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Implementation And Early Outcomes For The San Diego High Risk Sex Offender (HRSO) GPS Pilot Program

Susan Turner, Ph.D. and Jesse Jannetta, M.P.P.
with
James Hess, Ph.D.
Randy Myers
Rita Shah. M.A.
Robert Werth
Alyssa Whitby, M.A.

Center for Evidence-Based Corrections,
University of California, Irvine

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1. BACKGROUND

On November 8, 2006, California voters overwhelmingly passed Proposition 83, known as Jessica's Law. This proposition required, among other things, that registered sex offenders released on parole be monitored for life using Global Positioning Satellite (GPS) technology in the form of a satellite-tracked ankle bracelet. The law was passed with little information about how it would be implemented or evidence about how well GPS technology would protect Californians from sex offenders. According to a survey conducted by the Interstate Commission on Adult Offender Supervision in April of 2007,[1] California was already among the most extensive users of GPS for the monitoring of sex offender parolees prior to the passage of Proposition 83. Only Florida and Texas had programs of comparable size. The current report presents the first set of research findings on the use of GPS for sex offender parolees in California who were placed on GPS units between June and November 2005.

Our study of the implementation and early outcomes of the California Department of Corrections and Rehabilitation's (CDCR) pilot GPS project of High Risk Sex Offenders (HRSO) in San Diego County provides a much needed test of this high profile technology. Although 36 states employ GPS for sex offender supervision,[2] research into the effectiveness of GPS as a tool for the supervision of offenders generally and for sex offenders specifically has lagged behind practitioner adoption of the technology. Padgett, Bales and Blomberg[3] found that the use of GPS monitoring for offenders placed on home detention in Florida reduced the likelihood of technical violations, reoffending, and absconding from supervision dramatically. The applicability of these findings to the supervision of HRSO parolees is limited, due to substantial differences between that population of offenders and Florida home detention offenders. An evaluation of a Tennessee pilot GPS project[4] similar to California's did not find any statistically significant differences in number of parole violations, new criminal charges or days before first violation between GPS-monitored sex offenders and a comparison group of sex offender parolees.

This report is the second in a series of reports conducted by the UCI Center for Evidence-Based Corrections on the San Diego pilot study. The first report, published in May 2006, provides a description of the GPS program model being implemented (see Jannetta 2006). Readers are encouraged to read the first report for the development of the California HRSO GPS Program as well as a discussion of supervision of HRSO and GPS monitoring of offenders.

The current report addresses the following questions:

- What are the characteristics (e.g., demographic, criminal record, substance use) of the offenders who participated in the pilot; how do they compare with other HRSO in San Diego County as well as statewide?
- What were the implementation experiences? Was the program implemented as planned? How did program and services received for GPS HRSOs differ from routine supervision of HRSOs? What were the challenges in implementation and how were they overcome?
- How does GPS affect parole agent activities (workload, level of supervision, ability to utilize tracking information, apprehension process)?
- How does GPS affect parolee behavior? What were the timing, nature, and disposition of technical violations and new criminal offenses during the first six months after program start for participants compared with similar HRSO parolees not on GPS?

In order to answer the research questions above, the current project conducted a process and six-month outcome evaluation of the GPS pilot program. The research design and methods used for the study are detailed in Section 2. Section 3 presents the background characteristics of the GPS pilot project participants, our HRSO comparison group, and how the GPS parolees compare with HRSO parolees statewide. Section 4 presents the implementation experiences and impact of the technology on parole agent activities. Section 5 presents recidivism and other outcomes for GPS and comparison group parolees. Conclusions are presented in Section 6.

2. STUDY DESIGN

The study design incorporates multiple methods and study groups in order to provide a comprehensive description and evaluation of the GPS Pilot Program. We begin with how we constructed the GPS and comparison HRSO parolee study groups and the data that were collected in order to answer the major research questions.

GPS and Comparison HRSO Parolees

Constructing Study Groups

In order to understand the impact of GPS on offender services and behavior we need to contrast GPS participants with similar offenders who did not participate in the pilot program. Ideally, one would conduct a study in which eligible offenders were assigned on an equal-probability basis to either participate in the GPS pilot or remain on routine HRSO caseloads. This way, parolees in each group would be similar; observed differences in outcomes could be attributed to GPS and not to preexisting background differences (e.g., severity of prior record, drug use, risk) between the two groups. We were not able to conduct an equal-probability assignment for the current study. We were, however, able to take advantage of the assignment to GPS in constructing our study and comparison groups as outlined below.

As described by Jannetta (2006), GPS caseloads were created from the four HRSO caseloads existing in San Diego County.[5] Each of the four caseloads was ranked according to the GPS Assessment Score, and the 20 HRSO parolees with the highest scores on each caseload were placed on GPS monitoring. The remaining HRSO parolees

were transferred to one of two new HRSO caseloads created for that purpose. The first HRSO parolees were placed on GPS in San Diego County on June 29, 2005. By September 2005, all 80 of the GPS units for the pilot program had been assigned. As GPS offenders dropped out of the pilot program due to discharge from parole supervision or parole revocation, the units were reassigned to other HRSO parolees.

Our sample of GPS offenders consisted of all HRSO parolees who were placed on GPS units during the time period from June 29 through November 30, 2005. This resulted in 94 GPS study offenders. Our comparison HRSO group consisted of 91 parolees who were on HRSO caseloads during the same time period from June 29 through November 30.[6] We present the characteristics of both groups in the Section 3.

Data Collection

For each GPS and comparison HRSO offender, information was gathered about background characteristics. A six month follow-up was also conducted, which was constructed individually for each study participant. For GPS participants, the six month follow-up started at placement onto GPS and continued for six-months. For comparison HRSO parolees, the six-month follow-up started either on June 29, 2005 (for those HRSO parolees already on parole on that date) or the date on which the parolee went on an HRSO caseload during the June 29 to November 30 window. Figure 2.1 below presents a schematic of the data collection timeframe for a hypothetical GPS parolee.

Background Characteristics. Background characteristics were gathered from several sources. Prior criminal history was obtained from California criminal histories, or "rap sheets." For each arrest recorded on the rap sheets, we abstracted the date, arrest charges, disposition date, disposition charges, disposition and sentence (length of term imposed, plus information on fines, restitution, etc.), as well as information available on jail and prison terms served. Additional information was abstracted from parolee case files located in San Diego parole units. Information on parolee demographics, employment, education, and substance abuse was coded at the time the offender was arrested for the offense that resulted in his most recent prison term. In addition, information on marital status, children, employment and assistance, living arrangements, terms and conditions of parole and the Static-99 sex offender risk assessment tool (which predicts their risk of sex crime recidivism) were coded at the start of the six-month follow-up period.[7]

Six-month Follow-up. Information on the date and nature of parole agent contacts (e.g., office visits, home visits, drug testing), referral to and participation in treatment, parole violations and new arrests, housing, employment, romantic relationships, drug testing and drug use was abstracted from parolee case files for each parolee for the six month follow-up period. In addition, information from CDCR's Revocation Scheduling and Tracking System (RSTS) system on parole violations was also obtained and coded to augment violation information contained in individual parolee files.

Background and six month follow-up information was gathered from parolee files during the summer of 2006. Rap sheet coding was completed during the summer of 2006.

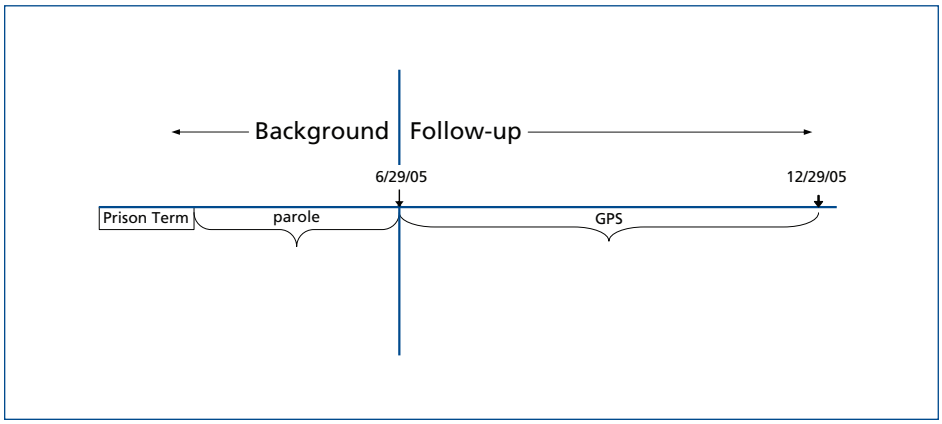
CDCR Automated Databases

The California Department of Corrections and Rehabilitation maintains automated computer files for management purposes. We obtained data files of all inmate admissions and releases for the study using two primary data files: TERMGRUP and TERMCASE. TERMGRUP provides a limited number of variables on all admissions and releases for offenders, including new admissions and parole violations. Variables include the offender age, county of commitment, and entry and exit dates from prison. TERMCASE provides information on the new commitments only, with information on the offenses for which the offender was committed.

Interviews with DAPO Implementation Team, Parole Agents, Treatment Providers

The UCI GPS research team conducted interviews the DAPO program implementation team as well as other parole staff, at both the unit and headquarters levels, identified by the implementation team as having been involved in the development and implementation of the program. Interviews were also conducted with the six parole agents in San Diego and Orange Counties who were carrying GPS caseloads. In addition, sex offender treatment providers working with HRSO parolees, law enforcement and prosecution staff working on developing GPS data-sharing with DAPO, a representative

Figure 2.1 Schematic of Data Collection



from Parole Agents Association of California (PAAC) and a representative from the GPS vendor, Satellite Tracking of People (STOP) were interviewed.

Interview questions focused on the implementation of GPS, including participant selection, how GPS information was used, impacts of GPS on parolee behavior and attitudes, collaboration and information sharing with local law enforcement, training and workload issues, and measures of success for the program.

The interviews pertaining to the first six months of the GPS Pilot Program took place between January 20, 2006 and March 15, 2006. Interviews lasted between 45 and 90 minutes and were taped and subsequently transcribed. There were three follow-up interviews with the GPS agents in June of 2006, lasting approximately 30 minutes.

STOP Tracking Event Data

Data from the GPS vendor, STOP, were obtained for GPS participants. The data included tracking information reflecting events and dates (e.g., strap tampering, unit charging, inclusion/exclusion alarms), as well as dates that units were placed and removed from offenders.

IRB Review

The project was reviewed and approved by the University of California, Irvine Institutional Review Board (IRB) for compliance with human subjects protection rules and regulations.

3. CHARACTERISTICS OF HRSO PAROLEES

Comparing Study GPS Parolees with High Risk Sex Offenders (HRSO) Statewide

We begin by taking a look at how the GPS study sample compares with HRSO statewide as well as within San Diego County. Table 3.1 below presents characteristics of the study group (combined GPS and HRSO) with those for San Diego County as a whole and statewide derived from CDCR automated databases.

Because virtually all HRSO offenders in San Diego County during the study time frame were either participating in GPS or served as a member of the comparison group, we find no differences in background characteristics between the study sample and the county at large. We do, however, see differences between the GPS study group and HRSO offenders statewide. The GPS study group was significantly different from the state in terms of age and in terms of those who had two prior strikes under the state's Three Strikes Law. Specifically, the study sample is older than HRSO offenders statewide and has a higher percentage of offenders with two prior strikes. Although not reaching conventional levels of significance, GPS study group parolees contained more Whites and fewer Hispanics than statewide. Admission offenses for GPS study offenders were also slightly more likely to be for "other sex offenses," less likely for "other crimes against persons," and slighter more likely for drug crimes. They were also slightly more likely to have more prior serious offenses.

