

DATA-INFORMED AND PLACE-BASED VIOLENT CRIME PREVENTION: THE KANSAS CITY, MISSOURI RISK-BASED POLICING INITIATIVE

By Joel M. Caplan, Leslie W. Kennedy, Grant Drawve, and Jonas H. Baughman

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Overview:

The Kansas City, Missouri Police Department sought to reduce violent crime with an evidence-based approach to problem analysis and intervention planning. Informed by hot spot analysis and risk terrain modeling, police and their community partners implemented a place-based crime intervention program focused on key attractors and generators of the environmental backcloth. During the 1-year program time period, violent crimes decreased significantly by over 20%. Crime prevention was achieved without an abundance of law enforcement actions against people located at the target areas.

Full Reference:

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Introduction

The Kansas City, Missouri Police Department (KCPD) has a rich history of research on crime and place. This study expanded on them by implementing risk-based policing (RBP) as a department-wide initiative focused on violent crime for a full year. Risk-based policing addresses situational contexts of crime at particular settings that promote illegal behaviors. Kennedy, Caplan and Piza (2018) define RBP as, “the operational mindset and practice of reducing and managing place-based crime risks in order to prevent crime incidents”. RBP encourages data-informed decisions following a process of problem definition, information gathering and analysis. In short, it deploys police officers with actionable information about where to go and what environmental features to focus on when they arrive. Police officers engage in tasks designed to both deter illegal behaviors at high-crime areas and mitigate environmental risks for longer-term prevention. This improves upon strictly reactive strategies that rely on calls for service or directions to visit persistent hot spots without details about why these places remain chronic problems over time regardless of who is present at any given moment. RBP utilizes risk terrain modeling (RTM) to diagnose environmental features that connect with crime and create vulnerable places or persistent hot spots. These areas then become key targets for change and crime prevention.

It was hypothesized that KCPD¹ could apply RBP to significantly reduce violent crime in the target areas, compared to comparison areas, and, because of its place-based nature, this would be achieved without significant increases in

arrests or citations against people. Violent crime was defined from the outset as homicide, aggravated assault and robbery incidents that involved a weapon. These data were obtained from the KCPD records management system. The pre-intervention period is March 15, 2018 through March 14, 2019 and the post-intervention period is March 15, 2019 through March 14, 2020.

The Blueprint for RBP in Kansas City

The KCPD RBP initiative involved agency-wide training, data management technology and protocols, data-informed decision-making, multifaceted intervention actions at target areas, and multi-stakeholder accountability. Each of these elements is detailed in the full article. A summary of each is below.

Training

KCPD develop two half-day training workshops centered on the principles and best-practices of RBP. One session was designed for KCPD command staff while the second session was for civilian crime analysts. This top-down approach ensured all command staff were aware of the Chief's goals for bringing RBP to Kansas City and how he intended to integrate the strategy into commander-specific accountability meetings. Leadership and coordination of the training agenda, and subsequent RBP activities, came from within the KCPD.

Data Management

KCPD's computer-aided dispatch (CAD) system was used to track policing activity in the target areas through a newly created CAD disposition code. Officers used this code over the police radio at the conclusion of any incident or activity that aligned with the scope of the RBP initiative. Officers were not required to write any formal reports to document their preordained activities in the target areas. However, they were asked to add a few sentences of notes in CAD call records describing what was done to address a risk factor or what interagency follow-up might be needed.

A custom CAD report automatically extracted all incidents that used the disposition code along with officers' notes. This report was run for each patrol division on a weekly basis and allowed division commanders to easily review, track and follow-up on activities related to the initiative.

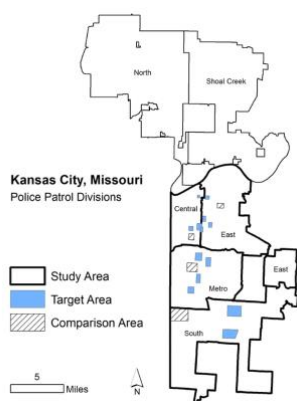
For example, if an officer visited a convenience store to check for liquor license compliance, a CAD note of "Spoke with manager John Jones; observed no liquor license; called Regulated Industries for follow-up" could suffice.

