Smart Policing: Institutionalizing Operation LASER in The Los Angeles Police Department

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Introduction

In 2011 the Los Angeles Police Department (LAPD or Department) began Operation LASER (Los Angeles' Strategic Extraction and Restoration Program) to combat gun-related crime in Newton Division. LASER focuses on chronic hot spot locations and chronic offenders. LASER follows the Smart Policing model by making use of problem-solving techniques, evidence-based strategies, rigorous data analyses, and evaluation to determine what works and why.

The key to the LASER model is the creation and use of a Crime Intelligence Detail (CID), made up of two patrol officers and a crime analyst. CID analyzes data and carefully determines the causes of crimes in chronic locations. The unit identifies chronic offenders -- including their characteristics and their crimes. CID provides information to patrol officers and detectives and asks them to monitor their activities and, if they are suspects in crimes, make arrests.

Fully implemented in Newton Division, the evaluation of LASER showed statistically significant decreases in gun-related crime, Part I violent crime, homicides, and robberies over a 16-month period (September 2011 to December 2012).

Based on the successes achieved in Newton, the LAPD seeks to institutionalize LASER in nine Divisions: Devonshire, Foothill, Hollenbeck, Newton (continuation), Pacific, Southwest, Topanga, Wilshire, and Air Support. In addition, as part of its emphasis on innovation, the Department seeks funds for technology that will assist officers on the street as they implement LASER.

Since 2008, the LAPD has engaged in a productive research partnership with Dr. Craig Uchida and Justice & Security Strategies, Inc. (JSS). Dr. Uchida has assisted the LAPD through predictive policing and Smart Policing grants. Dr. Uchida and his staff will continue to work with the Department by evaluating the strategies and tactics utilized in the field in the existing and expanded LAPD divisions.

Background

Los Angeles, California, is the second largest city in the United States with a population of nearly 3.8 million residents distributed over 472 square miles. The LAPD is the third largest police force in the US with 9,926 sworn and 2,851 civilian employees. Chief Charlie Beck oversees the Department that is divided into 21 separate patrol divisions and organized into four

bureaus. Importantly, the LAPD has become a laboratory for researchers, as Chief Beck and his staff have encouraged and promulgated the use of evidence-based practices throughout the Department.

The LAPD has experienced a decline in crime for 11 successive years (2003 to 2013), attributable in part to its use of Compstat, which relentlessly tracks crime and holds Captains accountable for crime reduction. The Department also engages in innovative practices, including predictive policing, the acquisition and use of new technologies, and since 2011, the Smart Policing Initiative (SPI).

Operation LASER: Findings and Common Elements

Operation LASER succeeded in Newton Division in a number of ways. Findings indicate that:

➤ Newton Division ended 2012 with an all-time low of 16 homicides – this was an impressive 56% decrease in homicides compared to 2011 and 59% decrease compared to 2010. (The trend continued in 2013 with 15 homicides and in 2014, eight homicides have occurred through mid-July).
➤ Overall violent crime dropped 19% in Newton (from 2011 to 2012).
➤ Newton ranked number one in violent crime reduction in the entire LAPD for 2012

The first 10 months of LASER (Sept 2011 to June 2012) showed significant and tangible reductions in:
➤ Gun-related crime (Part 1 and 2)
➤ Homicides
➤ Robberies
➤ Violent Crime (Part 1)

Key elements of the LASER model include five ingredients:
1. The creation of the Crime Intelligence Detail (CID) to collect, analyze, and use data routinely for strategic and tactical purposes
2. Newton Division command staff and patrol officers focused on:
   o Chronic offenders and
   o Chronic locations
3. Newton command staff directed its patrol officers and special units to work in specific areas every week to prevent and deter crime and criminal behavior
4. CID used technology (Palantir) to assist officers and detectives in identifying chronic offenders, finding license plates and vehicles, and in creating Chronic Offender Bulletins
5. The research partner, Justice & Security Strategies, monitored, evaluated and made real-time recommendations for improving LASER routinely (monthly)

Replicating Operation LASER

What does it take to replicate Operation LASER in other Divisions?

