**Driving forward data informed approaches to policing:
Using police data to assess demand, inform deployment and address priorities**

Key points of discussion

A workshop was held on 24th October 2019 to discuss data informed approaches to policing. The main aim of the workshop was to generate discussion aimed at informing the strategic direction of data-use for research purposes to inform, support and improve priority areas of policing practice in Scotland.

The workshop was attended by around 30 participants from a range of organisations, including Police Scotland, the Scottish Police Authority, the Violence Reduction Unit, HM Inspectorate of Constabulary in Scotland, the Information Commissioner's Office, and a variety of Scottish Universities. The event was chaired by Barry Sillers (Scottish Police Authority) and presentations were given by Denis Hamill (Chief Data Officer for Police Scotland), Supt Stan Gilmour (Thames Valley Police), Professor Jon Bannister (Manchester Metropolitan University) and Professor Susan McVie (University of Edinburgh).

In a facilitated discussion session, participants were asked to consider the presentations made by the speakers and consider six questions. Notes were taken during these discussions, and a summary of the responses to these questions is provided below.

1. **What are the data priorities to inform policing practice in Scotland?**

Police Scotland priorities are numerous, and include: better understanding patterns of demand and response; increasing efficiency and effectiveness of policing resources; increasing the focus of work on prevention and targeted intervention; and promoting and supporting partnership working to ensure 'whole systems' approaches to keeping people safe. Some areas of work lend themselves especially well to data analysis, such as monitoring cyber-enabled and cyber-dependent crime.

Using and sharing data considered key to achieving these priorities, as this helps to: specify the nature and quantify the scale of specific problems (especially areas of significant increase or decrease); improve the deployment of policing resources; inform strategic assessments and benchmarking activity; undertake gap analysis and identify unmet need; and enable the targeting of the right resource in the right place at the right time. Maximising collective knowledge through sharing of information across partner organisations is considered key to developing early intervention and prevention.

A growing area of need within Scottish policing is supporting the needs of vulnerable people. Using better data analysis to assess patterns of vulnerability, and understand how and where to deploy resources, is vitally important. Data is required that helps officers to understand the needs of individuals and to apply effective trauma informed practice.

Clearer specification of the problems could improve individual outcomes and save resources, for example by keeping people out of custody.

Police Scotland does not necessarily need more data, but there is a need to start using the data it has more effectively. Part of that need is to identify the partners that policing data should be shared with and how it should be used.

2. **What police (and other) data sources are being used to inform specific areas of policing practice?**

Police Scotland has multiple data systems and these are used in different ways to inform areas of policing practice. Geographical data is used regularly and open source data is also used to some extent, although much greater use of this could be made. Data are used for many purposes, including problem profiling, spatial analysis of crime trends and patterns, operational and strategic planning, official governance and reporting purposes, and a variety of other internal uses.

Data are used to inform training of both analysts and police officers, although there is scope to improve this. Police Scotland could capitalise on some of the training offered by other organisations (e.g. NHS) around data analysis and usage.

3. **What are the challenges of accessing, managing, linking or analysing these data? And what are the data gaps that hinder policing practice?**

Police Scotland is on a journey towards developing new procedures for governance and oversight of data. The organisation is moving in the right direction, but it is a slow process and will take time. There are many challenges around data within Police Scotland, some of which will take longer to address than others. A fundamental challenge for Police Scotland is making clear strategic decisions at executive level that data should be shared and in what circumstances. The primary challenges around data fell into three main types:

Challenges with the data itself:
- Limitations of the legacy data systems to facilitate data management, linkage or analysis;
- Old IT systems that are not well-connected means extracting data takes time;
- Problems with the database utility (e.g. some data fields are ill-defined);
- Lack of clarity around data holdings (e.g. sources of specific information are hard to identify);
- Systems make importing data easy, but exporting difficult;
- Systems are fundamentally constructed to aid policing, not for research purposes;
- Data quality can be problematic (e.g. missing data, data gaps, unlinked data, or multiple methods of data input);
- Lack of systematic data dictionaries or technical reports;
- Nominal data can be especially difficult;
- Lack of information governance protocols (with the exception of data systems that are subject to external inspection);

- Lack of clarity on asset ownership at an operational level.

