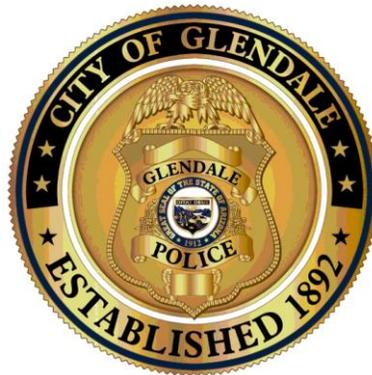# Employing Problem-Oriented Policing to Target Convenience Store Crime

The Glendale, Arizona Smart Policing Initiative

Application for the 2016 Herman Goldstein Award for Excellence in Policing

Submitted by the Glendale, AZ Police Department

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PROJECT SUMMARY

Critical analysis of problem-oriented policing (POP) suggests that some of the steps in the strategy come with a higher degree of difficulty than others. Analysis and assessment, in particular, present challenges for police. The Glendale Smart Policing Initiative sought to overcome these challenges through a partnership with academic researchers. The Glendale SPI team included approximately 25 officers, as well as civilian crime prevention specialists, crime analyst, two sergeants, one lieutenant, and two professors from Arizona State University. The ASU researchers delivered intensive POP training, and they provided critical support during the difficult analysis and assessment phases.

Officers and analysts identified convenience store crime as the target problem, and they conducted an in-depth analysis of the problem. The results suggested that crime and disorder were disproportionately occurring at Circle K stores, and that Circle K management practices were responsible for the problem (violations of basic CPTED principles). The Glendale SPI team targeted the six top-generators of calls for service - all Circle Ks, several of which averaged more than 500 calls per year.

The team developed a three-pronged response plan that included engagement with Circle K leadership, prevention, and suppression. The Glendale SPI team met with Circle K corporate leadership over a period of several months to discuss and reform problematic management practices. The Glendale team also devised prevention components to target juvenile offenders. Last, the Glendale team also carried out numerous suppression operations in 2010-2011 at the six target stores, resulting in 57 arrests.

The original assessment phase conducted by the Glendale team documented statistically significant reductions in calls for service at five of the six target stores, representing an overall 42% decline in calls. This reduction occurred at a time when calls at nearly all other convenience stores in the city remained flat. A more recent extended analysis completed in 2016 shows that significant crime reductions continued at four of the six target Circle Ks for more than two years after the intervention. The updated analysis also showed that five target stores experienced a diffusion of benefits, as calls for service declined in the areas around those stores.

We believe that the Glendale Smart Policing Initiative represents one of the most robust implementations of POP to date. We also believe that the rigorous implementation of POP, anchored by the researcher/practitioner partnership, explains the significant, sustained reductions in crime and disorder at the targeted Circle K convenience stores in Glendale.

INTRODUCTION

Problem-oriented policing has taken on a variety of forms over the past 30 years, with police agencies often focusing on particular people, places, and events that generate crime, disorder or other problem behavior. Prior evaluations have consistently supported the effectiveness of POP strategies in reducing a wide range of crime and disorder problems such as firearm-related homicides, street level drug dealing, violent and property crime, and prostitution (Sherman, 1989; Kennedy, 1997; Green-Mazerolle et al., 1999; White et al., 2003; Reitzel et al., 2005). Moreover, the model is embraced by police practitioners because of the simplicity and clarity of the SARA model (scanning, analysis, response, assessment; Eck and Spelman, 1982). However, scholars have noted that, in practice, certain elements of the model are more difficult to implement than others. For example, scanning and response development are typically "easy" for police to implement (though there is a tendency to over-rely on traditional enforcement strategies). Analysis, however, does not come as naturally to police officers, and as a result, it is sometimes given short-shrift. Braga and Weisburd (2006: 146) referred to this tendency as "shallow problem solving," and they caution that inadequate analysis can short-circuit the entire strategy because it results in officers not fully understanding the problem and its causes.

A review of the research on POP also suggests that the assessment phase is often weak. In the most comprehensive examination of POP to date, Weisburd, Telep, Hinkle, and Eck (2010) identified more than 5,500 studies of problem-oriented policing, and they conducted a meta-analysis of the ten studies that utilized experimental or strong quasi-experimental designs to examine the impact of the strategy on crime and disorder. They reported that POP had "a small but meaningful impact" (Weisburd et al., 2010: 153) among the ten study sites. The authors concluded that while POP is one of the most significant police innovations over the past

several decades, few studies have examined the strategy through methodologically rigorous

research designs. In sum, despite its popularity, POP projects are often not implemented in a

manner consistent with Goldstein's (1979; 1990) original vision.

THE GLENDALE POP PROJECT

In 2009, the Glendale, Arizona Police Department (GPD) and their research partners at

Arizona State University's Center for Violence Prevention and Community Safety received

funding through the Bureau of Justice Assistance's (BJA) Smart Policing Initiative to target

crime – particularly property crime – through problem-oriented policing. The Smart Policing

Initiative (SPI) provides funding to law enforcement agencies to test solutions to serious crime

problems in their jurisdictions. The Glendale SPI team sought to implement problem-oriented

policing in the spirit originally envisioned by Goldstein, with robust execution of each phase of

the SARA model.[1]

The Glendale POP project began with training. From January through April 2010, the

ASU researchers provided advanced training in the SARA model and problem-oriented policing.