One of the key components of the LASER model was the creation of the Crime Intelligence Detail (CID). The unit includes two patrol officers and one crime/intelligence analyst who

gather information daily from patrol, foot, bike and gang officers, and detectives. CID looks at field interview cards (FIs), and incident and arrest reports to find active, potential suspects who are working in Newton. If they find a 'person of interest' from these reports they will dig deeper into their background by looking at criminal histories, probation and parole records, and other databases. If the person fits the criteria for the violent offender list, CID will create a Chronic Offender Bulletin.

The Chronic Offender Bulletin contains pertinent information on each individual, such as description, physical idiosyncrasies (tattoos), gang affiliation, prior crimes committed, parole or probation status, and locations of where the individual was stopped in or near Newton Division. The Chronic Offender Bulletins are disseminated to the officers and detectives via an internal computer drive (M-Drive) that is utilized by sworn personnel only. Officers are also given briefings about the Chronic Offender Bulletins at roll call.

Chronic Locations

LASER also focuses on chronic locations or hot spot corridors. Researchers at JSS, crime analysts at RACR Division, and CID analyzed seven years of data (2006-2012) on gun-related crime. Any Part I or Part II crime and arrest that involved a firearm were included in the analysis: drive-by shootings, shots fired, robberies, aggravated assaults, homicides, gang-related crime (with a firearm), drug offenses with a gun, vandalism with a gun, etc. For calls for service the analysts flagged calls for crimes as well as 'incident code descriptions' that included 'shot' or 'gun' in the text fields.[1] Using ArcView, analysts created hotspot/density maps for each year that were then layered and animated. Further analyses were done on the locations to determine the types of crimes, suspects, and victims. In Newton five specific corridors of gun-related crimes were identified for interventions by patrol and other units (see map below).

Directed Patrols

At Newton, command staff made use of existing resources to intervene in the hot spot corridors and with the chronic offenders. Because of financial constraints, overtime is used sparingly. As a result, the Newton Division Captains created weekly 'missions' where patrol officers and bike and foot patrols were directed to the hot spot corridors during their respective schedules.

Within these corridors the following interventions took place:

1. Directed patrols. Patrol officers are given 'missions' to work the areas, watching for criminal activity at specific times and in specific locations. Officers also wrote FIs and citations.
2. Bike officer and foot beat 'missions' in the hotspot corridors.
3. Use of closed circuit television (CCTV) cameras in key locations. Video surveillance in the Central Avenue corridor began in March 2012.

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[1] To insure that crime analysts could replicate the analysis, protocols were developed by the RACR intelligence analysts.

Newton Area - 2011
Gun Related Crimes
Hot Spot - Gun Related Crimes
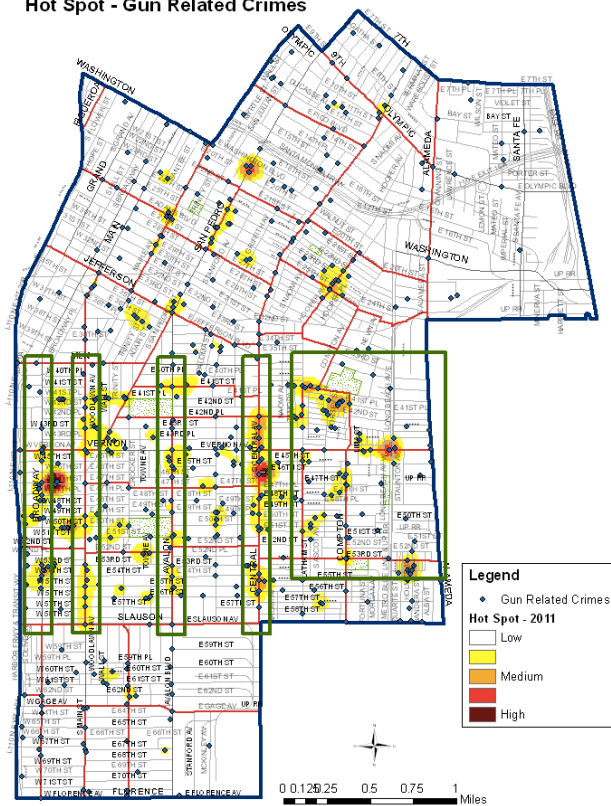
Using New Technology

