

Using mapping technology to improve briefings about hotspot patrols

Using a free and open-source cross-platform, to analyse harm hotspots, officer compliance and inform patrol strategies and briefings.

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Key details

Stage of practice	Untested
Purpose	Prevention
Topic	Neighbourhood crime Digital, data and analytics Productivity
Organisation	Cumbria Constabulary
Contact	Martin Jackson
Email address	martin.jackson@cumbria.police.uk
Region	North West
Partners	Police
Stage of implementation	The practice is implemented.
Start date	January 2022

Key details

Completion date	January 2023
Scale of initiative	Local
Target group	Workforce

Aim

To analyse patrol officer activity and the effectiveness of patrol briefings.

Intended outcome

To increase officer compliance when tasked to engage in identified hotspot areas. This is measured through radio data.

Description

Cumbria Constabulary conducted a trial involving three different shifts of response officers being briefed in three different ways.

- Group 1 received the standard briefing with no change in approach.
- Group 2 received a different briefing in which they were told the hotspot area they would be patrolling and why the area had been chosen as a hotspot. They were also told their patrol activity would be monitored using their airwave radio.
- Group 3 received a different briefing in which the officers conducting the briefing were told to 'improve' the quality of their briefing. They did not tell officers that their compliance in attending the hotspot would be checked by the airwave radios.

Patrol activity was extracted from radio data. This informed findings as to whether officers complied and effectively engaged in the hotspot locations as they were tasked. The information and communications technology (ICT) operational lead used red sigma to examine whether officers had been in the hotspot locations for the right amount of time.

Results from this trial highlighted that officers who were told their patrol activity was monitored by their airwave radios were more likely to attend their assigned area than those who were not made aware of this. Overall, these findings indicated that officer compliance was low and the quality of briefing made a large difference to the level of compliance. With this information Cumbria Constabulary created the geospatial evidence-based problem-solving approach.

Overall impact

As part of their geospatial evidence-based problem-solving approach, Cumbria use QGIS (a free and open-source cross-platform that can display data on google maps) making it easy to examine the location of officers. No training was provided for QGIS but it was highlighted that there are a lot of resources online, such as on YouTube, where individuals can learn about how to use it. Using this platform, Cumbria's ICT operational lead could compare officer activity with further police data such as calls for service and hotspot tasking. Through this analysis there were multiple findings.

- By looking more closely at patrol patterns on QGIS it became clear that certain roads were never driven on by officers. It was also found that patrol officers were spending a large amount of time in the police station rather than out on the beat. This information guided the briefing of officers, they were encouraged to drive through villages and back roads.
- Officer compliance varied throughout the force, meaning that different areas were being provided a different level of service.
- Effectiveness of patrols were also examined, with the time officers were in different areas also mapped on QGIS. This showed that despite officers being in their targeted areas, they were not there at the right time.
- QGIS was also used to test policing assumptions. For example, areas that officers identified as hotspots were not always accurate to where tasking was more efficient. This was evidenced in a rural crime case where officers were sent to look for stolen quad bikes in fields, only to find, by looking at data of previous rural theft, that the main roads were evidenced as the best place to patrol.

Cumbria decided to take an educational approach rather than a disciplinary approach when attempting to modify their officer's behaviour. This included explaining during briefings why they were being tasked certain areas, further than simply labelling it a hotspot. This was also significant when looking at the effectiveness of patrols due to the time-of-day officers are present.

By explaining the specific types of crime and background of an area identified as a hotspot, officers can organise their patrols to be more effective. This changed briefings in Cumbria, and created the following recommendations:

- when delegating officers to certain areas it is important that they understand why the area has been identified as a hotspot
- officers should also be shown how the time of day and type of patrolling can impact the effectiveness of their patrol
- telling officers that their location is monitored through their radios also increases compliance

These findings further informed Cumbria Constabulary's action around hotspots, specifically in targeting road safety. Cumbria used Department for Transport figures to evaluate the harm on their roads, focusing on cost to the community. They created a scale of points in relation to the level of harm, fatal collisions at 31 points to minor harm at 0.01 points. This showed which roads in Cumbria had the most harm, creating 'harm hotspots'.

These hotspots were mapped on QGIS, and the locations directed policing activity informing where police could patrol to increase safe driving. Cumbria Constabulary also spoke to partners like the council to improve these parts of the road and reduce harm.

Cumbria Constabulary compiled an internal course to teach officers about the use QGIS to monitor radio airwaves and how people attended hot spots and the foundations of geospatial data. 13 intelligence officers were involved in this training, due to limited resources the ICT operational lead ran this themselves. The training course was completed over two days. It aimed to inform officers on approaches to police activity in response to crime and incident patterns.

The trial highlighted that improvement was necessary in the deployment of patrolling officers. Through QGIS, Cumbria have been able to improve their analysis of patrol officer movement, as well as use crime indices to formalise their hotspot tasking. It is too early to ascertain whether the change in briefing is positively impacting officer compliance, however the primary positive impact of this initiative is the use of QGIS to inform policing practice and better understand the local picture of policing in rural areas.

The force has continued to utilise the tool in response to the government's funding initiatives to deploy high-visibility patrolling of hotspots of anti-social behaviour and serious violence.

There are hopes this will improve officer compliance long term.

Learning

QGIS has been highlighted as a helpful tool to gain a better understanding of the activity and effectiveness of patrolling. Cumbria focus on how it is a free software and therefore enabled them to learn more about their practice without increasing their budget.

Despite the training sessions, it has been highlighted that geospatial data has not been adopted into Cumbria Constabulary's daily routine as frequently as hoped. However, Cumbria Constabulary are still planning on incorporating this approach into the daily routine of shift inspectors so they can understand where their officers have been whilst on shift.

As a result of this, the use of QGIS is still run by Cumbria's ICT operational lead. Having the sole responsibility of running the QGIS analysis was identified as time consuming and something they do outside of their full-time role. This is what the training sessions hoped to combat, as every team would be able to keep track of their own data.

It is essential to have clear aims of briefings and communication of non-compliance to assist in the patrol activity, closely matching the expected actions.

Best available evidence

The [Crime Reduction Toolkit](#) includes best-available evidence on [hotspots policing](#).

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Tags

Hot spots policing Crime reduction