WMP Briefing Paper

Solihull Partners Data Insight Project

Ethics Committee (06 July 2022)

> This project is at the proof of concept stage and is presented to the committee in an embryonic form so that any immediate concerns can be raised.
>
> It is acknowledged that significant development of safeguards such as creating information sharing agreements is required before a specific data project can be presented to the Committee for consideration 'in principle'.
>
> The ambition of this project is to use several partner agency data sets and as such represents a significant development in the work of the Data Analytics Lab. Therefore it is presented to the Committee at the earliest possible opportunity for consideration.

Tasking

This project was instigated by the *Solihull Together Partnership* in February 2022. The ambition is to maximise the use of data to drive partnership activity and interventions in the Solihull ward of Kingshurst.

In broad terms, the West Midlands Police (WMP) Data Analytics Lab (DAL) will be tasked with overlaying data sets from a number of statutory partners to answer questions set by the partnership.

Purpose[1]

The purpose of the Kingshurst Data Insights Project is to:

- Embed a locality-based approach to partnership working
- Improve health and other life outcomes for residents
- Tackle the root causes and inequalities that impact most communities
- Develop evidence based practice (EBP)

The driver for this project is the recognition by the partners that they often deal with cases or incidents as single agencies and therefore do not have the fullest possible understanding of all issues and challenges faced by the communities they serve. All the agencies experience repeat demand for their services and in many cases the most frequent service users are the same across all partners. When a service or treatment is delivered, consideration should be given as to which agency is best placed to lead in any intervention, which may not be the original agency that was contacted.

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[1] Information in this section is taken from the *Kingshurst Data Insights Project Partner Briefing document*

Therefore the ambition is to share data between partner agencies in order to make coordinated decisions about how best to respond to community issues and inequalities.

The mechanism for achieving this will be for the partnership to make use of the technologies and expertise available in the WMP DAL to merge and analyse a number of partner agencies' data sets.

The focus will be on the Community Safety priority areas of *anti-social behaviour*, *youth violence*, *violence against women & girls* and *hate crime*. The partnership will prioritise areas of business where greatest impact can be achieved and will take a pragmatic approach to explore the opportunities where rich data sets already exist.

The aim of the Data Insight Project is to use predictive analysis to identify individuals and locations who are at a higher risk of needing support and intervention. It also intends to test the effectiveness of partnership solutions and understand what works. It is anticipated that through the pilot the partnership will be able to identify the most appropriate agency and treatment for a range of issues across Kingshurst. This learning will be applied in a consistent way to reduce repeat demand for service across the partnership in Solihull.

Context

Solihull Together and Data Insights Project Board
Solihull Together is a multi-agency partnership which takes a 'place-based' approach to supporting its communities to have the best health and well-being possible. The partnership has established a Data Insights Project Board chaired by Chief Superintendent Ian Parnell from WMP which reports into Solihull Together. Board membership is made up from a wide range of professionals who represent partner agencies across Solihull, including;
- Solihull Metropolitan Borough Council (SMBC)
- Solihull Community Housing (SCH)
- West Midlands Fire Service (WMFS)
- NHS Birmingham and Solihull Clinical Commissioning Group (BSOL CCG)
- West Midlands Police (WMP)

The Board will develop the data insights pilot to maximise outcomes for residents of Kingshurst.

Kingshurst
Whilst Solihull as a whole is the least deprived local authority in the West Midlands, it is relatively polarised between large parts of the borough that rank among the least deprived areas of England and a concentration of neighbourhoods among the most deprived. The level of deprivation experienced in North Solihull is consistent with that found in East Birmingham, falling within the most deprived 10% of neighbourhoods in England. [2]

