



# Predictive Policing: The Future of Law Enforcement?

by Beth Pearsall

Law enforcement explores ways to anticipate and prevent crime.

For years, businesses have used data analysis to anticipate market conditions or industry trends and drive sales strategies.

Walmart, for example, learned through analysis that when a major weather event is in the forecast, demand for three items rises: duct tape, bottled water and strawberry Pop-Tarts. Armed with this information, stores in the affected areas can ensure their shelves are fully stocked to meet customer needs.

Police can use a similar data analysis to help make their work more efficient. The idea is being called "predictive policing," and some in the field believe it has the potential to transform law enforcement by enabling police to anticipate and prevent crime instead of simply responding to it.

In November 2009, the National Institute of Justice, in partnership with the Bureau of Justice Assistance and the Los Angeles Police Department, held a Predictive Policing Symposium to discuss this emerging idea and its impact on the future of policing. Researchers, law enforcement officers, crime analysts and scientists gathered in Los Angeles for three days to explore the policy implications, privacy issues and technology of predictive policing.

## What Is Predictive Policing?

Predictive policing, in essence, is taking data from disparate sources, analyzing them and then using results to anticipate, prevent and respond more effectively to future crime.

Predictive policing entails becoming less reactive. “The predictive vision moves law enforcement from focusing on what happened to focusing on what will happen and how to effectively deploy resources in front of crime, thereby changing outcomes,” writes Charlie Beck, chief of the Los Angeles Police Department.<sup>1</sup>

Beck told participants that perhaps the greatest benefit to predictive policing is the discovery of new or previously unknown patterns and trends. Just as Walmart found increased demand for strawberry Pop-Tarts preceding major weather events, LAPD has found its own subtle patterns when examining data that have helped the department accurately anticipate and prevent crime.

Predictive policing is not meant to replace tried-and-true police techniques, symposium speakers explained. Instead, it borrows from the principles of problem-oriented policing, community policing, evidence-based policing, intelligence-led policing and other proven policing models.

“This is a very important next step to move forward in the evolutionary process of our profession,” said Bill Bratton, former LAPD chief and chairman of Altegrity Risk International. “We are building on the essential elements of all policing strategies for the greater good.”

John Morgan, director of NIJ’s Office of Science and Technology, added, “This is a framework to help us organize policing as an information-intensive business in an information age. Predictive policing is not meant to replace any other model of policing,” he said. “Instead, it enables us to do these things better.”

Moreover, doing them better remains critical given the current economic climate.

George Gascón, chief of police for the San Francisco Police Department, noted that predictive policing is the perfect tool to help departments become more efficient as budgets continue to be reduced. “With predictive policing, we have the tools to put cops at the right place at the right time or bring other services to impact crime, and we can do so with less,” he said.

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### **So What Does It Look Like in the Field?**

“There is no predictive policing in a box,” explained Colleen McCue, president and CEO of MC<sup>2</sup> Solutions, which provides professional services in predictive analytics. “Let the problem guide the solution,” she advised.

Current analytic tools and techniques like hot spots, data mining, crime mapping, geospatial prediction and social network analysis can be applied to a broad range of criminal justice problems. For instance, they can be used to anticipate localized crime spikes, inform city and neighborhood planning, and aid in police management decisions.

Here are two examples of predictive policing at work:

**Reducing Random Gunfire in Richmond.** Every New Year’s Eve, Richmond, Va., would experience an increase in random gunfire. Police began looking at data gathered over the years, and based on that information, they were able to anticipate the time, location and nature of future incidents. On New Year’s Eve 2003, Richmond police placed officers at those locations to prevent crime and respond more rapidly. The result was a 47 percent decrease in random gunfire and a 246 percent increase in weapons seized. The department saved \$15,000 in personnel costs.

**Connecting Burglaries and Code Violations in Arlington, Texas.** The Arlington, Texas, Police Department used data on residential burglaries to identify hot spots and then compared these locations to areas with code violations. According to Chief Theron Bowman, officers found that every unit increase of physical decay resulted in almost six more residential burglaries in the city. Thus, neighborhoods with greater physical decay could expect greater increases in residential burglaries. Arlington subsequently developed a formula to help identify characteristics of these “fragile neighborhoods.” The police department and other city agencies now work more efficiently in the neighborhoods to help prevent crime.

### **But Is This New?**

Some participants questioned whether predictive policing was, in fact, a new model. They argued that good crime analysts have been practicing predictive policing for more than 40 years.

“Are we doing anything new or innovative with this data or are we just doing it better and quicker?” asked Chief Tom Casady of the Lincoln, Neb., Police Department.