Table 3.1 California Sex Offender Parolees Persons on CDCR Parole in Study Window, June 30 - Nov 30, 2005

	All California (n=2709)	San Diego (n=201)	GPS Study (n=183*)
	Pct	Pct	Pct
Sex			
Male	99.2	99.5	99.5
Ethnicity			
Black	26.2	30.3*	29.5
Hispanic	22.3	13.9	14.8
White	46.4	51.2	51.9
Other/Unknown	5.1	4.5	3.8
Age at Release			
<20	0.3	0.0	0.0*
20-29	15.9	13.4	12.0
30-39	28.7	24.4	23.0
40-49	33.8	32.8	33.9
50-59	14.5	21.4	23.5
60-69	5.0	6.0	5.5
70+	1.9	2.0	2.2
Mean age	41.4	43.5*	44.2**
Last CDCR Status			
New Admission	54.1	51.7	52.5
PV ret. w/new term	9.4	12.4	12.6
PV ret. to custody	33.7	34.3	33.3
Pending Revocation	2.8	1.5	1.6
Offense Group			
Rape	5.9	2.5**	2.7
Lewd Act w/Child	36.1	34.3	36.1
Oral Copulation	3.4	5.0	4.9
Sodomy	1.1	0.5	0.5
Penetration w/Object	2.0	0.5	0.5
Other Sex Offense	20.9	28.4	27.9
Other Crime Against Persons	10.6	8.0	8.2
Property Crime	7.2	5.5	5.5
Drug Crime	7.5	12.4	10.4
Other Crime	5.3	3.0	3.3

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Table 3.1 (cont'd) California Sex Offender Parolees Persons on CDCR Parole in Study Window, June 30 - Nov 30, 2005

	All California (n=2709)	San Diego (n=201)	GPS Study (n=183*)
	Pct	Pct	Pct
Time on the Street			
0-3m	44.1	39.3	36.1
4-6m	11.3	11.9	12.0
7-9m	8.3	7.5	8.7
10-12m	6.7	8.5	8.2
1-1.5y	10.0	8.5	9.3
1.5-2y	8.5	11.4	10.9
2-2.5y	6.8	8.0	8.7
2.5-3+y	4.2	5.0	6.0
Mean (mo)	8.9	10.0	10.6*
Prior Time on the Street-Offenses			
0	59.8	56.7	57.9
1-2	20.3	21.4	20.8
3-5	14.9	14.4	13.7
6+	5.1	7.5	7.7
Prior Serious Offenses***			
0	88.7	88.6	87.4
1	8.1	7.0	7.7
2	2.0	1.5	1.6
3+	1.2	3.0	3.3
Prior Violent Offenses***			
0	76.6	75.1	76.0
1	13.9	14.9	13.7
2	5.6	4.5	4.4
3+	3.9	5.5	6.0
Highest Strike Count			
2	20.0	29.4**	29.0**

Note: Two parolees in the GPS study are interstate parolees without records in the CDCR database.
* =significantly different from All California, p<.05.
** = significantly different from All California, p<.01.
*** =serious and violent offenses are specified in California Penal Code Sections 667.5(c) and 1192.7(c).

Overall HRSO parolees in California, as well as in the GPS study group, are virtually all male. About half are White, and more than half were older than 40 at the time of release from their most recent incarceration. About half were released onto parole after serving terms for new prison admissions (as opposed to serving time as parole violators). The most common offense for which offenders were incarcerated was for a lewd act with a child, with "other sex offenses" the second most frequent offense.[8] Interesting, not all offenses are for sex crimes; about twenty percent were sentenced for property, drug, or other crimes. The majority of offenders had been on the street six months or less when they entered the study window period, although more than 10 percent had been on parole for at least two years. In sum, the study sample reflects San Diego HRSO caseloads well, however, San Diego HRSO offenders are different from the overall state HRSO characteristics.

Comparing Study GPS and High Risk Sex Offenders (HRSO)

As indicated earlier, more complete background information on the study sample was obtained from parole files maintained in San Diego parole units. Table 3.2 below compares the GPS and HRSO offenders in the study group. There were no significant differences between the HRSO and GPS offenders on background characteristics in Table 3.2. As seen in Table 3.1 above, the study sample was virtually all male – only one GPS participant was female. The majority were White Non-Hispanic. Most had been married at some point, but only about 20 percent were married at the time of the study period. Over half of the study group had children. More than two-thirds have a high school degree or some college. More than half exhibited frequent drug use or drug abuse/dependency. Most offenders were over 40 at the time of their most recent incarceration. More than half were living in a single room occupancy (SRO) type situation or hotel; about 60 percent were employed. The average Static-99 score was 3.7, indicating a medium risk level. However, both HRSO and GPS groups contained low as well as high Static-99 risk offenders.

Table 3.3 presents information on the prior criminal record for study participants abstracted from offender criminal histories, or "rap sheets." Prior record was defined as prior arrests and their dispositions prior to the arrest for the offense for which they were admitted to CDCR. Approximately 75 percent of both groups had been arrested prior to their current offense. HRSO and GPS offenders were similar in terms of their prior arrests except for the percentage having a prior property arrest. HRSO parolees were significantly more likely to have a prior arrest for a property offense than were GPS offenders. In addition, HRSO offenders were more likely to have been convicted and sentenced to prison for a property offense than GPS parolees. HRSO parolees were also more likely than GPS offenders to have been sentenced to prison for a drug offense. On other measures of prior record (not shown in Table 3.3), HRSO offenders were also more serious: the average number of prior arrests for HRSO parolees was 8.1 compared with 6.4 for GPS offenders; the average age at first arrest was 31.6 and

Table 3.2 Background Characteristics of GPS and HRSO Parolees

	Group	
	HRSO (N=88)	GPS (N=95)
	Pct	Pct
Sex		
Male	100.0%	98.9%
Ethnicity		
African American	31.8	26.6
Hispanic	17.0	11.7
White Non-Hispanic	50.0	53.2
Other/Unknown	1.1	8.5
Marital Status		
Never married	39.3	36.5
Divorced	34.5	42.4
Married	26.2	21.2
Have Children		
Yes	58.8	67.9
Education		
Less than High School	29.6	26.1
High School or GED	39.5	47.8
College	30.9	26.1
Drug Use		
No drug use	13.8	17.6
Some/occasional drug use	17.2	29.7
Frequent drug use	26.4	15.4
Drug abuse/dependency	42.5	37.4
Age at Imprisonment		
20-29	9.3	7.8
30-39	26.7	18.9
40-49	31.4	35.6
50-59	24.4	27.8
60-69	8.1	7.8
70+	0.0	2.2
Mean age at Imprisonment	43.4	45.4
Living Arrangements		
Rooming house/ SRO/Motel	54.5	63.9
Residential: Live alone	10.4	14.5
Residential: With family, friends or relatives	26.0	16.9
Treatment Facility	9.1	4.8
Current Employment		
Employed	63.0	59.8

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35.5 respectively for HRSO and GPS offenders. The difference in the number of prior arrests is not statistically significant, but the younger age at arrest is significant at the $p<.05$ level.

The prior records of both the HRSO and GPS parolees show that many are recidivists. Over 50 percent had been arrested in the past for a sex offense. Although recidivists for sex offenses, the arrests records indicate that the prior records of study group offenders were not limited to sex offenses. More than a third had been arrested for other person and property offenses; more than 30 percent for drug offenses. More than half had been arrested for "other" offenses, including weapons possession (~19%), resisting or obstructing a public officer (12%), disorderly conduct (11%), giving false identification, felony parole violations (10%), DUI (8%), obscene/threatening phone calls (4%), disturbing the peace (4%), and violating a restraining order (3%). None of the differences between groups on these charges was statistically significant.

4. IMPLEMENTATION EXPERIENCES

San Diego County Parole Units were the first parole locations to incorporate GPS technology in the supervision of High Risk Parolees in the state. As such, the implementation experiences are instructive for other counties and jurisdictions interested in the technology. We begin with a brief overview of the GPS pilot program (see Jannetta 2006 for a more complete description of the program model).

Overview of GPS Pilot Program

Development of the California HRSO GPS Program

Section 3010 of the California Penal Code authorized the California Department of Corrections and Rehabilitation to use GPS technology for the supervision of parolees. The CDCR's DAPO GPS Pilot Program was authorized and funded by the California State Budget Act for Fiscal Year 2004-2005 to place 500 high risk sex offender (HRSO) parolees throughout the state on GPS monitoring. Approximately one third of the states 10,000 sex offenders are on

Table 3.2 (cont'd) Background Characteristics of GPS and HRSO Parolees

	Group	
	HRSO (N=88)	GPS (N=95)
	Pct	Pct
Static-99 Risk Category		
Low (0-1)	16.7	18.3
Medium Low (2-3)	38.1	33.3
Medium-High (4-5)	23.8	26.9
High (6+)	21.4	21.5
Mean Static-99 Score	3.7	3.7
(Std. Deviation)	(2.2)	(2.3)

HRSO caseloads. (HRSO Task Force 2006). The CDCR elected to implement the GPS program incrementally, beginning with a pilot program in San Diego County, followed by a phased expansion statewide.

The CDCR conducted an informal survey of GPS programs throughout the United States and in the United Kingdom during the process of developing their program. Many of these programs were targeting low-risk, rather than high-risk offenders, and none was employing the fully active GPS system with the technical requirements desired by the CDCR. As the CDCR did not find a model program that met their system requirements, they devised their own program model rather than adapting one from elsewhere.

DAPO engaged in a unique partnership with the Parole Agents Association of California (PAAC), the labor union representing rank and file parole agents, in the development of the GPS Pilot Program. PAAC representatives were part of the GPS development and implementation team from the outset of its efforts, a departure from typical CDCR procedures. The partnership with the PAAC was intended to facilitate program implementation by addressing labor union concerns in the program design phase rather than through negotiation over a completed program design, and preserving the option to test and adjust the supervision responsibilities for GPS parole agents.

GPS devices utilize signals from orbiting satellites to determine their location with a high degree of accuracy. By placing a GPS receiver on a HRSO parolee, a parole agent receives a tremendous amount of information about parolee activities, allowing him or her to verify compliance with parole conditions such as curfews, and to investigate suspicious patterns of behavior.

Program Goals and Five Major Components

The CDCR's GPS monitoring program has five goals:

- Reduce sexual and violent criminal behavior of HRSO parolees;
- Improve detection of violations of parole conditions and patterns of risky behavior through enhanced supervision of HRSO parolees;
- Increase HRSO parolee compliance with conditions of parole;
- Identify or eliminate parolees as suspects in new crimes by sharing GPS information with law enforcement agencies;
- Develop partnerships with local law enforcement to reduce crime.