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[2] https://www.solihull.gov.uk/sites/default/files/migrated/InfoandIntelligence_Index-of-Multiple-Deprivation-Summary.pdf
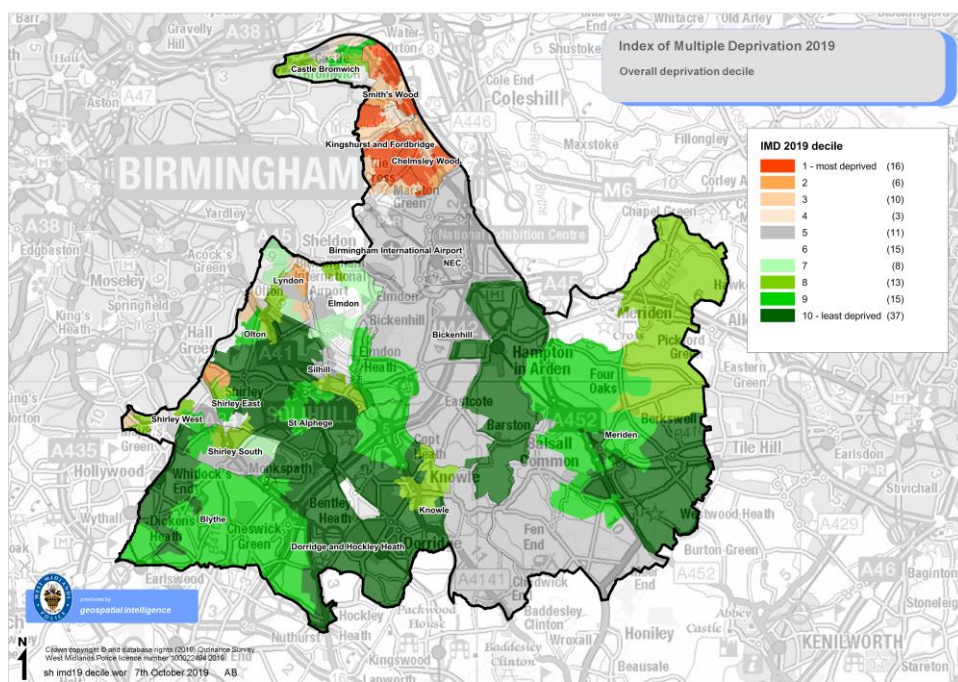
Figure 1 : Solihull Index of Multiple Deprivation (2019).

For this reason Kingshurst has been chosen as a pilot area for the data project because it is an area of higher demand for service for all agencies. In addition this area is already an early adopter of locality based working.

Partner Data and the Data Analytics Lab

The partners have agreed to use the WMP DAL to receive, manage and analyse their data and to disseminate findings back to the group, so that decisions can be made about the best interventions and the most appropriate agency to deliver them.

The partners have begun the process of identifying possible data sets which they can contribute to any analyses. Over 40 potential data sets have been identified for inclusion in the project under the following broad themes:

Solihull Community Housing	Homeless applications
Licensed Premises	Trading Standards
Houses of Multiple Occupation (HMOs)	Noise complaints
Anti-social behaviour (ASB) complaints	Reports of Arson
Domestic Abuse data (both police and public health)	Employment and skills data relating to school leavers and young adults
Education data	Supporting Families Programme
NHS data sets relating to interventions in a variety of care settings	Ambulance Data
Fire Service Data	Police data
Youth Exploitation Tracker	

Whilst many of these data sets are collected in granular detail and can be interrogated at the level of the individual, each organisation is making decisions about the level of granularity at which they are prepared to share. Each data set is being assessed as Red/Amber/Green to give it a 'RAG' status in terms of risks associated with bulk sharing.

An initial assessment has identified that the level of granularity at which partners would be prepared to share data ranges from:

Individual >> Address >> Postcode (15 – 20 houses) >>

Lower Super Output Areas (LSOA approx. 1500 residents) >> Ward >> Local Authority

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Currently, the risk appetite for most data sets is to share at ward, LSOA or postcode level only. Some of these aggregated data sets are available as open source via the Indices of Deprivation (2019) and Public Health England. Equally the West Midlands Violence Reduction Unit (VRU) has produced a Strategic Needs Assessment for Solihull which incorporates much of this data in its analysis. Therefore, whilst partners may be able to provide more timely and frequent updates, our current understanding of the strategic issues facing the area may not be significantly enhanced if data is only provided at LSOA or ward level.

Some organisations, such as education and NHS have an internal unique identifier which sits across their multiple data sets. However, the only way to merge all partner data sets at the level of the individual would be to share name and date of birth with the DAL. Advice is being sought internally by each organisation about acceptable levels of data sharing for the purposes of the project.

It should be noted that at this stage:
- No data has been shared with WMP DAL for the purposes of this project as yet.
- Information Sharing Agreements (ISA) have yet to be implemented to provide a clearly defined framework to facilitate the sharing of personal information where necessary and proportionate to the statutory obligations of the partnership whilst respecting the rights of the individual. Once agreed, ISAs will provide principles to ensure that all legislative requirements are fulfilled.
- A Data Protection Impact Assessment (DPIA) has not yet been completed since the categories of personal data which are to be included have not yet been determined, nor have the precise questions been posed.
- The ALGO-CARE framework to assess the ethical implications of a data project has not yet been completed for the same reasons.