The training was grounded in the model curriculum available through the Center for Problem-

Oriented Policing and was attended by approximately 25 officers and civilian employees in two

specialized units (see http://www.popcenter.org/learning/model_curriculum).

Scanning

The training included approximately 20 hours of classroom instruction, coupled with 10-

12 hours of out-of-classroom work. Table 1 (Appendix A) shows how the instructional

component of the training was organized, using a combination of Power Point presentations

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[1] For more on the Glendale SPI, see: http://www.smartpolicinginitiative.com/SPIsites/glendale-arizona-phase-i

(from the POP Center) and traditional lectures by the ASU research partners. Though the lecture-based material was vital to knowledge transfer, the centerpiece of the training involved "homework assignments" that required officers to complete each phase of the SARA model. The assignments instructed officer groups (from 5-7 officers/civilians) to scan to identify problems; to complete in-depth analysis to understand the scope, nature and causes of the problem; and to develop response and assessment plans. Officers were told to "think big" and identify problems that have been persistent and difficult to solve. Table 2 shows the assignment for each of the phases of the SARA model (see Appendix A). Officers and analysts immediately identified convenience store crime (especially theft of beer, or "beer runs") as the target for the project. Officers selected the problem because it was chronic, placed a burden on police resources, and threatened the safety of both customers and employees. Indeed, from 2008-2010, a number of incidents occurred in the Phoenix metropolitan area in which thefts from convenience stores escalated into violence.[2]

Analysis

Once officers had identified convenience store crime as the target problem, the Glendale SPI team completed in-depth analysis of the problem, beginning with an examination of calls for service. Crime analysts pulled calls for service from 2008-2010 at 65 convenience stores in Glendale, by store location. Table 3 in Appendix A shows the top generators of calls for police service during that time, and the top ten locations all are Circle K stores. Notably, there are only 15 Circle K stores in Glendale (representing 23% of all convenience stores in the city), but those 15 stores were responsible for 79% of the calls for service at convenience stores in 2010. Several of the stores experienced more than 500 calls per year. Table 4 examines the types of crimes at

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[2] The most notable of these cases involved a "Good Samaritan" getting killed after intervening to stop the theft (http://archive.azcentral.com/community/phoenix/articles/2010/02/20/20100220phoenix-beer-run-homicide.html).

Circle K stores for 2010.[3] The findings show that property crimes, disorder, and welfare checks comprised the majority of incidents. These stores were also characterized, but to a lesser extent, by violent crime, drug crime, and sex crime (e.g., prostitution).

One possible explanation for the disproportionate amount of crime at Circle K stores involves their location. In other words, Circle Ks might be found in communities where crime is more prevalent. To examine this issue, the Glendale team mapped the locations of convenience stores and examined crime and disorder at both Circle Ks and surrounding convenience stores, shown in Figure 1 (2010 calls only, see Appendix A). Circle K stores are represented by the stars, and other convenience stores are represented by solid dots. As the legend suggests, the size of the dot or star indicates the total number of calls at each location. Figure 1 shows that convenience stores located near Circle Ks experienced substantially less crime and disorder ("big stars" surrounded by "small dots"). This geographic analysis suggests that, even when accounting for the location of the convenience store, Circle Ks generated a disproportionate amount of crime and disorder at convenience stores in Glendale.

Those arrested at Circle K convenience stores were also debriefed by officers to learn more about the disproportionate number of offenses occurring at Circle K stores. The interviews indicated that Circle K's were selected by offenders for several related reasons. First, offenders knew about Circle K's policy of staff not confronting offenders—resulting in less risk for the offender if they chose to victimize the store. Second, arrestees indicated that merchandise was located in areas that made it easy for them to "grab and go" quickly. Third, Circle K offenders explained that "mom and pop" stores were risky to victimize because they were often armed with

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[3] Data for tables 3-4 come from Call Aided Dispatch/Record Management System (CAD/RMS) data which contains calls for service (CFS), as well as officer initiated, and official report data.

a weapon, and other convenience stores had multiple employees on site making it more difficult to evade detection.

The Glendale SPI team also visited Circle K stores, as well as other convenience stores with low or no crime problems. Team members completed Crime Prevention through Environmental Design (CPTED) surveys of the stores, and conducted surveillance of the most active locations. Based on this work, the Glendale SPI team confirmed that a number of Circle K management practices were largely responsible for the crime problem. These practices included inadequate staffing; failure to respond to panhandling, loitering, and graffiti; and violations of basic CPTED principles, such as poor lighting, obstructed lines of sight, and high-risk product placement (e.g., placing beer by the front door).

Response

Based on the analysis, the Glendale SPI team developed a three-pronged response plan that included engagement with Circle K leadership, prevention, and suppression. Response plans were developed by the officers and vetted by the research partners and the department leaders.

