

Dr Sue Jowett PhD, MSc, BSc

Senior Lecturer In Health Economics / Health Economic Modelling

Health Economics

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About

Sue Jowett is a Senior Lecturer in the Health Economics Unit and is an Honorary Research Fellow at the Arthritis Research UK Primary Care Centre at Keele University.

Her research interests lie in the conduct of economic evaluations alongside applied research in chronic diseases. She collaborates with a number of departments at the University of Birmingham including Primary Care Clinical Sciences and Public Health, and externally with researchers at Oxford, and Cambridge. She also oversees the health economics research within studies undertaken by the Arthritis Research UK Primary Care Centre at Keele University, as part of a formal collaboration between the Health Economics Unit and Keele.

Sue has published a number of trial-based economic evaluations in the area of cardiovascular disease and anticoagulation,. She is the health economics co-investigator on a number of major grants from the NIHR and HTA, concerning primary and secondary prevention of cardiovascular disease, and COPD detection and epidemiology. Due to her role with Keele, she has developed research interests in musculoskeletal disease, concerning both trial-based analysis and modelling of musculoskeletal conditions, and is a co-investigator on a number of grants with Keele.

Qualifications

- PhD in Health Economics, University of Birmingham, 2007
- MSc Applied Meteorology and Climatology, University of Birmingham, 1995
- BSc (Hons) Geography, University of Bristol, 1993

Biography

Sue Jowett qualified with a BSc (Hons) in Geography from the University of Bristol in 1993 and went on to complete an MSc in Applied Meteorology and Climatology at the University of Birmingham in 1995. She joined the Department of Primary Care and General Practice (now Primary Care Clinical Sciences) in 1995 as a Research Associate and became a Research Fellow in 2001.

In 2004 she moved to the Health Economics Unit, where she continues to work. During her time within the Unit she studied for a PhD in Health Economics which she gained in 2007. In early 2010 she was appointed to a Senior Lecturer position to lead the health economics research within studies undertaken by the Arthritis Research UK Primary Care Centre at Keele University, as part of a formal collaboration between the Health Economics Unit and Keele. She successfully gained a permanent HEFCE Senior Lecturer post with the University of Birmingham in 2013, still continuing her collaboration with Keele.

The majority of Sue's published work to date has been in the area of economic evaluation alongside interventions for the prevention of cardiovascular disease, and management of musculoskeletal disease working alongside colleagues in the Primary Care departments of Birmingham and Keele Universities respectively. Initially, she worked on three large clinical trials (SAFE, SMART, BAFTA) which looked at screening for Atrial Fibrillation (AF), Self-Management of Anticoagulation, and treatment of AF in the over 75s respectively. Her expertise in this area has led to further collaboration on cardiovascular projects, and she has overseen the health economics modelling undertaken on an NIHR-funded Stroke Prevention programme grant, and Theme 7 (Optimisation of the Management of Stroke and Transient Ischaemic Attack) of the Birmingham and Black Country CLAHRC. She has also advised the NICE Guidelines Development Group on the health economics modelling undertaken for the blood pressure diagnosis section of the Hypertension Guidelines.

As lead of the health economics collaboration with Keele, her main focus lies with the musculoskeletal research being undertaken at the Arthritis Research UK Primary Care Centre. Here she oversees the health economics aspects in over ten trials and cohort studies, and is the lead health economist on research grant applications. She is developing methodological research with Keele in areas such as measurement of productivity costs, data collection on resource use and modelling of interventions within musculoskeletal disease.

She has been a co-applicant and health economics lead on a large number of successful research grants. These include five NIHR Programme Grants in the areas of venous thromboembolism (VTE), chronic obstructive pulmonary disease (COPD), hypertension, stratified care for musculoskeletal disease, and primary care management of stroke patients. Furthermore, she has also been involved in a large number of HTA funded studies concerning COPD, aspirin resistance, duration of anticoagulation for VTE, oxygen supplementation for acute stroke and stratified care for sciatica.

