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Author: Edna Erez, LL.B., Ph.D., Peter R. Ibarra, Ph.D., William D. Bales, Ph.D., Oren M. Gur, M.S.

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GPS Monitoring Technologies and Domestic Violence: An Evaluation Study

Edna Erez, LL.B., Ph.D., University of Illinois at Chicago
Peter R. Ibarra, Ph.D., University of Illinois at Chicago
William D. Bales, Ph.D., Florida State University
Oren M. Gur, M.S., University of Illinois at Chicago

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Authors:

Edna Erez, LL.B., Ph.D.
Department of Criminology, Law and Justice
University of Illinois at Chicago
Behavioral Sciences Building (MC 141)
1007 W. Harrison Street
Chicago, IL 60607
(T) 312 996 5262 (F) 312 998 8355
eeerez@uic.edu

Peter R. Ibarra, Ph.D.
Department of Criminology, Law and Justice
University of Illinois at Chicago
Behavioral Sciences Building (MC 141)
1007 W. Harrison Street
Chicago, IL 60607
(T) 312 413 2475 (F) 312 996 8355
pibarra@uic.edu

William D. Bales, Ph.D.
College of Criminology and Criminal Justice
Florida State University
Hecht House
634 W. Call Street
Tallahassee, Florida 32306
(T) 850 644 7113 (F) 850 644 9614
wbales@fsu.edu

Oren M. Gur, M.S.
Department of Criminology, Law and Justice
University of Illinois at Chicago
Behavioral Sciences Building (MC 141)
1007 W. Harrison Street
Chicago, IL 60607
(T) 312 996 5290 (F) 312 996 8355
ogur2@uic.edu

Abstract

This study examines the implementation of Global Positioning System (GPS) monitoring technology in enforcing court mandated “no contact” orders in domestic violence (DV) cases, particularly those involving intimate partner violence (IPV). The research also addresses the effectiveness of GPS as a form of pretrial supervision, as compared to other conditions in which defendants are placed. The project has three components: First, a national web-based survey of agencies providing pretrial supervision reported on patterns of GPS usage, as well as the advantages, drawbacks, and costs associated with using GPS for DV cases. The results indicate a gradual increase in agencies’ use of GPS technology for DV cases since 1996, primarily to enhance victim safety and defendant supervision.

Second, a quasi-experimental design study of three sites from across the U.S. – referred to as “Midwest,” “West,” and “South” – examined the impact of GPS technology on DV defendants’ program violations and re-arrests during the pretrial period (referred to as the “short term”), and on re-arrests during a one-year follow-up period after case disposition (referred to as the “long term”). The results indicate that GPS has an impact on the behavior of program enrollees over both short and long terms. Examination of the short-term impact of GPS enrollment shows it is associated with practically no contact attempts. Furthermore, defendants enrolled in GPS monitoring have fewer program violations compared to those placed in traditional electronic monitoring (EM) that utilizes radio frequency (RF) technology (i.e., remotely monitored and under house arrest, but without tracking). GPS tracking seems to increase defendants’ compliance with program rules compared to those who are monitored but not tracked.

Defendants enrolled in the Midwest GPS program had a lower probability of being re-arrested for a DV offense during the one-year follow-up period, as compared to defendants who had been in a non-GPS condition (e.g., in jail, in an RF program, or released on bond without supervision). In the West site, those placed on GPS had a lower likelihood of arrest for any criminal violation within the one-year follow-up period. In the South site, no impact deriving from participation in GPS was observed. The heterogeneity of the defendants who are placed on GPS at this site, and the different method for generating the South sample of DV defendants, may account for the absence of GPS impact on arrest in the long term.

An examination of the relationship between GPS and legal outcomes across the three sites revealed similar conviction rates for defendants on GPS and those who remained in jail during the pretrial period. Further, a comparison of conviction rates for GPS and RF defendants at the Midwest site found a significant difference – with GPS defendants being likelier to be convicted as compared to RF defendants; conviction rates in the Midwest and South sites were also higher for GPS defendants compared to defendants released on bond without supervision, suggesting that defendants’ participation in GPS increases the likelihood of conviction. These findings may be related to the fact that GPS provides victims with relief from contact attempts, empowering them to participate in the state’s case against the defendant.

The third component of the study is a qualitative investigation conducted at six sites, entailing in-depth individual and group interviews with stakeholders in domestic violence cases – victims, defendants and criminal justice personnel. The interviews identified a variety of approaches to organizing GPS programs, with associated benefits and liabilities. Victims largely felt that having defendants on GPS during the pretrial period provided relief from the kind of abuse suffered prior to GPS, although they noted problems and concerns with how agencies and courts apply GPS technology. Interviews with defendants supported quantitative findings about

the impact of GPS on defendants' short- and long-term behavior, and found both burdens and occasional benefits associated with participation. Benefits of GPS enrollment for defendants included protecting them from false accusations, providing added structure to their lives, and enabling them to envision futures for themselves without the victim. Burdens pertained to living with restrictions and becoming transparent, managing issues related to stigma and disclosure of one's status as a DV defendant tethered to GPS, and handling the practical issues that emerge with the technology and equipment. Policy implications highlight the importance of having a logical connection between defendant attributes and program details, avoiding enrollment in cases where the GPS has minimal or no value and is imposed for reasons other than protecting victims or enforcing restraining orders, the need for justice professionals to cultivate relationships with victims whose abusers are on GPS, and the importance of maintaining an appropriate balance between victim safety and due process for the defendant.

Table of Contents

Abstract.....	i
Table of Contents	iv
Acknowledgments	ix
Executive Summary	x
The purpose of the study.....	x
Research design and methods	xii
Findings	xiii
A. Web-based survey	xiii
B. Varieties of GPS for DV programs: Perspectives of justice personnel in six sites	xv
C. Quantitative impact study (Midwest, West, South).....	xvi
D. Victims and defendants: Views and experiences	xvii
Study limitations.....	xviii
Conclusions	xx
Chapter 1: Introduction	1
A. Statement of the problem	1
B. Literature review	2
C. Hypotheses and research questions of the present study.....	12
1. Hypotheses.....	13
2. Research questions.....	13
Chapter 2: Methodology.....	15
A. Web-based survey	15
1. Topics and procedures	16
B. Quantitative assessment of program effectiveness (the quasi-experimental component)..	17
1. Participant selection criteria, methods, and sampling.....	18
2. Measures and indicators	22
C. Qualitative assessment of GPS-based monitoring.....	24
1. Interviewee recruitment and interview procedures.....	26
2. Topics of in-depth interviews	27
3. Qualitative data analysis	28
Chapter 3: Findings	29
A. Web-based survey	29
1. Types of technologies used and defendants monitored	30
2. Program start date and location	32
3. Rationale and aims of GPS programs	34
4. Referrals and enrollment.....	36
5. Technological attributes and costs.....	37
6. Current uses and changing program attributes	41
7. Victim-relevant factors	44
8. Impact of GPS on defendant behavior and other defendant-relevant factors	44

B.	Varieties of GPS for DV programs: Perspectives of justice personnel in six sites	47
1.	Midwest: Crime control and penalty	51
2.	South: Due process and treatment	53
3.	West: Due process and penalty	55
4.	East: Due process and penalty	58
5.	Southeast: Treatment and crime control	59
6.	Southwest: An ad hoc, make-shift approach	60
7.	Conclusion	61
C.	Quantitative impact study (Midwest, West, South).....	62
1.	Midwest	62
2.	West	73
3.	South	83
D.	Victims and defendants: Views and experiences	94
1.	Victims	94
2.	Defendants	108
Chapter 4: Conclusions		125
A.	Discussion	125
1.	Web-based survey.....	125
2.	The quantitative impact study	127
3.	Qualitative findings	138
B.	Summary and conclusion	144
C.	Implications for policy and practice	147
D.	Limitations of the study.....	157
E.	Implications for future research.....	161
References.....		165
Dissemination of research findings.....		170
Appendices.....		171
A.	Web-based survey	171
B.	Midwest coding sheet for GPS	185
C.	Midwest coding sheet for non-GPS groups.....	189
D.	Midwest agency intake form	193
E.	Midwest agency reassessment/termination form	196
F.	West coding sheet for GPS	199
G.	West coding sheet for non-GPS groups	205
Endnotes		209

List of Tables

Table 3A-1. Percentage of respondents indicating their program uses each technology, by type of defendant.....	30
Table 3A-2. Percentage of respondents in the DV subsample utilizing each technology, by type of defendant.....	31
Table 3A-3. Percentage of respondents in the DV subsample utilizing each number of technologies, by type of defendant.....	31
Table 3A-4. Descriptive statistics for number of monthly referrals and enrollments/hook-ups for programs in the DV subsample.....	36
Table 3A-5. Average monthly caseloads for officers using GPS and non-GPS officers in the DV subsample.....	37
Table 3A-6. Cost of active, hybrid, and passive GPS for programs reporting multiple levels of monitoring and costs in the DV subsample.....	39
Table 3C-1. Descriptive statistics of variables with all cases: Midwest site.....	63
Table 3C-2. Descriptive statistics (mean values) of variables across four groups: Midwest site.....	64
Table 3C-3. Logistic regression models of effect of length of time on GPS and short-term outcome of whether violated among all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	65
Table 3C-4. Logistic regression models of effect of length of time on GPS and short-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	66
Table 3C-5. Logistic regression models of effect of length of time on GPS and long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	66
Table 3C-6. Logistic regression models of the effect of GPS versus RF on short-term outcome of violation for all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	68
Table 3C-7. Logistic regression models of the effect of GPS versus RF on short-term outcome of arrest for all cases and convicted cases: Midwest site.....	68
Table 3C-8. Logistic regression models of the effect of GPS versus RF on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	69
Table 3C-9. Logistic regression models of the effect of GPS versus non-GPS on short-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	70
Table 3C-10. Logistic regression models of the effect of GPS versus non-GPS on long-term outcome of arrest for cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	71
Table 3C-11. Logistic regression models of the effect of GPS versus non-GPS on long-term outcome of arrest for domestic violence for all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	71
Table 3C-12. Logistic regression models of the effect of RF versus non-EM on short-term outcome of arrest for all cases: Midwest site.....	72
Table 3C-13. Logistic regression models of the effect of RF versus non-EM on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site.....	73
Table 3C-14. Descriptive statistics of cases placed on GPS: West site.....	74
Table 3C-15. Descriptive statistics (mean values) of variables across three groups: West site.....	76

Table 3C-16. Logistic regression models of effect of length of time on GPS and short-term outcome of whether violated among all cases, dismissed/acquitted cases, and convicted cases: West site	77
Table 3C-17. Logistic regression models of effect of length of time on GPS and short-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: West site	78
Table 3C-18. Logistic regression models of effect of length of time on GPS and long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: West site	79
Table 3C-19. Descriptive statistics of GPS and non-GPS cases: West site	80
Table 3C-20. Logistic regression models of effect of GPS versus no GPS on long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: West site	82
Table 3C-21. Descriptive statistics of variables with all cases: South site	84
Table 3C-22. Descriptive statistics (mean values) of variables across four groups: South site	85
Table 3C-23. Logistic regression models of effect of length of time on GPS and short-term outcome of whether violated among all cases and convicted cases: South site	86
Table 3C-24. Logistic regression models of effect of length of time on GPS and short-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: South site	87
Table 3C-25. Logistic regression models of effect of length of time on GPS and long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: South site	88
Table 3C-26. Logistic regression models of the effect of GPS versus RF on short-term outcome of violation for all cases, dismissed/acquitted cases, and convicted cases: South site	89
Table 3C-27. Logistic regression models of the effect of GPS versus RF on short-term outcome of re-arrest for all cases and convicted cases: South site	90
Table 3C-28. Logistic regression models of the effect of GPS versus RF on long-term outcome of re-arrest for all cases, dismissed/acquitted cases, and convicted cases: South site	90
Table 3C-29. Logistic regression models of the effect of GPS versus non-GPS on short-term outcome of re-arrest for all cases, dismissed/acquitted cases, and convicted cases: South site	91
Table 3C-30. Logistic regression models of the effect of GPS versus non-GPS on long-term outcome of re-arrest for all cases, dismissed/acquitted cases, and convicted cases: South site	92
Table 3C-31. Logistic regression models of the effect of RF versus non-EM on short-term outcome of re-arrest for all cases: South site	93
Table 3C-32. Logistic regression models of the effect of RF versus non-EM on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: South site	93

List of Figures

Figure 3A-1. Year in which organization began using GPS technology for tracking domestic violence (DV) defendants	32
Figure 3A-2. Slopegraph of states with programs using EM (left column) and GPS (right column)	33
Figure 3A-3. Percentage of respondents in the DV subsample indicating how important each reason is to the agency when deciding to start to use GPS for supervising DV pretrial defendants	34
Figure 3A-4. Percentage of respondents in the DV subsample indicating how important each factor is for choosing who is placed on GPS when used for supervising DV pretrial defendants	35
Figure 3A-5. Percentage of respondents in the DV subsample indicating how often defendants are not enrolled in GPS for DV pretrial programs for each reason.....	36
Figure 3A-6. Percentage of programs utilizing each vendor in the DV subsample.....	38
Figure 3A-7. Capabilities utilized by programs in the DV subsample	40
Figure 3A-8. Percentage of respondents in the DV subsample indicating how important each reason is to the agency when using GPS for supervising pretrial defendants.....	42
Figure 3A-9. Percentage of respondents in the DV subsample indicating to what extent they agree or disagree with statements regarding using GPS for supervising DV pretrial defendants	43
Figure 3A-10. Victim-centric features of programs in the DV subsample	44
Figure 3A-11. Percentage of respondents in the DV subsample indicating the percentage of defendants participating in each program while being monitored	46

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Executive Summary

The purpose of the study

This study examines the implementation of Global Positioning System (GPS)-based monitoring technology in enforcing court mandated “no contact” orders in domestic violence (DV) cases, particularly those involving intimate partner violence (IPV). The research also addresses the effectiveness of GPS-based monitoring as a form of pretrial supervision, as compared to other conditions in which defendants are placed. GPS for DV programs first emerged in the 1990s and their numbers have since been steadily increasing. GPS for DV programs are created in response to local demand, court initiative, or state legislation, often prompted by an incident in which an intimate partner was harmed or killed by an arrestee who had been released by a court on bond, and are usually directed at bolstering protection orders. Since 2000, twenty-one states and the District of Columbia have enacted legislation mandating or recommending that justice agencies employ GPS to protect victims of DV during the pretrial period; several other states are in the process of considering such legislation.

