USING LINKED DATA IN NORTHERN ENGLAND TO SUPPORT CHILDREN WITH SEND

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CONNECTED BRADFORD AND SEND

POST-16 PATHWAYS AND RISK PROFILES

Individual and Systemic Factors

Both personal and systemic factors influence young people's transitions and outcomes on different pathways.

Connected Bradford

Linked health/education/social care dataset covering 800k residents also linked with the Born in Bradford birth cohort for in-depth data.

Large variation across schools

Probability of a **high-risk trajectory**	At a **low-risk school**	At a **high-risk school**
An **average student**	0.4% →	1.6%
A **high-risk student**	10.6% →	35.5%

Probability of **steady training trajectory**	At a **low probability school**	At a **high probability school**
An **average student**	0.05% →	0.97%
A **high-risk student**	0.9% →	14.8%

SCHOOL ENVIRONMENT AND NEET OUTCOMES

Inclusive School Indicators

Lower suspension rates, strong Progress 8 scores, and school identity (faith/single-sex) reduce NEET rates.

Post-16 Pathways Overview (6 pathways)

Stable: education, employment, and training,
Unstable: high-risk, moderate-risk, and unknown activity.

Importance of Support Systems

Supportive school and system environments are critical to improve futures for vulnerable youth.

Takeaways

- Variability across schools, strong social cohesion helps
- NEET as binary (on/off) hides lots of nuance, more detailed analyses needed for effective policy decisions

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IMPROVING EMERGENCY CARE AFTER SELF-HARM

WHAT HELPS YOUNG PEOPLE AFTER SELF-HARM

Scope of Self-Harm Incidents

Approximately 50,000 young people aged 10–24 present annually to hospitals for self-harm in England, highlighting the critical need for care.

EmCASH Realist Methodology

EmCASH triangulates findings from literature, linked NHS data, and interviews to study aftercare effectively.

Involving Young People and Families

Young people and families co-develop research questions and shape findings to ensure evidence is grounded in lived experience.

Impact on Mental Health Services

Helping national investments in mental health emergency departments respond to the high demand from young people after self-harm incidents.

PRINCIPLES FOR EFFECTIVE POST-SELF-HARM CARE

CURED+ dataset

Linked hospital, mental health trust, NHS 111, and ambulance data for Sheffield and the surrounding region.

Data-focused research

1) **Exploring** How can we find self-harm episodes in hospital data (as they are often poorly coded)?

2) **AI:** What factors are associated with repeated self-harm events, using NHS111, ambulance, and hospital data?

3) **Process Mining:** Where are the intervention points in the system where we can make a difference?

DATA-DRIVEN
VULNERABILITY
MAPPING

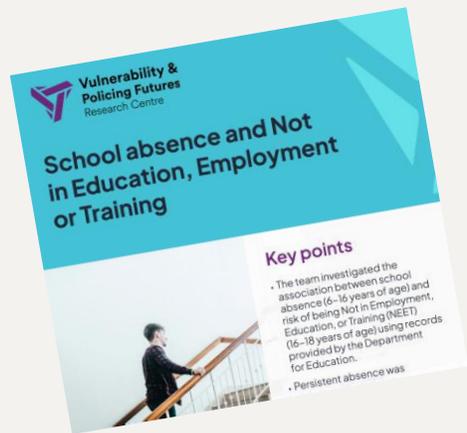DAN BIRKS
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UNDERSTANDING STRUCTURAL AND SITUATIONAL PATHWAYS TO VULNERABILITY

Geospatial and sociodemographic patterns of unauthorised school absence
Levels of unauthorised absence are highly concentrated within neighborhoods and pupils:
- 30% of Bradford LSOAs -> 60% of unauthorised absence
- 12% of pupils -> 80% of unauthorised absence

