

Job Description

Job Title:	Research Associate in Population Health and Policy
Department/Division/Faculty:	Primary Care and Public Health, School of Public Health, Faculty of Medicine
Campus location:	Charing Cross Campus (Hammersmith) & White City Campus
Job / Family Level	Research, Research Associate
Responsible to:	Professor Paul Aylin & Professor Alison Holmes
Key Working Relationships (internal):	<ul style="list-style-type: none"> • Dr Nina Zhu, Population Health and Policy Research Lead. • Dr James Price, Consultant in Infection Prevention and Control and Population Health and Policy NHS Lead. • Prof Rifat Atun, Population Health and Policy Theme Co-Lead. • Dr Raheelah Ahmad, Knowledge Mobilisation Lead. • Dr Farzan Ramzan, HPRU Data Manager. • Ms Juliet Allibone, Head of Operations HPRU. • Other named researchers and collaborators in the Population Health and Policy theme.
Key Working Relationships (external):	<ul style="list-style-type: none"> • Dr Susan Hopkins, PHE Theme Lead. • Drs Russell Hope, Colin Brown, Sarah Gerver, Katherine Henderson, Theresa Lamagni, Dr Matthew Ellington (PHE lead), and other PHE named collaborative researchers as appropriate. • Collaborators at Imperial Healthcare Partners. • Other partners including Public Health England, University of Warwick, University of Cambridge.
Contract type:	Full time, fixed term for 3 years

Purpose of the Post

The post is funded by the National Institute for Health Research (NIHR) as part of its establishment of number of Health Protection Research Units (HPRU) in key priority areas. These Research Units are collaborations between Universities, Public Health England (PHE) and other partner organisations and aim to provide centres of excellence in multi-disciplinary health protection research.

The NIHR Health Protection Research Unit in Healthcare Associated Infection and Antimicrobial Resistance at Imperial College London is a collaboration between Imperial College London and its partners, Public Health England, Imperial Healthcare Partners, Warwick University, and Cambridge Veterinary School.

The causes driving antimicrobial resistance (AMR) and healthcare associated infection (HCAI) are inter-related and complex. Our research aims to better understand the underlying causes and the factors that contribute to their spread and to develop novel technologies and interventions to minimise this. We need to find ways to identify which people are most at-risk, what actions can be taken to prevent or recognise drug resistance and HCAI earlier, and identify the best methods to improve antimicrobial use, e.g. developing and adopting new tools or changing clinical practice or policy.

The Unit therefore plans to carry out research in four themes:

- Priority Pathogens
- Precision prescribing
- Practice, design and engineering
- Population health and policy

The Population Health and Policy theme will maximise the utility of data collected within the NHS and PHE, building on existing work. The projects will use of linked primary and secondary care data (e.g. the Whole Systems Integrated Care (WSIC) database) in NW London, and the second generation surveillance system (SGSS) and high velocity, high volume data which is uniquely available to us, such as the comprehensive patient electronic health records (EHR) of Imperial College Hospitals NHS Trust. They will seek to answer questions around how we can best develop and use newly accessible population-level and linked health datasets to better understand AMR, infection transmission and evaluate policy impact, how the use of advanced methods and tools can enable us to dynamically understand risk and vulnerable populations such as the elderly, multi-morbid, those in long-term care facilities and how methodologies can be developed that monitor potential unintended consequences across the healthcare economy (including the impact of COVID-19).

Projects will also look at combining deterministic and probabilistic (hybrid) modelling using participatory approaches to model development and the impact of multi-level policies. We will look at the role of social determinants and access to antimicrobials and how an understanding of this might shape policy and its implementation. Research will be informed by our health systems and policy expertise, strengthened further by links (Atun) with Harvard's Department of Health Policy.

Importantly the post-holder will also have a “responsive research capacity role” which will require them to address any approved requests from Public Health England for additional research needed to assist them in fulfilling their role to protect the public and improve the nation’s health. This might include, for example, the investigation of an unexpected surge or outbreak.

Research Duties

To conduct and plan own scientific work with appropriate supervision, to:

- Design, conduct and write-up of statistical analyses and mathematical models of risk of infection including community onset and healthcare associated infections, surgical site infection (SSI), and Healthcare Onset Covid (HOCI)
- To develop and apply statistical and mathematical models for infections, AMR, antimicrobial use, and other associated clinical and non-clinical outcomes
- To ensure the validity and reliability of analyses at all times
- To maintain highly organised, full, accurate, complete and legible record records of work
- To draft reports for submission to research sponsors
- To identify funding opportunities and draft group funding applications for research group
- Prepare work for presentation at appropriate national or international meetings and for publication in relevant peer- reviewed journals, in discussion with the other investigators
- To respond to approved requests to undertake “response capacity” research

Data and Information Analysis

- To extract data from NHS information systems to support the research programme and analyse health service and other data
- To identify and develop suitable techniques, and apparatus, for the collection and analysis of data
- Support the review, analysis and interpretation of information to ensure that projects, theme and overall programme build on best practice and are responsive to national and international developments.

