

Experienced NHS data scientist with interests in predictive modelling, machine learning, text mining, and teaching

I advise and train NHS teams and the private sector on using data to manage hospitals, monitor quality, performance, and mortality. I am an experienced trainer, presenter and post-graduate teacher. I have built and released several R packages and am a keen contributor to the NHS-R Community. I lead a local R usergroup, and run a programme of R training courses for HED.

[illegible]

2020

PhD Applied Statistics and Machine Learning

📍 London, UK

Thesis: Statistical Methods for NHS incident reporting data

2014

PGCert. Public Health

📍 Birmingham, UK

MPH programme, left partially unfinished due to commencing PhD,
finished as PGCert instead.

For more information, please
contact me via email.

Experienced NHS data scientist, working on benchmarking hospital data, indicator development, and training.

Significant experience with modelling HES data and standardised mortality methods.


Skilled in R, SQL, Regression Modelling, and Machine Learning.

Managing Data Science team with interests in risk modelling and natural language processing.

This CV was made with the R package [pagedown](#).
View online at [here](#)

Last updated on 2020-05-09.

2009 ● **CIPD / City College Coventry**
CIPD Certificate in Training Practice  Coventry, UK

2006 ● **University of Manchester**
BSc Microbiology with Industrial Experience  Birmingham, UK

Thesis: A model of *Pseudomonas aeruginosa* in the Cystic Fibrosis lung.
Placement: One-year with Arch Biocides

EXPERIENCE

2020
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Present ● **Senior Statistical Intelligence Analyst**
Healthcare Evaluation Data (HED), Health Informatics, University
Hospitals Birmingham NHS FT

 Birmingham, UK


- Managing and delivering senior analyst functions in HED (see below)
- Natural Language processing projects including mapping text to ontologies for PIONEER project
- Managing informatics training function, including strategy and delivery, and commercial R training courses
- Line management and project leadership in data science applications

2012
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2019 ● **Intelligence Analyst**
Healthcare Evaluation Data (HED), Health Informatics, University
Hospitals Birmingham NHS FT

 Birmingham, UK

- Statistical lead and senior analyst, focused on building predictive models in R and SAS, indicator design, SQL database infrastructure and processes, as well as quality assurance.
- Building online national benchmarking analysis tools: www.hed.nhs.uk.
- Highly involved in customer support, training and translating between analysts, business teams and users.
- Line management and team work planning, using Agile methods.
- Run local R usergroup, contributing to national NHS-Community, and established a commercial R training programme.

2012
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2016 ● **Data Manager (AIR Study)**
Clinical Immunology (sub-contracted from UHB), University of
Birmingham

 Birmingham, UK



- Data extraction and outcome linkage for trial participants, from UHB attendance and clinical data systems.

2011
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2012 ● **Informatics Analyst**
Health Informatics, University Hospitals Birmingham NHS FT

 Birmingham, UK





- Producing monthly reporting outputs for UHB clinical and performance management functions
- Specialist analysis, dashboard building, and information development for HIV service.

2010
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- 2011 • **Cancer Informatics Analyst**
Arden Cancer Network  Coventry, UK
- Informatics support for network service improvement projects.
 - Constructed cancer waiting times reporting system and various automated templates.
- 2009 |
2010 • **Information Officer**
West Midlands Cancer Intelligence Unit (WMCIU)  Birmingham, UK
- Producing statistics for information requests.
 - Investigative analysis, e.g. difference from nationally published figures and research data.
 - Supervising/validating work of junior analysts.






TEACHING AND ASSESSMENT EXPERIENCE

- 2016 |
2018 • **Use of Evidence**
First year UCL medical school course on study design and statistics.
Led a tutorial group over the course and delivered lectures to full course group.
 London, UK
- 2016 |
2017 • **Statistical Methods in Epidemiology**
Teaching assistant on MSc Data Science for Health, UCL Farr Institute/LSHTM
 London, UK
- 2016 |
2017 • **Understanding the NHS**
Assessing first year medical student assignments on NHS structure, history, and current/future challenges.
 London, UK
- 2016 |
2017 • **Research dissertations**
Second assessor on MSc Mental Health dissertations for students with quantitative studies.
 London, UK



SELECTED PUBLICATIONS, POSTERS & TALKS

- 2019 • **Driving R adoption in an NHS information service: barriers and solutions**
Talk at Enterprise Applications of the R Language (EARL) conference
 London, UK
Mainey C
- 2019 • **Using funnel plots and CUSUM techniques to monitor hospital-standardised mortality**
Talk at Royal Statistical Society Conference
 Belfast, UK
Mainey C
- 2018 • **Modelling Incident Reporting in the NHS**
Poster for Royal Statistical Society Conference
 Cardiff, UK
Mainey C, Freemantle N
- 2017 • **Can we build statistical models of incident reporting in the**

NHS?

Poster for Patient Safety Congress Conference

📍 Manchester, UK

Mainey C

2016

● **Brief Report: Immunization of HIV-Infected Adults in the UK
With Haemophilus influenzae b/Meningococcal C
Glycoconjugate and Pneumococcal Polysaccharide
Vaccines**

J Acquir Immune Defic Syndr. 2016 Nov 1;73(3):287-293.

MacLennan C, Richter A, Hodson J, Faustini S, Birtwistle J, Whitelegg A,
Chigiga J, Singo M, Walker-Haywood J, Mulugeta B, Masuka S, **Mainey
C**, Plant T, Drayson M; Manavi K