Casady argued that the idea is not new. “It is a coalescing of interrelated police strategies and tactics that were already around, like intelligence-led policing and problem solving. This just brings them all under the umbrella of predictive policing,” he said. “What is new is the tremendous infusion of data,” Casady added.

Referencing the Richmond example, he explained, “We knew there were shootings on New Year’s Eve, and we knew where they were happening. So if we could pinpoint the time, we could put more police in those areas. This is pretty basic stuff,” he said, “and we have been doing this for years.” Casady said the real question the field should be asking is how to take this to a new level: How do we use information to stimulate different interventions?

### Community Involvement Is Critical

Participants agreed that transparency and community involvement are important.

“Community trust is huge as we move down this path,” Beck explained. “We need to be extremely transparent. As we advance this discussion of how law enforcement will use information and how we tie that information to officer deployment, all of these discussions must be open.”

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## NIJ Funds Predictive Policing Demonstration Initiative

NIJ has launched a demonstration initiative to develop, test and evaluate predictive policing in a real-world, real-time context. The Institute awarded planning grants to seven law enforcement agencies.

NIJ has also funded a team from the RAND Corp. to evaluate the projects. The evaluation is designed to address questions such as what works, what does not and what is promising in predictive policing.

**For more information** on the initiative, see <http://www.ojp.usdoj.gov/nij/topics/law-enforcement/predictive-policing/symposium/discussion-demonstrations.htm>.

handle information the right way,” said Thomas O’Reilly, senior policy advisor at the justice department’s Bureau of Justice Assistance. “As we move into predictive policing, nothing should be secret. We should engage privacy advocates and community leaders from the outset to explain the program and get their ideas and input to alleviate their concerns.”

Sean Malinowski, a lieutenant with the LAPD, assured participants that predictive policing does not deny civil rights. “Police are not arresting people on the probability that they will commit a crime,” he said. “Police still must have probable cause.” In addition, predictive policing methods do not identify specific individuals; instead, they anticipate particular times and locations where crime is likely to occur.<sup>2</sup>

Yet privacy and civil liberty issues are critically interrelated with predictive policing and must be addressed. “We have a solemn obligation and a strategic imperative for the success of predictive

policing to put privacy, civil rights and civil liberties in the forefront from the outset,” said Russell Porter, director of the State of Iowa Intelligence Fusion Center.

Participants stressed the importance of setting up a thorough privacy policy, training personnel to use it properly, enforcing accountability and continually refining the policy. Policies should also include what information can be shared with other agencies.

“Transparency, auditing and due diligence are critical to developing a process that is trustworthy, protects privacy and produces good outcomes,” said Joan McNamara, a commander in the Los Angeles Police Department.

Bratton added, “If we do this right, if we do it constitutionally, collectively and transparently, we can lessen the concern. We can hear the concerns and move forward, all the while expanding and modifying and improving and continuing that path of discussion.”

## It Is All About the Data

In the end, the success of predictive policing will all come down to how reliable it is, how different information sources are integrated and how all the data are analyzed.

“Police departments collect great data all the time,” said Craig Uchida, president of Justice & Security Strategies Inc, a company that helps law enforcement agencies in evaluating and addressing program needs. “We just don’t know how reliable, valid and clean it is. We need to oversee data collection to ensure the data are clean.”

Along with watching quality, police departments also need to tap into the wealth of nontraditional data available locally, such as medical and code-compliance data.

“Predictive policing has another level outside the walls of the police department,” Jim Bueermann, chief of police in the Redlands, Calif., Police Department, said. “It takes a holistic approach — how do we integrate health and school and land-use data?”

“Part of the challenge is understanding what all the available data are and then finding a way to fuse that data, bring the people who use that

data together, and approach it from a holistic perspective,” Bowman said. “It is just as important to understand what we don’t know at the local level.”

John Miller of the Office of the Director of National Intelligence suggested that the field also looks at “predictive perpetrating.” “We must ask ourselves: What data sources have the bad guys pulled up? We are not the only ones looking at data,” he warned.

“It is so important to bring these data warehouses and analytics together and to search and make them available so we can do our job,” Beck said. Malinowski added, “Analyzing all of this data will give decision-makers better information to make better decisions.”

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## Notes

1. Beck, C., and C. McCue, “Predictive Policing: What Can We Learn From Wal-Mart and Amazon About Fighting Crime in a Recession?” *The Police Chief* 76 (11) (November 2009), [http://policechiefmagazine.org/magazine/index.cfm?fuseaction=display\\_arch&article\\_id=1942&issue\\_id=112009](http://policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=1942&issue_id=112009).

2. Ibid.



Check out the recap of the Predictive Policing Symposium on the NIJ Web site: <http://www.ojp.usdoj.gov/nij/topics/law-enforcement/predictive-policing/symposium/welcome.htm>.