Data-Informed Decision-Making

Hot spot mapping and risk terrain modeling (RTM) analyses were conducted by KCPD analysts using ArcGIS and RTMDx software (rtmdx.com). KCPD analysts shared maps and other analytic outputs with patrol division commanders who selected target areas based on this intelligence. Between one and four noncontiguous target areas were located in each patrol division, as depicted in the Figure, below. The average size of target areas within these patrol divisions was 0.38 square miles (Standard Deviation = 0.36), with a total coverage area across all divisions of 4.9 square miles, which accounted for 1.5% of the city's land area. Comparison areas were designated by KCPD using a similar methodology.

Figure.

*Study Area²,
Target Areas and
Comparison
Areas Within
Police Patrol
Divisions of
Kansas City,
Missouri*



Activities for risk reduction and crime prevention involved directed police patrols and business checks³. Directed patrols were given information about what environmental features to focus on when they arrived at particular places. One-page intelligence reports were created for patrol commanders and officers for each target area. This report provided a map, a list of ranked environmental risk factors to address, and peak days/times of target crimes in the area. Its purpose was to give frontline officers everything they needed to know on a single page: where to go, what to look for and focus on when they got there, and when they needed to show up. The goal of directed

patrols was to offer optimal police presence and immediate crime deterrence effects (Koper, 1995; Sherman, 1990), while an officers' focus on particular features of the environment was geared towards mitigating criminogenic attractors/generators for longer-term impact.

For example, risk factors for robbery in the East Patrol Division included convenience stores, gas stations, bus stops, restaurants, laundromats and vacant buildings. This is why CAD call notes might reference an officer interacting with the on-duty manager of a convenience store. That is, the choice of the convenience store was calculated, not random.

Patrol officers were empowered to problem-solve in the field, to identify potential risks and recommend insightful solutions based on professional experience and supporting data. Spatial intelligence helped them make decisions about what to do at the target areas in ways that go beyond traditional law enforcement actions. Some tasks deemed necessary were within the scope of the police department's responsibility, while others were referred to partnering agencies such as 'Codes Enforcement', 'Regulated Industries', 'City Prosecutor's Office', 'Fire Marshall', or the 'Health Department'. CAD records indicate that patrol officers embraced the creative freedom for case management that was demanded of them. At times, they proposed crime 'risk narratives' (Kennedy et al., 2018) in their call notes based on their conversations with business employees.

For instance, they noted how an isolated convenience store may not pose much of a risk for crime, but a convenience store located near bus stops and abandoned buildings could provide motivated offenders an opportunity to use public transportation to travel to convenience stores, commit crimes, and then seek refuge in a nearby abandoned structure. Hypotheses like this prompted officers to notify the city's 3-1-1 hotline or reach out directly to city agencies that could, for instance, board-up an abandoned structure located near a convenience store and bus stop in the target area.

One officer from Central Patrol Division noted several risk factors in the immediate area of a high-risk gas station. In addition to conducting a business check at the gas station, the officer noted street lights in need of repair, a nearby dangerous dilapidated structure, and numerous abandoned vehicles. This officer's observations noted in the CAD system brought several environmental risk factors to the attention of Public Works (for the street lights), Codes Enforcement (for the dangerous structure), and KCPD's Parking Control Section (for the abandoned vehicles).

Officers that used the CAD notes to share professional insights about what they observed in the target areas served as a catalyst for coordinating assistance from other city officials at high-risk places. In this way, KCPD invoked an approach to policing whereby multiple stakeholders shared the burden of crime prevention by deploying existing resources in optimal ways.

To summarize, intervention activities for this initiative in the target areas included 1) directed patrols, 2) business checks, 3) coordination and deployments of non-police resources, and 4) positive police-community engagements.

