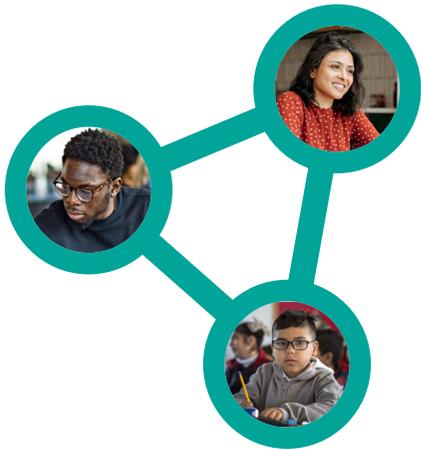


# EXPLAINER



# Connected Bradford:

breaking new ground in promoting good health and wellbeing  
through secure, whole-system, lifecourse data

# Our interlinked population data – unparalleled in its richness and diversity

**+ 1.4m** – individual patients on a regularly updated database linked between primary, secondary, ambulance, and other data sets

**+ 115+** – projects harnessing Connected Bradford data

**+ 25+** – published papers and reports since 2021 – from patient safety, to the use of AI in managing diabetes; from modelling NHS England 111 demand for primary care services, to reducing inequalities in special educational needs and disabilities (SEND) provision

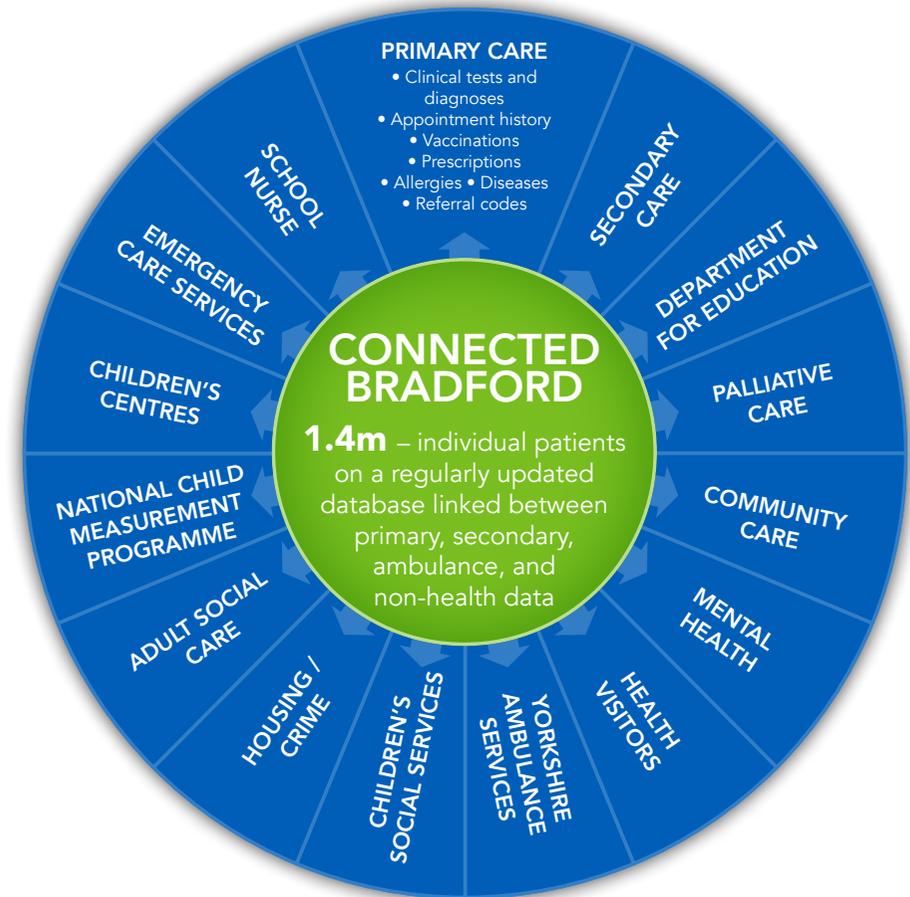


**+ 3** – live headline studies exploring Clean Air Zones, unplanned admissions for cardiovascular disease, and attention-deficit hyperactivity disorders (ADHD) in schools



**+ 40** – years of data at our fingertips ... and growing!

**+ £8m** – Healthy Urban Place funding from the Medical Research Council to scale our health and environment datasets - the latest in a series of major grants secured



## What sets Connected Bradford (cBradford) apart

### Enhancing patient care and trial recruitment through controlled re-identification

cBradford is a core part of the Yorkshire and Humber Secure Data Environment and has demonstrated the potential of a controlled re-identification process, in which only the direct care team get to see the identifiers. This is an innovation poised to transform two critical areas:

- Supporting direct patient care:** proactively identifying patients for early interventions (eg autism assessments, optimising frail patients on surgical waiting lists). This aligns with strong public support for data use to directly improve health.

- ✔ **Enhanced trial recruitment:** transforming how studies find participants, cBradford can act as a "Super-PIC", efficiently identifying diverse cohorts, reducing screen failures, and making Bradford a top recruiter – fulfilling NIHR aims of bringing research to underserved regions and communities.

