

# California Study to Assess Effectiveness of GPS Monitoring for High-Risk Sex Offenders

By Stephen V. Gies\*

## Overview

The criminal justice system manages most convicted sex offenders with some combination of incarceration, community supervision, and specialized treatment. While the likelihood and length of incarceration for sex offenders has increased recently, most of these offenders are at some point released into the community (Center for Sex Offender Management, 2001). The monitoring and supervision of this population is particularly important because of the irrefutable harm that sexual victimization can cause and the potentially volatile community responses to the release of sex offenders (Center for Sex Offender Management, 2002). The California Department of Corrections and Rehabilitation (CDCR) has been working aggressively since 2006 to more closely and efficiently monitor sex offenders through use of Global Positioning Systems (GPS)—a technology that remains relatively new for this use.

Despite the growing use of GPS monitoring of sex offenders, little is known about the effectiveness of this technology in reducing recidivism—and in promoting compliance with the conditions of parole. It is critically important, however, to criminal justice agencies and the public to determine whether the integration of GPS with electronic monitoring technology into the traditional supervision of sex offenders offers significant benefits. As a result, Development Services Group is conducting a process and outcome evaluation of CDCR's GPS program for monitoring high-risk sex offenders (HRSO) with funding provided by the National Institute of Justice. The study assesses the impact, quality, and costs of the CDCR GPS program, including the program's

effectiveness in reducing sex offender recidivism and in detecting technical parole violations.

Specifically, the goals are to;

- Assess the extent to which the GPS program is administered as designed (i.e., delivered to the appropriate population; with appropriately trained staff; using the right protocols, techniques, and materials; and in the locations or contexts as prescribed)
- Assess the quality of the GPS program delivery
- Assess the cost of the GPS program
- Assess the effectiveness of the GPS program in reducing the criminal behavior of HRSO parolees
- Assess the effectiveness of the GPS program in increasing HRSO parolee accountability and compliance with the conditions of parole
- Assess the effectiveness of the GPS program in improving the detection of parole violations.

## Study Design

The study design incorporates multiple methods to provide a comprehensive assessment of the GPS program. Though a classical experimental design with randomized assignment was thoughtfully considered, it was ultimately rejected because of the administrative difficulties in implementing the GPS system in California. Likewise, the ethical issues involved in releasing HRSOs into the community without a GPS monitoring system for research purposes prohibited the use of typical nonequivalent comparison group design. As an alternative, the study employs a nonequivalent-group, quasi-experimental design with propensity score matching estimators to account for the differences between the treatment and comparison groups. The study population is drawn from all HRSOs (as determined by the Static Risk Assessment instrument) who

are released from prison and reside in the state of California. The study excludes an offender if a) the parolee prison release date preceded January 2006, b) the elapsed time between release and placement onto GPS exceeds seven days, or c) the parolee is assigned to a parole unit with fewer than 30 HRSO parolees.

The result of the sampling plan provides roughly 800 HRSO parolees released from prison after Jan. 1, 2006. The treatment group includes all HRSO parolees who were placed on GPS. The control group includes all HRSO parolees who either were a) never placed on GPS (and still live in the community without GPS or were revoked and sent back to prison or suspended because they are at large) or b) were placed on GPS 365 days or more after their release from prison. This sample includes 15 parole units covering all four California parole regions: 5 units from Region 1; 3 units from Region 2; 3 units from Region 3; and 4 units from Region 4.

## Data Sources

This study uses five primary data sources: 1) CDCR data management systems, 2) parole agent field notes, 3) GPS monitoring data, 4) CDCR staff interviews, and 5) CDCR cost information.

**CDCR Data Management Systems.** California operates many data management systems that house information relevant to HRSO parolees. The majority of data for this study are derived from three databases: Cal-Parole, the Revocation Scheduling Tracking System (RSTS), and the Offender-Based Information System (OBIS). The Cal-Parole tracking system stores a variety of information on offenders released from prison and placed on parole, including birth date, gender, race, residency information, the date the parolee

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was released from prison, the date the parolee is scheduled to be discharged from parole, any special conditions linked to parole, and the unit and agent to which the parolee is assigned. RSTS stores a vast array of data regarding parole revocations, including information on the date and type of parole violation, and the result of the parole revocation hearing. OBIS maintains a rich database of information concerning prior criminal history (date of arrest, arrest charges, disposition date, disposition charges, disposition, and length of sentence) of all adult offenders in California.