When used for DV offenses, GPS is typically assigned during the pretrial period, defined as the justice system phases beginning with arrest and concluding with case disposition. This period is known to be highly volatile, characterized by heightened danger to the victim and attempts by the accused to dissuade the victim from participating in the prosecution of the case.

The adoption of GPS tracking to enhance victim safety emerged as a preferred method of electronic monitoring (EM) over radio frequency (RF)-based approaches that operated primarily as house arrest programs. When assigned in the context of a DV-related charge, traditional RF programming was commonly enhanced through the use of a bilateral strategy that augmented house arrest by placement of a second receiver in the victim’s residence (hereafter “bilateral

RF”). The second receiver detected the presence of the defendant wearing a synchronized transmitter (typically on his ankle), within a range of approximately 500 feet. By synchronizing the second receiver to the defendant’s transmitter, authorities would be alerted if the defendant had entered the perimeter of the victim’s residence.

Although bilateral RF was an enhancement to simple house arrest (hereafter “RF”), GPS represents a further advance in its ability to track a defendant across time and space. Like bilateral RF, GPS for DV is intended to deter contact attempts by the defendant toward the victim, but GPS operates on the principle of “geo-fencing” – it can be programmed to establish *multiple* and potentially *unlimited* zones of exclusion (defined as areas where the alleged abuser may not enter) and inclusion (areas where the alleged abuser is required to remain as per program specifications). Contact attempts are measured by the defendants’ incursions into exclusion zones (i.e., areas where the victim is likely to be present), but it does not detect contacts attempted via other means, such as telephone, email, social media, SMS (i.e., text messages), chance encounters outside monitored areas, or contacts initiated by the victim (e.g., when the victim enters areas where the defendant is present). The advantages of GPS relative to bilateral RF include its versatility, broadened detection range, capacity for multiple zone coverage, and, in the version of GPS known as “active,” its unique ability to keep track in real time of the offender’s whereabouts beyond the immediate range of his and the victim’s residences (i.e., through logging of the offender’s “GPS points”). Possible drawbacks to using GPS include greater per diem costs to agencies, greater workload demands on staffs, elevated legal jeopardy and net-widening effects for defendants, cultivation of false feelings of safety in victims, and the problems of reliability and accuracy associated with a developing technology.

The purpose of the study was to evaluate the effectiveness of GPS in accomplishing the aims of victim protection via contact deterrence during the pretrial period. The second aim was

to assess whether GPS enrollment is associated with deterrence in the long term, as measured by lower likelihood of re-arrest during a one-year follow-up period. The study also attempted to provide an integrated picture of the benefits (direct and indirect), as well as risks and liabilities, resulting from the use of GPS in DV cases.

Research design and methods

The study is comprised of three parts: First, a web-based survey of pretrial service agencies in the United States was conducted to learn how electronic monitoring technologies are used in their operations, with a specific emphasis on applications of GPS to address DV cases. Agencies known to use GPS were contacted using a national list provided by an EM expert consultant, Peggy Conway. In addition, two organizations for pretrial agencies, the Pretrial Justice Institute (PJI) and American Probation and Parole Association (APPA), sent an email with an embedded link inviting their members to participate in the web-based survey. The survey received responses from 616 individuals representing agencies in 43 states, the District of Columbia, and Puerto Rico.

Second, a quasi-experimental design was applied to the analysis of quantitative data derived from large and established programs, with the aim of assessing GPS systems' effectiveness in a) deterring defendants' program violations (including contact violations) while being monitored, and in b) reducing participants' re-arrest during both the monitoring period and a one-year follow-up period. The three sites offer geographic diversity as well as variations in how agencies approach the use of GPS to monitor defendants' compliance with "no contact" orders in DV cases during the pretrial period. In the Midwest site, a total of 2052 defendants referred to the GPS program over a two-year period (2006-8) comprised the sample; they spent the pretrial period either on GPS, on RF, in jail, or were bonded out without any form of

supervision. In the West site, a total of 1000 defendants who were referred to GPS over sixty-four months (Oct 2001 – Jan 2007) comprised the sample. These defendants were placed on GPS, kept in jail, or released on bond without any form of supervision. In the South site, a total of 604 defendants with DV charges were selected from jail booking and release data over two years (2008-2009). These defendants spent the pretrial period in one of four conditions: either GPS or RF-based supervision, on bond release, or in jail. To conduct an analysis of GPS vs. RF outcomes, data were supplemented with information found in the records of the pretrial agency that monitored GPS and RF defendants during the pretrial period.

The third prong of the study consisted of in-depth interviews with parties directly or indirectly involved with programs (victims, offenders, justice personnel, and social service providers; N = 210) at six agencies – the three included in the quantitative study and three additional sites, located in different parts of the country and practicing varying approaches to GPS for DV. The in-depth individual and group interviews investigated participants' experiences with GPS and the effects of justice-related practices on victims and defendants.

Findings

A. Web-based survey

The national survey provided a snapshot of current trends in the adoption of GPS and emerging standards and practices in the targeted implementation of GPS for DV cases. While most respondents agreed that the desire to keep victims safer was the most important impetus for their program's creation, few reported that their programs had objective features to actively engage victims in the process of increasing their own safety in partnership with the criminal justice system. The role of the victim is still being defined and aligned with technological efforts

to enhance supervision, ensure client accountability, more effectively protect the public, and deter additional crimes.

The concern with victims influences who is enrolled in GPS for DV programs. Practitioners stated their programs were targeting primarily serious offenses for GPS supervision and cases for which the court had issued an order of protection. A victim request that a defendant be placed on GPS was also an important consideration for enrollment, as was the defendant's prior history of alcohol or drug use. The majority of programs reported successfully enrolling all referred defendants, but a quarter of the programs reported being able to hook up only half of those referred to GPS, for a variety of reasons, including defendants not meeting program requirements, a lack of available GPS equipment, absence of victim cooperation (when the latter's consent was required), or the defendants inability to pay program fees. The results also suggest that the overwhelming majority of programs lack victim-centric features in spite of the expressed sentiment that GPS was most important as a tool for victims. Programs most often utilize abilities that allow them to map the defendant's movements in the community over time, determine their current location, send the defendant an alert, and establish inclusion and exclusion zones. Yet the least utilized function is one that allows victims to receive text message notification when the defendant violates zone restrictions. Such an alert would allow the victims to take their own precautions without having to rely on law enforcement, a vital option considering fewer than half of the programs report that law enforcement automatically responds to defendant violations or alerts.

GPS programs rely on the ability of their officers to effectively supervise defendants, and a reduced caseload allows GPS officers to scrutinize the information generated by advanced technologies – on average GPS officers monitor less than half as many clients as non-GPS officers. Yet, the majority of practitioners agreed with the statement that the GPS cannot prevent

a defendant from committing a crime, which could be evidence of the need to shift the object of practitioner focus onto the victim. Some practitioners also were of the opinion that GPS tracking empowers victims, or at least that GPS was more empowering to the victim than punitive to the defendant. However, the majority (70%) also agreed with the statement that victims misunderstand the capabilities of GPS tracking, and over half agreed that it gives victims a false sense of security – yet 80% thought it made the general public safer. Only 13% of programs had ever formally evaluated the effectiveness of GPS tracking for defendants, and only a third employ special procedures to assess the risk of violent behavior by the defendant during the pretrial period.

Among programs reporting multiple levels of monitoring (active and passive), the average cost of GPS to the agency per day is \$11.18 for active monitoring, and \$6.84 for passive monitoring. The cost to defendants per day is \$8.68 for active monitoring and \$6.79 for passive monitoring. The overall figures reported by a larger national sample of GPS-using agencies is a \$9.80 cost to the agency and \$8.80 charged to the defendant. These per diem amounts do not include the costs of personnel or program administration. On average, DV defendants spend 99.5 days on GPS, with wide variation between programs.

B. Varieties of GPS for DV programs: Perspectives of justice personnel in six sites

The qualitative data gathered from interviews with criminal justice personnel identified a variety of approaches to organizing GPS for DV programs, each of which can be located on two continua: first, with respect to crime control vs. due process models of justice, and second, in relation to penalty vs. treatment approaches to defendants. Programs differed in their restrictions, the scope of investigating defendants' movements (via "GPS points"), willingness to violate defendants who did not conform to program rules, levels of fee for participation in the

program, and average stay on the program. The different approaches taken were also influenced by understandings about DV and the need to separate defendants from alleged victims, the characteristics (including criminal records) of DV defendants who were admitted into the program, the type of agency, and the depth of agency resources. The different approaches taken by the six agencies may be helpful in understanding the findings that emerged in the three quantitative impact study sites.

C. Quantitative impact study (Midwest, West, South)

The quantitative impact study shows that GPS technologies have an impact in the short term (during the pretrial period): GPS is effective in preventing defendants from (physically) contacting victims, suggesting that GPS “puts teeth” into restraining orders. A more rigorous program (at the Midwest site) found a reduced likelihood of program violations (e.g., curfew) by GPS defendants as compared to RF defendants, while a less restrictive program (at the South site) found no differences in the likelihood of program violations by GPS defendants as compared to RF defendants. This finding is especially surprising since the Midwest GPS defendants, who had a higher mean number of prior arrests compared to their counterparts at the South site, had a lower likelihood of violating program rules.

In terms of court outcomes, GPS defendants had conviction (and dismissal) rates that were more similar to rates found among those who remained in jail, as contrasted to rates found among defendants placed on RF or released on bond without supervision. At the Midwest site, conviction rates were even higher for GPS defendants than for defendants remaining in jail. It may be that program-enforced prohibition against contacting the victim (e.g., to persuade her to renege or not appear in court) results in a higher conviction rate.

The impact of enrollment in GPS over the long term (or during a one-year follow-up period after disposition or completion of a jail sentence) is reflected in a lower likelihood of arrest for *any* offense in the West site, and a lower likelihood of arrest for *DV* offenses in the Midwest site. The South site did not show any long-term differences attributable to enrollment in GPS during the one-year follow-up period. The heterogeneity of the defendants who are placed on GPS at this site, and the different method for generating the South sample of DV defendants, may account for the absence of GPS impact on arrest in the long term.

D. Victims and defendants: Views and experiences

The qualitative data show that GPS programs can provide victims peace of mind and relief from harassment and abuse, such that the resumption of a normal life seems more tenable. Although many victims did not understand how the technology works, most expressed an awareness of the technology's limitations in terms of guaranteeing their safety. In some cases victims were anxious when they saw their alleged abuser moving freely about in settings outside the exclusion zone(s), and expressed concern that their estranged partners would be able to manipulate the technology or subvert its capacities and undermine program rules and restrictions. Victims also discussed problems pertaining to maintaining their privacy during court hearings related to the defendant's GPS enrollment (e.g., having to divulge the victim's new address or provide information about the children's babysitter). Concerns were also raised about inadvertent disclosure of victim locations marked in "unknown zones" due to alerts the monitoring agency sent to defendants. At the same time, some victims expressed satisfaction at being able to covertly visit estranged partners enrolled in the GPS program, in some cases even staying overnight, mentioning that they could come and go "on their own terms."

Defendants reported having both positive and negative experiences during their time on GPS, viewing it as “a mixed bag.” Most felt it was far preferable to “sitting in jail” and were grateful that participation enabled them to maintain their employment. They also appreciated the fact that GPS shielded them from false accusations that could be (and in some cases were) made by a vengeful estranged partner. Defendants at a more treatment-oriented site spoke of being thankful for the various kinds of assistance they received from supervising officers. Defendants also spoke about using their time in the program, and away from the alleged victim, as an opportunity to engage in various constructive pursuits, including rebuilding relations with family members, looking for work, returning to school, and reimagining their lives without the victim having a part in it.

On the other hand, defendants enrolled in the more rigorous programs found them to be quite demanding and the personnel extremely inflexible, especially around issues related to rescheduling “out hours” (i.e., the specific periods that defendants are given to conduct “personal business”) or accommodating their commuting situation, particularly when reliant on public transportation. The technology and equipment prompted a number of practical and logistical concerns, such as difficulty with maintaining an active signal while at work and inadvertently disclosing one’s status as a monitored subject. Concerns were also raised that GPS participation could damage or undermine their employment situation or chances of being hired.

Study limitations

This study has several imitations that are common to social science research, particularly in the criminal justice context. The national web-based survey may suffer from problems of reliability and generalizability. Because the survey is respondent- rather than agency-based, it is

possible that some agencies are overrepresented as a result of more than one employee responding.

The limitations of the quantitative impact study stem from the research design and the data that were available to measure key attributes and outcomes. The ideal approach to examining treatment effects – experimental design with random assignment of individuals to comparison groups – could not be utilized because referral of DV defendants to GPS programs is a function of judicial discretion. Therefore, a quasi-experimental design with relevant controls was used to derive non-GPS and GPS groups that were as equivalent as possible on factors known to influence the outcomes. Equivalency was accomplished by statistically controlling for covariates that were observable in the three locations.

The comparability of the GPS and non-GPS groups may have been compromised by various factors, some related to the socioeconomic status of the defendants (e.g., inability to post bond or establish a new residence during the pretrial period), others related to program rules and technological issues (e.g., victim's consent could not be obtained, GPS signal could not be sustained at the defendant's or victim's residential location). Because SES data were not available for all groups, SES could not be controlled for in the analysis.

