

Restricted



**Kent
Police**

Corporate Services
Analysis Department

40

PredPol operational review

Restricted

Introduction

This document provides an overview of Kent Police's evaluation of PredPol. The document provides all key findings, recommendations and a summary of the evaluations carried out over the past 15 months. The full report will be published at the next Performance Committee on 16th April 2014.

The evaluation used several methods to determine accuracy, levels of use, impact on crime and ASB and user feedback.

Accuracy referred to as hit rates in this document was determined using a blind test experiment at West Kent during the North Kent Pilot phase (Dec 2012 – March 2013). Since this time Corporate Services have developed an automated system to track hit rates for all crime and ASB.

Usage has been tracked using dosage levels, these data are produced on a weekly basis. Dosage is provided under the manual book in, book out process using [REDACTED]

31

The impact on crime and ASB is measured using a weekly time series approach adopting SPCs. This is a recognised method this has been ratified by leading academics from the UCL and Cambridge.

Officer feedback has been gathered using an online survey and focus groups.

It should be noted that the Force has experienced an unprecedented year with the HMIC recorded crime inspection. This is likely to result in a 10% increase in crime at the end of this financial year. It is difficult to envisage any predictive system managing an increase of this scale. Despite this, there is evidence that shows PredPol can reduce crime and ASB if the system is used.

Key Findings

1. A reduction in all crime (4%) was seen during the North Kent pilot. This was not sustained and no further overall reductions have been observed. However, there have been further transitory reductions in crime under operation Nero.
2. A sustained reduction in ASB has been seen during the pilot and Force roll out. Analysis of ASB hit rates (the number of incidents that appear in boxes) shows that PredPol picks up a significant chunk of ASB across the Force (see finding 6)
3. Reductions in ASB, criminal damage and violence were observed during [REDACTED] These reductions were sustained for a period of around 3 weeks [REDACTED] without further intervention above and beyond normal PredPol activity (Appendix 2).
4. The average all crime hit rate (the number of crimes that appear in boxes) is 11%, the hit rate is at its highest in Canterbury at 19%. This has increased since the blind test at West Kent during the PredPol pilot which showed an 8% hit rate.

Restricted

This means that over a tenth of all crime takes place in the 500 square feet PredPol boxes and represents a substantial concentration of crime in small geographical areas across the Force.

Random hit rates generated during the blind test produced less than 1% while intelligence led hit rates produced a 5% hit rate. This shows that PredPol is 10 times more likely to predict the location of crime than random patrolling and more than twice as likely to predict crime as boxes produced using intelligence led techniques.

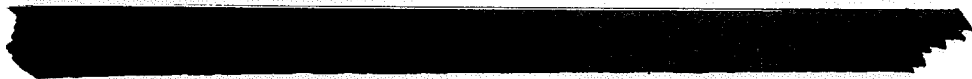
5. Near hit rate analysis shows that around 1 third of all crime takes place in and immediately adjacent to PredPol boxes. This analysis looks at the Predpol box and the 8 boxes surrounding each box.

This shows that a significant amount of crime is taking place at small concentrated areas in and around PredPol boxes. Hit rate analysis shows that violent crime, criminal damage and ASB are currently most affected by PredPol.

6. A recent analysis of ASB shows higher average hit rates compared to crime, at 16% in the boxes and over 1 third in adjacent boxes.
7. PredPol produces 520 boxes per day; the average amount of boxes visited per day is 86. This means the Force are currently reaching 16% of boxes per day on average.

During the North Kent pilot 25% of boxes were visited on average and a 4% reduction in crime was observed. This indicates that the Force has not reached a sustained critical mass; officers are not getting to enough boxes to make a significant impact on crime.

8. PredPol dosage levels are dropping. Average daily rates are now around 28 boxes per day at Divisional level. This has declined since August 2013 at 40 per day per Division to the present level.



31

9. Many officers value and enjoy the use of PredPol, however indicate that they do not have the time to use PredPol. The review found that PCSOs were more likely to use it regularly. While there are mixed views and confusion around the effectiveness and purpose of PredPol, officers do value PredPol and believe it to be useful police work.
10. There is confusion around the use of crime and ASB filters. PredPol has been found to be more effective when using the all crime or violence setting for general Patrol, ASB should also be considered.

Officers are asking for direct access to PredPol without the requirement to login to the system. Many officers indicated that the name is not useful and does not help to emphasise the systems purpose or capabilities.

Restricted

11. A financial analysis using the Home Office cost to society method shows that a 0.35% reduction in all crime would match the cost of PredPol in financial terms.

Summary

The Force has trialled PredPol, a geographic predictive policing model, in Kent for almost 15 months. During this time there have been several initiatives including road shows lead by the Chief Constable, all out days and Force wide operations that have used PredPol alongside other policing tactics. PredPol has become part of daily business at Divisions supported by colleagues from Central Operations and external partners.

User feedback

The Force adopted a generic approach to PredPol indicating to officers that any patrol time should be spent in PredPol boxes. This has gone down well with frontline officers as they feel they have been trusted to learn about and adopt the system. Many other Forces in the UK and abroad have looked to adopt similar tactics when looking at or using PredPol. However, it is fair to state that the system has not reached critical mass in Kent and therefore the Force has not achieved maximum potential benefit from PredPol.

Many officers value PredPol and the chance to get out onto the streets of Kent to prevent crime and engage with communities. There is frustration at the perceived lack of time and opportunities to use PredPol and this is reflected in the relatively low dosage levels seen in recent months.

At a recent PredPol focus group it was clear that officers felt that more time on the streets was important and something they enjoyed. PredPol was viewed as something that enhanced confidence and developed focus, particularly for newer officers but not exclusively.

