidime with avibactam and cefiderocol. These analyses differ from standard cost-effectiveness analyses used by NICE in that they seek to quantify long-term health and NHS impacts at the population level, excluding the drug price. The evaluations faced major methodological and evidential challenges including the large number of indications for new antibiotics, the lack of relevant evidence on clinical effectiveness and the highly uncertain profile of long-term resistance.

The EEPRU reports are available for ceftazidime with avibactam and cefiderocol.

CHE recently hosted a very successful workshop on the Mental Health Services Dataset (MHSDS). Presenters included speakers from NHS Digital, NHS England, and a mental health commissioner, along with academics from CHE with experience of analysing the MHSDS. Participants came from a range of backgrounds including NHS Trusts, commissioning organisations, NHS England, funding organisations, researchers and PhD students. The workshop consisted of overviews of the challenges of working with this complex dataset, as well as opportunities to test skills in spreadsheet exercises using a mock MHSDS data extract.

Approaches to projecting future healthcare demand

Project Team: Maria Ana Matias, Rita Santos, Panos Kasteridis, Katja Grasic, Anne Mason, Nigel Rice

To plan healthcare services for the NHS, the government needs to know how much future demand for care will rise and its expenditure consequences. These estimates are known as projections: they indicate changes to demand and/or expenditure should certain assumptions hold true. Published estimates of future NHS expenditure needs vary widely. While these reflect uncertainties about the growth in demand, they also reflect differences in the modelling approaches used and their underlying assumptions.

This project reviews and assesses four approaches to projection modelling applicable to healthcare services: macro-level modelling, macrosimulation, microsimulation and machine learning. All have benefits and limitations, and the appropriate choice will depend on a number of factors. These include the projection objective, for example: to assess the likely impact of a change in policy, or to project expenditure growth in response to an ageing population; the development and implementation needs of the approach, in particular the data input requirements and the resources needed to maintain the model; the required accuracy of the technique in terms of projections and how well they fit current data; and the ease of updating the model as new information becomes available.

More details here www

How can economic analysis guide resource allocation within HIV programmes in sub-Saharan Africa? A consensus Viewpoint

CHE Project Team: Paul Revill, Newton Chagoma, Sakshi Mohan, Simon Walker

HIV treatment and prevention programmes have contributed to impressive increases in national life expectancies in sub-Saharan Africa (SSA). For instance, life expectancy has increased from 45 years in 2000 to 65 years today in Malawi, from 45 to 62 years in Zimbabwe, and 56 to 64 years in South Africa. However, despite this progress, significant challenges remain and there are almost 1 million new HIV infections that are still occurring each year in the region. Mathematical modelling and economic analyses have played a significant role in shaping responses to HIV. However, until recently, there has been relatively little critical reflection on their role within the institutional and funding arrangements that characterise the responses and how the dual challenges of expanded HIV care and full Universal Health Coverage (UHC) can best be met together.

In this Viewpoint, researchers and HIV policymakers from a wide array of influential organisations set out a vision, formed through consensus, for how HIV modelling and economic analyses can be better used to inform national-level policymaking in sub-Saharan Africa in future. They call for analyses to be more routinely aligned with national government and Ministry of Health priorities, across HIV and other areas of health; for expanded collaboration between research groups that aim to inform policy; for HIV analyses to be increasingly integrated with efforts to understand health needs beyond HIV; and, critically, for substantial and equitable investment in capacity strengthening within African countries, so that in future African researchers will increasingly be leading modelling exercises. It is hoped the recommendations will shape the way HIV modelling and economic analyses are funded, conducted, and utilised in future.

More details here www

News from CHE

We are delighted to congratulate **Dina Jankovic**, **Vijay Gc** and **Francesco Longo**, who were recently promoted.



It was with great sadness that CHE reported on the recent death of **Dr Stephen Martin** following a short illness. Read more ...

World-leading research undertaken by CHE has been recognised in the results of the 2021 Research Excellence Framework (REF 2021). Read more ...

