Thank you.

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| Host department: Oxford |
| Project Title: |
| Understanding adverse drug events in ageing populations |
| Proposed supervisory team: |
| Dr James Sheppard (Oxford)  Prof Rupert Payne (Exeter) |
| Potential for cross consortium networking and educational opportunities: |
| Opportunities to engage with related cross-consortium projects including the NIHR funded Optimising  Structured Medication Reviews through Clinical Applied Research (OSCAR), OPtimising Treatment for MIld Systolic hypertension in older people at risk of adverse Events (OPTIMISE2) deprescribing trial, and ADverse DRug EventS in Ageing Populations (ADDRESS-AP) projects, linking with researchers from within the SPCR in Oxford, Exeter, Bristol, UCL and Manchester and beyond in Leeds, Liverpool and Birmingham. The PhD student will also have the opportunity to participate in national networks including the NIHR Multiple Long-Term Conditions Cross Network Collaboration (MLTC-CNC) and HDRUK Medicines in Acute & Chronic Care Driver Programme. |
| Project description: |
| As individuals age, they often develop multiple health conditions that necessitate the prescription of numerous medications. Some individuals many be prescribed an excessive number of medications, known as ‘inappropriate polypharmacy’ and this is associated with an increased risk of harm, including delirium, falls, bleeds and kidney problems. Medication-related harm accounts for 1 in 10 hospital admissions. Presently, doctors are asked to undertake regular medication reviews to avoid these harms, but do not always know which patients are most susceptible to experiencing such harms. One solution is to ‘deprescribe’ medications, this has not been evaluated widely in clinical trials, and outcomes remain unclear.  In this PhD, the student will undertake a project using data from routine electronic health records (CPRD), focussing on one specific adverse drug event, and explore:   1. Which medications are most strongly associated with this adverse drug event (systematic review and drug association study) 2. Which patients are at the highest risk of experiencing this adverse drug event (prediction modelling study) 3. Whether stopping potentially problematic medications is associated with greater benefit or harm (causal inference study) |
| Indicative project costs: |
| Training costs @£10,000 per annum to cover additional training courses (Clinical prediction modelling course run by the University of Birmingham and Causal inference epidemiology run by University of Bristol), conference attendance.  £25,000 for data access + data management support |
| Training and development provision by host: |
| *Formal Training courses offered by the host department:*  Fundamental Statistics  Medical Statistics Methods  Statistical Study Design  Systematic reviews  Meta-analysis  Health economics  Grant applications and financial management for students  Further courses run by University of Oxford [Medical Sciences Division](https://www.medsci.ox.ac.uk/study/skills-training/skills-training) |
| *Informal training:*  Developing medical code lists for big data  Data management of routine electronic health records |
| *PPIE*:  Introduction to public involvement in research run by host department  PPIE Support from department lead Polly Kerr |