Table 3.3 Prior Criminal Record of Participants

	Arrest Charges		Conviction Charges		Jail Sentence		Prison Sentence	
Offense Category	HRSO %	GPS %	HRSO %	GPS %	HRSO %	GPS %	HRSO %	GPS %
No priors	24.2	29.8	26.4	35.1	39.6	48.9	53.8	67.0
Sex offense	54.9	51.1	44.0	45.7	24.2	21.3	26.4	25.5
Rape	16.5	12.8	5.5	5.3	1.1	2.1	4.4	2.1
Child	28.6	28.7	20.9	28.7	6.6	9.6	13.2	17.0
Oral	9.9	8.5	6.6	4.3	0.0	0.0	6.6	4.3
Sodomy	7.7	4.3	1.1	0.0	0.0	0.0	1.1	0.0
Penetrate	6.6	11.7	2.2	0.0	1.1	0.0	1.1	0.0
Other sex	26.4	22.3	19.8	18.1	15.4	11.7	7.7	7.4
Reg 290	15.4	8.5	9.9	4.3	4.4	2.1	4.4	1.1
Persons	40.7	37.2	29.7	23.4	16.5	16.0	9.9	7.4
Property	53.8	34.0*	44.0	26.6*	33.0	21.3	19.8	4.3*
Drug	33.0	29.8	22.0	18.1	6.6	11.7	14.3	4.3*
Other	58.2	46.8	34.1	25.5	23.1	16.0	1.1	0.0

Note: *=HRSO and GPS different, p<.05.

The Pilot Program model consists of five components, designed to achieve the program goals:

- Reduction of caseloads for GPS agents. Each GPS agent is responsible for the supervision of 20 GPS-monitored parolees. A GPS parole agent supervises only GPS-monitored parolees.
- Screening of HRSO parolees to determine their risk to re-offend, and targeting GPS monitoring to the highest risk parolees. HRSO parolees are assessed on a three part instrument that combines their length of time since release from prison, their score on the Static-99 sex offender risk assessment instrument, and their parole agents' estimation of their risk to re-offend sexually. Available GPS units are placed on the parolees with the highest GPS assessment score.
- Enrollment and orientation of parolees into the parameters of GPS monitoring. For parolees selected for GPS monitoring, conforming to the requirements of GPS monitoring is added as a condition of their paroles. Parole agents orient the parolee to the new expectations associated with his GPS status, including maintenance of the unit and strict curfew adherence.
- Integration of GPS monitoring into the intensive supervision regime. GPS parole agents must absorb and utilize the information provided by the GPS device, both in the form of daily reports and priority alerts from the vendor-operated GPS monitoring center, and archived information in the from of activity maps from the vendor-provided tracking software. Agents can use this information to detect parole violations and patterns of risky or unexplained behavior, and investigate or intervene as appropriate.
- Synthesis of parolee GPS and law enforcement crime data. The GPS data on parolee whereabouts can be combined with law enforcement crime data to assist law enforcement in identifying or ruling out HRSO parolees as suspects in reported crimes.

Assessing Program Implementation of GPS Program Components Through Interviews

Our study gathered information from a number of staff involved in the development and implementation of the GPS pilot program, including parole agents, DAPO program implementation team, other parole staff based at the unit and headquarters levels identified as having been involved in the development and implementation of the program, sex offender treatment providers, law enforcement and prosecution staff working on developing GPS data-sharing with DAPO, as well as a representative from STOP. Information from these interviews was used to address implementation experiences during the first six months in these five components.

In this section, we present implementation experiences based on interviews. The following section presents analyses of data abstracted from parolee case files.

Reduction of Caseloads for GPS Agents

DAPO originally envisioned caseloads for GPS agents consisting of 20 GPS-monitored HRSO parolees, and 10 HRSO parolees not subject to GPS. Within the first two months of the program, it became clear to DAPO that a caseload of 30 was too large for an agent to supervise while fully utilizing the GPS technology, and the caseloads were reduced to 20 parolees, all GPS-monitored. As a member of the GPS implementation team said, "Our agents need lower caseloads to be able to go out and effectively supervise this population." At the time of the interviews, all of the parole agents had been supervising caseloads of 20 GPS-monitored parolees for several months. DAPO administration has been very serious about caseloads not exceeding 20. One agent reported being instructed to remove a parolee from GPS in order to stay at a 20:1 caseload, which he considered problematic.

HRSO agents were exceeding their supervision requirements prior to the introduction of GPS; afterwards they were more likely to be simply meeting them. "Just because we have GPS doesn't mean the rest of our work has gone away," one agent said. Time devoted to GPS had detracted from some elements of their supervision. Agents mentioned less face-to-face contact with parolees, doing less surveillance work than they believed optimal, more delays in note-taking, community contacts, returning phone calls and completing paperwork as concrete examples. A member of the implementation team summarized the situation: "It's definitely increased the work load even though it's a piece of technology that a lot of folks think would make us more efficient and maybe lighten the case load. It hasn't. We haven't seen that."

Three parole agents estimated that GPS-related work activity accounted for 50% of their time on a weekly basis, one agent estimated 60%, and another 80%. One agent said that the figure was too variable to estimate. On a typical day, GPS-related work began with the agent logging into the VeriTracks system to verify that all of the GPS units were active and calling in their information, and checking the daily e-mail report on GPS activity from STOP. Agents reported that the daily report contained some information, such as a strap tamper alarm or a charging problem, that needed to be addressed by contacting or checking on the parolee.

Agents devoted considerable time to reviewing the tracks each of their parolees through the VeriTracks system. All of the agents agreed that reviewing the tracks of all 20 parolees every working day was not possible, and one agent had set aside one working day to review all the tracks for the previous week. Checking the tracks is a time-consuming activity, and agents were often unable to review all the tracks because they would uncover information from the tracks or the daily e-mail that needed to be acted upon.

Prior to the enabling of the wireless cards in their laptops, agents could access VeriTracks only from the parole office, and through a slow Internet server, which increased the amount of time required to review the GPS

information, and required the agents to alternate inefficiently between reviewing GPS information in their offices, or acting on or otherwise utilizing that information in the field. Once DAPO received authorization to enable wireless capability for the laptops provided to GPS agents, agent ability to review parolee tracks improved greatly. They could access VeriTracks information while in the field dealing with parolees. The delay in obtaining approval to enable the wireless cards is indicative of the challenges to the GPS pilot of navigating the lengthy and cumbersome bureaucratic processes for selecting and purchasing new equipment. As one member of the implementation team put it, "[CDCR's] internal processes are our biggest problem."

Some parole agents and staff felt that the implementation had proceeded too quickly, and a slower implementation would have allowed agents more time to address the early problems and get comfortable with using the technology before agents had 20 parolees on GPS. To ease the incorporation of GPS caseloads into a parole unit, DAPO has moved to a process in which pre-implementation meetings are held in the units that are receiving GPS, and the parolees to be placed on GPS were identified and GPS agent caseloads were reduced to 20 parolees prior to the GPS agents attending training and placing any GPS units on parolees.

Screening of HRSO Parolees to Determine Their Risk to Re-Offend, and Targeting GPS Monitoring to the Highest-Risk Parolees

The method for selecting parolees for initial assignment to GPS combined the parolee's score on the Static-99, the time elapsed since their most recent release from prison, and agent judgment. Use of the Static-99 varied. One of the agents had been using it to score parolees, whereas other agents were considering a Static-99 score only if contract clinicians had administered the instrument to a parolee. Parole agents had not received training on using the Static-99. One agent noted that the Static-99 predicts the likelihood of sexual re-offense but not the potential severity of that offense. Parolees who committed serial indecent exposures rated particularly high, and were very likely to re-offend, but that behavior is not of as great a concern as that of pedophiles. The agent took potential severity of re-offense into account in evaluating parolees for GPS placement.

Factors parole agents mentioned considering in decisions regarding GPS assignment included clinical evaluation of the parolee, whether a victim has requested parolee relocation, whether the sex offense was recent, whether there were any indications that an offender had "crossed over" from one type of sex offending to others, whether the parolee was suspected of deceit in dealings with the parole agent, exhibited predatory behavior and grooming of victims, had multiple victims, or had stranger victims. Some of these factors are captured by the Static-99. Agents reported clinical evaluations carrying a lot of weight in the GPS determination.

Once GPS agents had reached a 20:1 caseload, the procedure for determining the next parolee to receive a GPS unit varied slightly. For the most part, the timing of parole revocations, discharges and releases had been such that parolees were being placed on GPS immediately upon release. HRSO agents evaluate sex offenders prior to release to determine if they should be placed on GPS. Only one parole unit reported drawing new GPS parolees from the non-GPS HRSO caseload.

Interview subjects mentioned a variety of characteristics that might make a parolee an ideal candidate for GPS monitoring. For parolees in general, there was a consensus that GPS was best utilized for high-risk offenders, such as violent or sex offenders, although one agent felt that GPS would have value for any parolee. GPS would be particularly useful for parolees such as stalkers or domestic violence offenders who would be likely to target specific, known victims. Respondents suggested GPS would work for offenders who might be deterred by the perception of being watched, or whose offenses were location-based, such as bank robbers or drug dealers associated with specific drug markets. Finally, an ideal GPS candidate has to be subject to parole conditions that GPS information will assist with enforcing, such as a curfew.

When asked which sex offender parolees would be best to monitor by GPS, there was a consensus that it was useful for sex offenders who might be trying to groom new victims, as opposed to selecting them opportunistically. Sex offenders likely to attempt to re-contact past victims were also mentioned as good candidates for GPS monitoring, as were smart and manipulative sex offender parolees, sex offenders with frequent parole violations and unstable sex offender parolees working their way through a cycle of precursor behaviors that were leading to re-offending. One agent believed that GPS monitoring helps parolees who are participating in sex offender treatment. A treatment provider said that pedophiles have distinct patterns of precursor behavior to offending, and might therefore be better than average candidates for GPS monitoring.

Respondents noted that due to the extensive unit charging and care requirements, a parolee has to be reasonably compliant with parole conditions in order for GPS monitoring to work. GPS won't work for a parolee who is likely to simply cut the unit off and abscond. Parolees with significant mental health issues, especially paranoia, were considered poor candidates, as GPS might cause them to break down. Homeless or transient parolees are also poor candidates, as they cannot comply with the unit charging requirements. Some parolees may have medical issues that make them ineligible. One agent had a parolee with poor circulation whose leg swelled so severely after the GPS unit was applied that he had to be removed from GPS monitoring.

Enrollment and Orientation of Parolees into the Parameters of GPS Monitoring

Agents reported that parolees were aware of GPS prior to being told about it by their agents, mostly as a result of

media coverage. Agents presented placing the GPS on their parolees in different ways. Some specifically referenced public outcry regarding sex offenders as the reason for it. Others focused on the parolee's degree of risk to the community. One agent described different approaches depending on the parole history of the parolee. If the parolee has been compliant, he accentuates the potential positives of having a GPS monitor confirm the parolee's compliance, but for parolees who have been problematic and he considers a serious risk, he emphasizes that they are being placed on GPS due to their high degree of risk, and that the decision to place them on is an agent decision.

Agents discussed expectations of the parolee for complying with GPS supervision, particularly the requirements for charging the unit. One agent physically demonstrates how to charge the unit. During the GPS installation, agents usually have to address parolee concerns and anxiety about wearing the unit and the stigma associated with it. Agents often address this by accentuating the potential positives for parolees of wearing the unit, which can absolve them if they are parole-compliant and accused of an offense or parole violation.

Agents indicate that the parolee attitude toward GPS has been mixed. Many parolees are receptive, particularly if they have admitted to the crimes of which they've been convicted. Some are unhappy, and want to fight or appeal their placement on GPS. GPS raises fear and concern on the part of many parolees. One agent reported anger from parolees during the early weeks of implementation, when some parolees had to continually report to the parole office due to equipment problems. Some parolees see potential positives in being on GPS, for the reasons provided by parole agents at enrollment. There is a consensus among parole agents and treatment providers that parolee fear and anxiety about being on GPS diminishes over time, and they come to accept it as simply another condition among many imposed on them.