Newton Division's CID became the first area station in the Department to use Palantir as a tool for analysis and investigations. The Palantir platform enables Newton CID and other crime analysts, officers, and detectives to search LAPD's data in a single place and discover associations and connections between internal and external sources. Data sources include crime incidents, arrests, field interviews, calls for service, license plate readers, vehicle recovery, and citizen tips. CID now generates Chronic Offender Bulletins using the platform. When LASER first began it took the CID unit about an hour to generate a bulletin; using Palantir, the process now takes about five minutes. Additionally, Palantir allows CID to search for license plates when they may only have three numbers or letters. It creates visual work-ups of criminal networks, puts crime incidents on maps, and allows crime analysts and detectives to find suspects, vehicles and locations quickly and easily. The use of this technology has increased the ability of officers and detectives to make arrests and close cases more quickly and efficiently than before.

Evaluation

Justice & Security Strategies conducted the evaluation of LASER and assisted in the problem solving process at Newton.

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For the evaluation, JSS researchers used an Interrupted Time Series with Non-Equivalent Control Groups design. JSS measured the impact of Operation LASER on several types of crime incidents: Total Part I Crimes, Part I Violent Crimes, Part I Property Crimes, Part I Gun-Related Crimes, Homicide, Robbery, Burglary, and Motor Vehicle Theft. JSS found:

- While LAPD and Newton Division experienced decreases in crime prior to Operation LASER, the interventions in Newton further decreased Part I Violent Crimes by an additional 5.393 crimes per month.
- Statistically significant decreases occurred in Homicide and Robbery after Operation LASER began:
  - Homicides decreased by an additional 22.59 percent per month in Newton after Operation LASER began.
  - Robbery decreased by an additional 0.218 robberies per month in Newton after Operation LASER was implemented.
- While the decrease in Part I Gun-Related crime in Newton did not reach statistical significance at the .05 level (but was significant at the .10 level), the trend is promising and if it continues, it is likely that Operation LASER will successfully decrease Part I Gun-Related crime.
- As expected, Operation LASER had no effect on Total Part I Crime, Part I Property Crime, Burglary, and Motor Vehicle Theft
- Based on comparisons with the entire city, similar decreases were not observed in 18 other divisions.

Expanding and Institutionalizing Operation LASER

Because of the success of LASER, the Department seeks to sustain efforts in Newton, and to expand and institutionalize the model to other Divisions, using the same methodology and similar evaluation techniques described above.

Criteria for Expansion

To expand LASER a set of criteria was established to determine which Divisions were viable candidates. These criteria included need, representativeness, willingness to participate, and evaluability. They are described below.

1. Need: Do significant problems of violent and/or property crimes exist in the Division?
2. Representativeness: At least one Division from each of the four bureaus must be represented.
3. Participation: Is the Division Captain willing to replicate the LASER model? Is the Captain open to creating a CID and then using data to drive decision-making?
4. Evaluability: Can the interventions be appropriately measured? Are there interventions already occurring that may confound the effects of LASER? Divisions with existing programs that overlap with LASER should be carefully considered and perhaps, avoided.