The measures used to create equivalent non-GPS and GPS DV defendant groups were limited by the data available in the three sites, and the disparate definitions and recording practices used by the agencies. Had more control variables been available for inclusion in the statistical models, results of the analyses may have varied. Also, the completeness of the measures that were used may have been compromised due to missing data. The use of administrative data to test hypotheses in criminal justice research is accepted practice, however, even though it may be problematic.

The outcome measure of recidivism as repeat domestic violence offenses (or crime in general) through re-arrest may also be problematic; it is likely to miss incidents in which offenders perpetrate abuse but the offending behavior is not reported or detected – a particularly common problem in domestic violence cases.

The qualitative component of the study was limited in that it primarily relied on interviews to document the perspectives and experiences of personnel, victims, and defendants, and was not complemented with extensive systematic observational fieldwork with each group of stakeholders. The latter method may provide insights into taken for granted understandings that may not emerge in the course of being interviewed.

Conclusions

GPS for DV programs usually monitor DV arrestees referred as a condition of pretrial release, without having been convicted. Thus, defendants may experience these pretrial supervision programs as a form of punishment without benefit of trial; indeed, the present study found that, in the three sites, almost half of all GPS clients' cases were dismissed. This result has potentially far-reaching implications, both for defendants and for how society responds to domestic violence. Because GPS programs for DV defendants are increasing, and since they appear to be effective in accomplishing criminal justice goals, issues emerge for public policy discussion. First, are GPS for DV programs appropriate for all of those who can technically be brought under their purview? Second, what is the optimal or suitable approach to take with those to be subjected to court-imposed liberty restrictions? Third, how should the program incorporate the victim in the definition of its overall mission and everyday operations? Ideally, deliberations about how to design pretrial GPS for DV programs will be undertaken with an understanding of the needs and situations of DV victims, on the one hand, and the rights and interests of

defendants, on the other. A balanced approach would consider victims' welfare (including their safety) as well as defendants' rights (to due process).

Agencies that proceed to establish programs without careful consideration of the issues risk encountering the problem of mismatch (e.g., enrolling "non-hardened" abusers into GPS for DV programs that are organized to manage high-risk offenders). Conversely, programs designed to enroll low grade "abusers" (e.g., those facing a first arrest) or those whose charges stem from a family disturbance that is of a different nature (e.g., mother-daughter fights), may at times admit offenders who are considered a serious risk into a non-rigorous supervision regime. To the extent that programs seek to have a consistent set of rules and restrictions by which defendants must abide, and have a mix of clients across the spectrum of DV arrestees, a series of misfittings may manifest themselves in logistical terms for both staff and defendants. Defendants may also experience emotional and psychological effects in such circumstances. Common scenarios in which logistical problems emerge include the following: having rigorous supervision regimes that result in officers spending time with low-risk instead of concentrating on high-risk defendants, subverting defendants' employment by requiring in-person office visits during business hours, and having clients obtain employment verification that deters employers from hiring applicants. The emotional and psychological impact of the program may be found in the defendant who becomes demoralized when he can no longer work overtime because of program inflexibility regarding work hours or is repeatedly rejected on a job search due to restrictions on mobility.

Agencies considering establishing or improving a GPS for DV program implicitly or explicitly make decisions about the extent to which victims will be central or peripheral to their operations. How the victim's role in the program is defined has implications for whether victims are viewed and treated as an asset or liability. Irrespective of whether victims are central or

peripheral, viewed as assets or burdens, GPS for DV programs should be mindful of possible discordance between victims' expectations or understandings and the program's actual capabilities and practices. Absent such foresight into victims' expectations for program performance – including consideration of how justice system personnel create or influence such expectations – victims are likely to experience frustration, loss of confidence in the system, disappointment, fear, a false sense of security, and in the worst-case scenario, the victim's safety can be seriously compromised.

An individual client's risk level and the agency's program details, rules, and restrictions should be logically connected. However, because such an approach might ultimately preclude placement of arrestees who could benefit from the program – or deny victims the indirect but tangible benefit of defendants' being on GPS – the alternative is to design GPS for DV programs that are comprised of graduated degrees of restrictiveness, based on client's risk levels, whether these are understood to be fixed or changing. Programs should also strive to establish criteria for including DV defendants that are derived from an understanding of the dynamics of DV, rather than having eligibility as a default assignment made in an effort to reduce jail overcrowding, or as a means of solving indigent defendants' problems with raising bail. Ad hoc approaches may address various exigencies encountered by criminal justice agencies, but they ultimately are not a substitute for developing initiatives that thoughtfully and simultaneously address the problem of intimate partner violence, the interests of victims, and the rights of the accused.

GPS for DV programs are organized to either make victims central or peripheral to their focus and operations. The decision to organize a GPS program in either direction will likely affect the nature of the agency's relations with the victim, including the quality of the information that the victim and agency share, and the assistance that the victim receives during the period when the defendant is enrolled in the program. However, irrespective of whether the

approach is victim-centric, the program should be based on an understanding of the dynamics of DV, rather than utilizing the GPS program as a way of handling non-DV related problems (e.g., jail overcrowding). A DV-focused identity would recognize the importance of accrued expertise in properly managing DV cases, whether the programs are victim-centric or not.

Maintaining good communication between agency and victims is paramount for all GPS for DV programs. Personnel should be watchful for possible discrepancies between victims' expectations for program performance and the program's actual capabilities and practices. Programs that are not familiar with victims' expectations risk engendering a sense of frustration, fear, and loss of confidence in the system, or the victim can develop a false sense of security. Providing accurate information to victims about the capabilities and limitations of the GPS platform in use is critical for victim welfare and safety. Victims who are correctly informed about the absence of protection may not feel safe, but their actual safety will thereby be enhanced as they now take precautions that are congruent with how defendants are actually supervised. As it is not always possible to provide victims with the resources that they should optimally have, training victims on how to do safety planning is essential.

Solicitation of victim feedback about agency standards and practices is important to a program's effectiveness, especially during its learning phase. Incorporating victims' feedback empowers them to share individualized concerns, transforming victim input into a catalyst for agency innovation. In turn, the newfound program flexibility that is thereby encouraged enables otherwise reluctant victims to access the program, with defendants spending less time in jail as a byproduct.

Learning from mistakes, misunderstandings, blind spots, and limitations is critical to a program's continued improvement. Such improvement entails staying abreast of technological innovations, becoming familiar with the situations of defendants and victims, and developing

greater coordination among all relevant stakeholders (e.g., monitoring agency personnel, judges, victim advocates, attorneys, shelter workers, and police). Continuous training and program refinements can address a wide range of issues. Some reforms may entail financial resources, such as updating technology, but others will require no cost or even result in savings to the agency (e.g., partnerships with victim service organizations). Promoting greater understanding among all stakeholders within the local justice system of the purpose and value of GPS for DV programs may ultimately spearhead community efforts to develop a coordinated response to domestic violence, with GPS for DV programs being integrated into it.

Chapter 1: Introduction

A. Statement of the problem

The present study examines the implementation and effectiveness of Global Positioning System (GPS)-based monitoring technology in programs designed to address domestic violence (DV)/intimate partner violence (IPV).¹ Currently, public safety and criminal justice agencies utilize GPS tracking for various offenders, predominantly those convicted of sex offenses, but also for those likely to violate their terms of probation and parole (e.g., Bales et al., 2010). Many jurisdictions also utilize GPS to monitor DV defendants. GPS for DV programs first emerged in the 1990s, but their numbers have since been steadily increasing. GPS for DV programs are created in response to local demand, court initiative, or state legislation, often prompted by an incident in which an intimate partner was harmed or killed by an arrestee who had been released by a court on bond, and are usually directed at bolstering protection orders. Since 2000, twenty-one states² and the District of Columbia have enacted legislation mandating or recommending that justice agencies employ GPS to protect abused women under specific conditions; several other states are in the process of considering such legislation. The trend is toward increased adoption of GPS for DV offenses, making the present research a timely endeavor.

For DV programs, GPS is typically used in the context of the post-arrest or pretrial³ period, and this is the circumstance in which these kinds of programs were evaluated in the present project. This study extends a previous investigation of radio frequency (RF)-based monitoring programs for DV (Erez, Ibarra, and Lurie, 2004; Ibarra and Erez, 2005; Ibarra, 2005; Erez and Ibarra, 2007), denoted with the term “bilateral” to distinguish it from mere house arrest-based RF programs (see below). The field of community corrections has since shifted to using GPS technologies for handling DV cases. GPS tracking promises to enhance victim safety

compared to bilateral RF-based EM programs⁴ (hereafter “bilateral RF”). Its advantages over bilateral RF, in terms of versatility, broadened detection range, and multiple zone coverage, for example, are demonstrable, as is its unique ability to keep track of the offender’s whereabouts beyond the home in real time.⁵ GPS monitoring technology operates on the principle of “geo-fencing” – it can be programmed to establish *multiple* and potentially *unlimited* “zones of exclusion and inclusion”⁶ (Crowe et al., 2002), including the victim’s workplace, house of worship, and children’s school(s). Bilateral RF monitoring technology ordinarily results in only one protected “geo-zone” (hereafter “zone”), namely the perimeter of the victim’s home, typically with a detection range of 500 feet. By contrast, GPS exclusion zones can be programmed to extend to entire counties, states, and regional areas, which means that the victim, or law enforcement, can have more time in which to respond to a zone violation by the offender. RF monitoring facilities are limited in the kinds of determinations they can make of an offender’s whereabouts – they can confirm⁷ his presence or absence at his and the victim’s homes, but they cannot determine the offender’s location when he is away from home or his pattern of movement (see also Conway, 2003).

In situating the present study’s focus on GPS for DV cases at the pretrial stage, this chapter first reviews the relevant literature and research findings; it then presents hypotheses and questions derived from a consideration of the state of the field, which the body of the report will examine based on the empirical data that were collected.

B. Literature review

DV in an intimate partner relationship often involves lengthy and severe abuse (Rennison, 2003; Tjaden and Thoennes, 2000a; 2000b). Nevertheless, reporting it to authorities is a step that victims do not take lightly. Typically, women⁸ report it only when they have

reached an “enough is enough” tipping point (Fischer and Rose, 1995), after a lengthy period of victimization during which they often will have been subjected to repeated abuse, such as intimidation, harassment, stalking, and/or physical assault (Tjaden and Thoennes, 2000a; 2000b). Taking action against DV by reporting it to the police or attempting separation often places women at a higher risk of renewed violence. “Separation assault” (Mahoney, 1991) is a well-known phenomenon in DV dynamics, as is the stalking of estranged partners. Block (2003) found that three-fourths of female homicide victims and 85 percent of women who experienced severe but nonfatal violence had left or tried to leave their batterers in the prior year.

Historically, it has proven difficult to protect women in abusive relationships when they report abuse or leave their abuser. The context and dynamics of DV render the protection of its victims a continuous challenge to the justice system, one fraught with logistical problems and contradictions (Jordan, 2004; Worden, 2000). Courts use *protection orders* to secure the safety of women who step forward as victims of DV, restricting the abuser from contacting the victim in person or through other means (e.g., by telephone, email, social media, SMS). Although such orders can be beneficial, compliance is difficult to enforce (Harrell, 1993; Harrell and Smith, 1996). Protection orders are generally associated with a subsequent decrease in abusive behavior by batterers (Holt et al., 2002; Holt et al., 2003), but they can be less effective when the abuser has a history of violent offenses (Keilitz et al., 1998; Jordan et al., 2010), when the victim is socially situated in particular ways (such as being unemployed, see Burgess-Proctor, 2003), or when the offender simply does not respect protective orders (Erez and Belknap, 1998; Jordan, 2004; for a review of the factors that contribute to compliance with protection orders, see Benitez, McNeil, and Binder, 2010). Ironically, upon receiving protection orders some abusers become so angered that they seek out their victims for renewed assault (Erez and Belknap, 1998; Shim and Hwang, 2005).

Preventing or deterring contact is difficult in DV cases for additional reasons. The offender is typically familiar with the victim's routines and social relations, which means that she often has concerns about being intercepted or ambushed, even when she is away from her home. He knows where she works, where the children go to school, the stores at which she shops, the residences of her friends and family relations, her home, cellular, and work telephone numbers, as well as her travel routes. Knowledge of her routines furnishes the abuser with numerous opportunities to harass, stalk, intimidate or assault the victim in spite of protection orders (Erez, Ibarra and Lurie, 2004). A particularly significant concern is that a defendant will seek out the complaining witness to request or demand that she retract or amend her complaint, or to intimidate the victim into failing to appear in court. Reporting such incidents is frustrating for victims when a "he said, she said" situation presents itself without definitive proof of the protection order violation (Hart, 1993; Erez et al., 2004; Hartley, 2001). A recurrent complicating factor emerging from the dynamics of DV is that many abused women – still emotionally or economically attached to the batterer, or sharing parenthood of children – want to have (non-violent) contact with the offender and are reluctant or ambivalent about facilitating the state's prosecution (Dichter et al., 2011). At times, therefore, they will allow their abuser to contact them despite the presence of a court order barring such association, or even seek him out at his place (Erez et al., 2004).

Previous research found that in DV cases, courts commonly used bilateral RF during the post-arrest/pretrial release phase rather than as a condition of sentencing (Erez et al., 2004). A rationale often cited by court officials for placing offenders on electronic supervision is that it will strengthen protective orders and "give them teeth," that is, will force restricted parties to take them seriously or suffer adverse consequence. The use of bilateral RF in DV cases presumes that offenders under "no contact" orders, knowing that they cannot approach specific geographic

zones without remote detection, are less apt to seek out the victim, notwithstanding a history of violating such orders without EM. This premise is supported by previous research on bilateral RF-based programs (Erez et al., 2004), which found that relatively few incursions into the victim's home region were attempted by defendants, as per monitoring facilities' records or reports from victims participating in EM programs.⁹ Personnel classified the few defendant incursions into the victim's home region as non-serious "unintentional" or "informational" violations. The former were essentially "drive-by penetrations";¹⁰ the latter amounted to cases in which defendants were curious about whether, for example, the woman had a male guest at her home, or the defendant was testing the sensitivity of the monitoring equipment vis-à-vis the perimeter around the victim's address. Over a five-year period in the more active of the two sites that were studied, only one home region incursion was attempted that actually involved victim endangerment; the less active site did not report any such contacts over an even longer period of time. Face-to-face contact violations were the most common type of non-home-based violations reported by victims in Erez et al. (2004), but few of these face-to-face violations were described by victims or program staff as "serious."¹¹ Victims in the programs who could contrast defendant compliance with no-contact orders buttressed by EM and non-EM circumstances observed a marked difference – before he would routinely ignore the protection order, now he was rigorously observing it – and they attributed this contact-free period to the effectiveness of the technology (Erez and Ibarra, 2007).