There was a consensus that the presence of the unit on the parolee's ankle serves as a constant reminder of parole supervision, and makes parolees consider their actions more carefully. One agent mentioned that at the end of the GPS installation, he opens VeriTracks and shows the parolees the dot on the map indicating their position, with the purpose of intensifying this reminder. Parolees may be more parole compliant as a result, at least initially. Some agents reported parolees voluntarily disclosing more information to parole agents, especially regarding travel. It may lead other parolees to be more deceptive, and has caused some heightened anxiety and stress because GPS-monitoring is causing them to refrain from behaviors they had engaged in prior to having the unit placed on them.

Integration of GPS Monitoring into the Intensive Supervision Regime

Asked to describe the challenges of supervising HRSO parolees, leaving GPS aside, interview subjects noted challenges related to characteristics of the HRSO parolee population, challenges related to the structure of the HRSO supervision in DAPO, and challenges arising from the external environment around sex offenders in California. Several interview subjects began by noting that sex offenders are a population that is relatively compliant with parole conditions and sex offender treatment requirements. Parole agents mentioned that HRSO compliance with parole conditions might be "surface compliance," that these parolees were capable of complying with their conditions of parole while re-offending or engaging in behaviors that might be precursors to re-offending that went undetected by supervising agents. HRSO parolees were described as being more intelligent and more manipulative than other parolees. According to treatment providers, these parolees have multiple criminogenic needs, and often have a history of denying their offenses, particularly while in prison, in order to protect themselves. Law enforcement officials noted that these parolees may be uniquely likely to return to offending.

With regard to challenges related to the structure of the HRSO supervision in DAPO, agents noted that it is a challenge to enforce the numerous special conditions of parole to which HRSO's are subject. Many of them are location-based (such as not being able to enter school grounds and parks), conditions that are difficult to enforce because parole agents have limited means to monitor parolee activities. Other DAPO challenges noted by interview subjects were insufficient training on the supervision of HRSOs, lack of funding and staffing to implement the full HRSO supervision model in many parole offices, insufficient funding to provide sex offender treatment for all HRSO parolees, a poor relationship between parole agents and Parolee Outpatient Clinic (POC) clinicians, outdated material for conducting relapse prevention groups, lack of rehabilitative work done during incarceration, and the lack of a validated assessment tool to determine HRSO parolee level of risk. Additionally, HRSO supervision is usually assigned to the best parole agents, and finding highly skilled agents willing to take on HRSO caseloads can be a challenge.

Challenges arising from the external environment around sex offenders in California are considerable and may be intensifying. Many interview subjects mentioned the strong community disapproval of sex offenders and the legislation affecting sex offenders that it produces as creating challenges in the supervision of HRSO parolees. Finding stable housing for sex offenders is extremely difficult. Parolees may face harassment by community members who discover their status as registered sex offenders. One interview subject with a clinical background observed that these environmental factors place stress on HRSO parolees, which could contribute to a return to offending or offense precursor behavior.

The benefits of the GPS program discussed by DAPO agents and staff address the challenges related to determining whether parolees are compliant with conditions of parole, or only surface compliant. Agent concern about

surface compliance among HRSO parolees arises from their observation that these parolees are secretive, intelligent and manipulative. GPS information affords agents with an independent verifier of the truth of parolee statements, and provides information that can trigger investigation or questioning regarding parolee activities. The benefit of GPS most commonly mentioned by subjects was more information about parolee routines and activities. As one agent said of what agents knew about parolee activities before GPS: "99.9% of the time we have no idea where our parolees are that are under our supervision." Agents mentioned that GPS information alerts them to previously unknown personal relationships that parolees have, enhances curfew monitoring, corroborates or refutes accusations against parolees, assists them in locating parolees (including by studying past patterns to locate parolees who have cut the unit off), and can alert agents to behaviors that are potentially precursors to offending and require intervention. Agents also mentioned that parolees began volunteering more information about their activities after being placed on GPS.

Integration of GPS monitoring into the intensive supervision regime proceeded in three stages in the GPS pilot: an equipment management stage, an information integration stage, and an investigative use stage.

The Equipment Management Stage. The dominant implementation challenge for the GPS agents in San Diego County in the early months of the GPS program was problems with the equipment. An initial provision of faulty straps led to constant false strap tamper alarms, with calls coming to the agents throughout the night. In addition to the strap problems, a number of the units did not function properly, indicating that they were fully charged when they were not, or simply not working. Agents were devoting most of their time to calling parolees, verifying that they had not cut the units off, addressing charging problems, and switching straps. A member of the implementation team recalled, "At one point an agent said, 'You know, I'm monitoring the equipment, not the parolee.' And there is some truth to that."

STOP replaced most of the GPS units, replaced the ankle straps and altered the clips that affixed the straps to the units, and stopped calling the agents to report strap tamper alerts. These changes reduced the alerts to a manageable level, and allowed the agents to change their focus to increasing their proficiency in using GPS as a tool to supervise their caseloads. In San Diego, however, this extremely trying early period has left a legacy of frustration and uncertainty about the reliability of GPS information among the agents. One respondent said that the program had experienced so many problems that it was unclear whether the parole unit had seen any benefit from it. Agents and DAPO staff felt that the technology had been "oversold" and they had to adjust their expectations to fit the limitations of the technology. Some of the agents expressed a concern that their questions and criticism of the program in its early stages was seen as complaining or lack of support for the program. They felt strongly that such input during the equipment management stage was critical for the program to realize necessary improvements.

By the time GPS implementation moved to Orange County, these equipment issues were solved to the extent that agents did not consider them to be a significant issue. Essentially, agents in counties other than San Diego County did not go through the equipment management stage. A member of the implementation team summed up the DAPO experience with the equipment management stage in San Diego by saying, "When you buy state of the art in an emerging field, you're not going to have a trouble-free experience."

The Information Integration Stage. After passing through the equipment management stage, the GPS agents and the DAPO staff could focus on understanding what the GPS information did, and did not, tell them about parolee activities. With this understanding, they could begin to create mechanisms and standards for using the data.

Strap tamper alarms present a difficult information integration problem. DAPO initially expected that GPS agents would immediately go into the field to respond to any strap tamper alarm, regardless of when it occurred. Even after the modifications made in the equipment management stage, however, false strap tamper alarms resulting from unit wear overwhelmingly outnumbered actual indications of parolee attempts to tamper with or remove the unit. DAPO altered its expectation, and strap tamper alerts are responded to immediately only if they fail to clear over an extended period of time, five to ten minutes. Agents know that straps will wear out after roughly two months, and are prepared to replace them when they start generating consistent false strap tampers. Although these measures have improved the situation, agents did not feel confident that they could quickly or reliably spot actual attempts to tamper with the GPS unit among the multitude of false positives. Many agents and DAPO staff expressed concern that the large number of false positives was desensitizing agents to this kind of alarm, potentially resulting in a slower realization and reaction time if and when a parolee did cut the unit off and flee.

In addition, there is a phenomenon called "drift," in which GPS points float dozens of feet from where the unit is. Drift can result in false inclusion zone alarms at night when parolees are subject to curfews. Several agents also mentioned "skips" as a serious problem with GPS. These occur when one of the GPS satellites is at such an angle relative to the atmosphere that the signal from the GPS unit skips, yielding a point hundreds of miles from the parolee's actual location. When this happens, and a parole agent looks at a parolee's location in VeriTracks, the view shows the smallest map that contains all the parolee's points, making the single outlier point (which may be, for example, in the middle of the Pacific Ocean) evident. The remaining points on the parolee give a good fix on his

location if the agent zooms in sufficiently on the San Diego area, but the agents interviewed tend to interpret these skips as the system "telling" them that the parolee is far away from his actual location. This indicates some remaining gaps in agent understanding of the GPS data.

The data from GPS are limited by where the unit can get a GPS signal, which is often blocked when the unit is indoors. Agents noted this limitation, but it did not appear to constitute a substantial impediment to their understanding of parolee activities and movements. Although agents were quick to point out various limitations of and problems with the GPS system, it was clear from agent descriptions of their use of the tool that they found GPS information sufficiently accurate and reliable to be useful to them. Said a member of the implementation team, "Everybody has had this learning curve where they had to accept the technology on the technology's terms."

DAPO's own technological infrastructure presented information integration challenges as well. GPS agents were provided with wireless Internet capable laptops, but their wireless was not enabled for eight months while the CDCR's information technology department considered whether to approve it. Wireless Internet had never been provided for CDCR staff, so there was no set procedure for providing it to parole agents.

In the interim, GPS agents had to access VeriTracks from their offices. (Some agents reported logging into VeriTracks from their home computers.) Internet access is not regularly provided to parole agents (in fact, their employment contracts of parole agents stipulate that they cannot be required to use computers), and as a result, the internet infrastructure in parole offices is not very good. The agents accessed the Internet through a shared state of California government server. The Internet connection was very slow, and frequently crashed, dumping the agents off-line and forcing them to log back into the system from the start. Agents found accessing the GPS information during this period aggravating and inefficient. They were not able to easily combine the GPS information with surveillance and investigation to determine how it squared with parolee activities. "I think one of the worse things we've done to the agents is to give them this wonderful technology and then not give them access to it quickly," described a member of the implementation team. "If we had had [wireless] from the beginning, I wouldn't be so beat up today," one of the GPS agents concurred.

Once wireless was approved, these problems were alleviated dramatically, and the transition from the information integration stage to the investigative use stage sped up. DAPO had not anticipated that Internet connectivity would be an issue for the program. It took a long time to get the wireless cards approved because wireless capability was new in CDCR, an example of how the GPS program is breaking ground within the department in peripheral areas of the technology.

Inclusion and exclusion zones remained an information integration challenge to be solved at the time of the interviews. Use of both was limited. Inclusion zones were in use in San Diego County for the purpose of curfew enforcement, but they were not being used in Orange County because the agents did not perceive a nexus between parolee crimes and being out at night, and because they could verify curfew compliance by means of viewing the tracks.

Exclusion zones were consistently described by respondents as highly problematic. The zone training for agents was insufficient and ineffective, and as a result, there were very few exclusion zones in use at the time of the interviews. Several agents did not have any exclusion zones in operation. Where exclusion zones have been used, they have been placed around the residences of past victims. This has been limited, because many victims reside outside the county, where parolees are not allowed to travel, or DAPO does not know the location of the victim. Agents expressed some concern about exclusion zones around victims because they did not want to inform the parolee of the location of the victims, but would have difficulty strictly enforcing the zones if the parolee could violate them in ignorance (or claim ignorance.)

Exclusion zones had not been placed on areas such as schools or parks because parolees would be constantly triggering alarms by engaging in routine activities, such as driving to work. DAPO is working on a system that would trigger a zone alarm only if there were multiple GPS points in violation of the zone, which would address this problem. If DAPO can bring this system into use, GPS work on exclusion zones will enter the investigative use stage.

The Investigative Use Stage. With the equipment issues under control and the Internet access issue resolved, the GPS program moved into engagement with higher-order challenges involving use of the GPS information. One participant in the implementation of the program felt that parole agents had not yet reached proficiency in the use of GPS at the time of our interview. Another estimated that 25-30% of the agents were using the GPS as a serious investigative tool.

GPS generates a huge amount of information about parolee activity, far more information than any parole agent has ever had. Agents and parole staff noted that with this information comes both incredible responsibility to use it to catch parolee non-compliance with conditions of parole, and also tremendous potential liability if a parolee committed an offense that might have been hinted at by information made available by GPS. "Not knowing what we don't know about these folks in some respects limits our liability," as a member of the implementation team put it. Adding to this challenge, CDCR did not have a knowledge base on how to use GPS, and there was no knowledge base outside the department, no agency that has used this technology to supervise many parolees of such a high risk level. DAPO and GPS parole agents had to learn how agents should use the information, how to spot problematic behaviors in the GPS tracks, how to tell good information from bad

(particularly in the area of strap tampers), and determine what the consistent reaction should be from parole agents to that information. Parole staff said that using GPS represented a fundamentally different kind of parole practice, more proactive than reactive, and also a highly technological approach in an agency in which computer use is infrequent.

