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| Host department: Manchester | |
| Project Title: | |
| ‘Early-stage detection of young onset colorectal cancer in younger adults in primary care’ | |
| Proposed supervisory team: | |
| Dr Sam Merriel (Manchester)  Prof Sarah Bailey (Exeter)  Other members of the supervisory team  Prof Evan Kontopantelis (Manchester)  Dr Adam Chambers (Bristol) | |
| Potential for cross consortium networking and educational opportunities: | |
| The candidate will be afforded excellent opportunities for learning and development across the NIHR SCPR. They will be supported to attend NIHR SPCR trainee conferences and Showcases to meet with primary care research colleagues and receive expert training and insight into developing their career as a primary care academic. They will have access to methodological and career skills training from the Doctoral Academy at the University of Manchester and the NIHR Academy. The candidate will be able to undertake research department visits at other NIHR SPCR institutions with experts in early cancer detection in primary care (Exeter and Bristol). This will augment their learning in this field and help to establish their research networks to improve their chances of success as an early career primary care academic. | |
| Project description: | |
| *Background*  The incidence of young onset colorectal cancer (yoCRC) has increased rapidly in recent decades. Adult  patients aged under 50 years with yoCRC are more likely to present with advanced disease and distal  tumours. Faecal Immunohistochemical testing (FIT) has been shown to be highly accurate in identifying CRC  in symptomatic older patients, but its performance in the context of symptomatic young adults is unknown.  *Aims*  The aims of this PhD project are to determine the diagnostic performance of FIT for yoCRC in adult patients under 50 years of age, and to develop a multivariable prediction model incorporating predictive clinical features that will identify younger adult patients at high risk of CRC who would benefit from FIT testing.  *Methods*  A systematic review and narrative synthesis of research databases will be undertaken to identify clinical  features, genetic factors, and investigation findings associated with CRC in adult patients aged under 50  years. A clinical audit of data from patients aged under 50 years who had a FIT in the South-West of England  between 2018 and 2023 will be used to assess the diagnostic accuracy of the test in this population.  Measures of diagnostic performance and a FIT threshold for a positive predictive value (PPV) of 3% for CRC  will be derived. A retrospective cohort study of adult patients under 50 years of age, using routinely collected primary care data linked to ONS and national cancer registries, to identify clinical features predictive of CRC and develop a multivariable prediction model for CRC in adults aged under 50 years.  *How the results of the research will be used*  Data on the diagnostic performance of FIT in adults aged under 50 years could be used to inform NHS commissioners and clinical teams on how this test should be used in this population. Research from this project will result in recommendations for FIT thresholds for the assessment of symptomatic young adults presenting to primary care that determines referral for endoscopy and other diagnostic procedures in national clinical guidelines.  *Training and support*  The PhD candidate will be supervised by leading experts in primary care cancer diagnosis and yoCRC from the Universities of Manchester, Bristol, and Exeter. The candidate will receive training in biostatistics, diagnostic modelling, evidence synthesis, and cancer epidemiology, as well as access to a wide range of development opportunities from the University of Manchester Doctoral Academy, the NIHR Academy, and the MRC. The PhD will involve the acquisition and cleaning of multiple datasets to prepare them for analysis, including large routinely collected healthcare datasets with linkage to registries and clinical datasets from hospital electronic health record systems. The candidate will also learn about searching, handling, and managing bibliographic databases for the purposes of evidence synthesis. Learning statistical methods for measuring diagnostic test accuracy will be a key skill gleaned from the PhD. The candidate will also develop skills in mathematical model development, calibration, and validation for disease prediction. | |
| Indicative project costs: | |
| Research costs | £23,000.00 |
| Training expenses | £38,000.00 |
| Estimated total | £61,000.00 |
| Training and development provision by host: | |
| *Formal training:* The Doctoral Academy Training Programme of the Faculty of Medicine, Biology & Health (FBMH) at the University of Manchester is available to all PhD candidates at the University. It comprises a suite of personal and professional training and development opportunities that can be tailored to the individual candidate’s learning needs. Training is aligned to the nationally agreed Researcher Development Framework, with access to a wider programme of Researcher Development Training delivered by the University for staff and post-graduate researchers. | |
| *Informal training:* Doctoral candidates within the Centre for Primary Care & Health Services Research (CPCHSR) can access a broad range of seminars run by the Centre and other research departments within FBMH. They will be able to attend doctoral training workshops and conferences organised by the NIHR SPCR, NIHR Academy, and the Wellcome Trust. They will also have access to ECR mentoring programmes within the University and the NIHR. Clinical academic trainees in Greater Manchester also receive support from the Integrated Clinical Academic Training (ICAT) programme, with access to ICAT trainee networking events and research showcases to build new collaborations. | |
| *PPIE*: CPCHSR ensures equality, diversity, and inclusion (EDI) is prioritised across strategies for PPIE and capacity building and is committed to engaging with patients and diverse communities for all stages of research that is inclusive for all. The Centre hosts a dedicated PPIE group and has strong connections with voluntary sector organisations to enable inclusive involvement and participation in research. | |