"I encourage my team to go out into PredPol boxes, I love it and tell them it's what it's all about. I had two of my team out in a PredPol box and they came across an Eastern European woman with her child. Both were vulnerable and the child had been sexually abused, the woman was in an abusive relationship. They found these people because they were in a PredPol box. They got a good work report from the Chief Inspector and we protected two vulnerable people. That's good news for me and my team, it feels right it's what it (policing) is all about."

There was frustration at the perceived lack of time to do PredPol, however the above participant indicated that by encouraging his team to fit PredPol into and around their day meant officers found the time to use PredPol. The participant indicated that there was a 'buzz' about PredPol in his team and that they had managed to turn around the doubters.

One participant stated that although they valued PredPol and agreed with the above it still fell down the list against all the other critical tasks they have to carry out. It was also clear from the focus group that PCSOs generally had more time to do PredPol and were using it on a daily basis. This matched the findings from the Force wide PredPol survey. Officers did indicate that the changes in June under CSR2 may represent an opportunity to provide more focus to PredPol across the Divisions.

Restricted

There is confusion amongst officers as to what PredPol does (locates areas where crime and ASB is most likely to happen on daily basis) and it is clear that the Force needs to re-think its communications strategy around PredPol and adopt a long term strategy to ensure officers understand and engage the system. Any communications should emphasise the simple fact that PredPol locates high risk areas where crime and ASB is likely to happen **today**.

Greater emphasis should be placed around the stories officers pick up when using PredPol, this has fallen off somewhat since the pilot. However, when talking with officers it is clear they have positive stories to tell.

Officers also indicated that the current system of booking in and out of boxes could be problematic and unpractical, specifically at locations where there are multiple boxes.

Results

Results from the PredPol evaluation are mixed in terms of straight reductions in crime. During the North Division evaluation a 4% reduction in all crime was observed. This was not sustained and coincided with a drop in dosage across North Division (see usage below).

During the 12 month Force wide evaluation no overall drop in crime was observed. This is not surprising given the unprecedented circumstances around recorded crime this year. However, there is evidence that supports the use of PredPol in terms of reducing crime and ASB.

31 [REDACTED] saw a sustained reduction in violence, criminal damage and ASB (Appendix 2). This indicated that around 10 hours of PredPol activity using existing resources re-brigaded to exploit PredPol lowered crime and ASB. Importantly, the drop was sustained for a period of three weeks without further PredPol activity beyond normal daily business. Crime filters were set to all crime and violent crime depending on Divisional priorities.

31 [REDACTED] was not as successful, yet employed almost 3 times as many officers but with a filter setting against burglary. This shows that using more officers is not necessarily a good thing without fully understanding how to engage the system. So PredPol has been shown to work when accurately engaged and dispels any notions that [REDACTED] was 31 more about getting officers out and little to do with directed patrol. This does not mean PredPol is not effective against burglary but is likely to be better used against this crime type alongside well established intelligence led operations.


31 When looking at these results it would appear that PredPol has not provided what was expected around crime reduction. However, there are significant indications that PredPol does reduce crime if the system is engaged sustainably. Findings from North Kent and [REDACTED] and the ASB results suggest that if PredPol was used at an impactful level that a reduction in demand would follow. In short the Force would likely experience less crime and ASB by suppressing and preventing crime. There is also the added benefit of increased visibility and it is clear that many officers enjoy using PredPol. Data around sustainable usage levels is provided in the next section.

Restricted

Usage

When looking at dosage, how many boxes are visited per day, this has steadily declined during the 12 month Force roll out (Appendix 2). Average daily rates are now around 28 boxes per day at Divisional level. This has declined since August 2013 at 40 per day per Division to the present level.

Approximately 25% of boxes were visited during the North Kent pilot specifically leading up to and during the 4% reduction in crime. Currently the Force is visiting 16% of PredPol boxes. This provides further evidence that critical mass is not being reached and sustained.

31 


This raises several questions not least the number of boxes produced by PredPol against the levels of available Force resource. With this in mind it would be sensible to look at the number of boxes currently generated by Predpol (40 per day at each District) and look to a possible reduction in number where appropriate.


How PredPol features in daily business and the perceived value of it by officers against other key daily tasks such as case file work and appointments is important. Findings from the evaluation suggest that PredPol could reduce demand by suppressing and preventing crime, providing more time for officers to carry out other tasks. This will take time to realise and will require a greater emphasis on PredPol than is currently being seen.

Cost

PredPol currently costs the Force around £100,000 pounds per year. When looking at the Home Office definition on the cost of crime to society and taking the financial cost of PredPol. The Force would need to achieve a 0.35% reduction in crime to match costs in financial terms. There is also the potential to save time if the system is fully engaged. Initially this will come at a cost in terms of time and resource but analysis suggests that a reduction in demand would follow.

Conclusion

31 

The evaluation finds that PredPol does reduce crime and ASB when used. Results do not show an overall drop in crime for the Force this year but there has been a sustained drop in ASB and transitory drops in crime at North Division and during 

Analysis suggests that the adoption of PredPol should reduce demand in several key crime types and ASB. The raises the question as to how the Force delivers a sustainable approach to PredPol. Changes to Force configuration in June under CSR2 may well present an opportunity to refresh the approach to PredPol.

Officers value PredPol but indicate that they do not have the time to use it. There is evidence of good practice and this should be spread across Force.

If undertaken this should also include a fully revamped communications strategy emphasising the purpose of PredPol and its capabilities as well as a look at how many boxes are delivered to each district on a daily basis. It will also be useful to

Restricted

test any new approach at a district level to determine the most effective and sustainable use of PredPol.

Appendix 1 and Appendix 2 exempt from release under the FOIA by virtue of the exemption at Section 31(1)(a)(b)