The basic investigative method used by agents was to establish, through repeated viewing, the normal pattern of movement for each parolee. With some individual variation, this pattern consisted of the parolee being at home, at work, at the parole office, and at sex offender treatment (which was in the parole office if the parolee received treatment through the Parole Outpatient Clinic), and traveling between these locations. Deviations from this pattern were noted by the agent, and investigated, primarily by questioning the parolee or traveling to the locations that the parolee had been visiting.

An example of this method frequently mentioned by interviewees occurred in San Diego County. The supervising agent saw that one of the parolees had been frequenting a location in the northern part of the county, well outside his normal pattern of movement, and involving considerable inconvenience to reach by public transportation. The agent was able to ascertain from the VeriTracks software that the location was a strip mall, but determining exactly where the parolee was going required the agent to drive to the strip mall, and show pictures of the parolee to individuals working there. The agent was able to determine that the parolee had been coming to a bowling alley located in that strip mall on youth league night, apparently for the purpose of grooming new victims. The parolee was found to be in violation of his condition of parole not to frequent locations where minors congregate, and his parole was revoked. This instance is indicative of the way in which investigative work is necessary in combination with GPS information to uncover parolee behavior of concern.

Program Staffing. Asked what made for an ideal GPS agent, the attribute most consistently mentioned by respondents was comfort and familiarity with computers, and a willingness to experiment with them. Other attributes mentioned were a strong investigative instinct, willingness to put in extra work, good verbal communications skills, spontaneity in how they meet the supervision requirements, ability to work well with local law enforcement, low frustration level, and an extensive history of working with or supervising sex offenders.

Several respondents agreed that the initial training received by San Diego County agents was not very good. STOP ran the training, and while their understanding of the technology is strong, they do not have community supervision or law enforcement experience. The zone training was cited as being particularly insufficient. One of the agents recognized the challenge of providing training to agents who arrive with very different levels of familiarity with using computers. This agent, and a law enforcement respondent who attended one of the early trainings, felt that more specificity and dealing with actual data would be valuable. "I don't think that any of us realized going in quite how intensive the agent training was going to be, how long it was going to take, how much it has to be continually enforced and just quite how complex the system is," a member of the implementation team said.

Based on what was learned from those initial implementation experiences, the training was modified and expanded. The initial training for the San Diego County GPS agents lasted a day and a half. The training was expanded to three phases. The first phase is a three-day introductory training covering how to use the VeriTracks software, how the GPS unit works, and how to apply it to a parolee and enroll them in the system. The second phase covers the application and use of inclusion and exclusion zones. The third phase will cover how to put the GPS information to investigative use. This training was still in development at the time of the interviews, and no agent had gone through it. Interview respondents who had attended the first phase thought that it had become very good. However, one DAPO participant thought that the hand-off of the technology to the agents after the training could be improved.

One interview respondent noted that training in DAPO frequently falls short in a variety of areas. There is no testing for proficiency as part of the training. Unit supervisors in San Diego County attended the GPS training, but this has not been the case as the program has moved to other regions. In addition, other agents in a parole unit that is taking on GPS are not receiving the training, which becomes an issue when GPS agents go on vacation or otherwise require someone to back up their caseload.

Parole agents and DAPO staff agreed that there was no formal guidance available to the agents regarding the expectations for them using the GPS information. At the time of the interviews, DAPO was still learning from the program what would constitute reasonable expectations for GPS agents. Expectations are discussed informally in the weekly conference calls that all GPS agents and the headquarters staff managing the GPS project participate in. There was a unanimous consensus from DAPO staff involved in program development and implementations that agents should be reviewing parolee tracks every day, and agents were aware of this expectation. Several DAPO staff respondents indicated that agents should interview parolees or conduct surveillance to determine the reasons behind parolee movement patterns. Agents were also expected to maintain their level of supervision for HRSO parolees.

The lack of a written policy defining the responsibility of GPS agents, coupled with the obligation entailed by access to such comprehensive information, was causing GPS agents considerable anxiety. Recognizing this, DAPO had an administrative team working on defining agent responsibilities to prioritize and respond to GPS information. An interview respondent on the implemen-

tation team felt strongly that these expectations then need to become a part of GPS training, and that unit supervisors need to receive training on them as well.

The role of DAPO staff other than GPS agents in the program has changed over time. According to DAPO headquarters staff interviewed, the most common thing that agents needed from them during the equipment management stage was assistance with the various equipment problems they were experiencing. Locally-based unit supervisors felt they played a key role in providing emotional support to the agents during periods of frustration and exhaustion. As implementation moved to the information integration and investigative use stages, agent needs of DAPO headquarters staff have been improved training and training follow-up, clear policies and procedures for their GPS work, and assistance with troubleshooting the system and interpreting some GPS data, such as drift points and skips. From the unit supervisors, they have needed back-up monitoring of the GPS when they are on vacation or otherwise unavailable. In addition, a unit supervisor said that there was at least one GPS-related discussion or conference with an agent every day, which could last 30-60 minutes.

GPS implementation work is not done exclusively by DAPO staff and agents. It is also shouldered by key partners in the PAAC, in STOP, and among the sex offender treatment providers. PAAC's participation in the GPS pilot was characterized as unusual in CDCR projects. Participants in the implementation of the program characterized this partnership very positively, saying that it allowed for open discussion about which program aspects were or weren't working, and allowed flexibility to adapt and change in the pilot. Union input was also very valuable to the administrative team because the union often has a better understanding of what is happening at the agent and unit level than DAPO headquarters staff.

STOP contributed substantially to the implementation of the program, running the agent trainings and providing troubleshooting and technical support services. Half the agents and most of the DAPO headquarters staff characterized STOP as being very responsive and helpful in their work with DAPO, citing their willingness to answer questions, assist agents, and make modifications to the equipment and software at DAPO's request. One member of the implementation team believed that although there had been problems with the equipment, there would have been similar problems at the outset of implementation regardless of the vendor.

In the early stages of the program, GPS agents received a lot of one-on-one attention and assistance from STOP. As the program has grown, this work has proceeded on an "as needed" basis. Some respondents believed that STOP responded to questions about GPS unit performance issues with vague answers, or did not answer the questions at all, and simply declared the problem "fixed." Several agents expressed frustration with what they characterized as STOP's tendency to blame problems with the units on the parolees or the agents before being willing to consider that there might be problems with the technology they had provided. This was partly attributed to understandable protectiveness toward the product.

Many HRSO parolees in San Diego County participate in contracted sex offender treatment provided by external entities, which is more common in urban areas in California. This is important, as one interview subject characterized the relationship between parole agents and DAPO Parole Outpatient Clinic (POC) clinicians as poor. Treatment providers interviewed characterized their relationship with parole agents as good, noting that HRSO agents are the best agents. The providers encourage agents to be as active in treatment activities as possible, and bring them in to meet with parolees if there are issues with treatment compliance.

Treatment providers did not necessarily think that the use of GPS to monitor their clients had affected their work much. Agents share information from GPS with them if they have a heightened concern about a parolee based on GPS information, and think that information from treatment group might shed some light on what they're seeing. A treatment provider said that it may help parolees with their situational awareness. Another said that it could either make a parolee more resistant to treatment or give them a reason to work on changing their behavior. A concern was raised that the addition of GPS could contribute to the victim mentality common in HRSO parolees that can interfere with their taking responsibility for their actions and establishing victim empathy.

Synthesis of Parolee GPS and Law Enforcement Crime Data

There are three ways in which GPS data is shared with and made useful to law enforcement. The first is through law enforcement contact with individual GPS parole agents, in which GPS information is provided to law enforcement in response to a law enforcement inquiry occasioned by a reported crime, or initiated by the parole agent to enlist law enforcement assistance in watching a parolee. The second is law enforcement viewing the tracks of GPS-monitored parolees through VeriTracks. The third is a law enforcement agency providing its crime data to be compared with the GPS tracks to determine whether GPS-monitored parolees were in the vicinity of reported crimes, a process referred to as crime scene correlation. The first type of GPS information-sharing does not require any formal data-sharing agreement with the law enforcement agency involved, but the second and third type do.

Multiple agents reported using GPS, at the request of law enforcement, to rule out parolees as suspects in reported crimes. One agent had used GPS at the request of law enforcement to locate one of his parolees who was a suspect in a crime. The agent used VeriTracks to determine the route that parolee took home from sex offender treatment, information the police used to intercept and arrest the parolee en route, rather than waiting at his residence, where he might have seen them

and fled. One agent said that GPS was useful to a law enforcement agency that engaged in moving surveillance, and had contacted them to ask them to watch a parolee based on information the agent gleaned from GPS. One agent did report struggling to keep up a previously strong connection to law enforcement because GPS work had proved so time-consuming.

At the time of the interviews, formal GPS data-sharing agreements had been reached with the Orange County Sheriff's Department and the Redlands Police Department, but not with any law enforcement agency in San Diego County. The agencies varied in their use of the GPS information. The Orange County Sheriff's Department focused on responding to crime scene correlation information, while Redlands PD has crime analysts checking parolee tracks, including any parolees from other jurisdictions who entered the city, on a daily basis and communicating with parole agents about the information.

GPS agents in Orange County are sent crime scene correlation "hit" reports daily. Hits are generated any time a reported crime occurs in a square with sides 2000 feet long, centered on the parolee. Hits are rated on a scale of one to five, one being the most significant. The rating is based on the proximity of the parolee to the reported crime, and how many GPS points in the area the parolee had around the time of the crime. At least one agent reported checking the crime scene correlation information daily, but in the first four months since the crime scene correlation component was established, it has yet to establish a link between a parolee and a crime. DAPO staff and law enforcement respondents did not have a sense of how frequently such a link should be expected.

Parole agents and DAPO staff were confident that GPS information would be useful to law enforcement. Despite this, some law enforcement agencies have been reluctant to share the data necessary for crime scene collaboration, particularly in San Diego County, where there is a regional data-sharing entity for law enforcement, ARJIS (Automated Regional Justice Information System). Law enforcement agencies have raised concerns about the security of their data systems if data is shared, and are also concerned that their data might be exposed, interpreted, passed on or sold, particularly by vendors. As a result of these concerns, law enforcement staff dealing with data and legal issues are often more reluctant to share data with DAPO, while patrol and investigation are more receptive. Law enforcement agencies are also concerned that working with the GPS data will be additional labor.

DAPO has some reciprocal concerns about sharing data with law enforcement agencies. Participants in the GPS program implementation wanted to make sure that law enforcement agencies used access to the GPS data responsibly. Someone in one cooperating law enforcement agency used the VeriTracks software to place an exclusion zone around his younger sister's residence. Another concern, expressed by both DAPO and law enforcement interview subjects, was that GPS information could be handed over to law enforcement agencies without their understanding how to interpret it, possibly leading to harassment of parolees. Interview subjects in DAPO and in law enforcement agencies noted that data-sharing problems have been exacerbated by DAPO's failure to be a "good salesman" for the GPS program with law enforcement. One participant in the development of the GPS program thought that law enforcement agencies would be more interested in the ability to view the GPS tracks through VeriTracks than in the crime scene correlation, but crime scene correlation was the first thing discussed with law enforcement in San Diego. Another program development participant noted that DAPO went to law enforcement early in the implementation process in San Diego County, while in subsequent implementation locations they have focused on building agent proficiency with the tool first, and then working to bring in law enforcement. Crime analysts, investigators, sex crimes units, and SAFE (Sexual Assault Felony Enforcement) teams were mentioned as potential consumers within law enforcement for the GPS information, and one respondent emphasized the importance of executive level support from within law enforcement agencies.