Furthermore, research found evidence that participation in bilateral RF programs had an impact on both victims and defendants. Participating women described being empowered and having an improved quality of life during their involvement with the program, which would likely have been more challenging in the face of the uprooting effects associated with relocating to a battered women's shelter (Erez and Ibarra, 2007). For example, by remaining in their own

homes following the offender's arrest, participating victims (and, if present, their children) were able to resume a semblance of a "normal life," without fear of assault, ambush, or vandalism, and beyond the controlling presence of an abuser, something that most people take for granted, but which many DV victims cannot (Erez and Ibarra, 2007). Victims who tested police response times by manually triggering alarms observed that "help" arrived far more quickly than it had in the past when distress calls were placed through 9-1-1. These shortened response times increased victim confidence in the system's ability to protect them. Further, because the victim had to file a complaint as a prelude to program entrée, she made herself visible to a broad array of persons whose services she could seek in the event of need. The victim was not restricted to calling a police dispatcher lacking familiarity with her case, or seeking solace and protection in a personal support network (although women in the program reported a flowering of their social life during their tenure). She could mobilize a variety of criminal justice professionals with personal knowledge of her identity and the intricacies of her abuse history, personnel with whom she developed rapport and who were viewed as accessible and helpful. During these interactions between victims and functionaries, the latter encouraged the former to persevere with their case. Indeed, participating women were observed to be more likely to testify and less likely to recant or fail to appear for court proceedings than non-participating victims (Ibarra and Erez, 2005), indicating that participating defendants had less sway with victims than often occurs in DV cases (Hart, 1993; Worden, 2000). Perhaps as a result of victims' increased willingness to testify, dismissal rates were lower for participating than for non-participating defendants (Ibarra and Erez, 2005).¹²

Although the nature of EM technology is important in that its capacities and limitations will circumscribe its reach and application, of greater significance is the *program* in which the technology is anchored (Erez et al., 2004). Each bilateral RF program is animated by a general

outlook and by particular historical origins, both of which define broad purposes that are reflected in a number of structural and programmatic features, including the professional orientations of personnel, understanding of DV dynamics, eligibility criteria, expectations for participants' conduct while they are enrolled in the program, and directions to personnel on how to interact with participants and enforce program expectations. Taken together, these various considerations organize each program's definition of success (Erez et al., 2004). In addition, EM programs can be influenced by factors related to the "cycle of violence" identified in the research literature, and the notion that such EM initiatives might function as an intervention in an abusive interpersonal relationship (Erez et al., 2004; Ibarra and Erez, 2005; Ibarra, 2005). For example, one of the sites in the bilateral RF study drew its cases from parties who were both in current and former relationships, while the second site primarily targeted parties whose relationship had undergone an irrevocable breach (e.g., living apart, legally separated, in various stages of divorce proceedings). Personnel at the latter site went to great lengths to be certain that the victim wanted nothing to do with the defendant before ordering the equipment's installation, while personnel in the former site saw much merit in ordering the equipment when the victim was ambivalent about ending her relationship with the defendant. Because this program enrolled many participants whose lives were still emotionally, materially, and socially enmeshed, program personnel approached interactions with male participants with a concern to detect "risk factors" in their living environments that might incline them to seek contact with the victim, and sought frequent encounters with them (e.g., through office and home visits) in order to gauge the presence of "red flags" indicative of elevated danger to the victim (Ibarra, 2005). Furthermore, this program was far more onerous in the imposition of liberty restrictions on male participants. For instance, defendants were required to make weekly office visits during which urine screens were administered, and they were required to submit to surprise home visits. The second site did not

have such rules and policies in place, deeming them too intrusive or burdensome for non-convicted persons, and was far more flexible in setting curfews to accommodate exigencies of clients' lifestyles and work schedules, even having a "hands off" attitude toward defendants' whereabouts while not working, provided they returned home before 11PM (Erez et al., 2004).

Differences in the intensity of supervision appear to be the most salient experiential dimension for the defendants who participate in bilateral RF programs as controlled parties (Ibarra and Erez, 2005). Men participating in the more intensively structured program in the Erez et al. (2004) study, for example, expressed anger and resentment about the "pains" associated with a pretrial EM program (cf. Payne and Gainey, 1998). Citing their status as defendants, they reported feeling they were being treated as if they had been found guilty without trial and were now living under a demoralizing and unjust regime. Their lives became transparent; their everyday practices open to scrutiny, correction, and sanction. These men reported having been "tricked" into consenting to enroll, because the extent of supervision was not explained to them beforehand; many even mentioned they would have preferred to stay in jail, had they known at the time what awaited them in the bilateral RF program (Ibarra, 2005). Men from the second site, the overwhelming majority of who were also defendants at the time of their enrollment, did not voice these criticisms or concerns. Instead, for the latter, EM was more of an inconvenience rather than an injustice, notwithstanding the fact that clients were required to subsidize the cost of administering the program by way of a weekly fee, and that they were required to participate in EM in order to be released on bond (Ibarra and Erez, 2005).

The bilateral RF programs seemed to have an effect on participating men, as measured by post-program offending behavior documented in records from the more stringent site (Ibarra, Erez, and Risser, forthcoming) and as indicated by defendants' self-reported changes in outlook at both sites (Ibarra and Erez, 2005). The quantitative findings derived from the agency's

records¹³ showed that participation in the RF based program was associated with lower recidivism rates in the long term (over a two-year follow-up period) than were detention in jail, conventional EM (i.e., no victim participation), or release on bond without pretrial supervision, pending disposition (Ibarra et al., forthcoming): Multivariate (MANCOVA) analyses demonstrated significant differences during the follow-up period (post adjudication/supervision) in DV arrests by enrollment condition.¹⁴ Post-hoc analyses revealed significantly fewer post-supervision arrests during the second year of follow-up for those in the bilateral RF condition relative to those who had remained in jail during the pretrial phase, as well as those who were released on bail without conditions or who were in a traditional EM program (without victim participation). When intimate partner violence variables were combined into a composite, there were significant differences in post-supervision arrests for the composite in the second year. Post-hoc analyses revealed that those in the bilateral RF condition demonstrated significantly fewer post-supervision arrests than those in the jail condition.

In-depth interviews with men who were placed on the program at the more stringent site shed light on possible reasons for reduced repeat victimization (post-program arrests) by participants in the bilateral RF program (Ibarra and Erez, 2005). Defendants spoke about feeling infantilized by having to live with their parents or relatives. They also described feeling powerless vis-à-vis their female partners as a result of not being able to get in touch with them to discuss the case or to otherwise reassert an element of control over their fate, while their female partners, on the other hand, were able to contact the abusers when they so desired and on their own terms. Defendants at the stringent site recalled the bilateral RF experience as particularly onerous, as something that they wanted to avoid at all costs, so renewed contact with the victim was not worth the risk of new entanglement with an EM program (Ibarra and Erez, 2005). On a more positive note, many men felt that participation in the bilateral RF program provided their

lives with “structure” that they otherwise lacked, helped them make a “fresh start,” and impressed upon them that they could function without the victim in their lives (Ibarra and Erez, 2005).

A criticism that has often been made of diversion programs – that they engender forms of “net widening” (Cohen, 1985; Decker, 1985) – may also apply to pretrial bilateral RF programs, especially those that entail more extensive liberty restrictions. Net widening refers to the idea that alternatives to penal strategies represent an *extension* of penal control by the criminal justice system over civil society (Austin and Krisberg, 1981; McMahon, 1990). Net widening occurs when people are brought into the system who would have otherwise avoided or more quickly exited it, if not for the existence of, for example, a diversion program; through the creation of new agencies and services that effectively supplement rather than replace the original set of control mechanisms; and by the creation of special programs that are more intrusive than is the justice system’s ordinary handling of such cases. The relevant notion here is that individuals come under justice system scrutiny when they would not be subject to extraordinary supervision or surveillance while under pretrial release, but for the existence of the EM program, and that such social control creates possible legal vulnerabilities for those offenders that they would not face absent the monitoring regimen (Ibarra and Erez, 2005).

There is support for the idea that the more intensive bilateral RF program examined by Erez et al. (2004) exhibits the kind of “net widening” that critics have observed elsewhere in diversion programs and other intermediate sanctions (Ibarra and Erez, 2005).¹⁵ Net widening is pertinent because DV cases usually have high non-prosecution and dismissal rates relative to other violent offenses (Fagan, 1995). The net widening thesis would suggest that participants in bilateral RF programs are likelier to remain entangled in criminal justice processing than non-participants. Although all DV arrestees are arraigned prior to release, for example, only some of

them will end up on bilateral RF, and the latter group will tend to have a different experience with the criminal justice system upon release, owing to the greater transparency of their lives during the post-arrest period and the interest that the prosecution will take in their cases (Ibarra and Erez, 2005).

Administrative data analyzed by Ibarra and Erez (2005) support the net-widening thesis. Dismissal rates for bilateral RF participants with pending cases (i.e., defendants) over a two-year period were significantly lower than for non-participants: participants had a 14% dismissal rate, compared to a dismissal rate of 44% for men who remained in jail during the pretrial period (Ibarra and Erez, 2005). The average number of days that participants spent in the program was higher (mean = 48, median = 29) compared to the number of days that non-participants spent in jail (mean = 30, median = 20). In short, bilateral RF participants' cases were likelier to last longer and culminate in verdict-based dispositions. The lower dismissal rates for participants apparently reflected the continued participation of the prosecuting witnesses in the cases, which in turn resulted in defendants seeking continuances, either to build stronger defenses, or as a way to wear down complainants' resolve to remain involved with prosecution efforts (Ibarra and Erez, 2005). Defendants who did not participate in the bilateral RF program were likelier to have their cases dismissed and be under the purview of the court for a briefer period of time.¹⁶ Hence, bilateral RF defendants (especially in stringent programs) contended with legal liabilities that comparable DV defendants did not.

Although men historically have been the majority of clients subjected to court ordered interventions for DV, and hence the likeliest recipients of net widening effects, arrests of women for domestic violence have been increasing over the past three decades (DeLeon-Granados et al., 2006). Judges have broadened the focus of EM programs for DV beyond violence between intimate partners to include such circumstances as assaults on or by the third party in a lover's

triangle, or mother-daughter altercations. In addition, although it happens infrequently, men do seek out protection orders against women (Durfee, 2011). The implication of these trends is that women are becoming likelier candidates for EM programs as tethered parties, raising questions about how women fare in programs designed with male batterers in mind (Ibarra and Erez, 2011).

C. Hypotheses and research questions of the present study

The above review demonstrates that bilateral RF programs can be effective in accomplishing the aims of victim protection, *via contact deterrence and lowered recidivism*, and result in an improved quality of life for the victims as well as their greater participation in criminal justice proceedings than would otherwise be expected. At the same time, extant research suggests that these bilateral RF programs produce a complicated scenario for defendants: Although these programs can, for example, assist offenders in “moving on” and developing a sense of structure in their lives, they can create everyday hardships ranging from emotional stress to legal vulnerabilities that stem from the acquired transparency of their ordinary activities.

GPS is technically more sophisticated than bilateral RF. It has superior tracking capabilities, offers increased customizability, and has greater area coverage. However, it is also costlier¹⁷ and creates more streams of information for which supervising agencies can be held accountable (i.e., GPS will create more work and increase potential liabilities for agencies). It is also not evident that GPS produces superior victim protection or that it has other ancillary benefits such as improved quality of life and greater victim participation in proceedings. Indeed, the increased transparency that results from the use of GPS raises issues about possibly increased legal liabilities, and the consequent net-widening impact on defendants. Thus, the shift toward using GPS monitoring technologies within the context of DV cases raises several issues that this

study aims to address. In addition to discussing issues related to effectiveness, matters of practical, legal, psychological, social, and material impact on defendants, victims, and the criminal justice system as a whole are reported.

In light of this review of extant literature, the current study is designed to examine the following hypotheses and questions, using quantitative and qualitative data (see “Methodology” section).

1. Hypotheses

- i. Defendants in GPS for DV programs (hereafter GPS defendants) have lower rates of re-arrest during the pretrial period compared to non-GPS defendants.
- ii. GPS defendants have lower rates of re-arrest during the post-disposition period compared to non-GPS defendants.
- iii. GPS defendants have fewer program violations compared to RF-based defendants.
- iv. Verdict rates are higher and dismissal rates are lower for GPS cases compared to non-GPS cases.

2. Research questions

- i. What safety-relevant effects does GPS monitoring have on victims and defendants, both in the short and long terms? Is there evidence that clients enrolled in GPS programs avoid initiating direct contact with their alleged victims? Do victims develop a “false sense of security”?
- ii. What are the advantages and disadvantages of different approaches to organizing a GPS-based program for DV? Are these different approaches correlated with various outcomes, including recidivism, client and victim satisfaction?
- iii. What changes in behavior (everyday practices, justice system related behavior) and outlook (level of confidence in the justice system) are reported by victims, relative to their behavior and outlook during prior occasions when reported abuse did not lead to abusers’ participation in a GPS program?
- iv. Are there unique attributes of cases, individuals, or relationships for which application of GPS may require special considerations (e.g., DV cases among non-intimate partners; DV cases in which the defendants are women)?