Teaching

Teaching Programmes

- [MSc Health Economics and Health Policy \(/postgraduate/courses/taught/med/health-economics-policy.aspx\)](#)
- [Public Health MPH/PG Diploma/PG Certificate \(/postgraduate/courses/taught/med/public-health.aspx\)](#) (Health Economics module)
- [Medicine and Surgery MBChB \(/undergraduate/courses/med/medicine.aspx\)](#) 2nd year Medicine in Society

Postgraduate supervision

Sue is interested in supervising doctoral research students in the following areas:

- Decision modelling in economic evaluation
- Trial-based economic evaluation
- Impact of disease on work and estimation of productivity costs
- Aspects of economic evaluation in chronic disease (COPD, musculoskeletal disease, cardiovascular disease)

If you are interesting in studying any of these subject areas please contact Sue on the contact details above, or for any general doctoral research enquiries, please email: dr@contacts.bham.ac.uk (<mailto:dr@contacts.bham.ac.uk>) or call +44 (0)121 414 5005.

For a full list of available Doctoral Research opportunities, please visit our [Doctoral Research programme listings \(http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show\)](http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show).

Research

RESEARCH THEMES

Health economics; economic evaluation; clinical trials, decision modelling, musculoskeletal disease, cardiovascular disease, anticoagulation, respiratory disease.

RESEARCH ACTIVITY

Cardiovascular disease and anticoagulation

Sue has worked on projects in the clinical topics of cardiovascular disease and anticoagulation since embarking on a career in health economics. She currently oversees the health economics research on three NIHR Programme Grants (VTE, hypertension, stroke). She has also advised on the modelling of the long-term cost-effectiveness of blood pressure diagnosis which forms part of the NICE hypertension guidelines.

The VTE programme includes a health economics work stream which considers the costs and cost-effectiveness of a number of aspects of primary and secondary prevention and treatment of VTE. Linked to this is a recently completed HTA study on stopping rules for anticoagulation after VTE, which included economic modelling. In collaboration with Oxford University, Sue leads the economic components of the programme grant "Optimising the diagnosis and management of hypertension in primary care through self-monitoring of blood pressure", which builds on the previously published work from the TASMINH trials. She is also a co-investigator on two Cambridge-led studies – a programme grant looking at primary care management of stroke patients, and a trial of a poly pill for the secondary prevention of CVD in stroke patients.

A number of projects are nearing completion. The final publications from the acute stroke/TIA theme of the CLAHRC programme will be submitted in 2015, as will those from the Stroke Prevention programme, which investigated both primary and secondary prevention of cardiovascular disease. Decision modelling was carried out to estimate the cost-effectiveness of a poly pill or treating as per guidelines versus usual care for primary prevention in unknown CV risk and high CV risk. In addition, a trial-based analysis and modelling has been undertaken for i) intensive blood pressure treatment for patients who have suffered a stroke and ii) self-management of blood pressure in stroke patients. The SOS trial concerning oxygen supplementation in acute stroke care has ended and analyses are underway.

Previous studies which have been published have included the SAFE, SMART and BAFTA trials, The TASMINH2 trial, the European Action on Anticoagulation trial which investigated the use of computerised decision support software in dosing of anticoagulation and a patient cost sub-study of the SPORTIF III trial concerning new treatments for AF.

Using the SAFE trial, Sue completed a PhD entitled "Using decision analytical modelling techniques in health economics: an application to screening for and treatment of atrial fibrillation". The research consisted of two core components i) the application of decision analytic modelling to explore the most cost-effective method of screening for AF and ii) the investigation of different approaches to modelling, including the investigation of the circumstances of scenarios where the modelling approaches of Markov and individual sampling models are most appropriate. A parallel modelling exercise was conducted using these different approaches.

Musculoskeletal disease

Sue leads the health economics portfolio of research conducted in collaboration with the Arthritis Research UK Primary Care Centre at Keele University on a wide variety of musculoskeletal disorders. Three core areas of research concern back pain, osteoarthritis and stratified care. An NIHR-funded programme of work on back pain contains three workstreams of which two contain health economics aspects. In the physical workstream the ATLAS (Assessment and Treatment of Leg pain Associated with the Spine) cohort study includes an exploration of quality of life, health care and wider societal costs associated with back pain, and the social workstream concerns the primary care management of work-related issues in back pain patients (the SWAP trial).

An NIHR funded programme of work on osteoarthritis is almost complete at Keele and contains four components, three of which contain trials, each including health economics aspects. BEEP is an exercise trial in knee pain, POST is a trial to screen for anxiety and depression in OA and MOSIACS is exploring model OA consultations in primary care. The fourth study was conducted as a PhD to look at predictors of persistent pain and optimal primary care for OA.

A further NIHR Programme Grant is exploring the use of stratified care for musculoskeletal disease, building on Keele's previous work on stratified care in back pain. Addition ongoing research includes trials concerning treatments for gout and carpal tunnel syndrome, self-referral to physiotherapy, and stratified care for sciatica.