As one example, the Kansas City Area Transit Authority (KCATA) was motivated to remove a problematic bus stop after it was shown to be interacting with nearby liquor stores and vacant properties to create a behavior setting for violent crime. This reduced loitering and mitigated an open-air drug market that was believed to be connected to nearby violent crimes⁴. Additionally, two code violations were noticed at one of the nearby liquor stores, so the Fire Marshal deployed resources to enforce these ordinances.

Accountability

The RBP initiative was woven into (already established) weekly meetings of executive leadership and commanders from patrol and investigative elements of the department by devoting one meeting every four to six weeks to RBP. Commanders used these RBP-specific sessions to discuss the status of their target areas in terms of crime metrics, risk reduction actions performed by officers, or challenges that require more than police resources.

Results

Assessment of Crime Reductions

Violent crimes significantly decreased and the target areas outperformed the comparison areas by over 22%. The total net effect of the RBP initiative was about 165 crimes reduced. The 13 target areas that accounted for this crime reduction covered just 1.5% of the city's land area. Some patrol divisions performed better than others. In the Central Division, violent crimes significantly decreased and outperformed the comparison area by 40.6%, which translates to a real reduction of 67 crimes ($p < 0.05$). In the East Division, violent crimes significantly decreased and outperformed the comparison area by 46.9%. This translates to a real reduction of 74 crimes ($p < 0.05$). In the Metro Division, violent crimes significantly decreased and outperformed the comparison area by 2.3%. This translates to a real reduction of 5 crimes ($p < 0.05$). In the South Division, violent crimes decreased and outperformed the comparison area by 8%. This translates to a real reduction of 14 crimes ($p < 0.05$).

Since some patrol divisions performed better than others it is possible that some target areas within or across patrol divisions performed better than other target areas. A location quotient (LQ) was calculated for every target area to explore the intervention's specific impact on each particular area. The LQ analysis answers the question: "What is the likelihood of violent crimes within a particular target area compared to all other places within the study area?" Two LQs were calculated for each target area: one using pre-intervention violent crime data and the other using post-intervention data. It was expected that LQs would significantly decrease between the pre- to post-intervention periods. A Paired Samples T-test confirms this occurred.

Assessment of Law Enforcement Actions: Arrests and Citations

Law enforcement actions against people were not intended to be used as a primary intervention mechanism for this place-based initiative, so it was hypothesized that self-initiated (as opposed to dispatch-directed or 9-1-1 calls for service) police activities resulting in arrests or citations (including summonses) would not significantly increase. They did not. These results, within the context of significant crime reductions, means that crime prevention was achieved without an abundance of law enforcement actions against people located at the target areas.

Summary and Conclusion

KCPD used spatial analytics, such as risk terrain modeling, to identify where officers should devote resources and what to do about these places when they arrived. KCPD's blueprint for this initiative incorporated agency-wide training, data management technology, protocols for data collection (and computer-aided dispatch), and multi-stakeholder accountability. They implemented and sustained the initiative for a full year, and it proved to be effective at significantly reducing violent crimes. Success was achieved without a significant increase in arrests or citations of people located in the target areas.

The KCPD RBP initiative demonstrates how data-informed policing can involve multiple community stakeholders and encompass a wide range of activities to protect people and properties from various dangers affecting their general well-being. Crime prevention is possible with community-based tactics focused on places, not people.

References

Complete references are provided in the full-text journal article.

Endnotes

¹ The city of Kansas City is the largest in the state of Missouri with an estimated population of 495,000 ([census.gov/quickfacts](https://www.census.gov/quickfacts/)) residing throughout approximately 315 square miles spanning Jackson, Cass, Clay, and Platte counties. The Kansas City Police Department (KCPD) is the agency tasked with protecting life and property within this jurisdiction.

² The four patrol divisions involved with this experiment are collectively referred to as the study area (see Figure, above).

³ Business checks are defined as contacting business owners while businesses are open or ensuring a property is locked and secure during closed hours.

⁴ Notably, law-abiding community members were not adversely affected due to two available bus stops nearby; no complaints arose from bus riders.