Staffing related challenges:
- Turnover of staff within the organisation (analytical and legal) has led to loss of skills and expertise;
- Confusion over who has responsibility for some data sets and who is responsible for giving data-related permissions;
- Limited capacity or capability of analytical staff to analyse the vast amounts of data that exist;
- Limited opportunities for training/knowledge development especially around data sharing for research;
- Multiple and competing demands from different stakeholders (both internal and external) to conduct (often very complex and time-consuming) analytical tasks;
- Reliance on a small number of individuals to know their way confidently around the data systems (e.g. often one person knows what the data is/where it is, but you don't know how to find them);
- Limited awareness within and across the organisation about what data is available, where it is held, in what format, who owns it and whether it can be shared);
- Unclear rules around what data specific analysts allowed to access.

Challenges around sharing data with other organisations:
- Concern about the circumstances under which data can be legally shared under GDPR and whether this would be permitted by the ICO;
- Fear as a result of previous experiences of data sharing where Police Scotland 'lost control' of the data and the negative implications it had for the organisation (culture of risk aversion).
- General concern from officers that data that is shared with other partners will be used to critique performance or create performance targets;
- Academics may not always be clear about what data they need or what data Police Scotland hold;
- Documentation needs to be in place to determine the information governance protocols around data sharing;
- Data sharing requires permissions at senior officer level, but it is not always clear who this should be and there may be reluctance to do this based on concern about repercussions.

A more general challenge around data sharing is the distinction between the purposes for which Police Scotland collect the data and the purposes for which other organisations may wish to use it. Academics (or others) may wish to use the data to support the development of better evidence-based policy; however, they may have limited knowledge about the structure of the data or the limitations that are in place. For example, policing data is activity focused and measures what the police do rather than outcomes and impacts.

4. **In what ways could academic researchers help to address these challenges and data gaps?**

There was general support from Police Scotland for further partnership working with academic researchers, although a recognition that the working cultures and practices are very different and so adjustments need to be made on both sides. There was also recognition that Police Scotland as an organisation has experienced very negative outcomes as a result of sharing data for research purposes (although an acknowledgement that this could have been handled better by the organisation itself). Therefore, to facilitate greater partnership working there is a need for better co-production of research aims and questions, improved systems of information governance, and closer working partnerships around data management, sharing and analysis.

Academics could help to address the challenges faced by Police Scotland in a number of ways. One of the main contributions could be to do more to ensure that all proposed research projects involving data sharing include an explicit statement on the benefits for or product to be provided to Police Scotland. These benefits or products may vary, but could include the following:
- Working with Police Scotland to ensure that research findings inform specific areas of police policy and operational practice;
- Ensuring that research outputs include recommendations for future operational data linkage;
- Highlighting errors or inconsistencies in the Police Scotland data (e.g. different spellings of the same name);
- Sharing analytical skills and methodological expertise (e.g. through providing staff training);
- Providing code for data cleaning that could speed up internal analytical work;
- Exchanging data in the other direction (e.g. new data or re-packaged product).

In order to ensure that these benefits are realised, procedures must be in place to ensure organisational learning on the part of Police Scotland. Examples were given of previous projects where researchers had offered to provide support (e.g., assistance to clean data) but police staff did not know how to respond.

5. **How can we develop a way forward for research-focused data sharing and collaboration?**

There was broad agreement that the barriers to data sharing can be surmounted. A number of suggestions for moving forward was highlighted, as follows:

Clarifying the position of ICO and GDPR requirements
The ICO is supportive of data linkage and data sharing in a controlled environment and GDPR does not necessarily prevent this work. The legal basis for data sharing for research purposes does not rely on consent and is focused on public benefit, so it is important to focus on this in any discussions around data sharing. Police Scotland needs to have a clear set of protocols around why and how it will share data for research. It was acknowledged that different protocols would be required for data sharing for operational purposes.