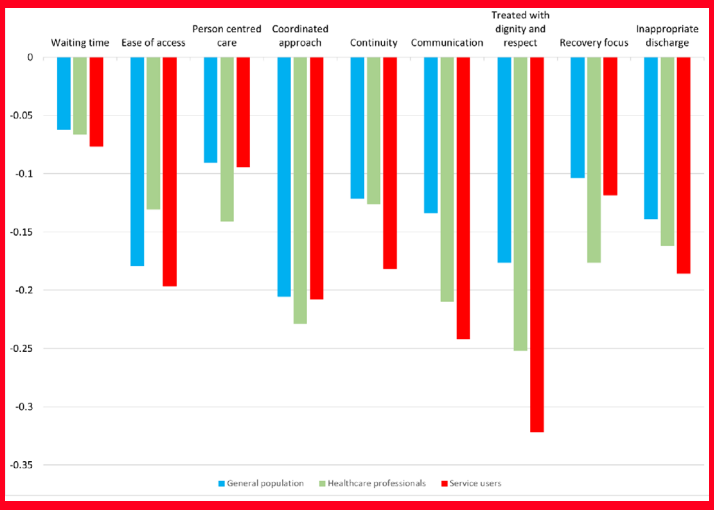
The University of York is one of the top 10 universities in the world for its collaborative work in helping the United Nations achieve its Sustainable Development Goals (SDGs), according to a prestigious league table. An example of York's work in supporting the SDGs is the 'Thanzi la Onse' (Health of All) project, led by CHE with collaboration from the Department of Politics and Interdisciplinary Global Development Centre.

More news about CHE can be found on our website. www

Valuing quality in mental healthcare

Project Team: Maria-Jose Aragon, Adriana Castelli, Rowena Jacobs (CHE), Donna Rowen, Philip Powell, Arne Risa Hole (University of Sheffield)

Healthcare systems may prioritise certain aspects of quality over others, but these may not reflect what is important to other stakeholders such as healthcare professionals or patients. This was the first study, undertaken jointly with the University of Sheffield, to provide evidence on relative preferences of different aspects of quality of mental healthcare across different stakeholders for mental healthcare: mental healthcare professionals; mental healthcare service users and the general population. Ten quality attributes were selected: waiting times, ease of access, person-centred care, co-ordinated approach, continuity, communication, capacity and resources, treated with dignity and respect, recovery focus, inappropriate discharge, and quality of life. A Discrete Choice Experiment was conducted for the three stakeholder groups. As shown in the figure, that provides relative importance (in terms of willingness to sacrifice quality of life), across all stakeholders, being treated with dignity and respect was of high importance. A coordinated approach was important across all stakeholders, whereas communication had higher relative importance for healthcare professionals and service users and ease of access had higher relative importance for the general population. This implies that policy could be affected by the choice of whose preferences to use, since this impacts on the relative value and implied ranking of different aspects of mental healthcare quality.



Evaluating childhood policy impacts on lifetime health, wellbeing and inequality

Project Team: Ieva Skarda, Richard Cookson (CHE), Miqdad Asaria (LSE)

We have developed a new long-term approach for economic evaluation of childhood policies – Lifecourse Distributional Economic Evaluation (LDEE). As well as standard cost-benefit analysis in monetary terms, LDEE allows the following innovative ways to evaluate childhood policies which are not possible using conventional methods (e.g. trial data analysis):

- cost-effectiveness analysis in terms of lifetime health and wellbeing;
- policy-targeting analysis to identify which children would benefit most;
- distributional analysis of inequality impacts within the general population.