School absence and Not in Education, Employment or Training (NEET)
Analysing 23,000 Bradford pupils from age 6 to 18, persistent absentees were:
- 3.9x greater risk of being NEET
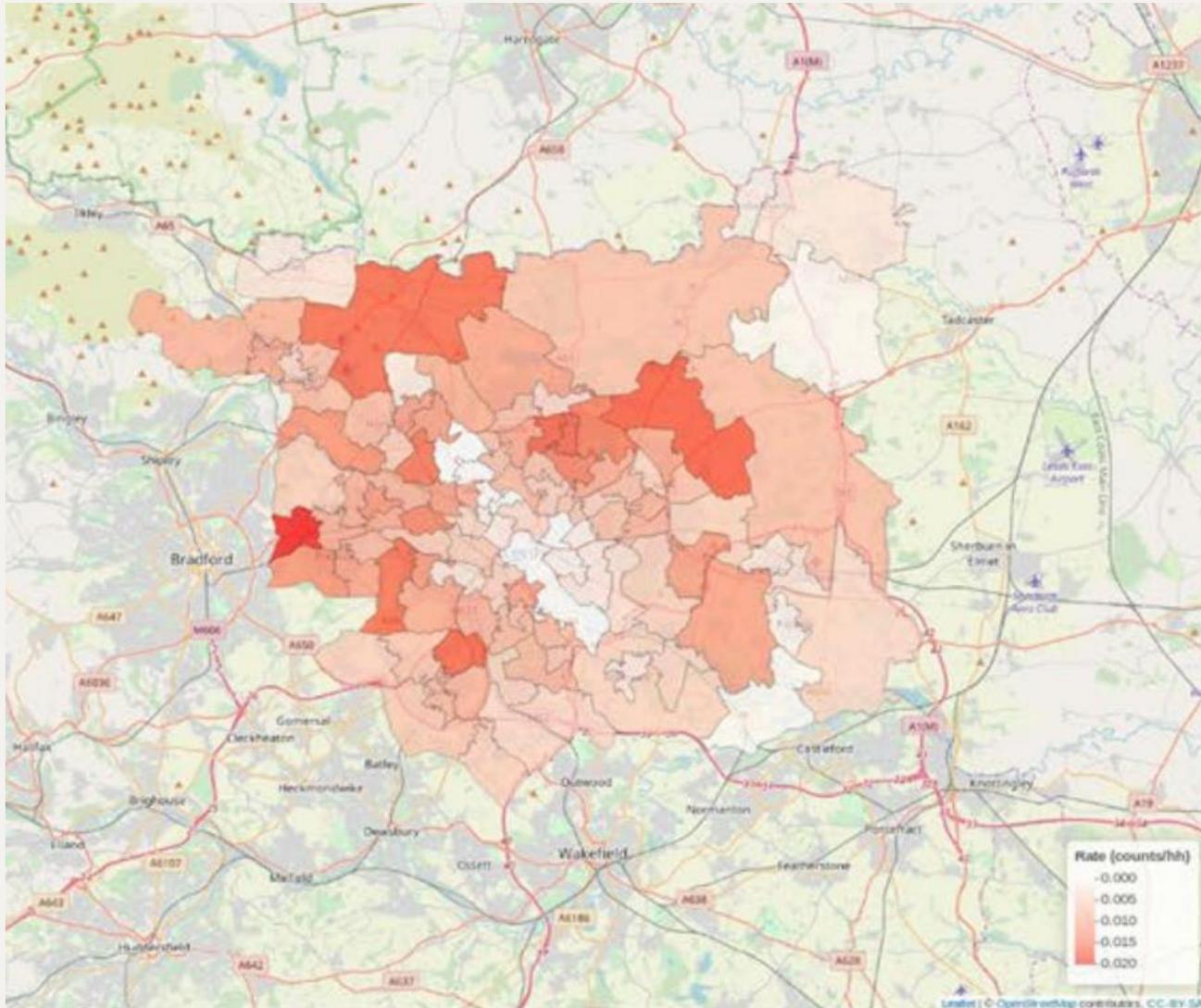- 6.3x greater risk of being persistently NEET.

School absence, academic attainment, and NEET
Exploring relationships between school absence, academic attainment and later NEET status in over 15,000 Bradford-based children
- Academic attainment plays a key role in the relationship between absence and NEET
- Role is much greater where absences are authorised compared to unauthorised.

DATA-DRIVEN UNDERSTANDING OF VULNERABILITY-RELATED PUBLIC SERVICE PROBLEMS & DEMAND

Space-time patterns of crime and police demand

Analysing spatial and temporal patterns in crime and police demand to understand how neighbourhood contexts shape the experiences of residents and transient populations.

Interagency data

Triangulating vulnerability-related police response data with ambulance call-out and primary care records to identify patterns of unmet need and opportunities for earlier intervention.

Advanced GenAI workflows

Designing and evaluating generative AI–enabled analytical workflows to extract reliable, actionable insights from routinely recorded unstructured data.

CONNECTED DATA FOR BETTER OUTCOMES

Integrated Data Systems

Linked datasets from education, health, emergency care, and policing enable comprehensive tracking of young people's wellbeing across Northern England.

Targeted Interventions

Data connections allow early identification of risk factors, supporting tailored interventions for children and young people at critical life stages.

Collaborative Research Projects

Projects like Connected Bradford, EmCASH, and police collaborations exemplify how co-produced research improves support for vulnerable youth.

Cross-sector Partnerships

University of Leeds partners with multiple sectors to transform data into impactful outcomes for young people across the region.