- v. Does the shift to GPS platforms represent an advance over (bilateral) RF in the ability of courts and their proxies to supervise clients within their purview?
- vi. Do the enhanced capacities for tracking offenders result in enhanced (perceived and objective) safety and quality of life for victims?
- vii. How do supervising officers use the increased information that is made available through GPS technology?
- viii. How do various stakeholders (e.g., victims, defendants, and criminal justice professionals) understand the potentials and limitations of GPS monitoring?
- ix. What are the kinds of problems that repeatedly come up in the administration of GPS programs for DV?
- x. How are defendants personally affected by participation in GPS for DV programs?
- xi. Are there unintended consequences (legal or otherwise) associated with GPS for DV programs vis-à-vis the parties who are directly or indirectly involved with it?
- xii. What do national patterns reveal about how agencies across the U.S. are applying GPS technologies in DV cases during pretrial?
- xiii. How do practitioners in agencies across the U.S. view GPS for DV (e.g., in terms of their caseload and effectiveness)?

Chapter 2: Methodology

The study is comprised of three parts: First, we conducted a web-based survey of pretrial service agencies in the United States to examine how electronic monitoring technologies are used in their operations, with a specific emphasis on applications of GPS to address DV cases. Second, to study GPS systems' effectiveness in deterring recidivism in the short- and long-terms, we applied a quasi-experimental design to the analysis of quantitative data collected by large and established programs in three jurisdictions – representing geographical diversity (from the Southern, Western, and Midwestern U.S.) as well as different program approaches (e.g., levels of restrictiveness and flexibility) – each using GPS to monitor defendants' compliance with protective orders in IPV cases during the pretrial period. Third, questions about the implementation, effectiveness, and impact of GPS were addressed through in-depth interviews with parties involved with programs at six cooperating agencies (victims, offenders, justice personnel, and social service providers).

A. Web-based survey

To situate the quantitative and qualitative findings within a national context, the first prong of the study sought the opinions and experiences of personnel at agencies using GPS-based monitoring programs to address DV during pretrial. An EM consultant, Peggy Conway,¹⁸ provided a list of 278 organizations, which was supplemented by having a graduate assistant contact state public information officers, departments of corrections, and other relevant authorities, as well as vendors of the technologies. Trained doctoral students in Criminology, Law, and Justice began placing phone calls to the agencies in late July 2008 to gather specific contact information. Following an IRB-approved script, they asked to speak to someone in a managerial position who could answer questions regarding the agency's GPS for DV program. A

brief screen was used to determine if each agency met the criteria for the online survey. When appropriate, contact information for the agency representative was obtained and recorded, including an email address where the survey would be sent in the form of a hyperlink embedded in the email message. The contact was then emailed a link to a survey administered through the web-based SurveyMonkey®¹⁹ data collection site, and invited to participate in the study.

The number of survey respondents had reached 34 by the end of June 2009, when representatives from two pretrial organizations²⁰ offered to help disseminate recruitment material for the NIJ-funded survey.²¹ With help from the umbrella pretrial organizations, and follow-up phone calls as necessary, 616 respondents participated in the online survey.²² Of the 616 respondents, 393 (63.9%) indicated that their organization uses EM to supervise defendants. A subset of 149 agencies consistently indicated that they use GPS to supervise DV defendants²³, and these respondents were directed to questions specifically pertaining to their agency's use of GPS for DV.²⁴

1. Topics and procedures

The web-based survey posed Likert scale, mutually exclusive, and open-ended questions aimed at documenting a number of factors related to the implementation of EM programs in general (yielding 616 respondents) and GPS for DV programs more specifically (resulting in 149 respondents). The questions addressed program history and current attributes, issues of technology, vendors, and training, respondents' views about and experiences with programs utilizing GPS for DV during pretrial, issues pertaining to victims, and defendant-relevant factors.

The survey was available to respondents from February 2009 through November 2009, and reminders were periodically sent to potential participants who had been contacted by email but had yet to respond. The web-based SurveyMonkey® data collection site allows survey

administrators to download results in multiple formats. Results were downloaded from SurveyMonkey® in Microsoft Excel (.xls) and comma-separated (.csv) formats, and saved. The excel spreadsheet was then used to create an SPSS (PASWStatistics 18.0) database, a process that resulted in over 200 variables. Following data processing and cleaning, descriptive and bivariate analyses were conducted.

B. Quantitative assessment of program effectiveness (the quasi-experimental component)

Three GPS-using jurisdictions participated in the quantitative component of the study, referred to as the Midwest, West, and South sites. Agencies participating in this part of the study were all mature²⁵ programs using active²⁶ GPS platforms. We selected these agencies after consulting with a variety of agencies nationwide²⁷ about their program design, caseload size, and data quality and accessibility. The agencies selected for the impact study had been operating a GPS program for DV defendants for at least three years, and offered access to offender data for a period of at least one year following defendants' exit from supervision related to the instant offense (i.e., the incident that resulted in the charge(s) that qualified them for program enrollment). The selected sites varied in terms of overriding philosophy, enrollment criteria, and staffing structure, enabling inferences to be drawn about the impact of variations in how programs are organized. Because the agencies exercise varying degrees of restrictiveness and transparency in their supervision practices, site differences may account for some outcome differences (both in the short and long terms).

The method of data collection in the three sites also varied: In the Midwest and West sites, data were collected using schedules designed for the current study (see data instruments in the Appendix), whereas in South, administrative data were extracted from a jail management system and supplemented with data from the pretrial agency's record system. As discussed

below, the study examines GPS program impact in the short term (during the enrollment period) and in the long term (during a one-year follow-up period).

1. Participant selection criteria, methods, and sampling

This section describes the rationales and procedures used to construct the comparison (treatment and control) groups in the quantitative study that examined program effectiveness. At two of the three sites (West and Midwest), referral by a judge is a predicate for enrollment in a GPS for DV program. However, due to various legal, technological, and practical or program design considerations, a substantial number of defendants (57% in West and 73% in Midwest) who were referred to the GPS program for possible hook-up did not actually enter the GPS program at any point before the conclusion of their case.²⁸

In Midwest, referred defendants may have been assigned to one of three alternative pretrial conditions: jail, bond without supervision, or RF-based EM. An inability to establish a separate residence apart from the victim, or obtain a landline telephone, resulted in the defendant remaining in jail. A successful motion to have the GPS requirement lifted resulted in the defendant's placement into RF-based EM or release on bond without supervision. A victim's withholding of consent could result in the defendant being reassigned to any one of the three other groups. Problems with maintaining a GPS signal at either the defendant's or victim's residence could result in the defendant's reassignment to either RF-based EM or release on bond without supervision.

In West, referred defendants may have been assigned to one of two alternative pretrial conditions: jail or bond without supervision (West did not have an RF-based EM program for DV). Those who posted bond and got their attorney to waive the GPS requirement were released without supervision. Some of these defendants were of greater means, but others were simply

facing more serious charges, and hence hired private legal counsel. An inability to establish a separate residence apart from the victim resulted in the defendant remaining in jail. Also, in West if the victim had moved some distance from the jurisdiction (e.g., out of state), the defendant might have the GPS requirement waived, in which case he would be released without supervision.

Inability to post bond, a problem endemic to pretrial release, also affected GPS enrollment in various ways. This hurdle may be mitigated by the existence of GPS programs in that defendants may be offered, as an inducement, lower or zero bond amounts, provided that they consent to GPS tracking. Inability to pay program fees was not an issue at the Midwest agency because it does not charge defendants any fees, but it may have been an issue for some defendants at the West agency, even though it employs a sliding scale to calculate defendants' fees (a sliding scale is also used in the determination of GPS and RF program fees in the South site.) Sliding scales do not necessarily eliminate the burdens that fees may cause a defendant or his household, especially if they are based on absolute cost to income ratios, and not on the defendant's budgetary circumstances.

In sum, because all West and Midwest defendants in the sample were referred for a GPS evaluation, they were initially perceived as sufficiently dangerous to warrant the extra level of supervision provided by GPS monitoring, irrespective of their actual eventual participation. Therefore, the West and Midwest samples were drawn from a database that was comprised of court referrals, constituted as 1) a treatment group – all defendants who were referred to a GPS for DV program and enrolled; and 2) a control group – a time ordered random sample drawn from all referred cases that were not enrolled in a GPS program during the pretrial period, but who either remained in jail for the duration or posted bond and were released. In addition, at the Midwest site, some GPS referrals who were not hooked up for reasons cited

above were reassigned to a traditional EM (i.e., RF) program (which consists of house arrest with curfew restrictions, staffed by officers who have general caseloads, rather than DV caseloads). The patterns of assignment and participation at these sites enabled the construction of a quasi-experimental design, comparing GPS cases with a matched sample of non-GPS cases. Such an approach is the best approximation of experimental design in the context of criminal justice.²⁹

Cases were drawn over multiple years in both of these sites. In the Midwest site, cases were drawn from archived judges' orders (which mandate that the defendant be evaluated for enrollment into a GPS for DV program) over a two year period (2518 total referrals between July 2006 and July 2008), yielding the following samples: 561 GPS cases (or 100% of defendants who were referred and hooked up) and 1521 non-GPS cases who comprised a random sample of 78% of defendants who were referred but not hooked up. The non-GPS cases were distributed as follows: a jail group (N = 549 or 50% of the referrals who remained in jail), a bond group (N = 507 or 56% of the referrals who were bonded out), and an RF-based EM group (N = 465 or 87% of the referrals who were reassigned to an RF program).³⁰

In the West site, cases were drawn from the GPS program's database, into which information from judges' orders (including referrals) had been entered, between October 2001 and January 2007, yielding the following samples: 500 GPS cases (or 100% of defendants who were referred and hooked up) and 500 non-GPS cases (or 75% of defendants [N = 670] who were referred but not hooked up, i.e., who remained in jail or were bonded out without spending any time on GPS).³¹

In the third site, the South, the comparison groups were generated using different procedures that allowed for a non-equivalent control group design by selecting defendants who had "domestic violence" listed in their charges. In Midwest and West, the basis for equivalence was a concern with whether the defendant would stay away from the victim, and the potential for

him to harm her, as determined by a judge. Judicial decisions resulted in lists of defendants referred to GPS, from which the Midwest and West comparison groups were drawn.

Generally speaking, DV defendants in South are ordered to GPS or RF based on a decision by the judge regarding their risk level. The primary difference between RF and GPS defendants at bond setting appears to be that cases ordered to GPS raise greater concerns for judges about the defendant trying to contact the victim or her family members. DV defendants who are considered especially dangerous overall are given high bond amounts that make it difficult for them to leave jail at all. DV defendants who are seen as low risk may be released on their own recognizance or with a relatively low bond. Thus, the “treatment group” of GPS, and the comparison groups of RF, Bond (without EM supervision), and Jail, are viewed by bail setting judges as posing different levels of risk.

In addition, South defendants who are seen as low risk, but who cannot make a low bond, may end up in RF or GPS, in lieu of posting a monetary or surety bond. These late entrants are likely to be reassigned to either GPS or RF as the result of a defense attorney’s motion to have initial terms of bond modified, or a judge’s independent observation that the defendant has spent an inordinate amount of time in jail.

To select cases for the evaluation study in South, all jail booking records from January 2002 through June 2011 were extracted. This file included a variety of arrestee demographics, the date of booking, charging information, bond amount, and other relevant measures. Additionally, the JMS identification number (JMS Number), which is a unique number assigned to each booking event, was provided, as was the Offender Control Number, which is unique number assigned to each new arrestee and included in records associated with all subsequent booking events for the same individual. The booking file contains a record for each arrest charge for each JMS Number. In addition, all jail release records from January 2002 to December 2009

were extracted. This file contains the same information as the booking file, except that it also includes the date of jail release and the type of release.

A file containing cases placed on pretrial release supervision was created that included a variety of variables relating to the arrestees' placement and removal from pretrial release supervision. A separate file containing similar data for offenders placed on electronic monitoring was also provided, which included the date and type of EM placement (Global Positioning System or Radio Frequency) and the outcome (e.g., completed, violated) of EM enrollment.

The dataset to assess the effectiveness of EM for DV cases in South was constructed as follows: First, all jail bookings that occurred from August 2007 through December 2009 were selected in which DV was one of the arrest charges. Second, this file was matched to the jail release file using the JMS number to capture the first jail release subsequent to the booking date. Third, this file was matched to the pretrial release monitor supervision dataset to identify cases placed on supervision. Fourth, this dataset was matched to the monitor dataset that contained those arrestees placed on electronic monitoring. The resulting dataset was sent to the specialist in the South site who oversees the agency's record-keeping to both confirm the accuracy of the data and to populate missing data based on individual reviews of the case files and electronic records. The resultant sample of 604 DV defendants in South was distributed across four groups as follows: GPS = 177, RF = 167, Jail = 42, and Bond without EM = 218.

2. Measures and indicators

As indicated above, the primary aim of the quantitative analysis was to determine the impact of GPS program participation on defendants over the short and long terms, i.e., during the pretrial period, and during a one-year follow-up period after the conclusion of supervision related to the original charges (e.g., after disposition for acquitted and dismissed cases, after jail or

prison for convicted cases). Impact was measured in the short term (i.e., during the pretrial period) by the occurrence of new arrests and charges (for all groups) and program violations (for those in a GPS or RF program; examples of possible violations include contact attempts, failed alcohol or drug tests, non-payment of fees, and curfew offenses). In the long term, impact was measured by the occurrence of new arrests within one year after release from EM supervision or confinement (i.e., the impact period for acquitted and dismissed cases began with final disposition; the impact period for sentenced cases with prison or jail terms began following release from confinement).³² Treatment was measured both by exposure to GPS and the number of days on the program.

Control variables consisted of the following: demographic characteristics (age, gender, race, Hispanic origin, marital status, etc.), severity of instant offense, offense history, and legal measures and indicators (conviction for the current offense, type of sentence, time on GPS, etc.); measures of socioeconomic status were generally not available. The specific measures that were used in the analysis for each site are discussed in the respective analyses of the data for the three sites.

