# Advert and Job Description

<table>
<thead>
<tr>
<th>Job Title</th>
<th>6 Fully-funded 3-year PhD Studentships</th>
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<tbody>
<tr>
<td>Department / Section</td>
<td>NIHR Imperial Patient Safety Translational Research Centre (NIHR Imperial PSTRC)</td>
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<tr>
<td>Location</td>
<td>Located at the Institute of Global Health Innovation, Imperial College London</td>
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<td>Reporting to</td>
<td>Academic leads in research themes</td>
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<tr>
<td>Working closely with</td>
<td>Other academic members, research associates, PhD students (including Clinical Research Fellows), support staff within both Centres and translational partners (i.e. charities, health and care providers, other academic institutions, and potentially overseas partners etc.) in the Institute of Global Health Innovation, as well as other associated Departments and Centres at Imperial College London and abroad</td>
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<tr>
<td>Job Family/Level</td>
<td>PhD student</td>
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<tr>
<td>Working Hours</td>
<td>36 months, with possibility of fixed-term appointment after the PhD has been awarded</td>
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<td>Fixed-Term</td>
<td>The studentship will pay EU/UK tuition fees and annual stipend of £21,000 for max of 36 months</td>
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<td>Application deadline</td>
<td>15th May, 2017</td>
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<td>Interviews</td>
<td>Beginning of June, 2017</td>
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<td>Starting date</td>
<td>Ideally in-post by 1st August 2017</td>
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## Summary of Posts

Applications are invited for 6 PhD Studentships across the research themes of the NIHR Imperial Patient Safety Translational Research Centre (NIHR Imperial PSTRC)
The Centre

The NIHR Imperial PSTRC focuses exclusively on translational research in patient safety. Our ambition is to improve the safety and quality of care received by patients in the NHS, through innovations which are underpinned by world-class science. As such, our focus is as much on generating high-impact publications as it is on ensuring that patients, their families and citizens tangibly benefit from our work.

The Centre, funded by the NIHR, will bring together multidisciplinary communities of clinicians, social scientists, economists, designers, and computer scientists to work on the development and translation of innovations and practices for the improvement of patient safety and quality. Areas of application span from helping individuals and organisation become more resilient and adaptive in the wake of increasingly complex care, to developing ways to utilise advances in mobile and digital technologies and sensors to track and identify deteriorating patients, to understanding the whole-system cost of unsafe care. Projects vary in size, length and focus, but all strongly feature an element of translation and potentially further scale-up.

The Centre will benefit from NIHR support, with a combined funding of over £7.3 million over 5 years. The Director, Professor the Lord Ara Darzi, has a long-standing track record in patient safety and quality.

The NIHR Imperial PSTRC, now in its second cycle of funding, was founded in 2007 (with £4.5 million in the first funding cycle). It was renewed in 2012 (second and current funding cycle; total of £7.2 million in funding) and is presently one of two such entities in the English NHS. In 2017, the Centre was successfully renewed for £7.3 million, marking what will be 15 years of focused translational research in patient safety by 2022 (end of the third and upcoming cycle of funding). In terms of impact, from 2005-2016, the Centre has had a stellar record of high-impact publications, including:

- 807 total publications
- 46 publications in journals with Impact Factor* ≥10
- 172 publications in journals with Impact Factor* ≥ 5
- 19,421 total number of citations

*2016 Scopus Impact Factor

Aside from publication, in the past 10 years, some notable innovations that have come of out of Centre includes:

- Contributing to the development of the WHO Surgical Safety Checklist and the first evaluation of the implementation of the Checklist in the NHS
- HARK, a digital clinical task management and prioritisation platform, which was acquired by Google DeepMind
Research Areas

This initial tranche of positions consists of 6 PhD studentships who will work across the following areas. Please note that projects are currently being scoped and successful applicants will have the ability to define the research projects. There is also the potential to shape the PhD around the candidate’s interests. Interested applicants are encouraged to seek more information through the website. Informal, exploratory chats can also be scheduled. Please:

- Email the theme leads (email links below), for queries regarding the research topic, the projects and methodology.
- Email the Centre Manager, Angela Yu (Angela.yu@imperial.ac.uk), for general queries regarding the Centre and the hiring process.

Theme 1 – Safer systems across the continuum of care

The theme, led by Professor the Lord Ara Darzi and supported Ms Sonal Arora (please email Sonal for queries regarding the theme’s research at sonal.arora06@imperial.ac.uk). The theme aims to create safer systems for patients as they move along their care pathways, thereby reducing error and enhancing quality. It will firstly seek to identify the patient safety problems across the continuum of care, and then develop and evaluate robust interventions for enhancing safety in the wider system. Finally, it will explore how best to promote the diffusion of innovation. Examples of initial projects (not exhaustive) include:

- Map the volume and significant risks to patients across a sample of patient pathways
- Using behavioural insights and data-sharing to improve transitions across settings of care
- Design interventions to reduce clinician burnout and improve individual resilience

Theme 2 – Partnering with patients for safer care

The theme, led by Mr Erik Mayer (e.mayer@imperial.ac.uk), aims to create practical and actionable solutions for addressing priorities in patient empowerment and engagement in safety, and generate high-quality evidence for implementation and diffusion of practical and sustainable patient engagement initiatives. Ultimately, we aim to support more active, and safe, involvement of patients in their own care. Examples of initial projects (not exhaustive) include:

- Understanding attributes and circumstances influencing true patient activation and involvement in their care
- Developing a novel digital learning and social network platform to promote health literacy in the self-management of patients’ own conditions
- Evaluating strategies and various interventions to partner with patients for safer care, including for example, projects to patient-led reporting, etc.

