PhD Studentship

The MRC Network of Hubs for Trials Methodology Research (HTMR) aims to **Improve health by improving trials.**
Our PhD programme presents a unique opportunity to undertake training for a PhD in trials methodology research.

The following studentship is available for March 2018 entry at Bangor University:
R20 - Defining outcome measures for medication adherence in clinical trials

https://www.methodologyhubs.mrc.ac.uk/about/phd-studentships/

MRC funded PhD studentship
Trials Methodology Research

- Title: Defining outcome measures for medication adherence in clinical trials
- Supervisors: Professors Dyfrig Hughes (Bangor University), Bernard Vrijens (University of Liège & Aardex), Ian White (MRC CTU, University College London)
- Location: Centre for Health Economics and Medicines Evaluation, Bangor University
- Duration of Studentship: 3 Years
- Stipend: £17,726 per year
- Deadline for application: 18 December 2017

MRC funded PhD studentship
Trials Methodology Research

Background to the project

Deviations from protocol-defined dosing regimens, in the form of variable adherence to trial medication, are prevalent and problematic. An analysis of 95 clinical studies, reported that the number of patients taking prescribed oral medication(s) decreased progressively over time [Annu Rev Pharmacol Toxicol 2012;52:275-301]. By day 100, about 20% of patients had discontinued treatment, and 12% of those still engaged with the dosing regimen were omitting a proportion of the prescribed doses. Thus, less than 70% of patients were fully adhering to the protocol-specified dosing regimen. This can lead to incorrect interpretation of a medicine's efficacy, confound the selection of an appropriate dosing regimen and may mislead the attribution of safety concerns to trial medication. Under the auspices of the European Society of Patient Adherence, Compliance and Persistence (http://www.espacomp.eu), we have published a consensus taxonomy for medication adherence [Br J Clin Pharmacol 2012;73(5):691-705], and developed Medication Adherence Reporting Guidelines (EMERGE) to be adopted by the EQUATOR network. This PhD project will aim to further advance the methodology of medication adherence measurement and reporting in clinical trials.

What the studentship will encompass

As an explanatory variable, adherence to trial medication is conventionally measured as the proportion of doses taken (or some variation on this); and, as an outcome variable, as the proportion of patients achieving some arbitrary threshold (usually 80%) of doses taken over a defined period of observation. Both measures conceal differences in the nature of patients' adherence. Specifically, non-adherence includes non-initiation (which is a dichotomous outcome); poor implementation of the dosing regimen (patients who take the drug, but not according to the prescribed dosing regimen); and premature discontinuation (when they are fail to persist with treatment). The student will: (i) review the literature for measures and models of medication adherence; (ii) develop appropriate statistical models that more effectively represents the three phases of adherence, utilising data from 17,625 trial participants in whom adherence was measured electronically using the Medication Event Monitoring System (iAdherence database); (iii) define a parsimonious model that characterises patients' adherence behaviour; (iv) assess the statistical properties of the model parameters, considering inter- and intra-individual variability; (v) develop a core outcome set of adherence measures for drug trials; (vi) make comparisons with conventional measures to highlight discrepancies in the measurement of electronically-compiled dosing histories. The findings will be extended to other forms of adherence measurement, depending on data availability.

MRC funded PhD studentship
Trials Methodology Research

Requirements

A degree in a mathematical or statistical discipline would be required. A Master's degree in a quantitative discipline would also be desirable. The ideal candidate would have a strong quantitative background, demonstrate an interest and desire to work across disciplines and able to work in multidisciplinary groups.

Eligibility and application details

Eligibility and residence requirements apply (details at https://www.methodologyhubs.mrc.ac.uk/about/phd-studentships/). Deadline for submission of application form is 18 December 2017. Candidates must discuss their application with Professor Dyfrig Hughes d.a.hughes@bangor.ac.uk prior to applying.

Training opportunities and student support

The student will be supported for their learning needs by their supervisors and postdoctoral staff at the Centre for Health Economics and Medicines Evaluation. Additional training will be provided where appropriate, including specialist short courses on statistics (including those available via the Network of Hubs for Trials Methodology Research), and specialist workshops on adherence research delivered by ESPACOMP. There will also be opportunities for the student to undertake taught modules at postgraduate level to provide the extra skills and knowledge needed to undertake postgraduate research, as well as attend workshops and courses provided for postgraduate research students by Bangor University's Centre for the Enhancement of Learning (CELT).

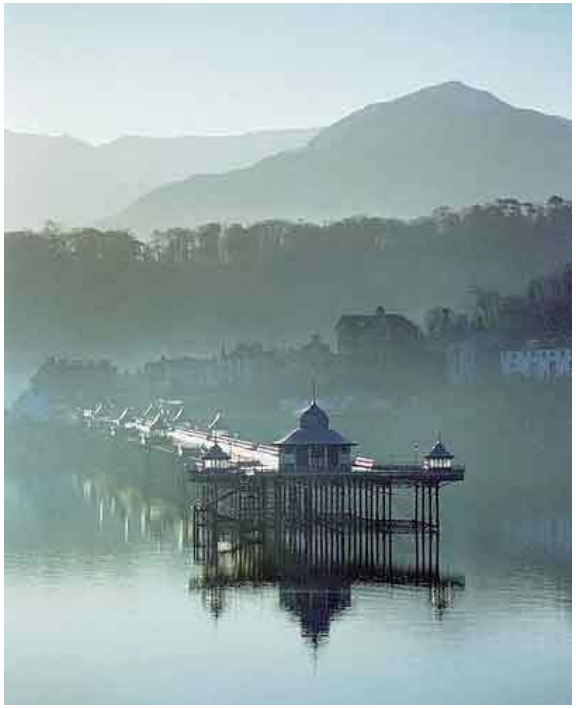
About the Centre for Health Economics and Medicines Evaluation (CHEME)

Founded in 2001, CHEME is now one of the leading health economics centres in the UK. CHEME contributed to the University's highest ranked unit of assessment in the 2014 Research Excellence Framework, with 95% of outputs being world leading and internationally excellent. Research outputs were rated 3rd out of 94 institutions across the UK.

About the Hubs for Trials Methodological Research

The Hubs for Trials Methodology Research (HTMR) were first established by the MRC in 2009 to create a UK-wide regionally distributed research resource to improve the design, conduct, analysis, interpretation, and reporting of clinical trials. Hubs work together as a Network to make a real difference to improve the quality of trials and, ultimately, patient care. The HTMR Network promotes and encourages collaborative methodological research relevant to trials, with the aim of accelerating implementation of the most effective and appropriate methods.

For further information please contact Professor Dyfrig Hughes d.a.hughes@bangor.ac.uk



Bangor University