The sources (written records, information systems) that were accessed to extract data for each site analysis are as follows: The Midwest site data set was constituted after consulting EM agency files, judges' orders, arrest files (details related to the instant offense), and the jurisdiction's computerized records database that collates information pertaining to crimes and offenders. The West data set was constituted after consulting EM agency files, the jail's data base, the misdemeanor court's information system, LexisNexis for the felony court's cases, the state's corrections information system, and the Federal Bureau of Prisons website. The South data set was constituted following extensive discussions with jail and community corrections staff. It included the measures and indicators found in the jail management system (including

booking records), and it was complemented by the incorporation of additional sources of data pertaining to the electronic monitoring and the pretrial program, which was also cross-checked by the agency's information system specialist.

The quantitative data from the three sites were processed into statistical packages and cleaned. The statistical analyses of the data included, for each site, descriptive statistics, and bivariate and multivariate (logistic regression) analyses. Detailed descriptions of the procedures and analytic strategies appear in Chapter Three: Findings.

C. Qualitative assessment of GPS-based monitoring

Complementing the web-based survey and quasi-experimental prongs of the study, the qualitative component included six participating agencies: the West, Midwest, and South sites, and three additional sites – Southwest, East, and Southeast. The latter were located after consulting with a national authority on electronic monitoring programs. The additional programs were spread out geographically and had GPS for DV programs with varying levels of maturity and comprehensiveness. These were smaller programs and hence did not have the number of cases required to participate in the impact study. However, they were included to widen the study's window on the issues and processes that are associated with GPS for DV programs.

The qualitative component of the study followed an in-depth interview-based research design. In-depth interviewing is a preferred approach in qualitative research because it enables investigators to document, in interviewees' own terms, the issues and problems that concern them (Rubin and Rubin, 1995). The qualitative data documented stakeholders' experiences and perspectives, and enabled an in-depth analysis of how agencies are applying GPS to DV cases.

The in-depth interviews were semi-structured and were conducted with all parties involved, directly or indirectly, with GPS-based monitoring for DV cases at participating

agencies. Such data are essential for shedding light on statistical findings, as well as for revealing contextual issues and social processes otherwise unobservable through administrative data alone.

Interviewees were drawn from:

- a) persons involved in DV incidents, including both former and present defendants (N = 74) and victims (N = 34);
- b) social services providers (N = 19) who help victims, including professionals from private non-profit assistance organizations designed to provide shelter or counseling to victims of IPV; and
- c) justice system practitioners (N = 83), including judges, prosecutors in state or district attorney's offices, public defenders, private defense attorneys, and practitioners working in EM related positions. Among the latter were line staff (e.g., EM or probation officers, case managers), line staff supervisors (e.g., House Arrest Sergeant, Community Control Supervisor), agency directors or supervisors (e.g., Director of Pretrial Services, Chief of EM Unit), and various specialists (e.g., technical support, intake/assessment). Criminal justice personnel working in victim related services were also interviewed, including victim advocates or service providers working on the front lines with victims and professionals holding supervisory positions in agencies providing services to victims.³³

The first two principal investigators conducted the interviews, which typically lasted about ninety minutes, although some were shorter than an hour and others lasted longer than two hours. Focus group interviews were pursued with former victims and offenders/defendants, usually in pairs or trios, although at times these interviews were done on an individual basis, as per the interviewee's preference or turnout. Interviews with personnel were usually done

individually or with pairs of co-workers, but in three cases the interviews were conducted with groups of three or more personnel.

1. Interviewee recruitment and interview procedures

Contact persons at each agency were instrumental in recruiting the individuals who participated in the interviews. Working from past cases, agency personnel contacted participants (both victims and defendants) for purposes of recruitment, forwarding an IRB approved recruitment letter composed by the PIs that explained the purpose of the study and nature of the interviews. Potential recruits were informed that the interviews were confidential and given assurances that they were under no obligation to participate, could withdraw from the interview at any time, and would suffer no harm should they decline to participate. These assurances were repeated as part of the informed consent process when participants appeared at the conference room located within the agency that had been reserved for the session. The informed consent script was read aloud by one of the interviewers, and participating subjects were asked if they verbally agreed before interviews commenced. Permission to digitally record the interviews was also sought during the informed consent process. Defendants' and victims' names were not documented in any way. However, in order to be able to summarize the characteristics of the sample, participants were asked to complete a brief questionnaire on which they could record their gender, race, age, occupation, and the charges that resulted in the interviewee's involvement with the program. Defendants and victims were compensated for their time and transportation costs, receiving thirty dollars cash for their participation. Because the thirty dollars in compensation might have been an inducement to financially pressed clients and victims to participate, the co-PIs emphasized to agency personnel that they should ensure that the sample was diverse in terms of SES. Accordingly, the resulting sample offered a diverse mix of

participants in terms of backgrounds representing the spectrum of employment (employed, unemployed, students).

Contact persons at each agency were also responsible for setting up the initial roster of justice system personnel and social service providers with whom interviews were conducted, although the researchers did not confine themselves to this roster of participants (see below). The contact person forwarded an IRB-approved recruitment letter explaining the purpose and nature of their participation to potential interviewees. Upon their arrival for the interview (in either the office of an interviewee or in an agency conference room), justice personnel and social service providers were given informed consent agreements reiterating that the interviews were confidential and that they were under no obligation to participate, could withdraw at any time, and would suffer no harm should they decline to participate. Permission to digitally record the interviews was also sought during the informed consent process. The “snowballing” technique of pursuing interviews with personnel who are mentioned by interviewees as having expertise in a particular area or on a specific issue provided a means of locating and recruiting additional justice personnel and social service providers to participate in the study.

2. Topics of in-depth interviews

The topics broached during the interviews were designed to garner the most pertinent descriptions and evaluations that representatives of each group could offer based on their expertise and/or experience. Although the topics of the interviews were wide-ranging, the central focus of the interviews was on a) establishing the legal, organizational, and technological distinctions and practices that define and structure the program’s working environment, b) the emotional, psychological, and practical impact that GPS program participation has on defendants and victims (including the latter’s safety), and c) the quality and intensity of victim support and

offender supervision built into the program's design.³⁴ Thus, questions probed the history and evolution of the interviewees' encounters with the technology, the technology's effects on those who use it, the auspices for social interactions between clients/victims and staff that are structured into the program, and the interactions between various people working within the local justice system and/or social service agencies.

3. *Qualitative data analysis*

In-depth interviews were transcribed into electronic documents and coded manually. The coded data were the basis for memos on the themes that emerged during interviews for each category of participant (i.e., memos were developed identifying themes in the interviews with defendants, victims, judges, etc.). Note was taken of the site at which the interviews were conducted so as to discern variations in themes by site, resulting in an analysis that was sensitive to both common themes for each category of participant as well as distinctive themes that are related to site differences (e.g., variations in program rules, levels of victim-support, intensity and intrusiveness of supervision, cost basis for participation, implementation of the technology's capacities, and compensation for its limitations). The memos were revised and developed into the various thematic sections of the qualitative analysis component in accord with principles of constructivist grounded theory (Charmaz, 2003). The latter is concerned with elucidating core processes of action and interpretation that are evident in the practices, concepts, and distinctions that are expressed during interview-based accounts or in the context of fieldwork more generally.

Chapter 3: Findings

This chapter presents findings from all components of the study. First, it reports results from the national survey of pretrial agencies that use EM technologies in their operations, focusing on a subset of agencies that employ GPS in the context of DV during the pretrial period. Second, drawing on interviews with relevant professionals, programs at the six sites that participated in the qualitative study (three of which also participated in the quantitative study) are described, highlighting central themes in the programs' orientations and practices. Third, results from the quantitative study of the short- and long-term impact of GPS enrollment on participants at the three sites are reported. Finally, main themes and key issues uncovered during in-depth interviews with the defendants and victims are described.

A. Web-based survey

The adoption of GPS technology in the U.S. by pretrial agencies, and the place of GPS technology in their response to DV cases, is documented in the web-based survey. Practitioners (N = 616) representing 43 states, the District of Columbia, and Puerto Rico, responded to a web-based survey covering a range of topics pertaining to EM and decisions about whether and how to adopt and implement GPS.³⁵ Almost two-thirds of the respondents reported using EM technologies to supervise pretrial defendants, and about a quarter use GPS for DV. The majority of the report focuses on respondents representing programs utilizing GPS for DV during pretrial (N = 149), hereafter *the DV subsample*. The survey is helpful in showing that agencies and programs participating in the qualitative and quantitative components of the study represent central trends in current usage at the national level.

1. *Types of technologies used and defendants monitored*

Respondents in programs using any EM technology (N = 393) indicated the types of defendants they monitored (see Table 3A-1). Nearly half report using GPS for sexual offenses, while two in five use GPS for DV or other violent offenses. RF is used most frequently – by one in three programs – for a violent offense other than DV, while bilateral RF, where both the defendant and victim receive RF devices (see Erez, Ibarra, & Lurie, 2004), was used by fewer than one in twenty programs. Nearly one in three programs use Secure Continuous Remote Alcohol Monitoring (SCRAM) for DWI/DUI defendants during pretrial, over one in five for other alcohol or drug offenses, and one in six programs for DV defendants. Other forms of monitoring technologies were used less frequently.

Table 3A-1. Percentage of respondents (N = 393) indicating their program uses each technology, by type of defendant

	GPS	Radio Frequency (RF)	Bi-lateral RF	SCRAM	Remote Alcohol Monitoring (not SCRAM)	Equipment-Free Monitoring	Other
DV or IPV	41.2%	29.3%	4.3%	16.5%	7.6%	7.6%	3.8%
Other violent offense	40.2%	32.8%	4.3%	11.5%	8.4%	7.6%	3.6%
Sexual offense	48.3%	26.7%	2.8%	6.4%	6.6%	6.4%	3.3%
DWI/DUI	19.3%	28.8%	3.6%	31.6%	17.3%	6.6%	3.1%
Other alcohol/drug offense	23.7%	28.2%	3.3%	20.9%	12.0%	7.1%	4.8%
Juveniles	21.6%	20.6%	2.8%	6.4%	4.1%	5.9%	3.6%
Gang Members	22.4%	22.1%	2.5%	4.6%	4.1%	5.3%	3.6%

Within the DV subsample (N = 149), 87.9% report using GPS for DV (see Table 3A-2). Programs in the DV subsample also use every other technology more often than programs in the larger sample (N = 393). Their greater use of technology may indicate that GPS for DV programs also use GPS and other technologies for other offense types, or that the DV defendant population includes persons who are facing multiple charges that call for the application of other

technologies. As in any self-report survey, it is possible some respondents did not indicate all applications.

Table 3A-2. Percentage of respondents in the DV subsample (N = 149) utilizing each technology, by type of defendant

	GPS	Radio Frequency (RF)	Bi-lateral RF	SCRAM	Remote Alcohol Monitoring (not SCRAM)	Equipment-Free Monitoring	Other
DV or IPV	87.9%	41.6%	4.7%	22.8%	14.8%	13.4%	5.4%
Other violent offense	74.5%	44.3%	4.7%	16.1%	13.4%	14.1%	3.4%
Sexual offense	81.9%	36.9%	3.4%	6.7%	12.8%	12.1%	3.4%
DWI/DUI	36.2%	38.3%	4.0%	37.6%	26.9%	12.1%	4.7%
Other alcohol/drug offense	40.3%	36.9%	3.4%	27.5%	20.1%	12.8%	6.7%
Juveniles	36.9%	29.5%	3.4%	5.4%	7.4%	8.7%	3.4%
Gang Members	41.6%	30.9%	3.4%	7.4%	8.1%	10.1%	2.0%

Table 3A-3 reports percentages of programs in the DV subsample using each number of technologies, by offense type. For example, 40% of programs use one technology to monitor DV and other violent offense defendants, while more than half of programs use more than one technology for DV, the highest such percentage for all offense categories. Taken together, Tables 3A-1, 3A-2, and 3A-3 demonstrate the survey reached a large population of agencies utilizing EM technologies, and that programs represented in the DV subsample specialize in the use of GPS for DV during pretrial, while employing other EM technologies for other offense types.

