National Institute of Justice

Briefing to Global Advisory Committee
October 24, 2012

Information-Sharing Activities at the National Institute of Justice

NIJ's information-sharing activities focus on helping practitioners — especially practitioners at the scene — to make timely and informed decisions. Some of our current activities include the following:

Testing Geospatial Police Strategies and Exploring Their Relationship to Criminological Theories Solicitation

Police Foundation - *Translating "Near Repeat" Theory into a Geospatial Police Strategy: A Randomized Experiment testing a Theoretically-Informed Strategy for Preventing Residential Burglary*

The Police Foundation, partnering with the Baltimore County Police Department and the Redlands Police Department, will integrate the information from the near repeat calculator into a geospatial processing tool that will identify originator events and report the street hundred blocks at highest risk of near repeat burglaries. The tool will then allow the departments to allocate each near-repeat-high-risk-area to treatment or control. Uniformed representatives of the police will swiftly provide homes in the treatment areas with notification of increased risk and crime prevention information.

Implications for this project cover a range of theoretical, policing, and crime prevention topics. Since the crime prevention strategy is based on criminological theory, the results will help sharpen those theories. From the view of practice, we will know if this combination of treatments and associated strengths can disrupt the pattern of near repeats. By surveying residents to determine their specific responses to the community notification we can learn more about how and why people did or did not react to their knowledge of elevated risk.

Rutgers University - *Risk Terrain Modeling Experiment: A Multi-Jurisdictional Place-Based Test of an Environmental Risk-Based Patrol Deployment Strategy*

Rutgers University, partnering with six police departments; Arlington, TX; Chicago, IL; Colorado Springs, CO; Glendale, AZ; Kansas City, MO; and Newark, NJ, will deploy a multi-jurisdictional research project that provides for the implementation of Risk Terrain Modeling (RTM) as a geo-spatial analytical strategy for the identification of high risk environments and an evaluation of a place-based intervention initiative in each jurisdiction. Despite the adaptation of RTM in many jurisdictions, there is a need to verify empirically its validity and reliability across different locations, agencies and crime types. In addition, the efficacy of RTM in identifying and directing resources to high risk areas requires testing in a controlled application of interventions. Rutgers University proposes a quasi-experimental project with two primary goals: 1) to replicate and validate RTM in multiple jurisdictions and across many different crime types; and, 2) to evaluate theoretically- and empirically-grounded risk-based interventions targeted at high-risk micro-level environments.

Research and Evaluation on Metropolitan Crime Solicitation

Analyzing Crime Patterns and Trends in the Washington, DC Metropolitan Area: Documenting the Value of Cross-Agency and Cross-Jurisdictional Data Integration

The Urban Institute (UI) proposes a comprehensive, cross-agency and inter-jurisdictional pilot study to collect, integrate, and analyze crime and related demographic, land use, service delivery, and operational data across the greater Washington, DC, metropolitan area. UI will use existing data holdings and collect new data from the District of Columbia (DC), Prince George's County, and Montgomery County to examine the following overarching research question:

Does collecting and integrating data across jurisdictional boundaries, disciplines, and agencies inform analyses of a variety of phenomena that affect public safety, yielding actionable decisions based on the results of those analyses?

The purpose of the proposed research is to create an integrated dataset that will enable researchers to address significant, policy-relevant gaps in the literature—those that are best answered with cross-jurisdictional data representing a wide array of economic and social factors. In addressing those gaps, UI will be able to assess the utility of the data integration effort for criminal justice practice. In the interests of developing knowledge from this pilot study that will benefit the larger field, UI will also undertake the important task of documenting the resources, relationships, and skills that are required to accomplish cross-agency data integration on a regional scale.

Crime in Metropolitan America: Patterns and Trends across the Southern California Landscape

The University of California Irvine (UC Irvine) will collect and combine data from a large number of sources (e.g. crime data, land use data, parolee data, business and employment data, etc.) to study crime and crime trends across three metropolitan areas (six counties) in Southern California. This wide array of information will allow accounting for the multi-dimensional and inter-related sources of crime and crime trends in Southern California at different units of analysis including blocks, neighborhoods, and cities. Using these data, UC Irvine will: 1) build a model to predict crime in small geographic areas; 2) model the change in crime in cities over a 50-year period; 3) assess the effect of neighborhood organizations and institutions on crime trends; 4) determine the effect of the spatial distribution of poverty (at both small and large scales) on crime rates; 5) examine the effect of gentrification on crime in neighborhoods and nearby neighborhoods; 6) assess the effect of foreclosures and vacancies on neighborhood home values and crime over time; 7) consider the relationship between immigration and crime, taking into account the neighborhood institutional context; 8) assess how the clustering of social problems in a neighborhood (including the presence of parolees) affects neighborhood crime over time. This project builds on prior work done by the Metropolitan Futures Initiative (MFI) team to locate various data sources in Southern California.