As part of the musculoskeletal portfolio of research, two PhDs have been completed successfully - Jerome Wulff from Keele University who undertook research on optimal primary care for osteoarthritis which included decision modelling and was part of the OA programme grant and Jesse Kigozi from the University of Birmingham who looked at the economics of back pain, concentrating on the measurement of absenteeism and presenteeism and associated productivity costs.

Respiratory disease

Sue is leading the health economics research on a programme of work concerning chronic obstructive pulmonary disease (COPD) led by colleagues within the School. Projects include a case finding RCT containing a within-trial and beyond-trial economic evaluation, a primary care cohort study which will also explore resource use and quality of life of COPD patients, and an exploration of the relationship between COPD and occupation, including analysis of wider societal costs. Two HTA-funded systematic reviews with economic modelling have also been undertaken, one concerning non-invasive ventilation in end-stage COPD and the other considered self-management strategies for moderate to severe COPD patients – both are expected to be published in 2015. Self-management is also the focus of a NIHR NSPCR-funded trial.

Other activities

Funding Committees

- Member of the West Midlands Research for Patient Benefit (RfPB) funding committee

Steering Committees

- Member of the Study Steering Committee for the HS&DR Stroke Study: Innovations in major systems reconfiguration in England: a study of the effectiveness, acceptability and processes of implementation of different models of stroke care (UCL, KCL, Manchester/Cambridge)

Collaboration with the NHS

- Determining the cost-effectiveness of implementing heart failure diagnosis pathways (with Birmingham East and North (BEN) PCT) (Completed 2009)
- Simulation modelling of acute stroke care to support strategic decision making in the West Midlands (with West Midlands Strategic Health Authority) (Completed 2008)

Publications

Kigozi J, Lewis M, Jowett S, Barton P Coast J. Estimating productivity costs using the Friction Cost Approach in practice: A systematic review. *European Journal of Health Economics* 2014 doi:10.1007/s10198-014-0652-y

McManus RJ, Mant J, Haque MS, Bray EP, Bryan S, Greenfield SM, Jones MI, Jowett S, Little P, Penaloza C, Schwartz C, Shackleford H, Shovelton C, Varghese J, Williams B, Hobbs FDR. Effect of self-monitoring and medication self-titration on systolic blood pressure in hypertensive patients at high risk of cardiovascular disease: The TASMIN-SR randomized clinical trial. *JAMA* 2014. 312(8):799-808.

Oppong R, Jowett S, Nicholls E, Whitehurst DGT, Hill S, Hammond A, Hay E, Dziedzic K. Cost-effectiveness analysis of joint protection and hand exercise in hand osteoarthritis. *Rheumatology* 2014 doi:10.1093/rheumatology/keu389.

Kigozi J, Lewis M, Barton P, Jowett S, Coast J. Construct Validity and Responsiveness of the Single-Item Presenteeism Question in patients with Lower Back Pain for the Measurement of Presenteeism. *Spine* 2014. 39(5) 409-16.

Penaloza-Ramos MC, Sheppard JP, Jowett S, Barton P, Mant J, Quinn T, Mellor RM, Sims D;Sandler D,McManus RJ on behalf of the BBC CLAHRC investigators. Cost-effectiveness of optimising acute stroke care services for thrombolysis. *Stroke* 2014 45(2):553-62

Kaambwa B, Bryan S, Jowett S, Mant J, Bray EP, Hobbs FDR, Holder R, Jones MI, Little P,Williams B, McManus RJ. Telemonitoring And Self-Management In The Control Of Hypertension (TASMINH2): A cost-effectiveness analysis *European Journal of Preventive Cardiology* 2014 21, 1517-1530

Jowett S, Crawshaw DP, Helliwell PS, Hensor EMA, Hay EM, Conaghan P. Cost-effectiveness of exercise therapy after corticosteroid injection for moderate to severe shoulder pain due to subacromial impingement syndrome: a trial based analysis. *Rheumatology* 2013. 52 (8): 1485-1491.

Lovibond K, Jowett S, Barton P, Caulfield M, Heneghan C, Hobbs FDR, Hodgkinson J, Mant J, Martin U, Williams B, Wonderling D, McManus RJ. Modelling the cost-effectiveness of different options for the diagnosis of high blood pressure in primary care. *Lancet*. 2011. 378; 1219-1230.

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