A central feature of the data management systems is that an offender can be linked across all three databases through a unique identifier that permits users to identify the same individual in different contexts or data systems. Moreover, most of these systems collect data electronically and allow the data to be transferred electronically in a conventional format such as Microsoft Access that can then be opened with a statistical software package. The initial wave of data was transferred through a password-protected CD in April 2008. The latest wave of CDCR data was transferred in December 2009.

**Parole Agent Field Notes.** A set of five site visits was conducted to obtain the record of supervision data from the parole agent field notes. The parole units by site visit are listed below:

- Site Visit 1 consisted of San Bernardino, Calif. (SBERNGPS); Riverside, Calif. (RIVGPS); Moreno Valley, Calif. (MORVAL6); and Victorville, Calif. (VIC).
- Site Visit 2 consisted of Fresno, Calif. (FRE1); Bakersfield, Calif. (BAK3); and Antelope Valley, Calif. (VANTVAL2).
- Site Visit 3 consisted of Ventura, Calif. (VEN1); Inglewood, Calif. (INGLE5); Long Beach, Calif. (HARBOR); El Cajon, Calif. (CAJON); and San Diego, Calif. (SEOPOGPS).
- Site Visit 4 consisted of Oakland, Calif. (EASTBAY); San Jose, Calif. (SAN JOSE 1); and Stockton, Calif. (STOCKTON).

\*One respondent logged into the survey but recorded no responses.

- Site Visit 5 consists of Sacramento, Calif. (SACMET3) and Redding, Calif. (RED).

**GPS Monitoring Data.** The GPS monitoring data are being used for the process evaluation and for descriptive purposes. The GPS monitoring system into which HRSO parolees are enrolled is operated by two companies: STOP and Pro Tech. Each company maintains comparable data in a similar format. Through CDCR, each provider furnished the following: a profile of the offender; a record of each event (inclusion/exclusion violation, strap tamper, charge violation, message gap) that includes the event start and stop times and duration during a specified period; and the assignment history of the device.

**CDCR Staff Surveys.** An online survey of GPS parole agents was conducted to assess model fidelity during fall 2008. The survey contained questions about the core program components, including caseload size, enrollment and orientation, intensive supervision contacts, investigative use of GPS monitoring, synthesis of parole GPS and law enforcement data, and program staffing. CDCR approved the online survey instrument in August 2008. The instrument was emailed to all parole agents within the same month. The parole agents were sent numerous requests to complete the survey during the next few months. They were also asked to fill out the survey during training and other events hosted by CDCR. The survey was closed at the end of November 2008. The survey received 747 responses from a population of roughly 1,000 parole agents (including supervisors with no caseloads and assistant supervisors with limited caseloads). A subsequent review of the responses indicated that 97 of the 747 responses (13 percent) contained no data.\* In addition, another 78 responses (10 percent) were duplicate records. Both the blank and duplicate records were removed. The result was that the survey produced 572 unique respondents for an overall response rate of 57 %.

**Cost Information.** Direct and indirect expenditures will be used to assess the cost effectiveness of the program. The data elements used in the study can be grouped into four broad categories: 1)

personnel (all full- and part-time staff and consultants), 2) facilities (i.e., the physical space required for the program), 3) equipment and materials (furnishings, instructional equipment, etc.), and 4) other inputs (all other costs that do not fit the other categories).

## Statistical Approach

The study evaluates the impact of the GPS monitoring of HRSOs using a quasi-experimental design that features a propensity score (PS) matching procedure to model the selection process. The use of the PS in constructing control groups is widely accepted for the establishment of comparison groups (Quigley, 2003; Dehejia and Wahba, 1998; Rosenbaum, 1995; Rosenbaum and Rubin, 1983; Rosenbaum and Rubin, 1985). A preliminary matching procedure to test various covariates that may be used in the final version of the propensity score model was developed in December 2008. The final version will be completed in December 2010.

The central feature of the analysis will be to use survival analysis to model all time-to-event (i.e., recidivism and compliance) measures, using a Cox proportional hazards model.

In general, the analysis plan will include the following steps: 1) compare characteristics of GPS and non-GPS offenders; 2) assess implementation of GPS technology; 3) compare offenses of GPS offenders before and after activation of GPS technology; 4) compare outcomes of GPS and non-GPS offenders; 5) conduct survival analysis of re-offending; and 6) conduct a cost-effectiveness analysis. The re-offending measures include technical violations, arrests for new criminal behaviors, arrests for new criminal behaviors of a sexual nature, arrests for new criminal behaviors of a violent nature, and a return to prison.

Completion of the study is expected by Sept. 30, 2011.

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