- ✔ **A unique digital resource:** cBradford is seamlessly integrated into clinical practice so that the questions we ask reflect local and national priorities, and the evidence that we find shapes policy and practice – underpinning the delivery of the 10 Year Health Plan for England. This also means we understand the data better. Any number of organisations have come to us with an idea of what data they were after - and we've helped them craft a better question based on our clinical and systems knowledge.
- ✔ **Local roots, global reach:** We are recognised as a national and international leader in maximising the potential of routine linked data through a rare dimension of genuine public engagement, excellent practitioner and policy integration, robust information governance with legal and ethical approvals governance, technical expertise of data linkage and data curation, and leading-edge analytical support.

**RESEARCH LEAGUE** **SEASON 2023/2024**

NO	HOSPITAL	Pts (Recruitment)
1	BRADFORD	25320
2	KING'S COLLEGE HOSPITAL	25157
3	ADDENBROOKE'S	21699
4	JOHN RADCLIFFE	16780
5	ROYAL LONDON	13489
6	SOUTHMEAD	12470
7	HAMMERSMITH	11679
8	UNIVERSITY COLLEGE	10444
9	QUEEN ALEXANDRA	9711
10	ROYAL FREE	8943

SEE HOW BRADFORD DOES IT AT [WWW.BRADFORDRESEARCH.NHS.UK](http://WWW.BRADFORDRESEARCH.NHS.UK)

*\*This annual NIHR league table of [the top ten recruiting hospital sites in the UK](#) shows Bradford Royal Infirmary as the top-performer with 25,320 new participants signing up to its growing portfolio of 85 live studies.*

## Case study: REDEFINE3

This international, commercial study focused on the efficacy of Novo Nordisk's CagriSema as a treatment to support weight loss for patients with type 2 diabetes. cBradford enabled rapid and efficient patient identification by analysing linked primary and secondary care data coupled with ethnicity and language spoken.

Recruitable patients were then re-identified by clinicians providing their care and offered the chance to take part in the study.

As a direct result of this data-enhanced recruitment process, latest available figures showed the Bradford Commercial Research Delivery Centre (CRDC) was the highest recruiter, at one point contributing nearly 40% of the entire country's recruits.

Furthermore, there were zero screen failures at the Bradford CRDC, in contrast to an average rate of 35% at other UK sites.

This success is due to cBradford's ability to easily filter potential participants by specific and often complex sub criteria, crucially across combined hospital and primary care datasets - such as type II diabetes, chronic kidney disease, and most recent HbA1c levels.

**+ 100%** – success rate, with zero screen failures

- ✔ **Unlocking the power of a data-driven revolution:** In parallel with a flagship patient, public and professional engagement programme, we are uniquely placed to understand their needs – and leverage the power of linked anonymised data

# At the heart of decision making and shaping policy: our impact

At pace and at scale, cBradford has since 2023 started to demonstrate the value of linked data through a series of high-impact studies, including:

- ✔ **Clean air:** Our study generated wide-range of international political and media attention as it demonstrated that a third of GP visits and half of A&E attendances with respiratory conditions were associated with air pollution.

**BIB BREATHES:**  
HOW WE ARE TACKLING AIR POLLUTION - AT A GLANCE

- 568 - people in Bradford die every year from respiratory disease
- 13,000+ - annual cases of COPD in community
- 41,000 - local people each year diagnosed with asthma
- 1-in-3 - asthma cases linked to city's air pollution
- 4th - city in the UK to launch a CAZ
- 200 - local primary school pupils trained as 'citizen scientists'
- 14+ - schools in the city fitted with indoor and outdoor pollution monitors
- £12m - grants obtained to help Bradford taxi drivers upgrade cars
- 20% - Bradford population living in CAZ
- 26/09/2022 - date Bradford CAZ went live
- 530,000 - Bradford residents helping our impact evaluation

**EVIDENCE BRIEFING**  
**AIR QUALITY:**  
POLLUTION AND HEALTH

## Pollutionwatch: improving air quality could ease pressure on NHS

People in Bradford made more GP and A&E visits for breathing problems after polluted days, researchers find



Long-term respiratory illness in Bradford is greater than the national average. Photograph: Christopher Thomond/The Guardian

A study shows that the impact of air pollution on GP and A&E workloads may be greater than previously thought. Put another way, improving air quality could ease pressure on the NHS.

Researchers compared the timing of 114,930 GP and 9,878 A&E respiratory visits in Bradford with air pollution measured around the city. Polluted days were followed by increased health service use for breathing problems, with impacts persisting for more than 100 days.

- ✔ **Healthy schools:** The Classroom Air Cleaning Technology (CLASS-ACT) study, analysed the portable high-efficiency particulate air (HEPA) filters in primary schools in Bradford. It highlighted the impact of better ventilation on reducing illness and improving attendance.

- ✔ **Care of the elderly:** The rapid growth in numbers of older people and increasing prevalence of comorbidity and long-term conditions is a growing challenge to the NHS. The electronic frailty index 2 (eFI2) developed from cBradford data is now being rolled out nationally – and saving lives.



- ✔ **Autism:** Linking health and education data evidenced how Early Years Foundation Stage (EYFS) profile was a major predictor of Autism Spectrum Disorder (ASD) and ADHD diagnosis and special education needs. This has led to a redesign of services to provide early and targeted support, reducing years of delay and improving recording of data.
- ✔ **Health and environment:** cBradford has supported the analysis of individual-level environmental exposure measurements to better understand the relationship between the built environment and health. This data resource captures the features and qualities of an individual's environment, including air quality, noise levels, amount of traffic, greenness and the number of fast-food outlets.

**For more information:**

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