Applying LDEE requires a lifecourse microsimulation model, i.e. a computer programme which can predict life events for different children throughout their lives. We have demonstrated the capabilities of LDEE using such a model, which draws observations of child outcomes from the Millennium Cohort Study dataset and then models the evolution of social, economic and health outcomes during adulthood for these children. Our team of researchers at York, UCL and LSE are currently developing other microsimulation models suitable for use with LDEE – in particular, LifeSim Childhood, which models the co-evolution of outcomes from birth to age 17 using estimates from UK longitudinal data. Our future plans include applying LDEE to childhood policies in Bradford and Tower Hamlets, as part of the ActEarly collaboration. See more information here

Aragón MJ, **Chalkley M**, **Kreif N**. The long-run effects of diagnosis related group payment on hospital lengths of stay in a publicly funded health care system: Evidence from 15 years of micro data. *Health Economics* 2022;31(6):956-972.

Bai Y, **Arabadzhyan A**, Li Y. The legacy of the Great Wall. *Journal of Economic Behavior and Organization* 2022;196:120-147.

Brown J, Ajjan R, Alderson S ,Bőhnke J et al (includes **Jacobs R**). The DIAMONDS intervention to support self-management of type 2 diabetes in people with severe mental illness: study protocol for a single-group feasibility study. *SSM - Mental Health* 2022;2:100086.

Bywater T, Berry V, Blower S, Bursnall M et al (includes **Cox E**, **Richardson G**, **Walker S**). A randomized controlled trial of a proportionate universal parenting program delivery model (E-SEE Steps) to enhance child social-emotional wellbeing. *PLOS ONE* 2022;17(4):e0265200.

Cowan F, Machingura F, Chabata S, Ali M et al (includes **Revill P**). Differentiated prevention and care to reduce the risk of HIV acquisition and transmission among female sex workers in Zimbabwe: study protocol for the 'AMETHIST' cluster randomised trial. *Trials* 2022;23(1):209.

Cox E, **Walker S**, Blower S, Sampaio F, BywaterT, **Richardson G**. The cost-effectiveness of a proportionate parenting programme for primary caregivers and their child: an economic evaluation using evidence from the E- SEE Trial. *BMC Health Services Research* 2022;22:814.

Dolton P, **Tafesse W.** Childhood obesity, is fast food exposure a factor? *Economics & Human Biology* 2022;46:101153.

Drummond M, Federici C, Reckers-Droog V, Torbica A et al. Coverage with evidence development for medical devices in Europe: Can practice meet theory? *Health Economics* 2022;doi:10.1002/hec.4478.

Gc S, Khanal A, **Gc V**, Bhattarai S, Panthee S, Khanal A et al. Burden of tuberculosis and hepatitis co-infection among people living with HIV in Nepal: A systematic review and meta-analysis. *Sexual Health* 2022;doi:10.1071/SH21216.

Gc V, Aryal N, Baral YR, Adhikary P, Wasti SP. Preparing an academic poster. In Wasti SP, van Teijlingen E, Simkhada PP, Hundley V, Shreesh K eds. *Academic Writing and Publishing in Health and Social Sciences*. Social Science Baha & Himal Books 2022: p190-200.

Gomes M, Latimer N, **Soares M,** Dias S et al. Target trial emulation for transparent and robust estimation of treatment effects for health technology assessment using real-world data: opportunities and challenges. *Pharmacoeconomics* 2022;40(6):577-586.

González-Uribe C, Olmos A, León-Giraldo S, Berna O, **Moreno-Serra R**. Health perceptions among victims in post-accord Colombia: Focus groups in a province affected by the armed conflict. *PLOS ONE* 2022;17(3):e0264684.

Gravelle H, Liu D, **Santos R**. How do clinical quality and patient satisfaction vary with provider size in primary care? Evidence from English general practice panel data. *Social Science & Medicine* 2022;301:114936.

Hinde S, Howdon D, Lomas J, Franklin M. Health inequalities: to what extent are decision-makers and economic evaluations on the same page? An English case-study. *Applied Health Economics and Health Policy* 2022;doi:10.1007/s40258-022-00739-8.

Kearns B, Stevenson M, Triantafyllopoulos K, **Manca A**. Dynamic and flexible survival models for extrapolation of relative survival: a case-study and simulation study. *Medical Decision Making* 2022;doi:10.1177/0272989X221107649.

