WMP Briefing Paper

Frequent Service Users

Ethics Committee (08 February 2023)

This project is at the proposal stage and is presented to the committee 'in principle' so that any immediate concerns can be raised.

The finer details of the methodology, exact data to be used and mode of communicating the results will not be determined until after the exploratory data analysis (EDA) phase has been completed.

Once the analyses have been completed the project will be presented to the Committee again so that the data used, methodology, findings, intention for deployment and communication plans can be examined in more detail.

Legal opinion has been sought and the Data Protection Impact Assessment (DPIA) is being reviewed by the Force Data Protection Officer (DPO).

Tasking

This project was initially requested by Superintendent Tony Hopkins of the Public Protection Unit (PPU) in April 2022. A feasibility study was conducted to ascertain whether it was possible to match the relevant data sources and this was presented to the Force Executive Team (FET) as a proof of concept in September 2022. FET direction was that ownership of this project would sit with Local Policing. Chief Superintendent Rich Fisher is working with the Data Analytics Lab (DAL) to shape the development of the proposed tool on behalf of the Local Policing portfolio.

The aim of the project is to discover members of the public with whom we have most interactions across the organisation as a whole. The output will be the development of a dataset and eventual Business Insight (Qlik) dashboard capable of identifying individuals' interactions with West Midlands Police (WMP), including phone contact, physical attendance, investigations of crimes, time spent in custody and missing person episodes. This presents an opportunity to identify those people whose circumstances are such that they are in regular need of a policing service and are more likely to experience some form of vulnerability.

Purpose

The purpose of the analysis is to provide a holistic view of our most frequent service users so that we can identify members of the public who have a high volume of interactions with WMP, potentially across a number of departments. By combining data across a range of interaction types and processes the intention is to identify those people who may be missed by simply counting the number of times they call the police, or the number of times they are a victim. Where we are able to identify an intensive use of resources focused towards an individual or household, there may be opportunities to better manage risk

and vulnerability associated with these individuals and as a consequence manage responses more effectively.

This will improve our service and facilitate the provision of appropriate multi-agency support. It is the remit of Neighbourhood Policing Units (NPUs) to work closely with communities, partner agencies and third sector organisations and the additional organisational intelligence generated by this tool will support their work.

Context

WMP is able to identify 'repeat locations' and 'repeat callers.' Repeat locations are often places such as large supermarkets or hospitals where the density of footfall and nature of the activity results in a high number of calls for service. Similarly, repeat callers tend to be either partner agencies such as the ambulance service requiring our assistance; or people who are identified as having poor mental health and for whom support is required to address wider issues; or those whose situation makes them vulnerable and in need of police assistance. Local policing teams work closely with repeat callers, whether they are large organisations or vulnerable individuals and regularly review the proactive management plans (PMPs) created to address such issues.

Neither of these metrics provide a true reflection of whether there are certain individuals or households whose circumstances mean they require an intensive use of the organisation's resources across a number of departments. Initially, the request was to understand all incoming and outgoing communication with service users in terms of phone calls, emails, attendance, investigation effort and time spent in custody. However, it is not deemed proportionate or practical to access outgoing phone and email records to understand the volume and nature of outgoing communication traffic, so this element of the request has not been scoped.

Currently the data sets in scope are:

- Incoming phone calls to the Contact Centre (Avaya)
- Records of Contact (RoC) and Incidents of all grades P1 – P9 (ControlWorks)
- Crimes and the resulting investigations (Connect)
- Custody records (Connect)
- Missing persons data (Compact)

All data used in the project is from the last 12 months only.

For most interactions, the number of hours spent and the number of resources deployed for each event can be calculated, giving an indication of the level of complexity involved. As an example, initial exploratory data analysis (EDA) has identified an individual who has had 32 ControlWorks logs created in the last 12 months. The subsequent interactions have included over 3 hours of call handling time and 55 hours spent in custody. A variety of response teams have spent over 450 hours attending calls for service and the neighbourhood team has also spent 160 hours attending. There have been 13 investigations and the individual features as both a suspect and as a victim on different occasions. This illustrates how there may be opportunities to focus on the interactions this individual has with WMP and to resolve underlying issues or to improve our service at the first interaction.

The initial EDA has focused on two specific questions; how to define a frequent service user and how this should be measured. Discussions about precise definitions are ongoing as the project develops to ensure clarity for any future subject access or freedom of information requests.

