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How Stockton Is Using Predictive Policing to Thwart Violent Gun Crimes



By **Dave Nyczepir** | MARCH 29, 2017

Non-domestic gun violence-related crimes in "forecast zones" decreased 40 to 60 percent month-to-month between March and May of last year.

LAW ENFORCEMENT TECH STOCKTON GUN CONTROL

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High crime, low staffing and mounting community frustration drove Stockton, California's police department to start exploring evidence-based practices in 2012.

Publications like *Forbes* were calling Stockton the “**eighth-most dangerous city in America**,” based on 2011 FBI crime data, as the force mulled vendor and in-house data-driven strategic approaches.

Forecasting violent gun crimes using cutting-edge predictive analysis soon emerged as Police Chief Eric Jones' top priority, and by 2013 the department had bolstered its crime analysis section with an embedded analyst courtesy of [Bair Analytics](#).

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LexisNexis Risk Solutions law enforcement sector senior director, told *Route Fifty* in an interview. “But it takes good old-fashioned police work in combination to make it all work.”

In 2014, Stockton's police launched its model, which analyzes buckets of data on non-domestic violence-related gun crimes to identify active trends and flag “forecast zones,” where incidents are likely to occur.

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Alpharetta, Georgia-based identity intelligence company LexisNexis Risk Solutions [acquired Bair](#) just before Jones' officers began operationalizing forecast zones in March 2015. By creating a call for service the department moves squad cars into projected hotspots at anticipated dates and times.

The same time the following year, the [Accurint Crime Analysis](#) forecast and 937F call were added to the force's monthly [Integrated Criminal Apprehension Program](#) meeting. The foundational intelligence layer triggered phase three of Stockton's efforts: Project Forebode—short for forecast-based deployment.

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“We’re not just dispatching cars to the zone but looking at other aspects to flood into the zone. Thirty percent of all gun crimes occur in these small zones,” Jones said. “If we’re able to put resources into zones, when we believe gun crimes will be hot, we are seeing reductions of gun crimes. To be successful to have reductions, we need to ensure 15 percent of the time we get them into the zones.”

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gun violence-related crimes in forecast zones. Property crimes in those zones decreased 20 to 30 percent at the same time, said police Capt. Antonio Sajor, Jr. in an email. Those statistics have the added benefit of engendering officer buy-in to the new way of doing things.

Next on Jones' to-do list is honing the forecast model with additional data because gang and gun violence is such an acute challenge for the city. Data from [ShotSpotter](#) gunshot technology deployed around Stockton may eventually be incorporated into the system, and the city also runs [Operation Ceasefire](#), a gun violence reduction communications program targeting youths at highest risk.

"Part of the evidence-based approach is, if we're not getting the reductions we want, we can pivot," Jones said. "Internally the officers really like it; they want to see this. This type of tech is starting to get recruits, who want to come to a department like this."

Situationally in the field, predictive policing makes officers more prepared. A seasoned officer might know that crime picks up in a particular 10 to 12 square block area in the summer, but forecast zones are even more precise—broadly validating police intuition while homing it in. Dates and times don't always align with when cops expect gun crimes to occur.

Currently the forecast algorithm relies on more than a decade of violent crime trends and active knowledge of gang activity. While an incident won't always occur when predicted, Jones likens crime forecasts to weather forecasts, which give people a pretty good idea of when they'll need an umbrella.

Accurint Crime Analysis is now in the hands of hundreds of law enforcement agencies across the U.S.

"Toward the beginning predictive policing was very new," Sizer said. "Now it's not a fad; it's really been refined."

Police departments can always test predictions before implementing them by using historical data to "predict" a violent crime and then see if it actually happened—reducing the likelihood of bad predictions.

LexisNexis is working on a new product that will add to predictions by adding into the model data on where repeat offenders, responsible for most crimes, live.

"We're bringing the 'who' into the equation," Sizer said.

The company also wants to assist departments looking to bring together crime analysts—working on the "what", "when" and "where"—and intelligence analysts tracking top offenders. Five or six large police departments across the country are actively trying to monitor top offender lists by merging crime and intelligence analysis.

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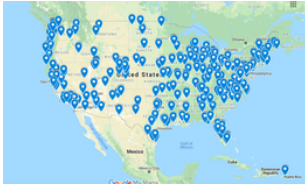
“My end goal here is to make this part of the way we conduct business in policing,” Jones said. 📧

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Attacks, Crashes Underscore Need for New 911 Systems

By **The Pew Charitable Trusts** | MARCH 24, 2017

State and local 911 call centers increasingly are besieged by pranksters and buggy software. Next-generation technology may provide relief, but few states or localities can afford it without help.

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This article *was originally published at Stateline*, an initiative of The Pew Charitable Trusts, and was written by Tim Henderson.