Multiple interviewees expressed the belief that cooperation with law enforcement on GPS monitoring was necessary, particularly in assisting them with monitoring and responding to sex offender behavior. A GPS agent said, "We are not a twenty-four hour law enforcement agency. We are predominantly parole agents who work Monday through Friday." A member of the implementation team echoed the sentiment: "We do need [law enforcement's] assistance. We're not structured in a manner that we can do this on our own. We do need their support."

Assessing Program Implementation of GPS Program Components Through Parolee Case File Abstraction

Special Conditions of Parole

We turn now to an examination of implementation based on the experiences of the HRSO and GPS offenders. As indicated earlier, offenders included in our evaluation were on parole on either GPS or HRSO caseloads. During their time under supervision, these parolees were subject to a number of special conditions of parole. Conditions included requirements of drug/alcohol restrictions, treatment and testing, prohibitions on possession of items related to sexual offending (e.g., cameras, child toys), contact with minors and victims, housing restrictions, etc. Table 4.1 presents the large number of possible special conditions, classified into general categories.[9] The most frequently imposed special conditions for HRSO and GPS offenders were to maintain a residence approved by parole, attend the Parole Outpatient Clinic, not possess pornography, and have employment approved by parole. GPS offenders were more likely than HRSO offenders to have a

Table 4.1 Special Conditions for HRSO and GPS Parolees

Special Conditions		HRSO	GPS
Category	Specification	%	%
Communicating Status and Activity	Agent Arrest	20.7	44.6**
	Agent Other	2.3	1.1
	Employment	95.4	97.8
	Income	25.3	43.5*
	Minor Contact	71.3	85.9*
	Residence	24.1	46.7**
	Significant Other	90.8	95.7
	Travel Log	10.3	37.0**
	Vehicles	23.0	44.6**
Maintain Identity	Badges	66.7	67.4
	Disguise	75.9	72.8
	No Alias	56.3	59.8
	Others Id	1.1	0.0
Gang Activity Prohibitions	Associate	9.2	7.6
	Colors	8.0	2.2
	Participate	5.7	2.2
Association with Other Prohibited Persons	Crime Partner	18.4	10.9
	Drug User	67.8	72.8
	Live With Offnder	79.3	92.4*
	Sex Offender	89.7	97.8*
Contacts with Potential Victims	Adult w/Custody	72.4	85.9*
	Female	39.1	48.9
	Hitchhiking	57.5	62.0
	Minor Contact	71.3	85.9*
	Specified Person	75.9	76.1
	Stalking	8.0	5.4
	Victim	85.1	89.1
Drug/Alcohol Restrictions and Testing	Alcohol	73.6	75.0
	Drugs	11.5	2.2*
	Testing	90.8	85.9
Location and Time Restrictions	Area Restriction	67.8	80.4
	Congregate	70.1	87.0**
	Curfew	74.7	81.5
	Home Access Emp	93.1	94.6
	Residence	97.7	98.9
	School	71.3	83.7*
	Specific Prohib	92.0	98.9*

(continued on next page)

number of conditions imposed upon them, including restrictions on Internet access, reporting sources of income, limiting contact with minors, maintaining a travel log, registering with campus authorities if they visited a school, placing classified ads, and providing parole with information on vehicles. A greater percentage of HRSO than GPS offenders were subject to a few special conditions, including drug and alcohol testing and following a course of treatment recommended by a clinician.

Contacts Between Parole Agents and Parolees

Parolees on both HRSO and GPS caseloads are required to meet with their parole agents during supervision. Parole agents also monitor parolee progress by conducting home visits, telephone and other collateral contacts. Drug use by parolees is monitored by drug testing. Table 4.2 presents the type of contact between parolee and parole agent for different contact types. We present the percent of each group who had each type of contact. In addition, we computed the monthly rate of contacts as the total number of contacts for each parolee, divided by the number of days during the six-month follow-up window when he/she was either on GPS or HRSO status. The percent of GPS and HRSO parolees with different contact types are similar, with the exception that GPS parolees were significantly more likely to have telephone, attempted, and other contacts than HRSO parolees. What is more striking in Table 4.2 is that the average *number* of contacts is often higher for the GPS than for the HRSO parolees. For example, the average number of face-to-face contacts per month for GPS parolees was 3.8 contrasted with 2.8 for HRSO parolees. Higher contact levels, as we shall see in Table 4.3, are often the result of the additional visits required for the GPS unit issues (see earlier discussion of strap and tamper issues). Higher visits may also be the result of the smaller caseloads for GPS parolees – 20 contrasted with the 40 on the HRSO caseloads.

Table 4.1 (cont'd) Special Conditions for HRSO and GPS Parolees

Special Conditions		HRSO	GPS
Category	Specification	%	%
Possession Prohibitions	Agent Access	21.8	45.7**
	Camera	25.3	21.7
	Locker	14.9	22.8
	Pets	25.3	39.1
	Possess Other	5.7	3.3
	Toys	64.4	79.3*
Sexual Stimulation Prohibitions	Child Pictures	18.4	17.4
	Internet	59.8	84.8**
	Movies MO	93.1	87.0
	Phone Sex	83.9	95.7*
	Porn	95.4	98.9
	Sado Mas Toys	69.0	77.2
Other Instructions and Prohibitions	Classified Ad	74.7	91.3**
	House Rules	31.0	31.5
	Instrct Other	2.3	0.0
	Means Transpo	33.3	31.5
	Occupation	44.8	40.2
	PO Box	64.4	73.9
	Womens Clothing	5.7	7.6
Penal Code 290 Provisions	Card	93.1	98.9
	Campus Reg	27.6	46.7**
	Disclosure	44.8	43.5
	Notification	17.2	22.8
	Registration	48.3	40.2
	Residence	44.8	44.6
Treatment Programs	Anger Mangmnt	3.4	0.0
	Assessment	69.0	79.3
	Battery	14.9	20.7
	Compliance	32.2	18.5*
	Drug	71.3	78.3
	HRSO	86.2	91.3
	POC	95.4	96.7
	Psychiatric	86.2	87.0
GPS Care and Maintenance	General	23.0	83.7**
Potential Electronic Monitoring	May Monitor	17.2	16.3

Note: Groups are significantly different *=p<.05, **=p<.01.

Table 4.2 Intensity of Agent Contacts, Contact Type

	HRSO Parolees			GPS Parolees		
Contact Type	%	Mean	Median	%	Mean	Median
Residence	98.7	1.40	1.30	97.8	1.60*	1.70
Jail	2.5	0.00	0.00	10.0	0.00*	0.00
Employment	3.8	0.00	0.00	5.6	0.00	0.00
Office	97.5	1.40	1.30	98.9	2.10*	1.80
Telephone	51.9	0.60	0.20	75.6*	2.10*	0.60
Attempted	51.9	0.20	0.20	28.9*	0.10*	0.00
Collateral	98.7	2.70	2.70	97.8	4.60*	3.70
Drug Testing	93.7	1.10	1.10	91.1	1.00	1.00
Case Review	73.4	0.20	0.30	85.6	0.30*	0.30
Other	41.8	0.20	0.00	90.0*	2.50*	1.35
Residence or Office	98.7	2.80	2.80	98.9	3.80*	3.50
Face to Face	98.7	2.80	2.80	98.9	3.80*	3.70

Note: *=GPS and HRSO significantly different, p<.05.

Table 4.3 Contact Type Categories

Contact Category	Contact Type
General	General
GPS any	GPS Unspecified
	Tamper Alarm
	Low Battery/Charging
	Tracks
	Strap Problems
	Change Unit or Charger
Support	Housing
	Job
	Medical/Health
	Bus Tokens
	Food Vouchers
Treatment	Sex Offender Treatment
	Drug/Alcohol Treatment
Violation	Parole Violation
	Curfew Check/Violation
New Offense	New Criminal Offense
Drug/290 Registration	290 Registration
Legal	Legal/Court Proceedings
Case Work	Received Case from Other Agent
	Initial Interview
ANT	ANT (Anti-Narcotic Testing)
Interpersonal	Family
	Spouse/Significant Other
	Contacts with Others
	Domestic Violence
Surveillance	Law Enforcement
	Whereabouts
	Travel

We were also able to ascertain the nature of the topics discussed during the contacts made by the parole agent. This was accomplished by coding the parole agent notes made in the Record of Supervision. Table 4.3 presents the categories of topics that appeared in the agent notes; if no specific topic was mentioned, the area was coded as "general."

Table 4.4 Intensity of Agent Contacts, Contact Topic

	HRSO Parolees			GPS Parolees		
Contact Topic	%	Mean	Median	%	Mean	Median
General	92.40	1.70	1.60	95.60	2.10	1.75
GPS any	8.90	0.00	0.00	98.90*	5.50*	4.90
Support	88.60	1.30	0.90	84.40	1.20	0.95
Treatment	81.00	0.80	0.70	84.40	1.00	0.90
Violation	44.30	0.20	0.00	30.00	0.20	0.00
New Offense	1.30	0.00	0.00	5.60	0.00	0.00
290/Drug Registration	55.70	0.30	0.20	55.60	0.30	0.20
Legal	2.50	0.00	0.00	3.30	0.00	0.00
Case Work	58.20	0.30	0.20	25.60*	0.20*	0.00
ANT	82.30	0.80	0.90	87.80	0.80	0.80
Interpersonal	32.90	0.20	0.00	40.00	0.30	0.00
Surveillance	31.60	0.40	0.00	36.70	0.20	0.00

Note: *=GPS and HRSO significantly different, p<.05.

Table 4.4 above presents contacts, the percent of GPS and HRSO parolees with a contact of each type and the average number of contacts (mean and median). Results show that parole agents cover a wide number of topic areas in their contacts. As expected, virtually all GPS parolees had GPS as a topic for contacts. A small percent of HRSO parolees did as well. This reflects the handful of HRSO offenders who were placed on GPS from a comparison non-GPS caseload during the study period. Treatment and support were common topics for contacts, as was alcohol and narcotics testing (ANT). Substantial proportions of contacts focused on sex offender registration (PC 290 requirements), violations, and surveillance (parolee whereabouts, travel). Few differences appeared between GPS and HRSO parolees with the exception of GPS contacts being higher for GPS offenders (as expected) and case work being lower for GPS. The latter may have been the result of fewer caseload transfers of GPS than HRSO parolees.

GPS Monitoring Data

As indicated in the implementation experiences in the first part of this section, it was common to replace GPS units for parolees. We were able to obtain the monitoring data from the vendor that recorded the start and stop dates of each new unit assigned to the GPS parolees. Table 4.5 below presents the distribution of the number of units per parolee as well as the average number of days each unit was attached to the parolee. On average GPS parolees had four units over the course of the six-month study window period, with an average of a little over a month per unit.

Table 4.5 GPS Tracking Bracelets, GPS Parolees Only

	Mean	STD	Median	1st Quartile	3rd Quartile	Minimum	Maximum
Number of Units	4.0	2.0	4	2	5	1	10
Days on Line*	37.5	33.3	29	6	70	0	112

*Days on Line measure refers to the time the equipment was operating and connected to the system; it was truncated at the opening or closing date of the study window. Durations of 0 days were not included if generated by a coincidence of window dates with bracelet replacements; 65 cases in which a unit was replaced on the same day.