Response 1 - Intervention with Circle K Leadership

Given available resources, the Glendale SPI targeted for intervention the top six generating Circle K stores. The team again completed CPTED assessments at all six stores. Over a period of several months, the team met with local and corporate Circle K leadership to address the management practices that were contributing to the crime problem at the six target locations. For example, the team presented more than 220 CPTED-related recommendations to alter store design and environment to reduce the opportunity for crime. The Glendale SPI team's intervention efforts with Circle K produced mixed results. On one hand, there were clear

8

successes. Circle K loss-prevention staff provided training to SPI officers on access and use of the store surveillance systems,[4] they began sharing information and working with detectives to identify repeat offenders, and they participated in suppression efforts (see "Response 2" below). The team achieved sporadic success with CPTED recommendations, such as the removal of beer from the floor at a few stores, and the placement of trespassing signs at all stores. For the most part, however, the Glendale team experienced resistance from Circle K management. CPTED recommendations were often ignored, especially those that required a financial commitment. For example, the Glendale SPI team conducted an analysis of days and times of crimes at each target store, and identified "high risk" times (10pm-2am Friday and Saturday nights). Circle K management refused to increase staffing during the high risk times because of the cost associated with a second employee. After initial meetings, Circle K leadership lost interest in addressing crime and disorder problems at their stores and reduced their communication with the SPI team.

The SPI team adopted two approaches in response to the resistance from Circle K management. The first involved the creation of a working group of law enforcement agencies in the Phoenix metropolitan area, including departments in Mesa, Tempe, and Phoenix. The SPI team collected call-for-service data from all the agencies and produced a multi-city convenience store crime report, which demonstrated that the experiences in Glendale were also common to other cities.[5] For example, the 116 Circle K stores in Phoenix represent 37% of all convenience stores in the city, but those locations were responsible for 68% of convenience store crime in Phoenix. Similar results were found in Mesa and Tempe. The working group served to increase leverage on Circle K through a collective voice of the largest police agencies in the state. The

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[4] Prior to this training, officers who responded to a call at a Circle K would have to wait until a manager accessed the system and provided a still photo of the suspect. After the training, the responding officers could access the system themselves and download a photo immediately.
[5] For a copy of this report, see
http://cvpcs.asu.edu/sites/default/files/content/products/CVPCSreport_convstore_2011_3PDs.pdf

Glendale SPI team's second approach involved presenting the multi-city report to the local media, which resulted in both print and television stories focusing on the Circle K crime problem (e.g., public shaming).[6] These strategies were responsible for getting Circle K management back to the table and involved as a stakeholder, and in facilitating the discussion over the modification of management practices.

Response 2 - Suppression (Operation Not-So-Convenient)

The Glendale SPI team carried out intensive surveillance and enforcement operations at the six targeted Circle K stores, called *Operation Not-So-Convenient*. This operation took place over nine consecutive weekends in August and September 2010, followed by periodic weekends throughout 2011. The operation included the use of undercover and marked cars, Circle K loss-prevention staff, researchers, and civilian staff. *Operation Not-So-Convenient* led to 57 arrests, including 15 felony arrests. Of the 57 arrests, 37 resulted in convictions (77% conviction rate among adjudicated cases, with several jail and prison sentences).[7] Also, many of the suspects arrested during the operation were not first-time or low-level offenders. About 50% of the arrestees had priors, and 10% had prior serious arrests (Part I Crimes). As part of the ongoing analysis phase, the SPI team conducted interviews with the majority of arrestees during booking. During the interviews, the team gathered information on the frequency of offending at convenience stores, and why offenders chose a Circle K over other stores. The interviews confirmed the team's conclusion about the role of management practices in crime prevalence at

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[6] For examples of media coverage, see
http://www.azcentral.com/community/glendale/articles/2011/07/10/20110710asu-study-circle-k-police-calls.html.
[7] The sentences include three prison terms (e.g., 17 years for an armed robbery suspect) and two county jail terms. The high conviction rate is likely tied to suspects being caught in the commission of the crime, and in the recovery of the evidence.

Circle Ks (offenders chose stores because of low-risk of being caught – fewer clerks, poor lighting, ease of escape, failure of store staff to approach customers, etc.)

Response 3 - Prevention

During the scanning and analysis phases, the SPI team discussed the importance of developing comprehensive responses that attacked the problem from multiple angles. Traditional crime-control strategies had been employed in the past to address convenience store crime, with little effect. Moreover, results from the *Operation Not-So-Convenient* arrestee interviews indicated that juveniles committed approximately 25% of the crimes at Circle K stores. Consequently, the SPI team developed a number of prevention strategies to deliver a clear message about the seriousness and potential long-term consequences of this crime. The centerpiece of these efforts involved a partnership with the Glendale Mayor's Youth Advisory Commission, as well as the development of a video public service announcement (PSA). This PSA, which was developed with assistance from a local Glendale television station, featured local high school students who acted in and presented a message about the consequences of engaging in thefts, especially "beer runs." The PSA was delivered to all Glendale middle and high school students in the weeks preceding the prom season. [8] The team also partnered with a local service provider for juvenile justice-involved youth, and mass produced and distributed fliers warning of the dangers of committing convenience store thefts ("if you steal beer, you will pay for it;" in English and Spanish). The fliers were posted in schools, libraries, bus stops, and other public places (see Figure 2 in Appendix A).