The following Divisions agreed to participate: Devonshire, Foothill, and Topanga (Valley Bureau), Newton and Hollenbeck (Central Bureau), Southwest (South Bureau), Pacific and Wilshire (West Bureau), and Air Support Division.[2]

New and Innovative Technologies

The use of advanced, innovative technologies is an important facet of implementing LASER in the Department. Funding is requested to support technologies that will allow officers in the field to access information readily from CID and Palantir. Both forms of technology make use of PDAs and tablets. The Department is particularly interested in determining whether and how officers use the technology and the value of the technology in providing real-time information about chronic location-based hotspots and chronic offenders.

Mobile Technology

To identify chronic offenders and chronic locations on a real-time basis, 'push' technology is becoming available on iPhones, Droids, and tablets. Push technology provides real-time intelligence and information to officers using hand-held units. The software 'pulls' data from LAPD sources and 'pushes' location-based information to the officer based on their GPS location. As an officer drives, walks, or bikes through neighborhoods, the phone or tablet transmits its GPS location and receives information that displays hot spots, chronic offender addresses, and other relevant data within a specified proximity of the current location.

The devices also track where the officer has been and the amount of time spent in the area (dosage) that can be used for evaluation of LASER by JSS. Software from vendors will be considered for this application. The Department has questions about the speed and value of the information, costs of devices, programming, and airtime, and whether the application will work as intended.

Palantir in the Field

Palantir is developing a mobile device that can be used in the field by supervisors and patrol officers in real time. The idea is to provide information to officers about persons, places, and plates, and thereby improve situational awareness. Palantir *Mobile* will be linked to Palantir workstations at RACR and LASER Divisions to closely coordinate activities and communicate with field units equipped with Palantir *Mobile* devices.

Specific information about chronic locations, geo-tagged images, video, and text can be shared between users' mobile devices and Palantir workstations. Palantir *Mobile* also provides the following:
- Tracking of Palantir Mobile users from the field;
- Visualized data that are geo-tagged in Palantir on a mobile device on top of cached maps;

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[2] Air Support Division is comprised of 19 airships (helicopters), pilots, flight officers, and staff that provide coverage across the city 24 hours seven days a week. Two airships are in the air at all times. For LASER, Air Support has focused on hot spot corridors in Newton. A sergeant has been assigned to provide missions for helicopter pilots, to keep track of dosage (minutes spent in the areas), and crime.

- Access to all of the LAPD/Palantir data that a user is authorized to see from the mobile device; and
- Streaming real-time data on Chronic Offenders and other intelligence to mobile devices and MDCs.

Palantir *Mobile* is designed to push specific information to the officer based on his/her request. For example, if a vehicle is stopped, the officer can request data (via text, email or phone) about the vehicle, the driver, passengers in the car, or other information. Analysts at Palantir workstations conduct a query and push the information back to the officer via text or email. This information theoretically gives the officer a fuller picture of the situation in a more efficient manner than through dispatch. The Department has questions about the efficiency of this arrangement, e.g., how long does it take for information to be pushed out? What is the value of the information to officers (are they getting what they want)? What are the costs of devices, programming, and airtime? Does the application work as intended?

Evaluation and Research Partner: Justice & Security Strategies, Inc. (JSS)

Dr. Craig D. Uchida and his staff at Justice & Security Strategies, Inc. (JSS) will continue their work as evaluator and Research Partner for Smart Policing.

The evaluation will include documentation of the implementation of LASER in multiple Divisions as well as determining the impact of LASER on crime reduction. A series of research questions regarding implementation and impact are asked:

Implementation or process evaluation questions:

1. Did interventions occur?
2. What was the dosage of those interventions?
3. Did patrol, bike, gang, and other officers follow their missions and work in designated areas?
4. Did they read and make use of the Chronic Offender Bulletins that were distributed via the intranet and 'push' technology?
5. Did the new technology assist officers in the field? Why or why not?

