PhD Full time Studentship

Inclusive Health: Use of Breath Diagnostics for cancer detection in Rural & Urban India

Further particulars 11756

Cancer is the second most common cause of death worldwide [1] and stomach cancer the third leading cause of cancer deaths [2]. Nearly 2/3rds of these deaths occur in developing countries like India. *Helicobacter pylori* (HP) bacteria is a major cause of stomach cancer and is easily curable with early detection. However, existing diagnostic tests in developing countries are invasive and costly. Further, infrastructural challenges in developing countries make access to detection and prevention impossible for most.

Dr Morgan has developed a novel diagnostic breath analysis tool with Oxford Micromedical Ltd, to non-invasively test for HP and in partnership with Tech Mahindra, this tool will be rolled out in India in 2020. Using this as a case study and employing a mixed methods approach (survey and semi-structured interviews), this proposal aims to ensure that the diagnostic tool will deliver the *Health For All* by studying challenges, opportunities and potential solutions associated with adoption of breath analyser tool in the healthcare system of developing countries.

The key objectives include:

1. Study critical constraints and opportunities for generating more accessible cancer care in developing countries
2. Conduct a review of other potential breath markers and lifestyle data to understand their interrelationships and identify the potential for other low-cost non-invasive early detection of other diseases.
3. Deliver a model for inclusive health through engagement with all the stakeholders involved, ranging from patients, health workers, clinicians, funders and policymakers.

This research focuses on India due to the high prevalence of stomach cancer and gut-related illnesses, and its vast population unable to access quality diagnostics.

Over 700,000 people now die of cancer in India every year, with stomach or gastric cancer the second highest cause. It is estimated that in India, 80% of the population are infected, and 3% of those infected develop stomach cancer [3]. In India, there are no guidelines for the diagnosis of the disease and most diagnoses are in a tertiary care setting, using highly invasive and expensive endoscopy. Lack of awareness of HP infection until complications have reached dangerous levels of ulcer or cancer makes the disease untreatable. India suffers from the similar issues as other developing countries regarding access and affordability to diagnostic tests and thus provides an ideal case to study challenges and opportunities associated with adoption of breath analyser device in the healthcare system of developing countries. Also, the very recent introduction (Jan 2018) of regulations for Medical Devices in India also adds a new dimension for those seeking to develop solutions for this market.
References


Application details

This full-time doctoral studentship at the Open University, UK, is funded by the UK Global Challenges Research Fund (GCRF). Eligible students will be from a low or lower-middle income country and applications from India are particularly welcomed. The student will be co-supervised by Dr Dinar Kale, Dr Aravinda Guntupalli, and Dr Geraint Morgan at the Open University.

An Indian co-supervisor, Dr Janak Nabar, will enable and support the student to investigate the scope for improving access to low cost diagnostics for gastric cancer through Indian expertise and collaboration.

Applicants should normally have a Masters-level qualification in a relevant topic, which may include clinical, biomedical, engineering, technological, social or business disciplines. The student will be one of a cohort of seven doctoral students from low and middle income countries, linked to GCRF-funded Open University research projects. The studentships provide for fees; a student stipend; a research support training grant of £2,500 per annum; and fieldwork research costs of £5000. The student will be based in the Faculty of Arts and Social Sciences, School of Social Sciences and Global Studies.

The successful applicant for this studentship will work closely with a research team, based at the Open University, working on a project funded by the GCRF Inclusive Societies Initiative, entitled “How to link industrial and social innovation for inclusive development: lessons from tackling cancer care in Africa” (http://www.open.ac.uk/ikd/research/health-innovation-and-equity/gcrf-inclusive-societies-how-link-industrial-and-social).

Interested applicants can contact Dr Dinar Kale Dinar.Kale@open.ac.uk Dr Aravinda Guntupalli aravinda.guntupalli@open.ac.uk; or Dr Geraint Morgan Geraint.morgan@open.ac.uk

Closing date for applications: 28th November 2018. Interviews are expected to take place in the week beginning 10th December 2018.

Application forms are available from http://www.open.ac.uk/postgraduate/research-degrees/how-to-apply/mphil-and-phd-application-process

For detailed information and how to apply go to http://www.open.ac.uk/about/employment/vacancies/phd-studentship-11756

Completed application forms, together with a covering letter explaining your interest and suitability to undertake the advertised project and your reasons for applying, must be sent to FASS-PhD-Applications@open.ac.uk by the closing date.