Assessment

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[8] See: https://www.youtube.com/watch?v=vPoLqyjPYWw.

Original Assessment Phase

The SPI team examined the impact of the Glendale SPI on calls for service (CFS) at the six target Circle K stores in comparison to 59 other convenience stores in Glendale.[9] In the interest of saving space, Table 5 (Appendix A) displays all of the Circle Ks in Glendale (the six target locations and the nine remaining locations), as well as the top CFS-generating other locations. Note that there are 36 convenience stores in Glendale not shown here. The stores not shown experienced less than 25 calls for service during each of the three years in the study period. The 29 stores shown in Table 5 accounted for more than 80% of the calls for service to Glendale convenience stores each year.

Table 5 shows the average calls for service per month by store type and location (1st and 2nd columns) over a three-year period including: the year preceding the Smart Policing Initiative (Pre-test period; August 2009 – July 2010), the year during the SPI response phase (Intervention period; August 2010 – July 2011), and the year after the intervention (Post-test period; August 2011 – July 2012).[10] We employed ANOVA to examine mean monthly changes in calls for service between the pre-test period and the post-test period, both by individual store location and by category of stores (e.g., SPI Stores/Target Group; Circle K Comparison Group, etc.). The last column shows the change in average monthly calls from the year before the SPI to the year after.

There were statistically significant drops at five of the six target Circle K stores (declines of 8-29 calls for service per month). For example, at the Circle K on 5907 W Bethany Home Road the average number of monthly calls for service dropped from 44.2 in the pre-test year to

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[9] These findings are reported in White and Katz (2013).
[10] Glendale's Smart Policing grant began in September 2009 but the first year of the project was devoted to the SARA training, in-depth analysis, and the development of response and assessment plans. The response, including "Operation Not-So-Convenient," began in August 2010 and continued until July 2011.

15.5 in the post-test year (total calls dropped from 530 to just 186). Overall, calls at the six target Circle Ks dropped by 42% from the pre- to post-intervention period (2,486 to 1,445; also statistically significant at p<.05).

Table 5 also shows average monthly calls for service for the remaining Circle K stores in Glendale. Though crime at these locations was much less common, these stores offer an interesting comparison to the impacts experienced at the target Circle Ks. Overall, calls for service at the nine non-SPI Circle Ks dropped by 31%, though this did not reach statistical significance. The majority of this drop is explained by the decline at the store on 6305 W Maryland, as the declines in three other stores were statistically significant but modest (e.g., the Circle K at 5902 Bell Road dropped from 6.7 to 4.7). The bottom of Table 5 shows the top generating non-Circle K convenience stores in Glendale. Only one of these locations experienced a statistically significant decline during the study period, but again, the drop was modest (three stores experienced modest, though statistically significant increases). Overall, calls for service at these locations changed little from pre- to post-intervention (by 0.5%).

Updated Assessment

In 2016, a doctoral student (Lisa Dario) in the School of Criminology and Criminal Justice at Arizona State University conducted an expanded analysis of the Glendale Smart Policing Initiative for her dissertation. Dario added convenience store call for service data on the front and back of the original analysis conducted by the SPI team: 18 months on the front end (now beginning in January 2008) and 15 months on the back end (ending in October 2013). She also included 11 additional convenience stores that were not part of the original analysis. Given that the SPI intervention ended in July 2011, Dario's analysis examines the impact of the POP project for nearly 2.5 years after the intervention ended (27 months). Dario (2016) also

conducted a more sophisticated analysis which included a difference-in-difference model and negative binomial random effects regression. Dario (2016) also collected call data in the 500-yard catchment area around each of the six target Circle Ks (from January 2008 – October 2013) in order to assess whether the intervention caused crime displacement, or generated a diffusion of benefits. The displacement/diffusion of benefits question was assessed using Phi and weighted displacement quotient (see Dario, 2016 for a detailed discussion of the analysis). Last, Dario (2016) replicated the original analysis using independent samples t-tests and monthly averages. The data were coded as pre-intervention (January 2008-July 2010), intervention (August 2010-July 2011), or post-intervention (August 2011-October 2013), for all stores (intervention and comparison). These time periods have 31, 12, and 27 data points, respectively.

The results from the expanded analysis demonstrate that the Glendale SPI produced sustained, significant crime declines that persisted for more than two years after the intervention ended. Table 6 in Appendix A shows the results from the less sophisticated Independent Samples T-tests, indicating that four of the six target stores experienced statistically significant declines in monthly calls for service through the end of the post-intervention period. For example, during the pre-intervention period, the Circle K at 5102 W. Camelback experienced on average 30.03 calls for service per month; during the post-intervention period the same store averaged 13.26 calls per month. Of the two remaining stores, calls decline slightly at one store (7428 N. 51st Ave), and actually increased slightly at another (5880 West Camelback).

