

The Philadelphia Predictive Policing Experiment

BY

Jerry H. Ratcliffe, PhD,
Professor of Criminal
Justice, Temple University,
Scientific Advisor, IACP

A FEW YEARS AGO, PREDICTIVE POLICING WAS ALL THE RAGE. THE TERM APPEARED WITH CONSIDERABLE FREQUENCY, COMPANIES OFFERED EXPENSIVE SOFTWARE OPTIONS TO POLICE DEPARTMENTS, AND RELATED SESSIONS AT THE IACP ANNUAL CONFERENCES DREW CROWDS OF POLICE LEADERS HOPING FOR THE NEXT POLICING “SILVER BULLET.”

For neighborhood patrol operations, predictive policing involves using prior data to forecast the places and times where crime is likely to occur, so police resources can be allocated most efficiently in those places and times to prevent crime from re-occurring. In other words, the idea was that police

leaders could estimate likely crime sites and prevent crime by having police officers at those locations.

While predictive policing caught a lot of attention from police chiefs, a committee commissioned by the National Academies of Sciences, Engineering, and Medicine pointed out, “There are at present insufficient rigorous empirical studies to draw any firm conclusions about either the efficacy of crime prediction software or the effectiveness of associated police operational tactics.”

In an effort to address this void, the Philadelphia Predictive Policing Experiment—led by now-Police Commissioner Kevin Bethel—sought to



Photo by Mark Makela/Getty Images

answer the question around the effectiveness of one common police operational tactic: targeted patrol.

METHODS

In Philadelphia, Pennsylvania, from summer 2015 to 2016, the police department studied predictive policing in two three-month waves. The first wave explored property crime. Crime prediction software, donated by a local company, was used to estimate three potential crime grids (500 feet by 500 feet) to be patrolled each day between 8:00 a.m. and 4:00 p.m.

Of Philadelphia's 22 districts (including the international airport), the lowest property crime district and the airport district were excluded from the study, leaving the remaining 20 to be randomized by blocks of four into one of four conditions by police district. In "awareness" districts, officers were made aware of the three grids during roll call. In "marked car" districts, officers were made aware of the grids during roll call *and* a dedicated marked police car was assigned to patrol the crime grids. In "unmarked car" districts, it was the same arrangement as the marked car districts except the car was an undercover vehicle. Finally, in "control" districts, researchers did not make any officers aware of the crime grids. Those districts were patrolled as normal. Across three months, researchers therefore had five "awareness" districts, five "marked car" districts, five "unmarked car" districts, and five "control" districts.

When the second wave, this time examining violent crime, commenced, researchers rerandomized the districts—after again dropping the two lowest crime areas (the airport and one low crime district). This time, officers patrolled from 6:00 p.m. to 2:00 a.m. because this was the eight-hour window in which violence was most concentrated.

RESULTS

At the conclusion of the study, researchers examined changes in crime in and around the predictive crime grids. This was done by comparing the three different types of treatment (awareness, marked car, and unmarked car) to the business-as-usual model of normal police patrol (the control districts).

No significantly different results were found for the violence wave of the study. But when researchers looked at the property crime results, they found that—compared to the control areas—marked car districts had 31 percent lower than expected property crime counts. Low levels of crime—not surprising given how small the areas were—meant the results were not statistically significant; however, this still translated into a substantial difference in

crime. Researchers even found a 40 percent reduction in property crime in the eight hours *after* the marked car was present. Thus, these results appear to have reduced the overall property crime level in the marked car property crime districts.

IMPLICATIONS FOR POLICY AND PRACTICE

The National Academies of Sciences, Engineering, and Medicine committee wrote that it "remains difficult to distinguish a predictive policing approach from hot spots policing." This begs the question of whether the work undertaken by Philadelphia Police was predictive policing or hot spots policing. It probably does not matter that much. In the end, data were combined with a spatial analysis to concentrate police in areas more likely than others to experience crime, and, as a result, positive and measurable crime reduction occurred.

Estimating locations as small as city blocks for where crime might occur in an eight-hour period remains challenging, and police departments may not derive much benefit from expensive software purchases. It may be that, for most departments, a simple map showing hot spots of past crime events will suffice. Recent studies have shown that simple counts of previous crimes in an area can generate

“
*Success in predictive
 policing involves
 not just identifying
 crime areas but also
 important choices
 around ethical tactics
 and sustainable
 implementation.*
 ”



Save money. Stay healthy. **Look great.**

VSP Individual Vision Plans

Did you know? It only costs about 61 cents per day for quality vision coverage with a VSP Individual Plan.

See what your IACP membership can save you. You have access to this discount—just for being a member!

Visit theiacp.org/member-benefits for more information.



similar results to more advanced techniques that incorporate more complicated data sets.

Police leaders should also consider how to best implement a hot spots or predictive policing strategy. Success in predictive policing involves not just identifying crime areas but also important choices around ethical tactics and sustainable implementation. Frontline officers in Philadelphia were skeptical that the software could surpass their local knowledge or could “interpret real life.” The project also ran into concerns that the computer would replace frontline officer decision-making or that the requirement to commit a car just to the predicted crime grids would place undue burden on colleagues in a response role. Indeed, police leaders should bear in mind that software purchases and algorithms are far less important to eventual success than careful and thoughtful implementation of a workable plan that officers and other stakeholders within the agency understand and support. ♡

Alarm Scoring is Rolling out Nationwide!



About the TMA-AVS-01 Alarm Validation Scoring Standard

AVS (Alarm Validation Scoring) is an intrusion alarm classification standard. The standard defines intrusion alarms based on various threat levels and the process to determine the alarm level. This process can be done manually by a central station operator or can be adapted by automation providers or other parties for automated processing. It also includes language on communicating these classified or scored alarms to Public Safety through Emergency Communication centers (ECCs/911) as well as language regarding compliance for alarm monitoring centers.



Visit our website
<https://ppvar.org/avs-01-public-safety/>

There are five alarm levels:

- 0** **Alarm Level 0**
No call for police response
- 1** **Alarm Level 1**
Police response request with no or limited additional information
- 2** **Alarm Level 2**
Police response request with confirmed or ‘highly probable’ human presence with unknown intent
- 3** **Alarm Level 3**
Police response request with confirmed threat to property
- 4** **Alarm Level 4**
Police response request with confirmed threat to life



AVS-01
Standard Document