Theme 3 – Avoiding deterioration and delays in the care of patients with complex needs
It is estimated that between 65-95% of medical errors are due to an action not being taken or being delayed. The theme, led by Professor Paul Aylin, aims to develop and implement solutions to identify deteriorating patients and ensure timely and appropriate clinical response by applying new methods to collect clinical information (e.g. sensors, wearable technology) and to analyse data (including artificial intelligence). Examples of initial projects (not exhaustive) include:

- Examining potential indicators of omission and delay using the Clinical Practice Research Datalink (CPRD) to highlight failure points
- Soliciting the views of primary care health professionals on the usefulness of reminders in electronic patient records and using databases
- Developing systems to warn of potentially deteriorating physical health amongst people with mental illness

Theme 4 – Enhancing the safety of medication and technology

The theme, led by Professor Bryony Dean Franklin, aims to build on existing knowledge about medication error and its implications for antimicrobial resistance (AMR) and create new evidence on the potential risks engendered by technology. It will develop solutions to both issues by leveraging technology, design, behavioural sciences and human factors. Examples of initial projects (not exhaustive) include:

- Optimising the use of hospital electronic patient records
- Understanding and influencing macro-level demand for antibiotics
- Understanding the unintended consequences of technology in both hospital and community settings

Theme 5 – Improving diagnostic accuracy and decision-making

The theme, led by Professor Brendan Delaney (brendan.delaney@imperial.ac.uk), aims to tackle the challenges related to diagnosis and decision-making in primary care and in peri-operative situations. Translational solutions will harness the scientific and technological capabilities of our team to support decision-making. Examples of initial projects (not exhaustive) include:

- Identifying determinants of diagnostic accuracy and designing systems to support diagnosis
- Improving the use of antibiotics in primary care by incorporating clinical risk scores into the consultation

Theme 6 – Ensuring value for money in patient safety

The theme, led by Professor Elias Mossialos and supported for Dr Joachim Marti (please contact Joachim for queries related to the research in the theme, j.marti@imperial.ac.uk), aims to better understand the wider economic burden of avoidable harm and generate evidence on the cost-effectiveness of safety-related initiatives to inform policy, improve efficiency, and incentivise safer, high-value care. It will work in close collaboration with other themes to test the cost-effectiveness of the developed solutions. Examples of initial projects (not exhaustive) include:
● Understanding the economic case for patient safety initiatives
● Applying novel methods in economic evaluation to patient safety to estimate cost and benefit of safety-related interventions
● Understanding the cost-effectiveness of other potential innovations (working with all other themes)

**Qualifications and person-specifications**

We are looking for candidates with a strong academic background (with a first class degree) or MSc in the following subjects:

- Statistics
- Human factors
- Engineering
- Psychology, decision-making, behavioural science and other related disciplines
- Medical informatics and data science
- Health services research and service evaluation
- Quality improvement
- Economics

Successful candidates will have experience in undertaking independent research in the above subjects. Applicants must also demonstrate familiarity with mainstream qualitative or quantitative research methods used in patient safety. We are looking for individuals with experience in one or more of the following areas and an interest to further develop his/her skills.

- Qualitative methods, including:
  - Ethnographic research (including observational)
  - Focus groups
  - In-depth interviews
  - Thematic analysis
  - Consensus studies
  - Service audits and evaluation

- Qualitative methods with specific understanding of psychology or behavioural science
  - Human factor methodologies

- Quantitative methods, including:
  - Survey design and data collection
  - Data mining techniques applied to healthcare
  - Proficiency in data preparation, cleaning and analysis using standard statistical packages (e.g. SPSS, Stata, R)
  - Experimental studies of human judgment

- Quantitative methods with specific understanding of economics, including:
  - Econometrics, analysis of large patient-level datasets
  - Economic evaluation and decision-analytic modelling
The PhD student will be supervised by the multi-disciplinary team in the Division of Surgery. Through the research programme at Imperial, the PhD student will benefit from strong links and involvement with the Institute for Global Health Innovation (www3.imperial.ac.uk/global-health-innovation) and partner organisations, including:

- The Behavioural Insights Team
- The Centre for Behavioural Change, UCL (Prof Susan Michie)
- The Centre for Applied Resilience in Healthcare (Dr Janet Anderson)

All students will be registered through the Imperial Graduate School which provides a full programme of training in research and transferable skills. Further details of the Department can be found at: http://www3.imperial.ac.uk/graduateschools.

How to apply

In the first instance, please:

- Email: pstrc@imperial.ac.uk, cc angela.yu@imperial.ac.uk with an expression of interest
- Your expression of interest should contain the following items:
  - Your CV
  - A personal statement no more than 1000 words outlining: 1) your interest, 2) your background, and 3) which research area(s) you would like to base your project on
  - Scans of your educational certificates and transcripts from your Master’s degree and your Bachelor’s degrees
  - Names and contact details of 2 referees who can speak to your educational background. Reference letters from these referees are ideal, but not required at this stage.

Short-listed candidates will be informed via email and will be interviewed. Successful candidates will be required to formally apply through the Imperial College London Postgraduate Research (PhD) Programme route.