Impact or outcome evaluation questions:

1. What are the effects of the police intervention efforts on crime reduction?
2. Did violent and property crimes decrease? Were there fewer victims of crime?
3. How do hotspots in the LASER Divisions compare to other areas in the city before, during, and after the interventions?
4. What are the effects of using new technology to deal with violent and property crime? Do they improve efficiency? Do they improve investigations?

Research Design

While the strongest research designs are randomized experiments, these experiments are not always possible in many applied settings. Quasi-experimental designs can provide substantial protection against faulty conclusions by allowing researchers to rule out many possible alternative explanations for observed intervention effects. One of the strongest quasi-experimental designs is the Interrupted Time Series design. The Interrupted Time Series design requires a specific time period for the intervention to be implemented and a series of observations over a period of time before the intervention and after the intervention.

The Interrupted Time Series design allows us to determine whether the interventions in the LASER Divisions had an effect on crime while carefully considering that crime may have decreased prior to the interventions. Because we have multiple observations before and after LASER was put into effect, we can effectively control for the previously existing downward trend in crime and determine if LASER "accelerated" the decrease in crime.

Organizational Capacity

The Los Angeles Police Department

Ms. Maggie Goodrich will serve as Executive Project Director and devote 5% of her time to the project, which will be an in-kind contribution by the LAPD. Ms. Goodrich is the Chief Information Officer for the LAPD. She oversees the Information Technology Bureau that includes grants and contracts and information technology services.

Ms. Goodrich earned her law degree at the University of California, Hastings College of Law and her Bachelor's degree at Chapman University. She is the former Policy Director for the Deputy Mayor of Homeland Security and Public Safety in Los Angeles and in the private sector managed and implemented eCommerce solutions for two companies.

Captain Sean Malinowski, Ph.D. will be the Project Director and oversee the implementation of technology, including software and appropriate hardware. He will devote 10% of his time to this project, which will be an in-kind contribution from the LAPD.

Capt. Malinowski is the commanding officer at Foothill Division and has served in the LAPD for 20 years serving as a patrol officer, patrol sergeant and then serving in the Office of the Chief. As Assistant Commander of the Real-time Analysis and Critical Response Division, Capt. Malinowski conducted a thorough needs assessment and developed a detailed strategic plan for the transition of RACR from Special Operations Bureau to Detective Bureau. He spearheaded several major technology funding initiatives to support the Crime Center. Capt. Malinowski received his doctorate in Public Administration from the University of Illinois at Chicago in 2003.

Research Partner: Justice & Security Strategies, Inc.

Dr. Craig D. Uchida will serve as the Research Project Director. He and his staff at Justice & Security Strategies, Inc. (JSS) will be responsible for the evaluation and in assisting the LAPD

by working with CID, crime analysis units and police officers on research methods. Dr. Uchida will be Principal Investigator for the project.

Under Phase I of the SPI grant, JSS worked closely with the LAPD to develop Operation LASER, assisted with the implementation of the SARA model and overall plan, and conducted the evaluation of LASER. This subcontract will allow JSS to continue to work with the LAPD on the next phases -- testing and evaluating an integrated problem solving routine in other Divisions.

Experience and Competence of the Research Team

Dr. Craig D. Uchida is a criminologist who has conducted field research throughout the country (drug enforcement, use of force, community policing, search warrants, problems in schools and gangs), published refereed journal articles, edited two books, managed and administered major grant programs in the US Department of Justice, and currently leads and directs a national criminal justice consulting firm. Dr. Uchida has extensive experience using quasi- and experimental designs, having conducted multi-site studies across the country.

Other JSS staff will include Ms. Shellie Solomon and Dr. Marc Swatt. Ms. Solomon has extensive expertise in GIS and spatial analytics and Dr. Swatt is a statistician with wide-ranging skills in advanced statistics, including time series, hierarchical linear models, and using predictive analytics.

Project Time Period

The expansion, implementation, and evaluation of Operation LASER will take 15 months, with a start date of October 1, 2014 and end date of December 31, 2015.