The difference-in-difference estimation (between the pre-intervention and post-intervention period) found a statistically significant treatment effect at the intervention stores (see Table 7 in Appendix A), and the negative binomial results found that the intervention stores

14

in the post-intervention period experienced a 16.5% reduction in calls for service.[11] Last, results

from the displacement/diffusion analysis showed that none of the six intervention stores

experienced crime displacement (see Table 8 in Appendix A). In fact, five of the six stores

experienced a diffusion of benefits in the surrounding 500-yard area; that is, a crime reduction

was observed at the intervention stores *and* in the surrounding areas of five of these stores.

Importantly, the diffusion of benefits also persisted for more than two years after the intervention

ended. The variation in impact at the six target stores may be tied to dosage, as stores received

differential treatment over the year-long intervention based on the emerging crime and disorder

issues, as well as project staffing.

CONCLUSION

Problem-oriented policing is among the most popular and effective strategies employed

by law enforcement agencies across the globe. The SARA model operationalizes POP into clear,

easily understood steps. A meta-analysis of POP projects in 2010 identified more than 5,500

published studies, highlighting its popularity. But prior POP projects have suffered from two

primary limitations: "shallow" problem analysis and weak assessment (Braga and Weisburd,

2006; Weisburd et al., 2010). The primary takeaway from this critical analysis of POP is that

some of the steps of the SARA model come with a higher degree of difficulty than others, as

those steps require skills and resources that may be outside of the "wheel house" of line officers

responsible for POP implementation.

The Glendale Smart Policing Initiative was grounded in the recognition that

implementing POP as originally envisioned by Herman Goldstein would be greatly facilitated by

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[11] See Dario (2016) for the more sophisticated results. Dario (2016) also conducted the analyses for just Circle K stores (target and non-target). The difference-in-difference estimation was again statistically significant, but the negative binomial results were not.

an active partnership with academic researchers. The ASU researchers delivered the intensive POP training, guided the officers through each stage of the SARA model, provided critical support during the difficult analysis and assessment phases, and recommended course-corrections as necessary (e.g., building the multi-agency partnership to overcome Circle K recalcitrance). The officers committed their energy to a long-term, persistent problem that put a significant drain on police resources (several stores averaged more than a call for service per day) and threatened the safety of both customers and Circle K staff. The officers embraced the research partnership, and they recognized the importance of a multi-pronged response that went beyond simple crime suppression. As a result, the Glendale SPI represents, arguably, one of the most robust implementations of POP to date.

We believe the robust implementation explains the significant, sustained reductions in crime and disorder at the targeted Circle K convenience stores in Glendale. The original assessment phase documented statistically significant reductions in calls for service at five of the six stores, representing an overall 42% decline in calls. This reduction occurred at a time when calls at nearly all other convenience stores in the city remained flat (with the exception of one non-target Circle K). The extended analysis recently completed by Dario (2016) shows that significant crime reductions continued at four of the six target Circle Ks for more than two years after the intervention. Moreover, her analysis showed that five of the six stores experienced a diffusion of benefits, as calls for service declined in the 500-yard catchment areas around those stores. Taken together, the Glendale Smart Policing Initiative reflects the true principles of POP as envisioned by Herman Goldstein, and through the active practitioner/researcher partnership, provides a road map for rigorous implementation of the SARA model that will increase the potential for long-term, sustainable reductions in crime and disorder.

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APPENDIX A

Table 1: Training Schedule for the Glendale POP SPI

Session I (2-2.5 hours)

- Introduction by Chief Conrad
- Introduction to SPI and POP

Session II (2.5 Hours)

- Lecture on POP (Case Study: Chula Vista)

Session III (2.5 hours)

- Lecture on SARA model
- Break into Groups and Hand out Assignment #1: Scanning to identify places

Session IV (2.5 hours)

- Lecture on Theories (Routine Activities, Crime Triangle, Broken Windows)
- Group Presentations and Discussion of Assignment #1
- Discussion of Analysis – Hand out Assignment #2

Session V (2.5 hours)

- Group Presentations and Discussion of Assignment #2
- Lecture on Responses – Hand out Assignment 3

Session VI (2.5 hours)

- Group Presentations and Discussion of Assignment #3
- Lecture on Evaluation and Assessment – Hand out Assignment #4

Session VII (2.5 hours)

- Group Presentations and Discussion of Assignment #4
- Final Exam*

*In order to assess enhancement in officers' understanding of the training course material, the authors developed a knowledge assessment that was administered before and after the training (December 1, 2009, and April 28, 2010). Officer performance on the knowledge assessment, which included both objective and short-answer questions, improved significantly over time, from 68.5% to 80.5%.

Table 2: POP Training Field Assignments

Field Assignment #1: Scanning

Instructions

The objective of this field assignment is to explore the problem that your group has selected. This is the Scanning Phase of SARA. Please complete the following:

1. Characterize the nature of the problem.
    a. What type of behavior, activity or events?
    b. What is the harm?
    c. Who is experiencing the harm?
    d. Do those experiencing the harm expect police to do something?
    e. Are the events recurring? How so? For how long?
    f. Do the recurring events have something in common?