Table 4.6 Type of Alert Recorded in Vendor Data

		Number of Events		Duration of Events	
GPS Alert Event	Percent	Mean	Median	Mean*	Median
Any Alert	98.9	75.0	33		
Bracelet Strap	97.9	14.1	8	3.6	0.5
Exclusion Alarm	2.1	0.0	0	13.5	13.5
Inclusion Alarm	68.1	12.0	3	9.4	2.9
Silent Exclusion	4.3	2.8	0	2.6	0.45
Silent Inclusion	76.6	45.9	12	1.3	0.3
911 Alarm Inclusion	8.5	0.2	0	0.4	0.3

* The mean duration is calculated as the Winsorized mean with the most extreme 5% of observations excluded.

The GPS vendor data also allowed us to examine the nature of the recorded alerts. Table 4.6 presents a distribution of alert events. Virtually all offenders experienced at least one alert event. The most prevalent alert type was for bracelet strap tampering. Inclusion alarms (either silent or not) accounted for the highest number of alerts. On average, GPS parolees had 46 silent inclusion alarms during the study window period. There were no data available to allow us to determine what proportion of these alert events were the result of parolee misconduct, and what proportion were the result of unit wear, drift, or other phenomena not related to parolee behavior.

In this section, we have seen how GPS parolees differ from HRSO offenders in terms of their supervision and contacts with parole agents. Our next section examines whether the use of GPS and related supervision had an impact on offender violations and new arrests.

5. PAROLEE OUTCOMES

In this section we present results on parolee recidivism. We use multiple measures of recidivism, including both technical violations and arrests for new criminal behaviors. We start first with a description of where parolees spent time during their six month follow-up period.

Supervision and Incarceration Status During Follow-up

Not all parolees remained in the community during the six month follow-up window. Some parolees were revoked and returned to prison, others were placed on other parole caseloads, and some were discharged. Table 5.1 to the right presents the average time in different statuses during the six-month follow-up for HRSO and GPS offenders.[10]

As one would expect, HRSO parolees spend most of their supervision time on HRSO parole; GPS parolees on GPS parole. A few HRSO parolees were eventually placed on GPS caseloads. As the table shows, most of the time parolees remained on parole during the follow-up period. However, HRSO parolees spent, on average, three weeks in custody during the follow-up. GPS parolees spent an average of 28 days in custody during the follow-up period. Both groups had days on abscond status, although the average number of days was small.

Technical Violations and New Criminal Behavior

The definition of program success often generates discussion among program planners and staff. During initial stages of the evaluation planning, Center staff met with CDCR staff to discuss appropriate outcome measures for the GPS pilot evaluation. In addition, our interviews asked respondents what they would consider measures of success. There was some concern on the part of respondents about specifying outcome measures. Agents consistently said that GPS monitoring cannot stop sex offending behavior. The fact that a return to custody does not necessarily indicate a failure was mentioned by a number of respondents, and the challenge of proving that victimization has been prevented was acknowledged. The interpretation of revocation as an outcome is especially salient because there was a consensus among agents that GPS has made them somewhat stricter in dealing with parole violations. Concern was expressed about DAPO's external communication about program success. Many respondents felt that CDCR had promised that GPS would deliver on public protection from sex offenders before the GPS program was developed enough to deliver, or to know whether it could deliver, on that promise, potentially creating a false sense of security. Conversely, some respondents felt that parole needs to do better at measuring and communicating successes in parolee employment, treatment attendance, desistance from drug use, and successful completion of parole. Outcome indicators

Table 5.1 Days in Window by Parole Status and Group

	HRSO	GPS
Status	Mean Days (SD)	Mean Days (SD)
HRSO Parole	120 (71)	2 (16)**
GPS Parole	3 (15)	151 (56)**
Regular Parole	4 (23)	0 (0)*
Unknown Parole	13 (40)	0 (3)**
Absconded/Not Reporting	4 (18)	1 (7)
Total Days on the Street	145 (53)	154 (53)*
Total Days in Custody	22 (43)	28 (53)

Note: Mean days significantly different for two groups,*=p<.05, **=p<.01.

Table 5.2 Percent of Parolees with Violations

Sex Offender Parolee Violation Charges	Percentage of Parolees Charged by Violation Type and Group	
Violation Type	HRSO	GPS
Any Violation	39.6%	37.2%
Any Parole Violation	34.1%	35.1%
VSC General	5.5%	3.2%
VSC Sex	5.5%	4.3%
VSC Inform Agent	4.4%	2.1%
VSC Contact	2.2%	2.1%
VSC Drugs Alcohol	5.5%	5.3%
VSC Abscond	9.9%	2.1%*
VSC Association	0.0%	1.1%
VSC Location	8.8%	10.6%
VSC GPS	0.0%	7.4%*
VSC Instructions	2.2%	3.2%
VSC Treatment	6.6%	7.4%
VSC Unknown	0.0%	1.1%
Reg 290 Crime	6.6%	2.1%
Any Crime	24.2%	19.1%
Drug Crime	13.2%	16.0%
Sex Crime	1.1%	1.1%
Assault Crime	0.0%	4.3%
Nuisance Crime	2.2%	4.3%
Other Crime	5.5%	2.1%

Note:*GPS and HRSO significantly different p<.05 using Fisher's Exact Test; VSC refers to Violation of Special Condition.

mentioned by respondents also included fewer parolees committing sex offenses while on GPS, reducing sex crime victimization, lowering the recidivism and return to custody rates, increasing victim and public sense of safety, and solving crimes. The mechanism mentioned by respondents that would lead to the positive outcomes they hoped to see was discovery of behaviors that were potential precursors to criminal acts, followed by intervention to preempt those acts, up to and including parole revocation. Only one respondent mentioned changing the behavior of the parolee through more effective case management. One respondent defined success as the benefits of the program being greater than the costs.

In this section, our analyses focus on officially recorded recidivism.

Table 5.2 presents the percent of parolees with violations during the six month follow-up period.

Almost 40 percent of both groups had a violation (either a technical violation or arrest for new crime) during the six-month follow-up period. The vast majority of violations were for technical conditions, although about a fifth of both groups were violated for new criminal behavior, primarily drug crimes. There were few differences between HRSO and GPS offenders in terms of technical violations incurred. GPS parolees were less likely than HRSO parolees to abscond during the six month window; they were also more likely to incur a GPS-related violation. Table 5.3 presents the average number of violations for parolees. This table mirrors the results in Table 5.2 with one exception. GPS parolees had a greater number of assaults than HRSO parolees. The most frequent types of violations were for location (e.g., parolee whereabouts) and for treatment. The absolute number of violations per parolee averaged about one-half.

Not all parolees were found guilty of the violations with which they were charged. Table 5.4 presents the percent of each group that was found guilty of violations, including technical violations and new criminal behavior. Fewer differences emerge between HRSO and GPS offenders than for violations displayed in Tables 5.2. and 5.3. The only significant difference between GPS and HRSO offenders was for absconding – GPS parolees were less likely than HRSO offenders to be found guilty of a parole violation for this behavior.

Table 5.3 Mean Number of Incidents During Six Month Follow-up

Sex Offender Parolee Violation Charges	Mean Number of Incidents by Violation Type and Group	
Violation Type	HRSO	GPS
Any Violation	0.538	0.564
Any Parole Violation	0.418	0.447
VSC Gen	0.055	0.032
VSC Sex	0.055	0.043
VSC Infrm	0.044	0.021
VSC Contact	0.033	0.021
VSC DrugsAlc	0.077	0.053
VSC Abscond	0.099	0.032*
VSC AssocPP	0.000	0.011
VSC Location	0.088	0.117
VSC GPS	0.000	0.074**
VSC Instructions	0.033	0.032
VSC Treatment	0.066	0.085
VSC Unknown	0.000	0.011
Reg 290 Crime	0.066	0.021
Any Crime	0.308	0.245
Drug Crime	0.176	0.191
Sex Crime	0.011	0.011
Assault Crime	0.000	0.043*
Nuisance Crime	0.033	0.043
Other Crime	0.055	0.021

Note: GPS and HRSO significantly different, *=p<.05, **=p<.01, using Fisher's Expert Test.

Table 5.4 Percent of Parolees Guilty of Violations

Sex Offender Parolee Violation Charges	Percent of Parolees Guilty by Violation Type and Group	
Violation Type	HRSO	GPS
Any Violation	29.7%	26.6%
Any Parole Violation	26.4%	23.4%
VSC General	3.3%	2.1%
VSC Sex	3.3%	3.2%
VSC InformAgent	3.3%	1.1%
VSC Contact	1.1%	2.1%
VSC DrugsAlcohol	5.5%	4.3%
VSC Abscond	8.8%	1.1%*
VSC Association	0.0%	1.1%
VSC Location	5.5%	3.2%
VSC GPS	0.0%	3.2%
VSC Instructions	2.2%	2.1%
VSC Treatment	3.3%	5.3%
VSC Unknown	0.0%	0.0%
Reg 290 Crime	5.5%	1.1%
Any Crime	16.5%	17.0%
Drug Crime	8.8%	13.8%
Sex Crime	1.1%	0.0%
Assault Crime	0.0%	2.1%
Nuisance Crime	1.1%	3.2%
Other Crime	3.3%	3.2%

Note: *GPS and HRSO significantly different p<.05 using Fisher's Exact Test.

Table 5.5 Percent of Parolees Returned to Prison During Study Follow-up

	Returned For:		
Group	Technical Violation	New Offense	Any Return
HRSO	26.4%	2.2%	28.6%
GPS	25.8%	0.0%	25.8%

The ultimate sanction for parolee misconduct in the community is return to custody. In Table 5.5 above we present the percent of HRSO and GPS parolees who were returned to prison. There were no differences between GPS and HRSO parolees in the percent who were returned to prison during the six month follow-up window. The most common return was for a technical violation. Approximately one-quarter of parolees were returned for violations. Very few were returned for a new offense.

Logistic regression analyses predicting return to custody, controlling for background characteristics over a one-year follow-up revealed again, no differences between GPS and HRSO parolees (See Table 5.6).