<u>On-going Projects</u>

SEARCH - Data Architecture Analysis:

The goal of this project is to create a national data architecture for justice and public safety information sharing. SEARCH will produce a comprehensive report that will document: the current national data architecture for information sharing among criminal justice agencies at all levels of government and between criminal justice agencies and their partners in related domains such as first responders, health, and social services agencies; any gaps or misalignments in the architecture; and, recommendations for policy, practice, or technology changes (with appropriate investments) necessary to close the gaps. During the past six months, SEARCH staff developed the project plan and timeline, and with NIJ support, made the decision to pursue an event driven architecture approach. SEARCH drafted a whitepaper and began prototyping the approach with several example business processes using Unified Modeling Language (UML) and Business Process Model and Notation (BPMN). Activities under this project will continue into the next calendar year.

<u>**Upcoming Available Final Reports**</u>

Research Triangle Institute - Developing a 911 Software Toolkit for the Strategic and Tactical Analysis of 911 Call-for-Service Records

RTI International, Structured Decisions Corporation (SDC), and the RAND Corporation—with funding from the National Institute of Justice—partnered with the Washington, D.C., Metropolitan Police Department (MPD) to create a software toolkit for CFS data. This 911 Software Toolkit incorporates each call's structured data fields and free-text comments, allowing us to better characterize the nature of the call. More specifically, the 911 Software Toolkit uses CFS data to develop a clearer picture of criminal threats and other emerging public safety needs by developing automated processes to:

- Query CFS by time, place, and nature of the call (including keywords or themes within calls);
- Characterize and refine 911 call categories to provide an improved ability to understand and analyze the specific nature of calls;
- Identify geographic locations at elevated risk of criminal activity in the near future;
- Generate forecasts of areas at increased risk of crime on varying space and time horizons; and
- Identify calls for service that imply significant risk to responding police officers.

Findings demonstrate that the toolkit's methodology provides a useful framework for using CFS call narratives and structured data to identify and analyze specific types of calls across time and space. The toolkit functions also provide alerts that provide automated feedback to analysts on statistical changes in call types and calls that represent an increased risk to responding police officers. Project deliverables include a prototype CFS software toolkit, as well as an implementation guide and source code that can be customized and applied to other law enforcement agencies.

Police Foundation - The Dallas AVL Experiment: Evaluating the Use of Automated Vehicle Locator Technologies in Policing

Law enforcement agencies lack specific information describing where police officers patrol when not responding to calls for service. Instead they have snapshots of events that are handled by police such as the locations of crime reports, arrests, traffic citations, and pedestrian stops. While computerized crime mapping has enabled "smart policing" and police have become more scientific in the ways in which they respond to crime (Bureau of Justice Assistance, 2010; Robinson, 2011), police agencies still have little ability to assess the effectiveness of their deployment strategies in relationship to their goals.

The Police Foundation's study sought to examine these two key gaps in the advancement of recent police innovations. If the police have knowledge about where patrol resources are concentrated in a police agency, can police Commanders more successfully manage broad patrol resources? Within the context of a Compstat model, can they ensure that crime hot spots gain increased levels of patrol? Finally, if such knowledge were available to the police will that help them to prevent crime? We think that the answers to these questions are key to the advancement of policing. Our study is the first we know of to test these questions directly.

The Dallas (Texas) AVL Experiment provides important information to improve the understanding of how AVL technologies can be used to maximize patrol in police agencies. The data suggest that, at least in cities like Dallas with large geographies, AVL information will not aid patrol allocations in large geographic areas because patrol coverage in beats is largely a function of cross district dispatch rather than Commander-specified deployment. However, it is effective in achieving higher levels of patrol in hot spots and significant reductions in crime.

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