Candidate Information

Position: Research Fellow
School/Department: School of Medicine, Dentistry and Biomedical Sciences
Reference: 26/113184
Closing Date: Monday 23 March 2026
Salary: £41,519 per annum
Anticipated Interview Date: Thursday 2 April 2026
Duration: Available until 1 September 2027

JOB PURPOSE:

We are seeking a postdoctoral researcher with advanced expertise in health data architecture, data governance, and research informatics to support the All-Island E-Health Hub for Cancer at Queen's University Belfast, in partnership with the Northern Ireland Cancer Registry (NICR), Health and Social Care Northern Ireland (HSCNI), and the Northern Ireland Biobank. Aligned with the e-Hub's strategic priorities, the post-holder will lead work to map, evaluate, and connect heterogeneous health and research datasets across HSCNI systems, legacy cohort studies, and biobank resources, with particular emphasis on assessing data readiness and implementing standards-based harmonisation (e.g. OMOP Common Data Model) to enable national and international federated analyses.

The role explicitly includes critical appraisal of legacy datasets, including assessment of data ageing, metadata completeness, consent scope, and governance constraints, rather than assuming direct migration into new environments. The successful candidate will contribute to high-impact research questions related to cancer data federation and aligning data pathways, to optimise national and international analyses of treatment, diagnosis and care quality, with the potential to contribute to Cancer Registry and Northern Ireland Biobank analyses.

The role offers a unique opportunity to develop regional data federation structures and enhance future policy-relevant insights while engaging in collaborative all-island infrastructure planning and the opportunity to contribute to next-generation cancer data analytics across Ireland, with direct supervision from Prof Mark Lawler, Dr Ethna McFerran and Dr Damien Bennett.

MAJOR DUTIES:

1. Lead systematic metadata auditing of existing datasets (e.g. registry, biobank, cohort studies), including variable provenance, coding systems, refresh cycles, consent scope, and linkage feasibility.
2. Assess the technical and governance viability of migrating or re-creating legacy cohort datasets within the NI Trusted Research Environment, explicitly considering data ageing, missingness, and reproducibility.
3. Design and document data pipelines and architectures that support secure linkage across HSCNI data, NI Biobank assets, and registry datasets within TRE constraints.
4. Evaluate and implement standards-based harmonisation, including feasibility assessment and selective mapping of NI datasets to the OMOP Common Data Model using OHDSI tools, to enable scalable and federated international research collaborations.
5. Produce clear decision frameworks to guide when legacy data should be migrated, modernised, or replaced by newly curated TRE-native datasets of equivalent or higher research quality.
6. Work with data controllers, information governance leads, and legal teams to identify and secure data-sharing agreements, DPIAs, and approvals required for linkage and reuse.
7. Support the development of federated analysis workflows that allow cross-jurisdictional collaboration without direct data movement, ensuring recommendations are aligned with evolving HSCNI, QUB, and UK-wide information governance frameworks.
8. Act as a technical bridge between researchers, data custodians, and governance bodies, translating analytical needs into compliant data solutions.

9. Conduct high-quality quantitative research using NICR datasets, including chemotherapy, radiotherapy, and routes to diagnosis.
10. Apply advanced analytics techniques (e.g. clustering, time-series, machine learning, survival analysis methods) where appropriate to large-scale health data, to investigate variation in cancer outcomes across patient subgroups and care pathways.
11. Generate impactful outputs including peer-reviewed publications, conference presentations, policy briefs and data dashboards.
12. Define and pursue a personal research programme that advances the Hub's goals and your scientific profile.
13. Liaise with registry data managers and clinical stakeholders to ensure clarity of interpretation and appropriate framing of analyses.
14. Participate in regular project governance activities, internal reporting, and stakeholder engagement.
15. Lead manuscript preparation and coordinate timely submission of high-impact publications.
16. Identify funding calls and draft fellowship/project/travel proposals that extend Hub capacity.
17. Support PIs with drafting progress reports and supplementary grant materials to satisfy funder requirements.
18. Co-develop and deliver training courses/workshops on Hub-relevant technologies and analytical best practice.
19. Maintain subject knowledge through continual literature review and professional-development activities to keep abreast of developments in own specialism and related disciplines.
20. Perform any other reasonable duties within the scope of the role as project needs evolve.