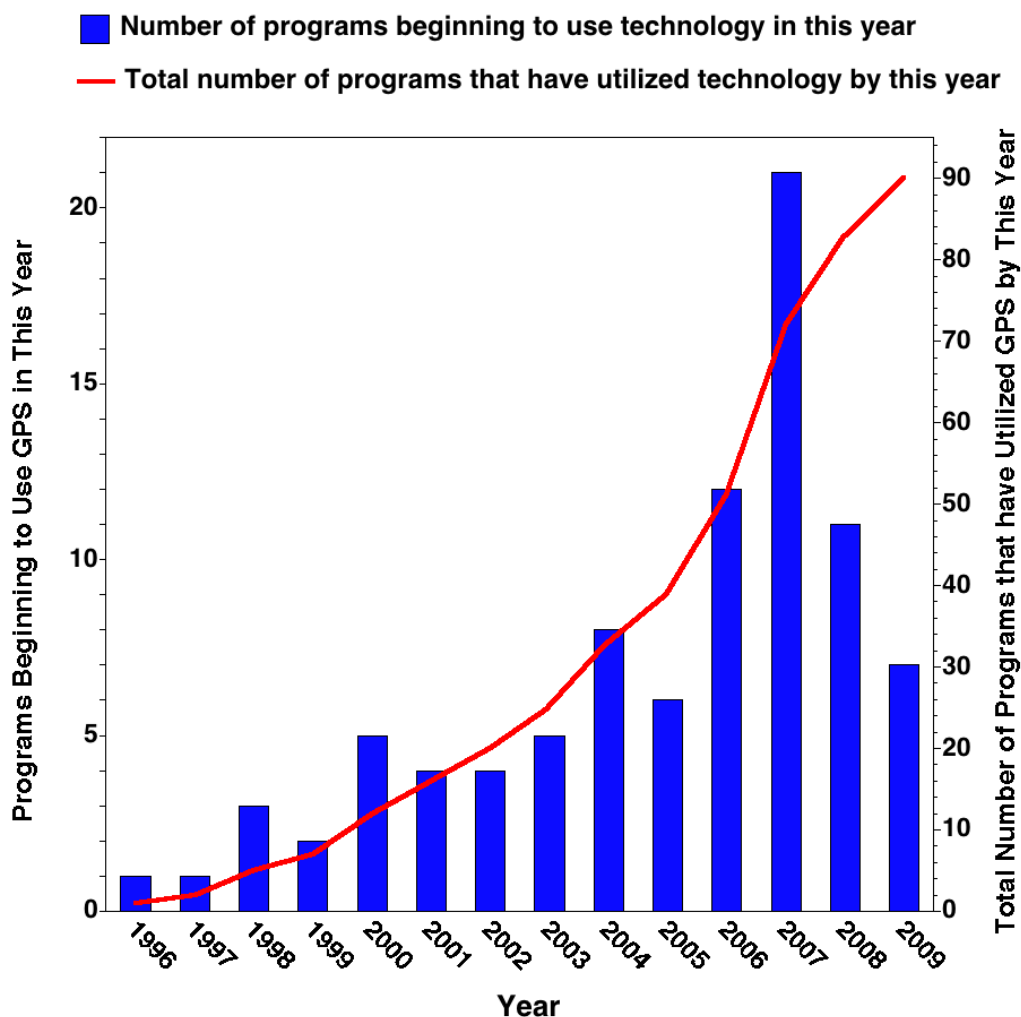
Table 3A-3. Percentage of respondents in the DV subsample (N = 149) utilizing each number of technologies, by type of defendant

	Number of technologies used						
	0	1	2	3	4	5	6
DV or IPV	5.4%	39.6%	29.5%	14.1%	7.4%	4.0%	0.0%
Other violent offense	14.8%	38.3%	23.5%	12.8%	6.7%	4.0%	0.0%
Sexual offense	11.4%	49.7%	21.5%	8.1%	6.7%	2.7%	0.0%
DWI/DUI	17.4%	36.9%	24.2%	14.1%	5.4%	1.3%	0.7%
Other alcohol/drug offense	22.1%	38.3%	20.8%	10.7%	4.7%	3.4%	0.0%
Juveniles	45.6%	30.2%	14.8%	4.7%	3.4%	0.7%	0.7%
Gang Members	45.0%	29.5%	12.1%	6.7%	4.0%	2.7%	0.0%

2. Program start date and location

The DV subsample represents programs operating for varying lengths of time (see Figure 3A-1) located in 43 states, the District of Columbia, and Puerto Rico (see Figure 3A-2).³⁶ Figure 3A-1 displays the number of programs beginning to use GPS technology for DV each year, and the climb in total number of programs using GPS for these purposes to ninety (90) – the total number of respondents that provided a year. While seven programs had been launched before the year 2000, 51 started between 2006 and November 2009, with a high of 21 in 2007. The spike in 2007 may be explained by passage of legislation mandating the use of these technologies in several states and related new funding sources.

Figure 3A-1. Year in which organization began using GPS technology for tracking domestic violence (DV) defendants (N = 90)

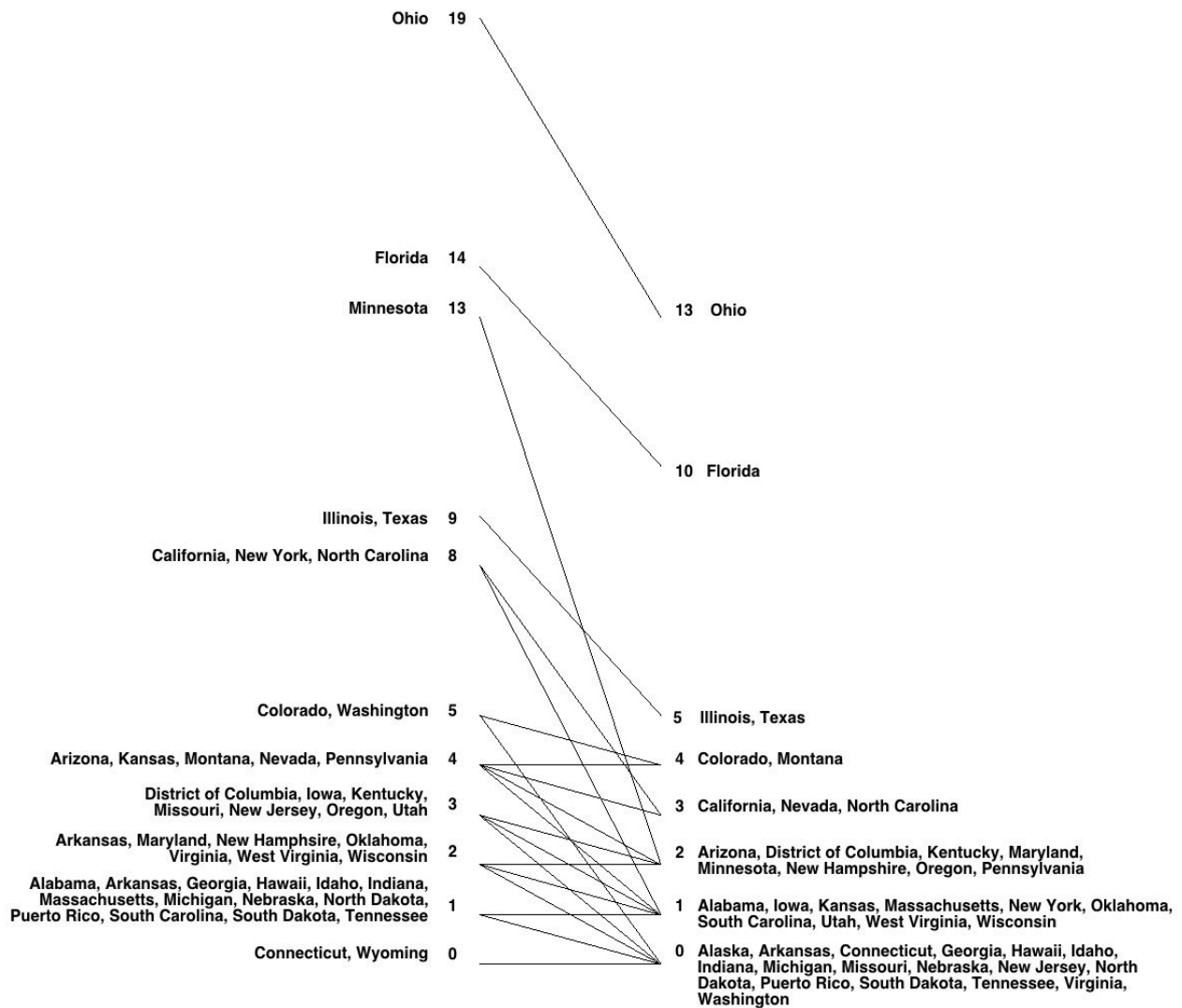


Erez, Ibarra, Bales, & Gur

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Figure 3A-2 shows states with programs utilizing any type of EM during pretrial (N = 167), and states with programs utilizing GPS for DV during pretrial (N = 74). Ohio had the greatest number of responding programs in both categories, followed by Florida, and though Minnesota had thirteen programs utilizing EM during pretrial, only two used GPS for DV. Jurisdictionally, the majority of programs (80%, N = 100) serve a county or city, 15% more than one county, and 5% an entire state. Administratively, 40% of programs (N = 100) are located in a county probation department, 13% in a sheriff’s department or jail, 18% in a court setting, and the rest in state probation departments, private or nonprofit organizations, or some other administrative position.

Figure 3A-2. Slopegraph of states with programs using EM (left, N = 167) and GPS (right, N = 74)

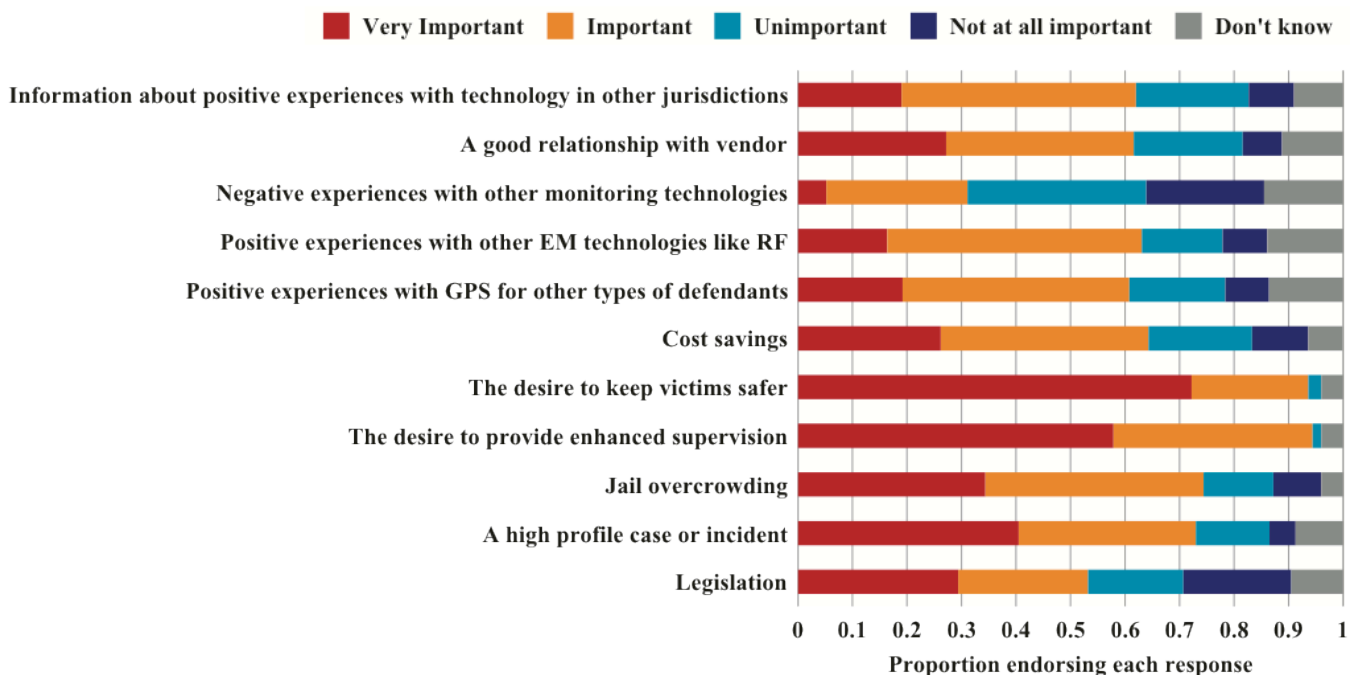


Erez, Ibarra, Bales, & Gur

3. Rationale and aims of GPS programs

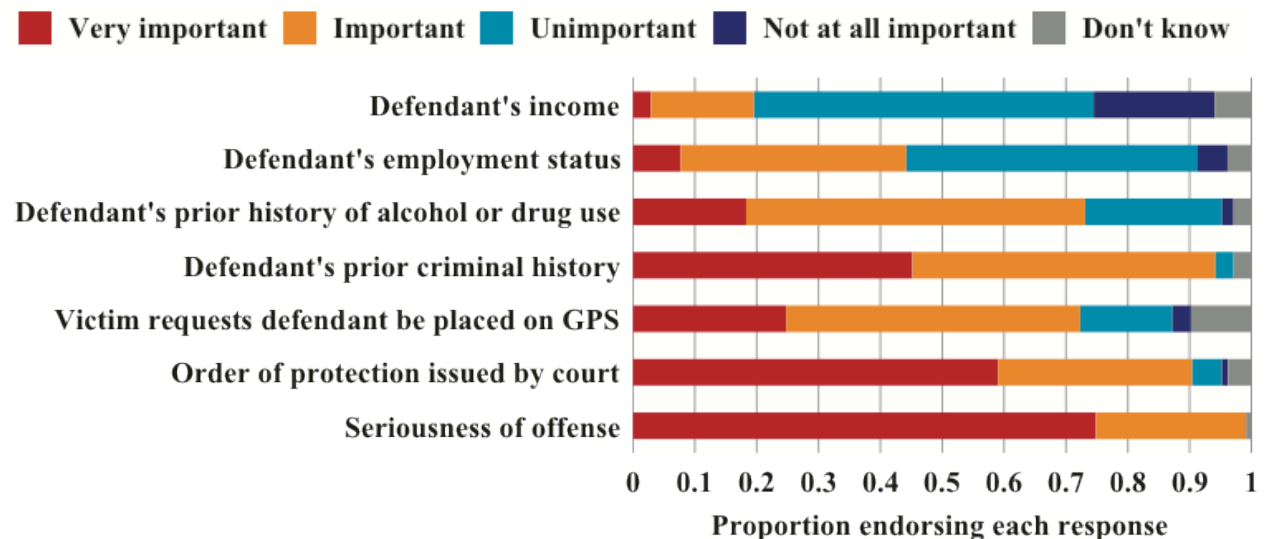
The programs designed to supervise and monitor DV pretrial defendants via GPS emerged due to a convergence of several factors. Figure 3A-3 indicates that 90% of respondents reported the desire to keep victims safer and provide enhanced supervision to DV defendants as the most influential reasons for establishing such programs. High profile cases or incidents and jail overcrowding were also important (over 70% of respondents endorsed these reasons). Legislation requiring GPS in pretrial of certain DV defendants was also cited as important by about half of the respondents. However, over a third (40%) of the practitioners (N = 101) reported there was no legislation in their jurisdiction mandating DV defendants be placed on GPS, and that there was no policy stipulating that DV defendants not monitored with GPS should be placed in jail. Only a minority (5%) reported having both legislation mandating placement on GPS for pretrial DV defendants, and placement in jail if not being monitored with GPS.

