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| Host department: Bristol |
| Project Title: |
| Improving the timeliness of treatment of herpes zoster (shingles), and our understanding of the impact of frailty on outcomes in in primary care. |
| Proposed supervisory team: |
| Matthew Ridd, GP and Professor of Primary Health Care, University of Bristol. Chief Investigator of the Amitriptyline for the prevention of post-herpetic neuralgia (ATHENA) trial.  Oliver van Hecke, GP and NIHR Academic Clinical Lecturer, University of Oxford. Principal Investigator on ATHENA.  Stephania MacNeill, Senior Lecturer in Medical Statistics, University of Bristol. Senior statistician on the ATHENA trial.  Jonathan Banks, Research Fellow, University of Bristol. Senior qualitative researcher on the ATHENA trial |
| Potential for cross consortium networking and educational opportunities: |
| This project will use the cross-discipline input from professional organisations such as NeuPSIG (a special interest group of the International Association for the Study of Pain, IASP) whose aim is to  advance the understanding of mechanisms, assessment, prevention, and treatment of neuropathic pain ([www.iasp-pain.org/group/neuropathic-pain-neupsig/](http://www.iasp-pain.org/group/neuropathic-pain-neupsig/)). van Hecke (proposed supervisor) has existing contacts within the NeuPSIG executive to accommodate opportunities for knowledge exchange (e.g. formal training), and further dissemination through conferences e.g. IASP World Congress of Pain, and first-rank scientific pain journal e.g. *PAIN*. In addition, we will utilise our networks with leading academic institutions and individuals with an active research interest in chronic and neuropathic pain in community settings (namely Prof Blair Smith, University of Dundee, and Dr Barbara Nicholl, University of Glasgow) to progress the findings of this important project for future interventions in primary care. The PhD will be conducted in the context of the ATHENA study (NIHR 129720), a randomised clinical trial, aiming to determine the clinical and cost effectiveness of prophylactic low-dose amitriptyline for the prevention of post-herpetic neuralgia in adults 50 years or older with herpes zoster. ATHENA is being delivered by SPCR members Bristol (Ridd CI), Oxford (van Hecke PI) and Southampton (Prof Hazel Everitt PI and collaborator on this proposal). |
| Project description: |
| Herpes zoster or “shingles” manifests as a painful, blistering dermatomal rash, and is caused by reactivation of the varicella-zoster virus within a dorsal root, or cranial, sensory ganglion. In the UK, the majority of people are managed exclusively in primary care. The most common complication is post herpetic neuralgia. Early diagnosis is important as antiviral treatment is most effective if given within 72 hours of rash onset.  While there is an agreed core outcome set for trials of treatments of neuropathic pain (IMMPACT), there is a need for a review of the psychometric properties of relevant patient reported outcome measures. Risk factors associated with the development of herpes zoster, such as age, gender and comorbidities, are well described, but the significance of frailty is poorly understood. Conceptually different (although related) to ageing, disability, and co-morbidity, frailty is characterised by an increased vulnerability to external stressors and is linked to adverse outcomes. A better understanding of frailty and other patient factors (including knowledge about the condition and benefits of early treatment) could be used to improve the timely care of patients with herpes zoster in primary care. The relationship between herpes zoster and frailty is bidirectional: frailty may effect risk of, pain severity and time to diagnosis of herpes zoster; and herpes zoster may worsen frailty.  The overall aim is to better understand how patient knowledge and frailty effects the diagnosis and outcome of herpes zoster in primary care.  Objectives:   1. To review and appraise patient reported outcome measures for post herpetic neuralgia 2. To describe and explore lay knowledge about herpes zoster 3. To describe associations between frailty and herpes zoster   Objective 1 will be met by a systematic review of the literature. Objective 2 will be achieved through two steps. First, a cross-sectional survey of patients, with and without a history of herpes zoster. Second, in-depth interviews with a sample of survey respondents. Objective 3 will be attained by secondary analysis of the ATHENA dataset (data on frailty is collected as part of the trial).  Timeline (months, for 3-year whole-time programme, adjusted pro-rata for part-time students): Background reading and literature review (1-5); systematic review (6-18); survey (12-20); interviews (16-28); secondary analysis (24-30); write-up and dissemination (31-36). |

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| Training and development provision by host: |
| *Formal training:* Bespoke according to needs, but suggested courses include:  Population Health Sciences [Short-courses](http://www.bristol.ac.uk/medical-school/study/short-courses/) at University of Bristol (Systematic reviews and meta-analysis (4 days) Questionnaire Design, Application and Data Interpretation (3 days); Stata (3 days); Linear and logistic regression (4 days); Writing a journal article (3 days)/qualitative paper (1 day).  University of Oxford Nuffield Department of Primary Care Health Sciences [short courses](https://uob-my.sharepoint.com/personal/epmjr_bristol_ac_uk/Documents/Documents/My%20research/my%20proposals/Wellcome%20PhD%20programme/(www.phc.ox.ac.uk/study/short-courses-in-qualitative-research-methods)) in qualitative research methods: Introduction to qualitative research methods (5 days); Introduction to qualitative interviewing (1 day); Introduction to analysing qualitative interviews (2 days). University of Surrey How to use NVivo course (£750).  Bristol Medical School Graduate Studies programmes (1/2 days): Basic Statistics/Basic Epidemiology; Library induction and literature searching (for systematic reviews); Introduction to EndNote; Open access; Introduction to STATA and hints and tips; Introduction to R; Quality papers; Research Reproducibility; Patient & Public Involvement; Public Speaking & Public Engagement; PhD plans and early results symposium; Thesis production and examination procedures  University of Bristol “develop” and IT courses (in person, online and blended; small group or self-directed; 1 hour-2 days) according to need, covering: Microsoft applications; personal and professional skills; career development; managing people and teams; leadership, wellbeing. |
| *Informal training:* The PhD will be carried out within a thriving, multi-disciplinary environment. There are many opportunities to attend and present at seminars within the Skin and Allergy Research Group, Centre for Academic Primary, Population Health Sciences and wider University. As part of their regular supervision, the student will receive career advice, mentoring, and support. The student will be encouraged and supported to submit abstracts to relevant conferences. External mentorship will be offered. |
| *PPIE:* A group of seven people with direct or indirect (as carers) lived experience of shingles meet regularly as part of the ATHENA trial. If this project is taken up, the student will be able to regularly share their plans and progress with this group, inviting and responding to feedback as appropriate. |