King's College London - Cancer Prevention Group Studentship Projects

Project Description

Applications are invited from graduates with a BSc (First or Upper Second) or MSc (Merit/Distinction), or equivalent, to work within the Cancer Prevention Group in the Comprehensive Cancer Centre at King's College London. There are 2 studentships available commencing in Autumn 2020 (for 3-4 years). Both will be based at Guy's Campus. This is an exciting opportunity for graduates from disciplines related to epidemiology, statistics, and behavioural sciences.

Applicants may choose from 4 available topics:
(1) Develop new methodology for the analysis and reporting of meta-analyses in the presence of heterogeneity
(2) Indicators of progress towards reducing cancer mortality through early diagnosis
(3) "Txt-netting" – using text messages to safety-net patients with low risk cancer symptoms in GP primary care
(4) Using non-speculum sampling approaches to reduce inequalities in participation in cervical screening

Projects (1) and (2) will suit students looking to mix applied and methodological statistics. Projects (3) and (4) will suit students with an epidemiological background or a mixed-methods background with strong quantitative skills.

Informal enquiries can be made to via email: Dr Anita Lim (anita.lim@kcl.ac.uk).

How to apply

Your application should consist of a CV and contact details of two academic referees. You must also include a personal statement (1,000 words maximum) describing your suitability for the selected project including how your research experience and interests relate to the project.

Please submit your application to King's Apply -
https://www.kcl.ac.uk/health/study/studentships/div-studentships/cps/cps-studentship-projects.

Funding Notes

This PhD studentship is funded by Cancer Research UK and comes with a tax-free stipend of £21,000 annually. It is open to UK Nationals, EEA/Swiss migrant workers and non-UK nationals with indefinite leave to remain in the UK who will have three years ordinary residence in the EU prior to the start of the studentship. University tuition fees (at UK/EU levels) will be met by the Institute.

Project Details

Project 1

Title: Develop new methodology for the analysis and reporting of meta-analyses in the presence of Heterogeneity

Description: Most meta-analyses use random-effects models in the presence of heterogeneity, but many analyses do not consider the likely sources of heterogeneity and their implications. Non-compliance and contamination in trials of cancer screening, and poor adherence to protocol in delivering a complex intervention will tend to attenuate the magnitude of "treatment effects". If the treatment effect is heterogeneous then one should be interested in what

features are associated with larger treatment effects. If we consider each trial to have a random treatment effect, then we should be interested in the proportion of trials (random effects) that are clinically important (e.g. what proportion (with a 95% confidence interval) of screening effects result in at least a 20% reduction in cancer-specific mortality). This is related to tolerance intervals (which are used in engineering but rarely in medical statistics). The student will review the literature regarding random effects meta-analysis and tolerance intervals and derive new methodology to address these questions. The methodology will be applied to RCTs of lung cancer screening and to observation studies of the association between excision of CIN and subsequent pre-term delivery.

Supervisors: Professor Peter Sasieni (primary) and Dr Jo Waller (secondary)

Project 2
Title: Indicators of progress towards reducing cancer mortality through early diagnosis

Description: The aim of this project is to develop new indicators that can be used to monitor progress in early cancer diagnosis. Such indicators should be available in a timely manner (so that they do not only relate to diagnoses made several years ago) and should be available both locally and nationally. Additionally, one needs to consider the potential impact of over-diagnosis and lead time. The student will consider a variety of measures including:
- The proportion of patients who die in the same calendar year as they are diagnosed as a surrogate for 1-year relative survival. This measure should be available 12 months ahead of 1-year net survival. The same denominator could be used but expressed as a population rate– mortality with death occurring in same year as diagnosis.
- Age-standardised incidence of advanced cancer. To do this one would need to account for tumours with unrecorded stage.

There are also issues regarding direct or indirect standardisation (or something in between) to adjust for differences in age-distribution at a local level.

Supervisors: Professor Peter Sasieni (primary) and Dr Jo Waller (secondary)

Project 3
Title: "Txt-netting" – using text messages to safety-net patients with low risk cancer symptoms in GP primary care

Description: Around 90% of cancers present initially to their GP but the nonspecific nature of cancer symptoms often precludes early diagnosis. Safety-netting is an important diagnostic strategy for managing patients with potential cancer symptoms. Asking patients to return if symptoms persist is a common approach but relies on patients to re-appraise their symptoms and to make follow-up appointments. Furthermore, worry about wasting the doctor's time and not wanting to bother the doctor are major help-seeking barriers in the UK. Text messages could be a simple, effective, and low-cost way of improving safety netting by acting as a nudge to remind patients to come back and to provide reassurance that the doctor wants to see them (txt-netting).

Recently, we conducted focus groups with GPs to assess their views and preferences for txt-netting. We found that GPs were amenable to txt-netting, realising its potential value, but also had some concerns about possible workload implications, patient confidentiality and data security (BJGP 2018 https://doi.org/10.3399/bjgp18X695741). We are planning to explore this further by implementing txt-netting in primary care, to assess feasibility and acceptability in a small number of GP practices. Based on results from this work, we will design and pilot a clinical trial to rigorously evaluate the potential for txt-netting. As part of this we will examine

patient preferences for text-message content and acceptability of txt-netting. Separate funding will be sought for a large trial, but the PhD will not be dependent on obtaining such funding. With the increasing use of technology in healthcare, the student could also explore additional ways in which technology can be harnessed to improve cancer safety-netting. This project would suit a student with an interest in clinical epidemiology.

Supervisors: Professor Peter Sasieni (primary) and Dr Jo Waller (secondary)

Project 4

Title: Using non-speculum sampling approaches to reduce inequalities in participation in cervical screening

Description:
The introduction of HPV primary screening to the NHS Cervical Screening Programme raises the possibility of using self-collected samples, or clinician-collected samples taken without a speculum, for HPV testing. These sampling methods have the potential to overcome a number of barriers to standard screening. These include practical barriers such as accessing primary care and finding time for a screening appointment, emotional barriers such as embarrassment or fear of discomfort and physical barriers for women with disabilities. Some of these barriers are experienced disproportionately by older women (for whom a speculum examination can be more uncomfortable) and marginalised/vulnerable groups, such as women with learning difficulties or transgender men.

This PhD project would use mixed methods including both qualitative (e.g. interview-based) and quantitative studies. It would explore the potential for non-speculum sampling methods to increase the accessibility and acceptability of cervical screening, focusing on one or more specific population sub-groups where significant barriers to screening currently exist. This project would suit a student with an interest in mixing clinical epidemiology with behavioural science, and who has strong quantitative skills.

Supervisors: Dr Jo Waller and Dr Anita Lim – joint supervisors