

# Implementing data science in a local authority

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## Introduction

### Aim:

To create a lasting approach to data science within the local authority, led by the HDRC, to set up a reliable, industry-standard data system, including data linkage and training colleagues in data science skills and best practices.

### Methods:

- Key stakeholder engagement (CBMDC, local partners and universities)
- Implementation of industry standard data science environment, Posit
- Working with IT to support cultural shift and deployment of tools
- Learning from Newcastle HDRC's data science approach
- Detailed job spec, task and interview for recruiting data scientists (x3)
- Data science project request and proposal system for CBMDC colleagues
- Formal data sharing approach and process with Connected Bradford
- Data linkage to primary, secondary and social care, education, and more
- Training support in data visualization, R and Python for colleagues
- Support in analysing Council data: air quality, social care, NEET (Not in Education, Employment and/or Training)
- Supporting other HDRCs in implementing data science

## Key findings

1. Key to bring IT and existing data champions along the journey
2. Proof of concept with early data science projects
3. Buy-in at all levels for data science practices
4. Sustainable data science training

We are developing a sustainable data science framework with a tailored industry-standard approach. Learning from Newcastle HDRC, Bradford implemented a data science environment with IT to standardise projects. This is supporting a cultural shift towards data-driven decisions. We refined our recruitment approach to appoint three data scientists. A project request system now aligns colleagues with Council priorities, while formalised data sharing with Connected Bradford and links across service areas will facilitate formal processes and feedback loops. Training in data visualisation, R and Python is providing colleagues with data skills, which will strengthen Bradford's capabilities. Early data science projects on air quality, social care and NEET data demonstrated the value of the approach and highlighted the importance of collaboration and credibility building for organisational buy-in. These foundations are fostering a data-driven culture and providing a sustainable model for our HDRC and others across the country.

### COLLABORATION



Working with IT and data champions is critical to building a unified, data-driven culture across departments, ensuring sustainable practices and informed decision-making.

### EARLY PROJECTS



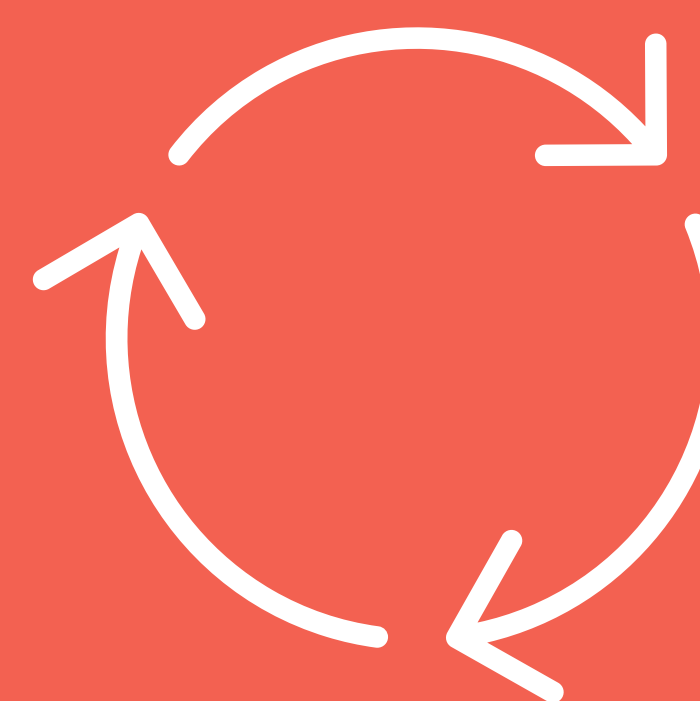
Early proof-of-concept projects in areas such as air quality and social care have demonstrated the tangible value of data science, building credibility and momentum for wider adoption.

### BEST PRACTICE



Implementing best practices in data science, such as standardised tools and training, ensured consistency and empowers colleagues to independently use data to make decisions.

### SUSTAINABILITY



A sustainable framework will be achieved by embedding data science practices, fostering internal expertise and ensuring organisational buy-in, ensuring long-term impact across the local authority.

## Challenges

### Recruitment

Early recruitment has been the most challenging issue for all HDRC's and partners.<sup>1</sup> Barriers here include HR processes, including developing new job specifications and salary grading, as well as wider issues such as local talent pathways.

### Technical infrastructure

Bradford is not unique as a local authority in that there was no existing industry standard Data Science software (RStudio, Python IDEs) with firewalls and IT blockages prolonging the process.

### Cultural change

Changing the research culture is key to HDRC success. Existing approaches cannot be overhauled (and shouldn't be) and there may be initial scepticism.<sup>1</sup>

## Recommendations

### Flexibility

Without lowering standards, widen the recruitment search by being flexible in the location of the team to ensure you're able to attract the best possible talent. Champion trust and flexible and home-working.

### Leadership

Recruit leadership team first to ensure project management and barriers can be addressed early before building wider team. It is crucial for the leadership team to be persistent in ensuring HDRC approaches are accommodated, e.g. infrastructure, job specs, finance, process.

### Identify early champions

Identify and work with data science champions at the local authority and ask for their support in understanding processes, unlocking barriers and securing the buy-in of colleagues.

## Acknowledgements

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<sup>1</sup>Newbury-Birch D, Harbin K, Adamson A et al. Establishing Research Ecosystems in Local Government: Ten lessons from the front line of the first year of the NIHR Health Determinants Research Collaborations (HDRCs) [version 1; not peer reviewed]. NIHR Open Res 2024, 4:11 (document) (<https://doi.org/10.3310/nihropenres.1115225.1>) <https://openresearch.nihr.ac.uk/documents/4-11>