ESSENTIAL CRITERIA:

1. Hold or be about to obtain* a PhD (awarded / submitted*) in health data science, epidemiology, medical statistics, or a closely related area such as computer Science, or mathematics . * If PhD pending, it must be conferred ≤3 months from date of interview.
2. Familiarity with cancer registry data or treatment datasets.
3. Demonstrable experience working across multiple health data environments (e.g. registry, EHR, biobank, cohort data) and navigating their structural and governance differences.
4. Practical experience working within Trusted / Secure Research Environments, including understanding their constraints on linkage, export, and tooling.
5. Proven ability to engage with data controllers, IG leads, and legal teams to operationalise data access and linkage.
6. Significant, relevant research experience
7. Proven track-record conducting research using large-scale routine or registry data, preferably in cancer.
8. High-level proficiency / experience developing reusable analytical pipelines or modular code (in R, Stata, or Python) with demonstrable experience applying open-source packages for large-scale health data processing.
9. Experience contributing to peer-reviewed publications or policy reports.
10. Collaborative mindset: Demonstrably effective at working in multi-disciplinary teams spanning bioinformatics, clinical science, statistics and data governance.
11. Depth and breadth of expertise: Up-to-date command of analytical methods and research techniques sufficient to contribute independently within established programmes.
12. Methodological fluency: Able to evaluate, select and adapt analytical packages or modular code based approaches to suit diverse datasets and research questions.
13. Problem-solving orientation: Capacity to troubleshoot analytical, computational and data-integration challenges quickly and rigorously.
14. Communicates complex scientific information clearly to specialist and non-specialist audiences, both orally and in writing.
15. Builds and nurtures professional networks across disciplines, institutions and sectors.
16. Ability to present research at national or international conferences (poster and/or oral) appropriate to career stage.
17. Demonstrated innovation in data analytics research with a clear commitment to improving care.
18. High intellectual ability and critical-thinking skills.
19. Proven team player, motivates and supports students and colleagues.
20. Self-starter who organises resources, meets deadlines and re-prioritises calmly under pressure.
21. Meticulous attention to detail; delivers accurate work even in complex, data-heavy settings.
22. Evident passion for research and continuous professional growth.
23. Ability to work independently and collaboratively across disciplinary boundaries.
24. The post-holder may be required to attend meetings or work on-site at NICR or other secure environments as required.
25. Must be willing to work irregular hours when necessary for the progress of the research project.
26. Must be willing and able to travel to national and international meetings.

DESIRABLE CRITERIA:

1. First-class (or equivalent) UG degree in a quantitative or life-science subject.
2. Formal training in statistics, AI/ML or health-informatics.
3. Governance & security experience working under GDPR and ISO 27001 (or similar) controls within Trusted/Secure Data Research Environments, including Accredited researcher training.
4. Standards-based data architecture; hands-on use of OMOP-CDM / OHDSI tools and other open standards for harmonising clinical research data.
5. Experience of UNIX/Linux, GitHub and reproducible workflow frameworks.
6. International data collaboration experience.
7. Cancer-site expertise: Prior work in colorectal, head-and-neck or prostate cancer.
8. Experience drafting or interpreting data-sharing agreements, DPIAs, and consent frameworks in applied research settings.
9. Experience developing or applying excess mortality models, particularly in the context of cancer survival analysis or health systems evaluation.
10. Experience delivering lectures/tutorials or mentoring students and staff.
11. Leadership & facilitation: experience chairing cross-disciplinary meetings, running stand-ups or sprint retrospectives.
12. Stakeholder engagement: Proven ability to translate complex technical topics for clinicians, funders, patients or industry partners.
13. Knowledge-transfer & training: Experience designing or delivering workshops, short courses or online tutorials in analytical packages or modular codebases.
14. Grant-writing experience: Contribution to successful research-funding bids or fellowships.
15. Change management: Adaptability in rapidly evolving technical or regulatory environments (e.g. rollout of new ISO, GDPR updates).
16. Contributed to outreach or public-engagement activities (e.g. patient groups, media, science festivals).
17. Helped organise scientific symposia, workshops or conference tracks.
18. Emerging leadership potential and ability to inspire and coordinate small teams.
19. Active commitment to open science, public engagement or patient-advocacy initiatives.
20. Awareness of commercialisation or translational opportunities arising from research.

ADDITIONAL INFORMATION:

Informal Enquiries to Damien Bennett - damien.bennett@qub.ac.uk