Intended activity resulting from the project

Once parameters have been agreed as to the data sources to be included and weightings (if any) applied to different types of interactions, the intention is to develop a Business Insight (Qlik) dashboard which presents individuals identified as the most frequent service users. It is anticipated that the data will be refreshed on a quarterly basis.

The direction from FET is that the dashboard should primarily be for the use of local policing teams in alignment with the new local operating model currently being developed. Just as local neighbourhood officers have a good understanding of the top repeat locations and repeat callers, this data will also provide an evidence base about which individuals and households in their local community have cause to interact with WMP on multiple occasions and thus ensure problem-solving activity is focused on the most relevant individuals and households. These teams are best placed to engage with partner agencies and third sector organisations to support any vulnerability that may be identified as a cause of the higher volume of interactions. Equally, neighbourhood officers will be able to provide feedback about organisational processes which are generating repeat demand (for example victims calling to find out about the progress of an investigation).

It will be possible for the dashboard to be configured in a variety of ways to inform decision making and enhance our ability to better protect the public. Some examples include:

- Filtering the output by NPU so that local teams can easily view the people in their local area. Local leadership teams will be able to decide on a manageable number for their neighbourhood teams to focus on and this will be reviewed through normal tasking processes.
- Filtering the output by themes such as Domestic Abuse, Mental Health, Child Sexual Exploitation, Child Abuse or Missing Persons. For example, this would enable the PPU to see how much engagement there is across the organisation with domestic abuse victims, perpetrators and their wider families.
- Filtering the output by priority crime types as deemed by Force and local tasking processes (such as violent crime or serious acquisitive crime).
- Applying a crime harm score such as the RFG[1] or the RFSDi[2] to provide a view of risk and / or vulnerability rather than pure volume. A similar weighting could be applied using the THRIVE[3] grading P1 – P9 for incidents.
- Using the data in submissions to the Crown Prosecution Service as evidence of the burden created by persistent offending committed by some individuals or against some victims, or as evidence for Domestic Violence Protection Notices (DVPN) or similar.
- Identify individuals whose interactions are escalating as this may indicate increasing vulnerability or risk that should be prioritised. PPU can use the tool to check whether a person they are aware of is also being considered by the NPU.
- The information can be used in discussions with partner agencies to evidence the need for a multi-agency approach with some individuals or households.

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[1] RFG: recency, frequency, gravity – currently used to understand harm caused by offenders and suspects.
[2] RFSDi: recency, frequency, severity, drugs and intelligence – previously trialled in the RFSDi/IOM model for charged offenders and going through EC process.
[3] THRIVE – the framework used by call handlers to assess threat, harm, risk, investigation, vulnerability, environment in order to grade the incident from P1 to P9 and ensure the appropriate response is deployed.

Ethical considerations

The aim of this project is to identify those individuals whose circumstances are such that they require an intensive use of WMP resources. This will offer opportunities to improve our service to vulnerable people and make effective use of our limited resources. There is no intention to 'flag' frequent service users in any way which would lead them to receiving a reduced service level. Rather, the intention is to identify those vulnerable individuals so that we can explore better ways of responding to their needs utilising the full suite of options available, including a multi-agency response such as the *Right Care, Right Person* approach developed by Humberside Police.[4] It is acknowledged that there will be some who may continue to require an intensive level of assistance because their particular circumstances require it. This tool would ensure that local policing teams are aware of these individuals and their circumstances and to ensure the wider organisation is sighted so that safeguarding them remains a priority.

As the tool is built, there will be decisions about the methodology used to rank service users depending on the parameters agreed. The intention is to undertake this in two stages. Firstly, data relating to ALL service users will initially be processed and ranked using a collection of agreed metrics to discover those who have the most interactions with WMP. Once the top numbers have been identified, these will be matched to the information we hold in a number of systems to identify the individual. This subsequent data processing will only be applied to the cohort of 500 identified as the most frequent service users. Information relating to some additional data subjects may also be included in the analysis, for example where a third party is calling about the individual of note. Options will be discussed with subject matter experts (SMEs) to ensure a range of views from departments are considered.