2. Develop an Analysis plan to examine this problem.
    a. Who will conduct the analysis?
    b. How will the analysis be completed (methods; interviews, call data, etc.)?
    c. What data will be collected?
    d. How will the analysis be carried out?

Please select 2 group leaders who will present each section of the assignment to the rest of the training class during our next session. Also, please prepare 2 one-page handouts that summarize #s 1 and 2 above (or if you prefer, this can be done electronically to save paper). Presentation of results should be in the range of 15-20 minutes.

Field Assignment #2: Analysis

Instructions

The objective of this field assignment is very straightforward. For the previous Field Assignment, you developed an Analysis Plan. In training today, we discussed and critiqued those plans. The objective for this field assignment is to **carry out the analysis plan.**

1. Implement your Analysis Plan.
    a. Collect the data
    b. Carry out the analysis
    c. Interpret the results
    d. What do the results tell us about the problem?
    **Use all of the available resources to conduct the analysis, especially the crime analysts

Please select 2 group leaders who will present the results of the analysis to the rest of the training class during our next session. Presentation of results should be in the range of 15-20 minutes.

Field Assignment #3: Response

<u>Instructions</u>

The objective of this field assignment is to develop a detailed Response Plan. Your plan should address all of the questions below. Think big! We don't expect that you will be able to implement this plan during our training, but it can serve as a framework for what you do going forward.

What are the primary components of your Response Plan?

  e. What types of strategies will you employ?
  f. Who will be involved? What will each team member contribute?
  g. In terms of SCP, how will your plan modify the situation (increasing effort, increasing risks, reducing rewards, reducing/avoiding provocations, removing excuses)? Explain
  h. What resources will you need? How long will it take?
  i. What are the primary challenges to implementing this plan?
  j. How will you know if it works (or doesn't work)?

There are two deliverables for the assignment.

1. Prepare a 2-3 page written response plan that addresses the questions above. Prepare this document as if it were going to be reviewed by your supervisors (once the project gets fully underway, they will).
2. Please select 2 group leaders who will present the Response Plan to the rest of the training class during our next session. Presentation of results should be in the range of 15-20 minutes; please use visual aids such as Powerpoint.

Field Assignment #4: Assessment

<u>Instructions</u>

The objective of this field assignment is to lay out a detailed assessment plan.

1. How will you evaluate or assess your response?
  a. What is the primary outcome measure(s)?
  b. What data will you collect data? How will you collect it?
  c. What resources will you need for assessment?
  d. How long will it take?
  e. How can you be sure that your response has caused a change in the problem (rather than something else causing the change)?

There are two deliverables

1. Prepare a 2-3 written response plan that describes #1 above. Bring 3-4 copies to hand out.
2. Please select 2 group leaders who will present the response plan to the rest of the training class during our next session (4/28). Presentation of results should be in the range of 15-20 minutes.

Table 3   Highest Generators of Calls for Service, 2008-2010, among Glendale (AZ) Convenience Stores

Name	Address	Totals	2008	2009	2010
Circle K	4306 W Maryland Ave	1,428	381	555	492
Circle K	5880 W Camelback Rd	1,148	199	396	553
Circle K	5907 W Bethany Home Rd	1,062	201	524	337
Circle K	5102 W Camelback Rd	1,020	304	434	282
Circle K	7428 N 51st Ave	918	323	322	273
Circle K	6305 W Maryland Ave	880	273	331	276
Circle K	4648 W Bethany Home Rd	861	282	306	273
Circle K	9002 N 47th Ave	664	271	206	187
Circle K	6002 W Grand Ave	527	163	159	20
Circle K	6937 N. 75th Ave	494	169	136	189
QuikTrip	6702 W. Glendale Ave	402	127	149	126
7-11	6010 W. Bethany Home Rd	197	69	75	53
QuikTrip	5082 NW Grand Ave	185	58	56	71

Table 4   Crime, by Call Type, among Glendale Circle K Convenience Stores, 2010*

Address	Disorder	Drug	Property	Sex Crime	Violent	Welfare Check	Total
5880 W Camelback Rd	110	5	377	6	6	23	527
4306 W Maryland Ave	64	4	378	2	9	16	473
5907 W Bethany Home Rd	89	3	185	6	15	32	330
6305 W Maryland Ave	21	1	215	1	11	23	272
5102 W Camelback Rd	34	2	185	0	10	39	270
4648 W Bethany Home Rd	17	0	225	2	9	11	264
7428 N 51st Ave	25	3	209	1	9	13	260
6002 W Grand Ave	15	0	168	0	7	8	198
9002 N 47th Ave	12	0	154	0	4	9	179
66937 N 75th Ave	42	0	104	3	8	16	173

*The number of calls in Table 4 may not match the totals in Table 3, as Table 4 only shows the selected call types.