Teaching/Training

- To provide guidance and statistical advice to staff, students and the wider HPRU group, including providing guidance and support to PhD students working in the theme
- Provide advice and expertise on data and information issues, ensuring appropriate rigour is applied to data analysis to maximise publication potential in high-impact journals.
- Assist with the development, implementation and management of epidemiological tools relevant to the programme and support local teams to develop appropriate data collection methods including collection of baseline data where appropriate
- To develop and support research projects around these studies suitable for PhD and MSc students or fellows, providing leadership to other team members such as the HPRU PhD students, nurses and other staff involved in allied projects

Communication

- To collaborate with other researchers within the HPRU, across Imperial College, Public Health England, the NHS Trust, and our partner organisations elsewhere in the UK or abroad, as appropriate.
- To promote the reputation of the Unit and actively participate fully in the academic life of the Unit by attending meetings, events and Seminars
- Take initiatives in the planning of research including directing the work of small research teams and assisting in the supervision of undergraduate and postgraduate research students and research assistants as required.

Other duties

- To undertake any appropriate administration tasks designated
- To participate in any public and patient engagement activities required.
- To comply with the College, Division, and Unit safety and Information Governance practices and to attend courses on safety and Information Governance when appropriate.
- To undertake any necessary training and/or development.
- To attend relevant meetings.
- To participate in other associated research projects as appropriate

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- Any other duties as may be deemed reasonable by theme leads, Director of Unit and Head of Division/Department/Section.

Where Imperial or funder conditions necessitate, you will be required to complete timesheets for your work on projects in a timely manner.

Person Specification

Requirements Candidates/post holders will be expected to demonstrate the following	Essential (E)/ Desirable (D)
Education	
At Research Associate level: PhD (or equivalent) in Epidemiology, mathematics, bioinformatics, Statistics, Health Services Research, or a related numerate subject	E
At Research Assistant level: Near completion of a PhD (or equivalent) in Epidemiology, mathematics, bioinformatics, Statistics, Health Services Research, or a related numerate subject	E
Experience	
Computer literate with a good knowledge of different computer programs including the use of at least one statistical package e.g. R, Python	E
Experience of analysing quantitative data and of the management and analysis of complex data	E
Practical experience within a research environment and publication in relevant journals	E
Extensive practical experience in a broad range of statistical techniques (e.g. generalised linear models, multi-level models, survival analyses, time series analysis)	
Experience of applying relevant models, techniques and methods, and developing new ones	E
Experience of using NHS or HES data	D
Experience of applying machine learning approaches to healthcare data (e.g., risk prediction modelling, data linkage algorithms)	D
Experience of working within a multidisciplinary research environment	D
Knowledge	
Knowledge of statistics, data science, epidemiology and/or applied health research	E
Knowledge of how to conduct Epidemiological analysis	E
Skills & Abilities	
Excellent verbal communication skills and the ability to deal with a wide range of people including scientists, sponsors, clinicians and students	E

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Excellent written communication skills and the ability to write clearly and succinctly for publication	E
Ability to organise own work with minimal supervision and prioritise own work in response to deadlines	E
Advanced computer skills, including a good knowledge of different computer programs with experience in data presentation and statistical analyses	E
Ability to direct the work of a small research team and motivate others to produce a high standard of work	E
Ability to conduct a detailed review of recent literature	E
Ability to develop and apply new concepts	E
Creative approach to problem-solving	E
Other	
Willingness to undertake any necessary training for the role	E
Willingness to work as part of a team and to be open-minded and cooperative	E
Flexible attitude towards work	E
Discipline and regard for confidentiality and security at all times	E
Willingness to travel both within the United Kingdom and abroad to conduct research and attend conferences	E
Willingness to work out of normal working hours (including weekends) if the requirements of the project demand it	E

Please note that job descriptions cannot be exhaustive and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the [7 Imperial Expectations](#) detailed below:

- 1) Champion a positive approach to change and opportunity
- 2) Encourage inclusive participation and eliminate discrimination
- 3) Communicate regularly and effectively within and across teams
- 4) Consider the thoughts and expectations of others
- 5) Deliver positive outcomes
- 6) Develop and grow skills and expertise
- 7) Work in a planned and managed way

Employees are also required to comply with all College policies and regulations paying special attention to:

- Confidentiality
- Conflict of Interest
- Data Protection
- Equal Opportunities
- Financial Regulations
- Health and Safety
- Information Technology
- Smoking
- Private Engagements and Register of Interests

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They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](#) page.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see <https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/>

The College believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes where their use is shown to be necessary for developing new treatments and making medical advances. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in the College's care are treated with full respect, and that all staff involved with this work show due consideration at every level.

<http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research/>

Committed to equality and valuing diversity, we are an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and work in partnership with GIRES to promote respect for trans people.

March 2021