Decisions about how to configure and display the information may lead to some unintended consequences. For example, we would want to ensure that looked-after children, whose home address can change frequently, are appropriately captured by the tool. Equally, some 'high service users' who do not quite reach the 'frequent service user' definition could miss out on enhanced support being provided as a result of this tool. For this reason, the intention is to test the project with a cohort of 500 which will initially surface more people than can be actioned, to enable decision makers to prioritise from a wider pool. These types of issues will be tested with end-users with local knowledge to critically review the data output.

There is no intention to make predictions about people's future behaviour or to find relationships between features such as where they live or their age. The tool will merely combine the data we have about each individual's interactions with WMP into one place and rank them by volume and/or harm to assist with resourcing decisions. As such, there will be no special category data used in the tool.

Currently without this tool WMP has no way of identifying those who may need additional safeguarding and support based on their interactions across numerous departments of the organisation.

The DAL asks the Committee to advise whether the ethical issues outlined above require further mitigation and whether there are any further issues of concern relating to the methodology being developed to define the most frequent service users and the intended use of this data.

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[4] HMICFRS Humberside PEEL Inspection 2021/22 - His Majesty's Inspectorate of Constabulary and Fire & Rescue Services (HMICFRS) – Home (justiceinspectorates.gov.uk). This approach is being looked at by the NPCC for a national roll out and focusses on mental health in particular, but also where there are welfare needs that the police cannot and should not be responding to.

Data

Data to be used:

The data comes from the main WMP data systems where information is held about our interactions with members of the public, whether they are victims, suspects, offenders, witnesses or other agencies.

- Phone calls to the Contact Centre (Avaya)
- Records of Contact (RoC) and Incidents of all grades P1 – P9 (ControlWorks)
- Crimes and the resulting investigations (Connect)
- Custody records (Connect)
- Missing persons data (Compact)

12 months of data will be used in the project

Level of analysis:

☑ Individual
  Individuals aggregated?
  ☐ Yes
  ☑ No
☐ Specific Area:
  ☐ Output Areas
  ☐ Super Output Areas - Lower
  ☐ Super Output Areas - Mid
  ☐ Wards
  ☐ Districts
☑ West Midlands
☐ Other (type of crime)

Reliability of data:

An extensive exploratory data analysis (EDA) phase will be undertaken to examine the extent of any data quality issues. The data comes from standard WMP data sources which are routinely used in DAL projects and known data quality issues are accounted for.

Sample or entirety: Entirety

Type of analysis:

☑ Exploratory
☐ Explanatory
☐ Predictive
☐ Optimisation
☑ Dashboard

Proposed methodology:

1. Identify different potential processes / touch points.

2. Assess ability to identify individuals within the different processes.

3. Create links between individuals over the different systems.

4. Develop measure of level of demand created for WMP.

5. Develop into ETL and eventual dashboard.
Will the project eventually be automated:
☑ Yes ☐ No
Means of evaluation: Not applicable – no explanatory or predictive element to this project.

ALGO-CARE considerations

As this project is at the proposal stage and is presented to the committee 'in principle' in order that any immediate concerns can be raised, the finer details of the methodology will not be determined until after the EDA. Once the analyses have been completed the projects will be presented to the Committee again so that findings and methodology can be examined in more detail.

Advisory	
If applicable, are the outputs from the algorithm to be used in an advisory capacity?	The output would be advisory. The intention is to provide an understanding of our frequent service users based on all available data (not just phone calls or incident locations as presently) to assist decision makers with the allocation of resources.
Does a human officer retain decision-making discretion?	Yes, the intention is that the information would be provided to NPUs to assist with the tasking of resources. This information would be considered in conjunction with other priorities as part of routine tasking processes.
Lawful	
What is the policing purpose justifying the use of the algorithm (means and ends)?	This project supports the Force Strategy and the Precision Policing Doctrine by ensuring that resourcing decisions are based on data and evidence.
Is the potential interference with the privacy of individuals necessary and proportionate for legitimate policing purposes?	The data will relate to events when individuals have had an interaction with WMP and would be routinely collected as part of that interaction for policing purposes. Some phone numbers may be used to infer that a particular interaction does relate to an already identified frequent service user where other data is missing or inaccurate.
In what way will the tool improve the current system and is this demonstrable?	It is not currently possible for local police teams to identify the people in their communities who have the most interaction with WMP across all departments, either by volume or by harm/risk.
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?	The data are from WMP systems and are collected as part of normal operational activity, responding to calls for service from the public. As such data is collected in the appropriate manner and for the appropriate purposes.