Figure 1
Glendale (AZ) Convenience Stores by Location, Type, and Calls for Service (2010)
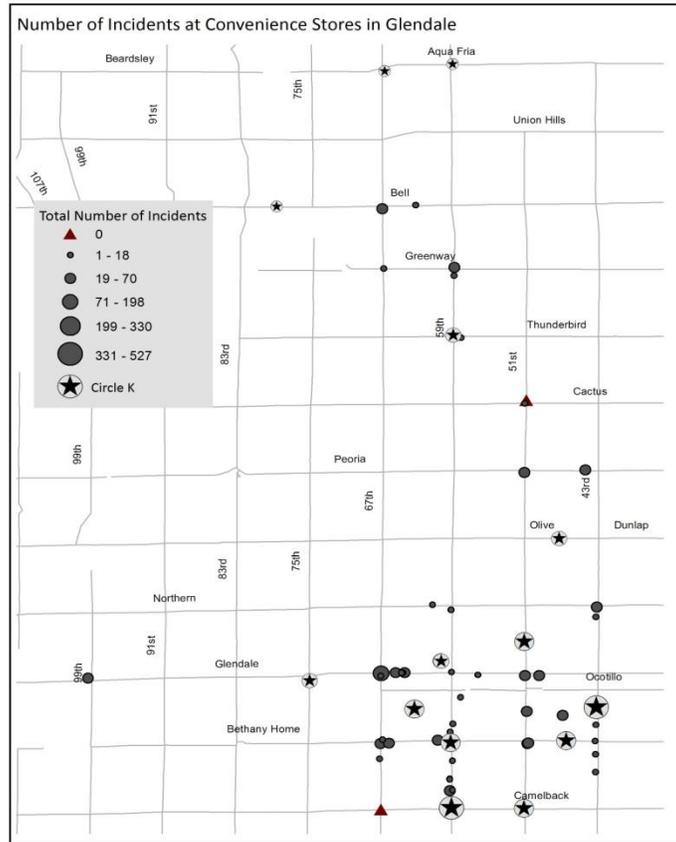

Number of Incidents at Convenience Stores in Glendale

Total Number of Incidents
▲ 0
• 1 - 18
• 19 - 70
● 71 - 198
● 199 - 330
● 331 - 527
★ Circle K

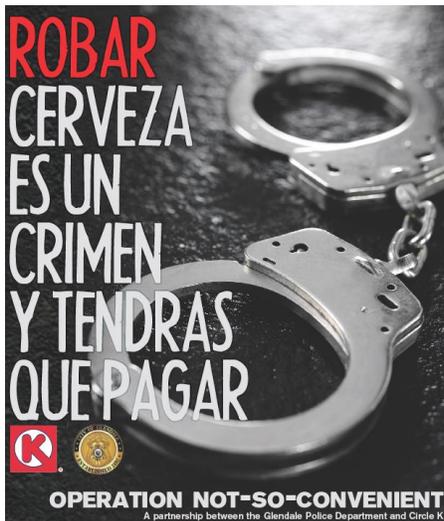**Figure 2**   **Operation-Not-So-Convenient Flier**

Table 5. Number of calls for service by period among Glendale (AZ) Convenience Stores

Store Name	Address	Pre-test period 8/9-7/10	Intervention period 8/10-7/11	Post-test period 8/11-7/12	ANOVA results	Monthly change
SPI Stores/Target Group						
Circle K	4306 W Maryland	47.8 (574)	39.3 (471)	28.2 (338)	*	-19.6
Circle K	5880 W Camelback	43.4 (522)	44.7 (536)	31.7 (380)	*	-11.7
Circle K	5907 W Bethany Home	44.2 (530)	18.0 (216)	15.5 (186)	*	-28.7
Circle K	5102 W Camelback	30.4 (365)	21.5 (258)	12.1 (145)	*	-18.3
Circle K	7428 N 51st Ave	20.3 (243)	24.3 (291)	20.4 (245)		----
Circle K	4648 W Bethany Home	21.0 (252)	20.9 (251)	12.6 (151)	*	-8.4
Total Target Group		(2,486)		(1,445)	*	(-42%)
Circle K Comparison Group						
Circle K	6305 W Maryland	26.8 (322)	17.3 (207)	14.7 (176)	*	-12.1
Circle K	9002 N 47th Ave	16.1 (193)	13.3 (159)	13.8 (165)		-2.3
Circle K	6937 N 75th Ave	14.5 (174)	17.5 (210)	9.7 (116)		-4.8
Circle K	6002 W Grand Ave	14.2 (170)	18.2 (218)	13.0 (156)		-1.2
Circle K	20203 N 67th Ave	5.7 (68)	3.2 (38)	2.0 (24)	*	-3.7
Circle K	20207 N 59th Ave	7.0 (84)	4.2 (50)	2.0 (24)	*	-5.0
Circle K	5049 W Peoria Ave	10.6 (127)	8.6 (103)	10.2 (122)		----
Circle K	5902 W Bell Rd	6.7 (80)	6.8 (82)	4.7 (56)	*	-2.0
Circle K	7870 W Bell Rd	3.0 (36)	2.1 (25)	2.7 (32)		----
Total Circle K Comparison Group		(1,254)		(871)		(-31%)
Other Comparison Group						
QuikTrip	6702 W Glendale Ave	11.9 (143)	12.4 (149)	12.9 (155)		+1.0
QuikTrip	5082 NW Grand Ave	4.1 (49)	5.4 (65)	3.6 (43)		----
7/11	6010 W Bethany Home	5.9 (71)	2.8 (34)	4.8 (58)		-1.1
Shell	6705 W Bethany Home	3.3 (40)	2.9 (35)	4.3 (51)	*	+1.0
AM/PM	9920 W Glendale Ave	4.2 (50)	2.5 (30)	2.2 (26)	*	-2.0
Somer Mkt	4935 W Glendale Ave	2.5 (30)	2.7 (32)	2.2 (26)		----
Chevron	5103 W Peoria Ave	1.7 (20)	2.6 (31)	3.0 (36)	*	+1.3
AAA Food	5105 W Glendale Ave	1.7 (20)	3.7 (44)	3.0 (36)	*	+1.3
Exxon	5908 W Thunderbird	9.8 (118)	9.2 (111)	7.8 (94)		-2.0
Carniceria	6402 W Glendale Ave	1.7 (21)	2.0 (24)	2.3 (27)		----
Pizza Local	6530 W Glendale Ave	4.2 (50)	2.9 (35)	4.2 (50)		----
Dollar Mart	6601 W Bethany Home	3.5 (42)	3.6 (43)	4.4 (53)		----
Quick Conv.	6705 W Bell Rd	2.1 (25)	2.3 (28)	2.2 (27)		----
Total Other Comparison Group		(679)		(682)		(+0.5%)