Kovacs S, Kalo Z, Daubner-Bendes R et al (includes **Drummond M**). Implementation of coverage with evidence development schemes for medical devices: a decision tool for late technology adopter countries. *Health Economics* 2022;doi:10.1002/hec.4504.

Lin J, Islam K, Leeder S, Huo Z et al (includes **Castelli A**) Integrated care for multimorbidity population in Asian countries: A scoping review. *International Journal of Integrated Care* 2022;22(1):22, 1-28.

Ma R, Romano E, Ashworth M et al (includes **Jacobs R**). Multimorbidity clusters among people with serious mental illness: a representative primary and secondary data linkage cohort study. *Psychological Medicine* 2022;doi:10.1017/S003329172200109X.

Martin S, **Claxton K**, Lomas J, **Longo F**. How responsive is mortality to locally administered healthcare expenditure? Estimates for England for 2014/15. *Applied Health Economics and Health Policy* 2022;doi:10.1007/s40258-022-00723-2.

Mohan S, Cárdenas M, Ricciardi F, Siddharthan T et al (includes **Soares M**). Cost-accuracy analysis of chronic obstructive pulmonary disease screening in low- and middle-income countries. *American Journal of Respiratory and Critical Care Medicine* 2022;doi:10.1164/rccm.202201-0071LE.

Papworth A, Hackett J, Beresford B, Murtagh F, **Weatherly H**, **Hinde S** et al. End of life care for infants, children and young people (ENHANCE): Protocol for a mixed methods evaluation of current practice in the United Kingdom[version 1; peer review: 1 approved]. *NIHR Open Research* 2022;2:37.

Patton T, **Revill P**, **Sculpher M**, Borquez A. Using economic evaluation to inform responses to the opioid epidemic in the United States: Challenges and suggestions for future research. *Substance Use & Misuse* 2022;57(5):815-821.

Phillips A, Bershtey A, **Revill P** et al. Cost-effectiveness of easy-access, risk-informed oral pre-exposure prophylaxis in HIV epidemics in sub-Saharan Africa: a modelling study. *The Lancet HIV* 2022;9(5):e353-362.

Revill P, Rangaraj A, Makochekanwa A et at (includes **Chagoma N**, **Mohan S**, **Walker S**). Perspectives on the use of modelling and economic analysis to guide HIV programmes in sub-Saharan Africa. *The Lancet HIV* 2022;doi:10.1016/S2352-3018(22)00035-2.

Rowen D, Powell P, Risa Hole A, Aragón MJ, **Castelli A**, **Jacobs R**. Valuing quality in mental healthcare: A discrete choice experiment eliciting preferences from mental healthcare service users, mental healthcare professionals and the general population. *Social Science & Medicine* 2022;301:114885.

Scott A, **Sivey P**. Motivation and competition in health care. *Health Economics* 2022;doi:10.1002/hec.4533.

Skarda I, Asaria M, **Cookson R**. Evaluating childhood policy impacts on lifetime health, wellbeing and inequality: Lifecourse distributional economic evaluation. *Social Science & Medicine* 2022;302:114960.

Stokes J, Bower P, Guthrie B, Mercer S, **Rice N** et al. Cuts to local government spending, multimorbidity and health-related quality of life: a longitudinal ecological study in England. *The Lancet Regional Health–Europe* 2022;doi:10.1016/j.lanepe.2022.100436.

Vrontisi Z, Charalampidis I, Lehr U, Meyer M et al (includes **Arabadzhyan A**). Macroeconomic impacts of climate change on the Blue Economy sectors of southern European islands. *Climatic Change* 2022;170:27.

These and other CHE publications can be found on our website here: www

University of York RESEARCH

CHE Centre For Health Economics

Centre for Health Economics
University of York
Heslington
York YO10 5DD UK

Tel: +44 1904 321401
Email: che-news@york.ac.uk
www.york.ac.uk/che