A recent rash of disruptions in antiquated 911 emergency-response systems points up the urgent need for new

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Earlier this month, AT&T wireless customers nationwide found they couldn't dial 911, prompting local emergency officials in more than a half dozen states — including Alabama, Colorado, Florida, Indiana, Oregon, Tennessee and Texas — to tell people to call an alternate number or text authorities in case of emergency. The company said it was a “service issue.” The Federal Communications Commission is [investigating](#).

In Dallas this month, callers were [unable to reach 911 during spikes](#) in calls that put hundreds of people on hold. City officials blamed a combination of calls from T-Mobile customers and a shortage of people to handle calls. To combat the problem, officials have dedicated \$2 million to upgrades, increased staffing and asked T-Mobile to disable a feature that calls 911 repeatedly if an initial call does not go through.

And in October, a malicious Twitter post with a link targeting [faulty phone software](#) caused people's cellphones to [repeatedly call 911](#) in cities around the country in what investigators now think was the largest cyberattack on the country's emergency-response system, The Wall Street Journal reported.

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During the attack, emergency call centers in at least a dozen states from California to Florida were overwhelmed by a storm of calls for 12 hours over two days. A Washington state teen was arrested and accused of sharing the link as a prank. Apple said it is “putting safeguards in place” to prevent similar incidents on its iPhones.

The attack illustrated how aging 911 systems are vulnerable to malicious hackers who may deliberately program multiple phones to crash emergency networks, either by infecting phones with malware or by buying a few thousand phones, according to a 2016 [paper on U.S. call center security](#) by Ben-Gurion University's Cyber-Security Research Center in Israel.

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switch to the newest next-generation internet-based technology that uses digital routing instead of old-fashioned phone lines with switches. Internet-based systems are better capable of handling cellphone traffic that is subject to accidental or malicious misuse.

An estimated [70 percent of emergency calls](#) are now made via cellphone, but few states and localities have the technology to fend off abuse or buggy software that can cause cellphones to call 911 repeatedly and stall the entire system.

The newest internet-based technology “offers a wider suite of defensive tools” for call centers, said Trey Forgety, government affairs director for the National Emergency Number Association, which represents government agencies and private firms involved in the emergency system.

Calls thought to be malicious or repetitive could be flagged and diverted automatically to systems that could detect whether they are legitimate by using techniques such as requiring clicks or voice commands, Forgety said.

Millions of Dollars Needed

Most emergency officials know how vulnerable their systems are. But they worry about where they will get the money to upgrade them.

“It’s easy to crash some of the bigger systems like Denver and Dallas,” said Monica Million, operations manager at the Grand Junction Regional Communication Center in Colorado. “The next-generation protocol is a more secure pipeline with better monitoring software than we currently have. But most of us in the states don’t have the financial resources to make the transition ourselves.”

Million estimated Colorado would need \$15 million to move the state into the newest next-generation technology.

The cost of making the switch will vary by jurisdiction, but major metropolitan governments can [expect to spend between \\$5 million and \\$7 million](#), and potentially more depending on other equipment and network needs.

The National 911 Program, housed in the U.S. Department of Transportation, is studying the costs associated with the transition to help Congress develop a long-term funding plan. U.S. Sen. Bill Nelson, a Florida Democrat, has circulated [a draft bill](#) that would help with funding.

Continuous Upgrading

Fairfax County, Virginia, is one of the few localities to install a next-generation system after years of planning for the costs, said Steve Souder, who oversaw the transition last year as the county’s director of public safety before retiring. It’s part of a \$4.3 million regional project to upgrade

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“take defensive action against attacks with bogus calls or call storms,” he said.

Some of the states and localities that were among the first to move to an internet-based service are finding that the technology is evolving so fast they already need to upgrade.

In 2012, Washington became the first state to have a 911 service based on internet connectivity. But the technology isn’t advanced enough to keep pace with today’s mobile phone issues, as the October Twitter prank demonstrated. An Olympia call center was shut down for about 15 minutes by the storm of bogus calls.

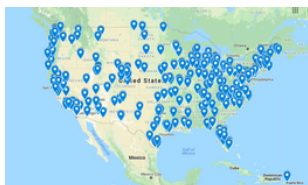
Washington now plans to upgrade its technology so that it can “shed” excess calls to neighboring call centers at busy times, said Andy Leneweaver, the state’s deputy state 911 coordinator. The estimated initial cost of the upgrade is \$5 million, but it will cost a total of \$45 million over five years.

“It can’t prevent the problems,” Leneweaver said, “but it can help mitigate them.” 📱

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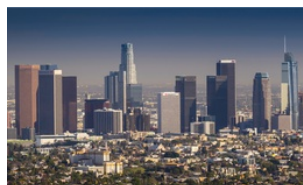
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