Time to Recidivism

Recidivism is highest in the months right after release into the community. Table 5.7 presents the average time until first violation, and first violation for a sex offender condition. No differences were observed between HRSO and GPS offenders. The average time until first violation was about two months. Few in each group had a violation for a sex offender condition. We present the time to

Table 5.6 Logistic Regression Prediction of One-Year Return to Custody

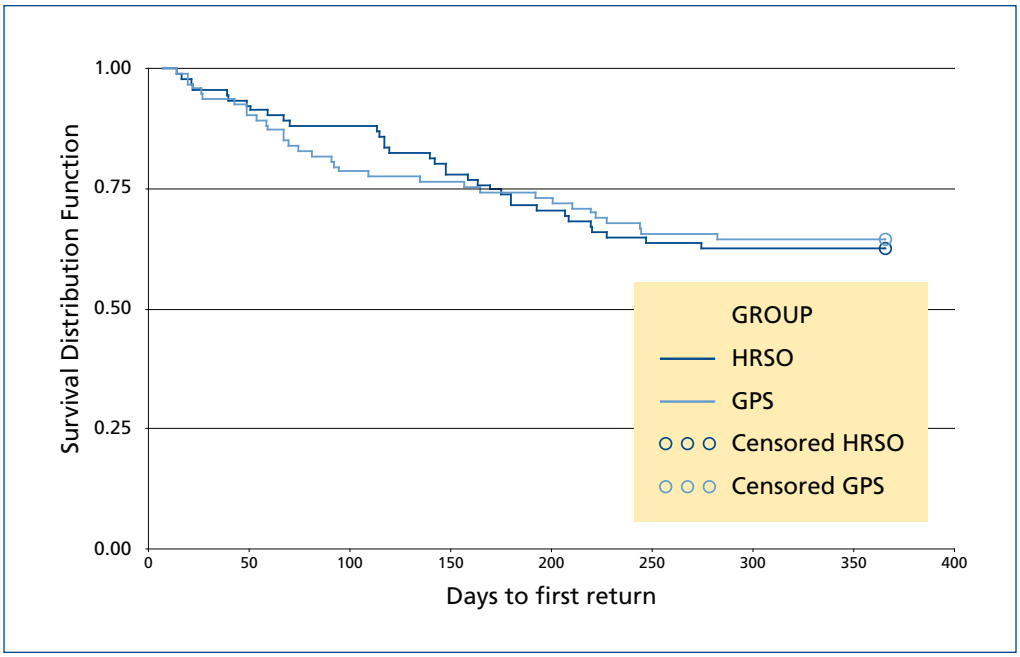
Factor	Odds Ratio	LCL	UCL	Probability
GPS Parolee	0.883	0.388	2.011	0.7675
Static99 Risk Category	1.908	1.223	2.976	0.0044
Prior Counts	1.221	1.027	1.450	0.0234
Currently Employed	0.345	0.152	0.782	0.0108
High School Education	0.237	0.097	0.578	0.0015
Residential Living	0.380	0.155	0.931	0.0344

$R^2 = 0.337$ AUC = 0.797.

Table 5.7 Time to First Violation

Sex Offender Parolee Violation Charges	Average Days to First Violation, by Violation Type and Group						
	HRSO			GPS			
Violation Type	N	Mean	Median	N	Mean	Median	Test of Difference
Any Violation	36	60	50	35	68	55	0.379
VSC Sex/Contact	7	66	79	5	74	68	1.000

Figure 5.1 Returns to Custody, 1 Year Follow-up From Start of Study Window



failure graphically in Figure 5.1 below. Unlike the prior recidivism analyses, this figure follows each parolee for one year. Parolees start returning to CDCR almost immediately; by about six months, most of those who are going to fail have been returned to custody. By about eight months, the returns to custody appear to have leveled off for both GPS and HRSO parolees.

Static-99 Score and Recidivism

Our final analyses examined the relationship between a parolee's Static-99 score and recidivism. Static-99 scores are designed to predict risk of recidivism – the higher the score, the greater the predicted risk. Table 5.8 presents our three measures of recidivism, by HRSO and GPS status, within the four Static-99 risk categories. As expected, low-risk parolees have the lowest rates of return to prison. Recidivism increases as risk level increases; however, there does not appear to be much differentiation among elevated and high-risk groups.

Table 5.8 Recidivism by Static Risk Level

	Returned For (percent):		
Group	Technical Violation	New Offense	Any Return
Low Risk (0-1, n=31)			
HRSO	7.1%	0.0%	7.1%
GPS	11.8%	0.0%	11.8%
Moderate Risk (2-3, n=62)			
HRSO	25.0%	3.1%	28.1%
GPS	26.7%	0.0%	26.7%
Elevated Risk (4-5, n=45)			
HRSO	40.0%	0.0%	40.0%
GPS	32.0%	0.0%	32.0%
High Risk (6-10, n=36)			
HRSO	35.3%	3.1%	41.2%
GPS	31.6%	0.0%	31.6%

6. CONCLUSION

Summary

In the time it has taken to complete this report on the first six months of the San Diego County GPS pilot, DAPO has expanded the project statewide to every parole unit that was home to an HRSO caseload. As a result of recommendations from the Governor's HRSO Task Force and the passage of Proposition 83, DAPO is proceeding with a two-year implementation plan that will place approximately 3,300 HRSO parolees on active GPS monitoring, in the same manner as in the San Diego County pilot discussed in this report. Sex offender parolees not classified as HRSOs, approximately 5,700, will be monitored using a passive GPS system.[11]

As indicated earlier, this study presents the first analysis of implementation and outcomes for GPS monitoring of HRSO offenders in California during the early months of the pilot project. Key findings include:

- GPS parolees participating in the San Diego pilot are slightly older and more likely to have two strikes than HRSO parolees statewide. GPS parolees, on average, reflect a moderate risk of recidivism, as measured by the Static-99. Virtually all are male. Most had been married at some point and over half had children. More than half had drug or alcohol problems. Almost three-quarters had been arrested prior to their most recent prison term; the average number of prior arrests was 6.4.
- Parole agents found the GPS program very time intensive. Agents devoted considerable time to reviewing the tracks of their parolees though VeriTracks automated system. The dominant implementation challenge during the early months of the GPS program was problems with the equipment. Agents spent a great deal of time investigating false strap tamper alarms and charging problems with the unit. These issues had largely been resolved by the time the GPS program was rolled out in other counties.
- Integrating the GPS information into case supervision was sometimes problematic. GPS units often signaled false alarms due to "drift" in the satellite signal; signals were often blocked when a unit was indoors. In the early stages of implementation, agent access to the Internet was slow and limited, making it difficult to utilize GPS data with other agent supervision and monitoring of the parolee. The use of inclusion and especially exclusion zones was limited during the study period.
- The use of GPS data as an investigative tool had not been fully developed during the study period. GPS generates a huge amount of information about parole activity; there were no guidelines within DAPO or models from outside the department on how to use the information. The protocols had to be developed based on experience; there was no formal guidance on expectations for using the GPS information.
- Sharing of GPS data between parole and other law enforcement agencies could be potentially helpful in solving crimes as well as ruling out parolees as suspects. During the course of the study, no data sharing agreements had been worked out between parole and any law enforcement agency in San Diego County.
- GPS and HRSO offenders are under a large number of special conditions of supervision. In order to monitor the conditions, parole agents conduct face-to-face visits, conduct home visits, make phone and collateral contacts to make sure parolees are abiding by their parole conditions. During the course of the study, GPS parole agent contacts were significantly higher than for HRSO offenders. These may have reflected some of the equipment issues or the smaller GPS caseloads (20-1, versus 40-1 for HRSO caseloads).
- GPS parolees exhibited a large number of alerts as recorded in GPS monitoring data. Over the course of the study period, the average number of alerts was more than 75, the vast majority for inclusion violations.
- GPS monitoring appeared to have little effect on parolee recidivism. The only significant difference between GPS and HRSO offenders was for absconding – GPS parolees were less likely than HRSO offenders to be found guilty of a parole violation for this behavior.
- Just over 50% of each group had a parole violation during the study window period, primarily for technical violations. More than a quarter of each group was returned to prison during the study period.

The integration of GPS technology into HRSO supervision was more difficult than DAPO anticipated. In the earliest stages of the pilot, this was primarily due to issues with the equipment, particularly the ankle straps. Once these technical issues were addressed, agents needed to become familiar with the strengths and limitations of the GPS technology and how to interpret the information they received in light of those strengths and limitations.

Much of what DAPO learned through the pilot concerned the extensive resource investment around the GPS technology package necessary in order to support its working effectively. CDCR contracting and approval processes took months to navigate. Agent caseloads needed to be lowered to 20:1. Agent training needed to be much more intensive and lengthy. DAPO's Internet

infrastructure was initially insufficient to effectively support agent use of VeriTracks. Procedures had to be developed for sifting through and making use of the unprecedented amount of information the GPS units were producing on each parolee. Training needed to be extended beyond the agents carrying GPS caseloads so that monitoring of the GPS was covered while agents were on vacation, and so that other agents and supervisors in the parole unit could support GPS agents in their work, as is the case for parole supervision generally. Law enforcement agencies needed to buy into the utility of GPS information so that they could assist parole agents in their work. These are issues not with the tool itself and how it works, but issues of the organizational adaptations required of DAPO in order to utilize it well.

DAPO has gained considerable knowledge over the course of implementing GPS, but the difficulty of providing the infrastructure to support effective use of GPS will increase greatly with the passage of Proposition 83 and the application of GPS monitoring to all sex offender parolees.

The role of sex offender assessment will be growing. Our findings indicated that there is considerable variation in the Static-99 scores among HRSO parolees. CDCR is now moving to assess all sex offender parolees with the Static-99, and sex offender parolees will be placed on HRSO caseloads, based on Static-99 scores. HRSO parolees will be monitored via an active GPS system. The remaining sex offender parolees will be monitored via a passive GPS system.

It is important to note that the results reported here cover only the first six months of the pilot. There was no evidence over that period of differences in recidivism between GPS-monitored and non-GPS monitored HRSO parolees in San Diego. However, as indicated in the report, GPS agents in San Diego were in the equipment management and information integration stages of integrating GPS monitoring into HRSO supervision during the period covered by this report. It is in the investigative use stage that the benefits of GPS as a supervision tool, if any, would be expected to appear. That said, it is worth noting that the findings in this report are broadly consistent with those for Tennessee's GPS pilot for sex offender parolees.

Further evidence regarding the effects of GPS will be offered in our third GPS evaluation report. This report will involve looking at the RSTS, rap sheet and return to custody information to compare outcomes for GPS and comparison group parolees over the first year of inception of the program. As this period will contain time after the San Diego GPS agents had become much more familiar with how to use GPS as a supervision tool, and after the resolution of many of the equipment issues that plagued the early months of the pilot, the comparison should be more telling as to the effect of GPS. The third report will also contain a basic cost analysis of the pilot.

ENDNOTES

[1] Interstate Commission for Adult Offender Supervision (2007). GPS Supervision Update Survey, accessed at http://www.interstatecompact.org/resources/surveys/default.shtml 6/28/07.

[2] Ibid.

[3] Padgett, K., Bales, W., and Blomberg, T., (2006). Under Surveillance: An Empirical Test of the Effectiveness and Consequences of Electronic Monitoring, *Crime and Public Policy* (Vol. 5, Num. 1, 201-232).

[4] Tennessee Board of Probation and Parole and Middle Tennessee State University (2007). Monitoring Tennessee's Sex Offenders Using Global Positioning Systems: A Project Evaluation. State of Tennessee, Board of Probation and Parole: Nashville.

[5] Sex offender parolees designated as HRSOs are supervised at caseload ratios of 40:1, lower than typical DAPO caseloads, by parole agents specially-trained in sex offender supervision.

[6] Three parolees were excluded due to being discharged from parole or being transferred to a non-HRSO parole caseload by 7/5/05.

[7] See Harris, Andrew H., Phenix, Amy, Hanson, R. Karl and Thornton, David (2003). "Static-99 Coding Rules Revised-2003." Ottowa, Canada: Department of Solicitor General of Canada.

[8] The most frequent penal codes for other sex offenses are:

	All California	San Diego	GPS Study
Failure to register as a sex offender	62%	44%	45%
Childporn:	17%	40%	41%
Statutory Rape	16%	11%	10%
Pandering a Minor	2%	4%	2%
Molesting a Minor w/prior	3%	2%	2%.

[9] These categories were determined by CEBC staff, based on subject area.

[10] This information was coded from parolee files. In some cases, it was not clear whether the parolee was on HRSO, GPS or other parole. In these cases, we considered the time as "unknown parole."

[11] Passive GPS systems record GPS Unit Position and activity information and transmit it to a monitoring center in a single daily transmission, rather than in near real-time, as active GPS systems do.