Once these parameters have been agreed WMP DAL has a secure computing environment in which to store and interrogate partner data. The storage and precise use of the data will be governed by the ISA will address questions such as the extent to which partner data sets will be kept 'separate' from WMP data systems and procedures for what action should be taken if partner data or a combination of data indicates a crime has occurred which has not been recorded in police systems.

Data

Data to be used:
Partner data sets from the following organisations – exact data sets to be determined once specific questions have been agreed:
- West Midlands Police   - West Midlands Fire Service   - Solihull Metropolitan Borough Council (including Community Housing, Education, Employment and Skills and Supporting Families Programme)   - NHS   - Ambulance Service
Level of analysis:
To be determined

☐ Individual
    Individuals aggregated?
    ☐ Yes
    ☐ No
☐ Specific Area:
    ☐ Output Areas
    ☐ Super Output Areas - Lower
    ☐ Super Output Areas - Mid
    ☐ Wards
    ☐ Districts
☐ West Midlands
☐ Other

Reliability of data:
An extensive exploratory data analysis (EDA) phase will be undertaken by the DAL to examine the extent of any data quality issues.
Sample or entirety: To be determined
Type of analysis:
☐ Exploratory ☐ Explanatory ☐ Predictive ☐ Optimisation To be determined once a question has been agreed
Proposed methodology:
To be determined once a question has been agreed
Will the project eventually be automated:
☐ Yes ☐No
Means of evaluation:
To be determined once a question has been agreed

ALGO-CARE considerations

The ALGO-CARE framework will be completed with representatives from the respective partner agencies once a question and appropriate data have been agreed.

Advisory	
If applicable, are the outputs from the algorithm to be used in an advisory capacity?	
Does a human officer retain decision-making discretion?	
Lawful	
What is the policing purpose justifying the use of the algorithm (means and ends)?	
Is the potential interference with the privacy of individuals necessary and proportionate for legitimate policing purposes?	
In what way will the tool improve the current system and is this demonstrable?	
Are the data processed by the algorithm lawfully obtained, processed and retained, according to a genuine necessity with a rational connection to a policing aim?	
Is the operation of the tool compliant with national guidance?	
Granularity	
Does the algorithm make suggestions at a sufficient level of detail given its purpose and the nature of the data processed?	
Are data categorised to avoid broad-brush grouping and results and therefore issues of potential bias?	
Do the potential benefits outweigh any data quality uncertainties or gaps?	
Is the provenance and quality of the data sufficiently sound?	
If applicable, how often are the data to be refreshed?	
If the tool takes a precautionary approach in setting trade-offs, what are the justifications for the approach taken?	
Ownership	
Who owns the algorithm and the data analysed?	
Does WMP need rights to access, use and amend the source code and data?	

Are there any contractual or other restrictions which might limit accountability or evaluation?	
How is the operation of the algorithm kept secure?	
Challenge	
What are the post-implementation oversight and audit mechanisms, e.g. to identify any bias?	
If the algorithm is to inform criminal justice disposals, how are individuals notified of its use?	
Accuracy	
Does the specification of the algorithm match the policing aim and decision policy?	
Can the accuracy of the algorithm be validated periodically?	
Can the percentage of false positives / negatives be justified?	
How was the method chosen as opposed to other available methods?	
What are the (potential) consequences of inaccurate forecasts?	
Does this represent an acceptable risk?	
How are the results checked for accuracy and how is historic accuracy fed back into the algorithm for the future?	
How would inaccurate or out-of-date data affect the result?	
Responsible	
Would the operation of the algorithm be considered fair?	
Is the use of the algorithm transparent (taking account of the context of its use), accountable and placed under review?	
Would it be considered to be used in the public interest and to be ethical?	
Explainable	
Is information available about the algorithm / decision-making rules and the impact of each feature?	

Appendix 1: Glossary of Terms

WMP / Law Enforcement / Partnership Terminology	
ACC	Assistant Chief Constable
ALGO-CARE	All projects have used the ALGO-CARE to consider ethical implications: Advisory, Lawful, Granularity, Ownership, Challenge, Accuracy, Responsible, Explainable
ASB	Anti-social behaviour
BSOL CCG	NHS Birmingham and Solihull Clinical Commissioning Group
DAL	Data Analytics Lab
DPIA	Data Protection Impact Assessment
EBP	Evidence Based Practice
EDA	Exploratory Data Analysis
HMO	Houses of Multiple Occupation
IMD	Index of Multiple Deprivation
ISA	Information Sharing Agreements
LSOA	Lower Super Output Areas
SMBC	Solihull Metropolitan Borough Council
WMFS	West Midlands Fire Service
WMP	West Midlands Police