Have a clear purpose for sharing data
It is vital to clarify the purpose of data sharing before making any data available. All requests for Police Scotland data should be demonstrably in line with current business strategy; therefore, applications for data should address two fundamental points: 1) what are the specific research questions; and 2) how will they inform operational or strategic aspects of policing? This will ensure that the correct data is identified and shared, and that the results of the analysis will feed directly into evidence-based policy decision making. To ensure this happens, Police Scotland could develop a better process for identifying and communicating police research priorities; and they should ensure that requests for data provide all the relevant information required to enable clear assessment.

Support better collaborative working
There is little doubt that sharing more data will support the development of better policing policy. However, it is often difficult for those external to Police Scotland to identify what data can be requested or what research questions could be addressed. Police Scotland could do more to share their own internal products and analytical findings, which would give researchers the opportunity to consider what is available/possible to achieve with the data it holds.

Collaborative working could also enable academic researchers to seek access to funding sources to conduct larger scale projects and to support the appointment of researchers to work alongside police staff. If Police Scotland was to expressly support the development of research proposals (through co-production), this would enable academic researchers to better understand the data, produce more informed results and would enable them to share skills and expertise with police staff (e.g. around data cleaning, creating data dictionaries and analysing data).

Collaborative working should also include sharing knowledge about policing research with the wider public. This will create a culture of openness and transparency, and leverage support for changes in policing practice based on robust data analysis.

Improve data quality
There are well recognised challenges around data quality within Police Scotland, but these could be lessened by learning from other Scottish organisations with responsibility for collecting and analysing data (e.g. NHS). There should be a forum of considering and resolving issues around public sector data quality in a consistent and supported manner. A particular challenge is the nominal issue to enable speedier data linkage. This is an area that Scottish Government would be well positioned to support.

Better staff training
Improvements in police analyst training could help to speed up the process of data sharing, and enable more effective collaborative working. New training is available within England and Wales (College of Policing), so it would be possible to draw on some of that. Skills training could also be provided by academic partners, as one of the benefits of data sharing. However, there is also a need to improve data literacy within the organisation as a whole and to ensure that all those involved in discussions about data and research have a clear understanding of what can and cannot be done with Police Scotland data.

Changing organisational culture
Police Scotland needs to start from the position that data should be shared, unless there are good reasons not to. This will require some adjustment in organisational culture, especially where there are fears that data will be used to achieve reputational damage or introduce performance targets. Senior level officers should feel confident about their ability to share data in a safe, controlled and justified way. Collaborative working should ensure that, where there are negative findings, these are discussed in detail and police staff feel empowered to communicate the results using a balanced and planned approach. Research champions could be identified within the organisation to support cultural change and challenge risk averse decision making.

Phased approach to data sharing
Police Scotland is not in a position to move to large scale data sharing as a result of its ongoing work around data quality and connecting legacy systems. However, there is strong support for the view that you should use what you can when it is available, and not wait until the data is perfect (which it may never be). Developing a phased approach to research planning could build confidence in the benefit of data sharing and demonstrate appropriate and effective was to mitigate risk.

6. Who should be involved in driving this forward?

There was not a unanimous view that one single organisation should be driving this work forward; rather, there was general agreement that it should involve shared responsibility across organisations.

Scottish Government is developing Research Data Scotland, which aims to support data linkage to improve public sector policy making and service delivery in Scotland. Therefore, it should be working closely with Police Scotland to support data sharing processes and protocols. It should also play a role in helping to set the research agenda and (where possible) providing appropriate funding or resources to support research for public benefit.

Police Scotland is on a journey to improve its data systems and structures; however, it should be more transparent about its data holdings and accept offers of support and assistance to ensure that its data is suitable and appropriate for the development of policy-relevant research. It should also be more open about its research needs and priorities.

Other public sector organisations (e.g. NHS) could provide much needed support and assistance to Police Scotland, especially around data systems, information governance and staff training.

Academics need to be prepared to have detailed conversations with Police Scotland about potential research ideas and the benefits that they would bring to the organisation. One way of coordinating this would be to work in partnership with the Scottish Institute of Policing Research, which could ensure that learning is maximised beyond just collecting and analysing datasets.

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