

## Dr Sue Jowett PhD, MSc, BSc

Senior Lecturer In Health Economics / Health Economic Modelling

Health Economics

### Contact details

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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 current role is 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 also 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, Cambridge and Salford University and UWE.

Sue has published a number of trial-based economic evaluations in the area of cardiovascular disease and anticoagulation, and has also been involved in a number of NICE technology appraisals. 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.

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, working alongside colleagues in Primary Care Clinical Sciences. 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 currently oversees 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.

More recently she has been a co-applicant on a number of successful research grants, including three NIHR programme grants in the areas of Venous Thromboembolism (VTE), Chronic Obstructive Pulmonary disease (COPD) and Blood Pressure, where she leads the health economics workstreams.

In her current post, 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.

### Teaching

#### Teaching Programmes

- [MSc Health Economics and Health Policy \(/postgraduate/courses/taught/med/health-economics-policy.aspx\)](#)
- [MPH \(/postgraduate/courses/taught/med/public-health.aspx\)](#) (Health Economics module)
- [MSc Clinical Oncology \(/postgraduate/courses/taught/med/clinical-oncology.aspx\)](#) (Clinical Trials module)
- [MBCChB \(/undergraduate/courses/med/medicine.aspx\)](#) 3<sup>rd</sup> year Special Study Module in Health Economics
- MBCChB 2<sup>nd</sup> 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) (<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 \(http://www.bham.findaphd.com/?es=y&apl=y&apt=&show\)](http://www.bham.findaphd.com/?es=y&apl=y&apt=&show).

## Research

### RESEARCH THEMES

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

### RESEARCH ACTIVITY

#### 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. Two core areas of research concern back pain and osteoarthritis. 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

An NIHR funded programme of work on osteoarthritis is also underway at Keele and contain 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 is being conducted as a PhD to look at predictors of persistent pain and optimal primary care for OA. Keele has ongoing trials in other areas of musculoskeletal disease (shoulder impingement, hand OA and tennis elbow), and a within-trial analysis is being conducted alongside each one.

Recently funded research includes trials concerning treatments for gout and carpal tunnel syndrome, acupuncture for back pain in pregnancy and self-referral to physiotherapy.

As part of the musculoskeletal portfolio of research, Sue supervises two PhD students. Jerome Wulff from Keele University is undertaking research on optimal primary care for osteoarthritis which includes decision modelling and is part of the OA programme grant and Jesse Kigozi from the University of Birmingham is looking at the economics of back pain, concentrating on the measurement of absenteeism and presenteeism and associated productivity costs.

#### 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 two programme grants and the acute stroke/TIA theme of the CLAHRC programme. 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 Stroke Prevention programme is investigating both primary and secondary prevention of cardiovascular disease. Decision modelling is being carried out to estimate the cost-effectiveness of a polypill or treating as per guidelines versus usual care for primary prevention in unknown CV risk and high CV risk and secondary prevention in patients with existing CV disease. In addition, a trial-based analysis and modelling is being 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 VTE programme includes a health economics work stream which will consider the costs and cost-effectiveness of a number of aspects of primary and secondary prevention and treatment of VTE.

Previous studies which have since been published have included the SAFE, SMART and BAFTA trials, 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.

#### Respiratory disease

Sue is leading the health economics research on a recently funded 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 as also being undertaken, one concerning non-invasive ventilation in end-stage COPD and the other considers self-management strategies for moderate to severe COPD patients. 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

### 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

Konstantinou K, Beardmore R, Dunn K, Lewis M, Hider S, Sanders T, Jowett S, Somerville S, Stynes S, van der Windt D, Vogel, S, Hay E. Clinical course, characteristics and prognostic indicators in patients presenting with back and leg pain in primary care. The ATLAS study protocol *BMC Musculoskeletal Disorders* 2012, 13:4.

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.

Monksfield P, Jowett S, Reid A, Proops D. Cost effectiveness analysis of bone anchored hearing aids. *Otology and Neurotology* 2011. 32(8); 1192-1197

Dziedzic KS, Hill S, Nicholls E, Hammond A, Myers H, Whitehurst T, Bailey J, Clements C, Whitehurst DGT, Jowett S, Handy J, Hughes RW, Thomas E, Hay EM. Self management, joint protection and exercises in hand osteoarthritis: a randomised controlled trial with cost effectiveness analyses. *BMC Musculoskeletal Disorders* 2011, 12:156.

Jowett S, Bryan S, Mant J, Fletcher K, Roalfe A, Fitzmaurice D, Lip GYH, Hobbs FDR. Cost effectiveness of warfarin versus aspirin in patients older than 75 years with atrial fibrillation. *Stroke* 2011; 42; 1717-1721.

Chen Y, Jowett S, Barton P, Malottki K, Hyde C, Gibbs S, Pepke-Zaba J, Fry-Smith A, Roberts J, Moore D. (2009) Clinical and cost effectiveness of epoprostenol, iloprost, bosentan, sitaxentan, and sildenafil for the treatment of pulmonary arterial hypertension in adults: a systematic review and economic evaluation. *Health Technology Assessment*. 13(49).

Jowett SM, Bryan S, Poller L, van den Besselaar AMHP, van der Meer FJM, Palareti G et al. (2009) The cost-effectiveness of computer-assisted anticoagulant dosage: results from the European Action on Anticoagulation (EAA) multicentre study. *Journal of Thrombosis and Haemostasis*. 7(9);1482-1490.

Jowett S, Bryan S, Mahé I, Brieger D, Carlsson J, Kartman B, Nevinson M. (2008) A multinational investigation of time and traveling costs in attending anticoagulation clinics. *Value in Health*. 11(2);207-212.

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