*ANOVA was employed to examine mean monthly changes in calls for service between the pre-test period and the post-test period. An asterisk indicates statistical significance ($p < .05$).

Table 6. T-Test Results for Intervention Stores by Intervention Period

	Pre-Intervention		Post-Intervention		95% CI (Combined)	t	df
	M	*SD*	*M*	*SD*			
4306 W. Maryland	40.23	14.93	31.85	10.78	32.72, 39.93	2.47*	54.24
5880 W. Camelback	29.74	17.92	35.11	12.15	28.14, 36.35	-1.35	52.99
5907 W. Bethany Home	31.29	18.69	19.30	6.56	21.63, 29.78	3.34**	38.21
5102 W. Camelback	30.03	9.30	13.26	5.96	19.19, 25.26	8.28***	51.68
7428 N. 51st Ave.	25.35	8.89	22.59	10.52	21.52, 26.62	1.07	51.23
4648 W. Bethany Home	23.87	7.30	13.89	5.60	17.06, 21.39	5.88***	55.16

Note: Satterthwaite approximation employed due to unequal group variances.

***$p < .001$.

**$p < .01$.

*$p < .05$.

Table 7 Difference-in-Difference Results

Outcome Variable	Full Sample*				Circle K Sample**			
	Calls for Service	SE	t	p>|t|	Calls for Service	SE	t	p>|t|
Baseline								
Control	2.977				8.687			
Treated	30.086				30.086			
Diff (T-C)	27.109	0.466	58.21	0.000***	21.399	0.899	23.80	0.000***
Follow-up								
Control	2.790				7.676			
Treated	26.376				26.376			
Diff (T-C)	23.586	0.341	69.11	0.000***	18.701	0.659	28.38	0.000***
Diff-in-Diff	-3.523	0.341	-10.32	0.000***	-2.698	0.659	-4.09	0.000***
R-square	0.54				0.44			

*74 convenience stores, 4292 calls for service in pre- and post-intervention periods.
**19 Circle K convenience stores, 1102 calls for service in pre- and post-intervention periods.
***$p<.01$

Table 8 **Displacement/Diffusion Results**

	4306 W. Maryland		5880 W. Camelback		5907 W. Bethany Home		5102 W. Camelback		7428 N. 51st Ave.		4648 W. Bethany Home	
	Pre-TX	TX	Pre-TX	TX	Pre-TX	TX	Pre-TX	TX	Pre-TX	TX	Pre-TX	TX
Target	1247	471	922	536	970	216	931	256	786	290	740	251
Buffer	148	116	203	115	472	219	93	52	152	81	187	103
Control	200	157	450	306	1540	975	55	43	105	73	470	276
	$x^2 = 29.97, p < 0.001$		$x^2 = 0.04, p = .841$		$x^2 = 44.57, p < 0.001$		$x^2 = 14.85, p < 0.001$		$x^2 = 5.76, p < 0.5$		$x^2 = 11.65, p < 0.001$	
	$PAI = 0.003$		$PAI = 0$		$PAI = 0.004$		$PAI = 0.003$		$PAI = 0.002$		$PAI = 0.003$	
	$WDQ = 0$		$WDQ = 0.253$		$WDQ = 0.201$		$WDQ = 0.044$		$WDQ = 0.096$		$WDQ = 0.057$	

Note. "Pre-TX" is an abbreviation for "pre-treatment period". "TX" is an abbreviation for "treatment period".