Is the operation of the tool compliant with national guidance?	The analyses proposed would accord with the Government Digital Service Data Ethics Framework 2020[5]
Granularity	
Does the algorithm make suggestions at a sufficient level of detail given its purpose and the nature of the data processed?	The output will enable the user to look at an individual identified as a frequent service user and see a count and headline data relating to all interactions with WMP within a specified time frame. If further detail is needed about a specific event there will be a link to source data systems such as Connect and ControlWorks (where their access can be audited).
Are data categorised to avoid broad-brush grouping and results and therefore issues of potential bias?	No, data will not be categorised as it will be viewed at the level of the individual.
Do the potential benefits outweigh any data quality uncertainties or gaps?	The project will include an extensive EDA element and this should highlight areas of heightened uncertainty in the data or where particular gaps exist. There is currently no tool available to help the Force understand the individuals who have the greatest volume of interactions with the organisation or the harm/risk associated with them.
Is the provenance and quality of the data sufficiently sound?	The data have been gathered during the day-to-day work of WMP and will enable analyses of the type envisioned for this project.
If applicable, how often are the data to be refreshed?	To be agreed with end users – likely to be quarterly.
If the tool takes a precautionary approach in setting trade-offs, what are the justifications for the approach taken?	Not applicable – no explanatory or predictive element to this model.
Ownership	
Who owns the algorithm and the data analysed?	WMP would own the analyses and the data.

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[5] https://www.gov.uk/government/publications/data-ethics-framework

Does WMP need rights to access, use and amend the source code and data?	No
Are there any contractual or other restrictions which might limit accountability or evaluation?	No
How is the operation of the algorithm kept secure?	The data and the analyses are contained wholly within the WMP system and the security measures employed therein.
Challenge	
What are the post-implementation oversight and audit mechanisms, e.g. to identify any bias?	End user feedback identifying any inaccurate data would be addressed.
If the algorithm is to inform criminal justice disposals, how are individuals notified of its use?	Not applicable.
Accuracy	
Does the specification of the algorithm match the policing aim and decision policy?	Not applicable – no predictive element to this project.
Can the accuracy of the algorithm be validated periodically?	Not applicable – no predictive element to this project.
Can the percentage of false positives / negatives be justified?	Not applicable – no predictive element to this project.
How was the method chosen as opposed to other available methods?	Not applicable – no predictive element to this project.
What are the (potential) consequences of inaccurate forecasts?	Not applicable – no predictive element to this project.

Does this represent an acceptable risk?	Not applicable – no predictive element to this project.
How are the results checked for accuracy and how is historic accuracy fed back into the algorithm for the future?	Not applicable – no predictive element to this project.
How would inaccurate or out-of-date data affect the result?	Inaccurate data could lead to an inaccurate assessment of the frequent service users. This could affect the deployment of neighbourhood officers to engage with people who are not in fact frequent service users.
Responsible	
Would the operation of the algorithm be considered fair?	The analyses will be fair in that each data point will be considered on its own merits.
Is the use of the algorithm transparent (taking account of the context of its use), accountable and placed under review?	The decisions of the weightings that should be applied (in initial sifting) to different types of interactions will be discussed with SMEs. End user testing will help to assess the output which will be sense-checked with local knowledge.
Would it be considered to be used in the public interest and to be ethical?	It would be considered to be in the public interest to ensure that limited resources are focused towards people who have the most interactions with WMP, or who have interactions relating to disproportionate vulnerability or risk. Being able to intervene in issues at an earlier stage is in the best interest of victims and the public.
Explainable	
Is information available about the algorithm / decision-making rules and the impact of each feature?	A technical report will be produced which will include information about the methods used and assumptions made.

Appendix 1: Glossary of Terms

WMP / Law Enforcement Terminology	
DAL	Data Analytics Lab
DVPN	Domestic Violence Protection Notices
FET	Force Executive Team
NPU	Neighbourhood Policing Unit
OPCC	Office of the Police and Crime Commissioner
PCC	Police and Crime Commissioner
PMP	Proactive Management Plans
PPU	Public Protection Unit
RoC	Records of Contact
WMP	West Midlands Police

Data Science Terminology	
ALGO-CARE	All projects have used the ALGO-CARE to consider ethical implications: Advisory, Lawful, Granularity, Ownership, Challenge, Accuracy, Responsible, Explainable
EDA	Exploratory Data Analysis