Figure 3A-3. Percentage of respondents in the DV subsample indicating how important each reason is to the agency when deciding to start to use GPS for supervising DV pretrial defendants (N = 116–126)



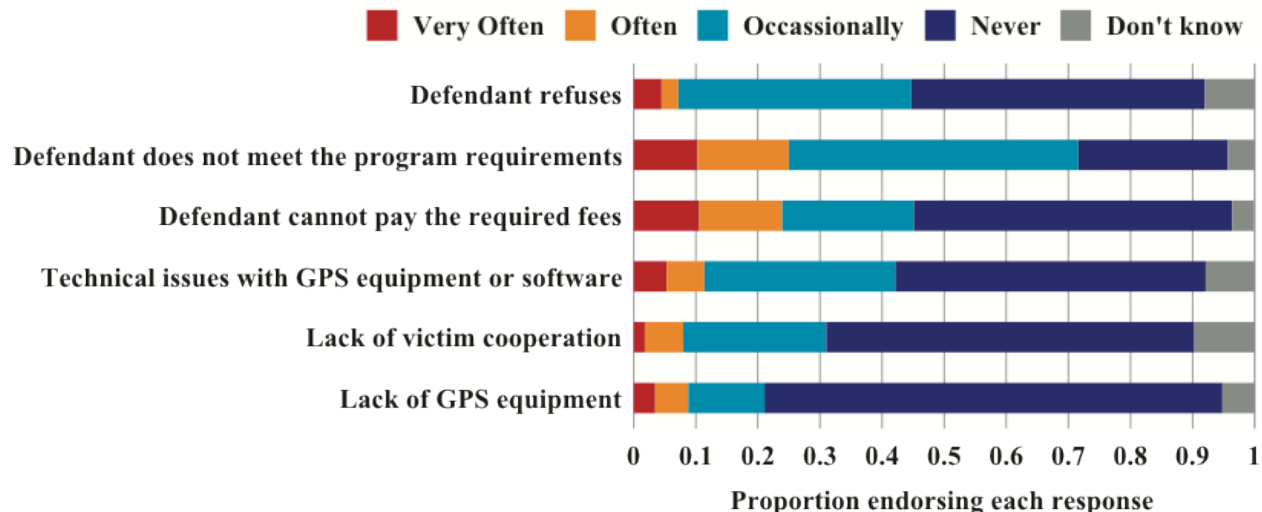
Selection criteria developed for choosing who is placed on GPS may also inform the aims of the program. In the DV subsample, seriousness of offense was most important among seven criteria for selecting defendants for supervision (see Figure 3A-4). An order of protection was deemed important by over 90% of respondents, as was the defendant's prior criminal history. A victim request that a defendant be placed on GPS was endorsed by about 60% of the respondents. The least important criteria were the defendant's income, and the defendant's employment status.

Figure 3A-4. Percentage of respondents in the DV subsample indicating how important each factor is for choosing who is placed on GPS when used for supervising DV pretrial defendants (N = 101–105)



A defendant who is referred to a GPS program for placement may not be enrolled for various reasons. Figure 3A-5 describes the considerations practitioners report as possibly disqualifying or preventing defendants from enrollment. A major reason reported is that defendants do not meet program requirements (e.g., cannot find a separate residence or have a land line telephone). Inability to pay program fees was another consideration that occasionally prevented defendants from being enrolled. On the other hand, a lack of GPS equipment or victim cooperation was rarely reported to be a problem.

Figure 3A-5. Percentage of respondents in the DV subsample indicating how often defendants are not enrolled in GPS for DV pretrial programs for each reason (N = 112–116)n



4. Referrals and enrollment

Prevailing practices in pretrial programs using GPS for DV (per data from the DV subsample, N = 149) are presented below. Over two-thirds of defendants (71%) are referred to the GPS programs by judicial orders, another portion by the supervising agency (14%) or prosecutorial requests (10%), with very few referred due to legislation or general policy.³⁷ Table 3A-4 indicates that the majority of programs hook up nearly all cases referred for GPS enrollment. Of programs providing both referral and enrollment rates (N = 98), more than two-thirds were able to hook up all referrals. Excluding one outlier, the successful enrollment rate among the remaining programs is over half (53%) of all referrals.

Table 3A-4. Descriptive statistics for number of monthly referrals and enrollments/hook-ups for programs in the DV subsample (N = 149)

	N	Minimum	Maximum	Mean	Std. Deviation
In an average month, how many defendants are referred to the GPS program?	101	0.5	150	16.980	25.288
In an average month, of those referred to be placed on GPS how many are enrolled or hooked up?	100	0.5	225	15.959	27.802

Note: Outlier excluded.

The average caseload for officers in the DV subsample monitoring GPS defendants is depicted in Table 3A-5. On average, non-GPS officers have more than twice as many cases as GPS officers. GPS officers have smaller caseloads than non-GPS officers in two-thirds of programs with GPS and non-GPS officers, with non-GPS officers managing three times as many defendants as GPS officers. While some GPS officers (22.2%) have as many cases as non-GPS officers, very rarely do GPS officers have larger caseloads than non-GPS officers, and officers in the few programs with only GPS caseloads average 22.25 defendants. These statistics suggest that most programs recognize that GPS for DV cases requires careful and labor-intensive supervision from officers, possibly because of the risk involved to victims or the larger stream of information produced by GPS tracking.

Table 3A-5. Average monthly caseloads for officers using GPS and non-GPS officers in the DV subsample

	N	Minimum	Maximum	Mean	Std. Deviation
What is the average caseload for officers who monitor defendants on GPS?	96	1.5	275	43.833	40.004
What is the average caseload for officers who do not monitor defendants on GPS?	87	0	300	91.805	65.114

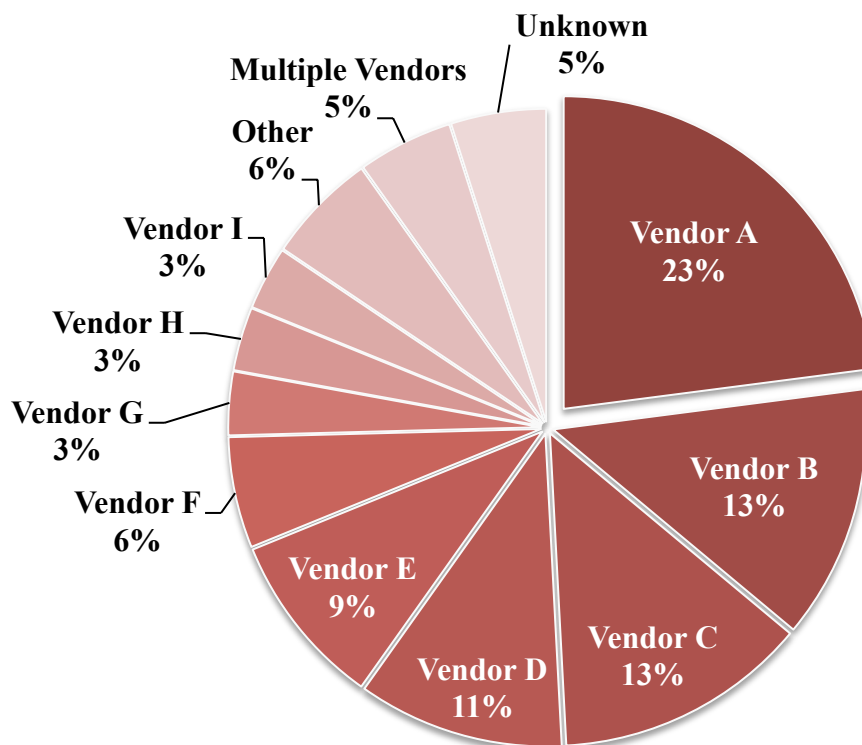
5. *Technological attributes and costs*

Patterns in vendor adoption are depicted in Figure 3A-6, showing that six vendors dominate the market, with one vendor having almost a quarter of all programs among their clientele. Nearly 90% of the programs utilizing the two most frequently used vendors were satisfied with their service provider.

Costs associated with monitoring technology were calculated by considering how much each unit costs the program per day, per defendant. To calculate mean cost, ranges (e.g., “\$5-\$15”) were recoded into average cost (e.g., \$10).³⁸ The minimum cost per defendant per day was \$0, while the maximum was \$18.50, with a mean of \$9.80 (N = 85, SD = 3.8). Entries of no costs likely include pilot programs subsidized by grants, whereas higher costs may reflect a program

lacking the volume of units for bulk discounts. Programs indicating a range of costs associated with different levels of monitoring (i.e., passive, hybrid, or active) are included in Table 3A-6, which also includes information on how much defendants are charged per day. Acknowledging sample size limitations, calculating cost to defendants as a percentage of cost to the agency for each level of technology shows defendants pay over three-quarters of the cost for active monitoring, over half the cost for hybrid, and nearly the entire cost for passive electronic monitoring. What seems like a sliding scale may reflect the cost of each technology to the agency.

Figure 3A-6. Percentage of programs (N = 113) utilizing each vendor (N = 122) in the DV subsample



Advanced technologies are costly, have potential for failure, and inappropriate handling may damage the equipment. Some programs report zero technology failures or cases of damage to the equipment, whereas for others the rate of failure and damage is very high (up to 100%).

Fewer than 20% of GPS units were returned due to failure of the equipment (N = 52), with a high standard deviation (SD = 27.1). Reported figures likely relate to how long programs have operated. For example, older programs should have higher rates of failure and damage as devices age and are used more. Programs operating at full capacity might not send devices for regular maintenance or repairs, and perhaps contracts with vendors impact these considerations.

Table 3A-6. Cost of active, hybrid, and passive GPS for programs (N = 18) reporting multiple levels of monitoring and costs in the DV subsample

Program	ACTIVE		HYBRID (On-Demand, Intermediate)		PASSIVE	
	Cost to agency/day	Cost to defendant/day	Cost to agency/day	Cost to defendant/day	Cost to agency/day	Cost to defendant/day
1	\$6.50	0 ^a	\$5.25	0 ^a		
2	\$10.00	\$10.00			\$8.00	\$10.00
3	\$9.00	\$9.00			\$6.50	\$6.50
4	\$8.95	varies	\$6.95	varies	\$4.45	varies
5	\$8.29	\$10.00 ^c			\$4.41	\$10.00 ^c
6	\$13.30	\$13.50	\$12.00	\$12.00	\$9.00	\$9.00
7	\$8.95	varies ^b			\$4.94	varies ^b
8	\$9.96	\$0.00			\$5.75	\$0.00
9	\$8.95	varies ^b	\$6.95	varies ^b	\$4.45	varies ^b
10	\$8.29	\$10.00 ^d			\$4.41	\$10.00 ^d
11	\$15.00	\$11.00			\$11.00	\$11.00
12	\$6.50	0 ^a	\$5.25	0 ^a		
13	\$9.50				\$4.50	
14	\$12.00	\$12.00			\$9.00	\$9.00
15	\$10.00	\$10.00			\$6.00	\$6.00
16	\$25.00	\$25.00			\$5.00	\$5.00
17	\$16.00	\$16.00			\$10.00	\$10.00
18	\$15.00	\$15.00			\$12.00	\$15.00
AVG/ DAY	\$11.18	\$8.68	\$7.28	\$4.00	\$6.84	\$6.79

a: federally funded

b: varies depending on financial status

c: \$50 installation fee; \$10/day or 20% of gross salary

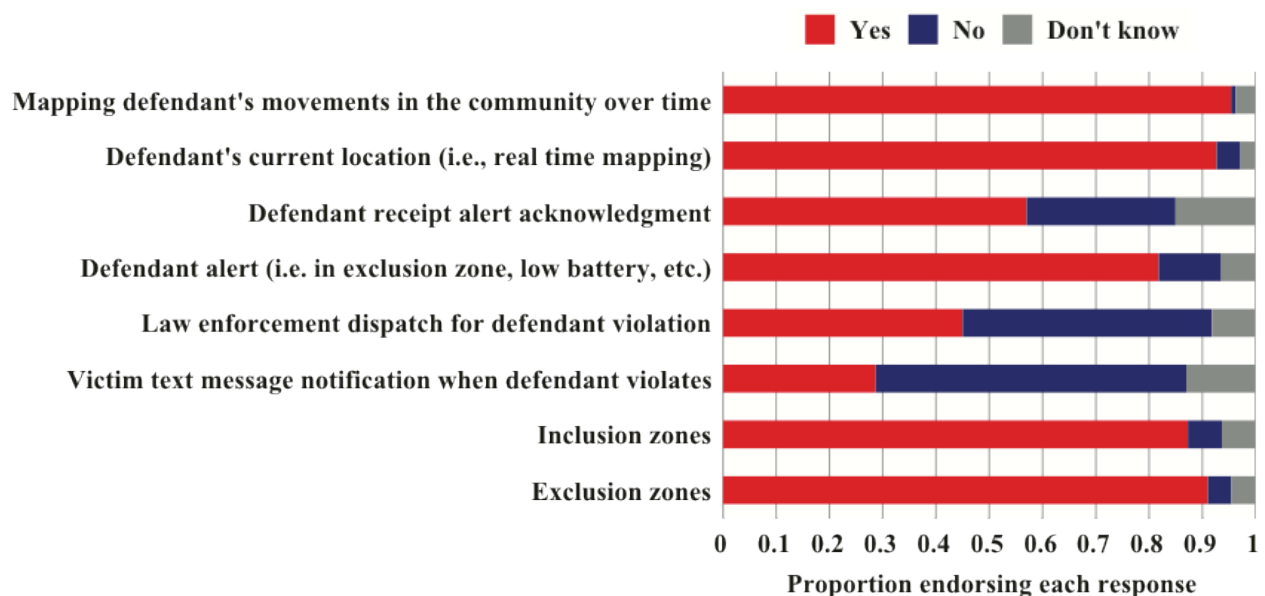
d: \$10/day or 20% of gross salary

GPS technology has many capabilities for agencies to consider when implementing a GPS for DV program. The adoption of these capabilities is presented in Figure 3A-7. The overwhelming majority of respondents report using exclusion and inclusion zones, “real time

mapping of defendant’s current location,” and “mapping of defendant’s movement in the community over time.” Importantly, less than half of respondents report that GPS functionality is utilized to dispatch law enforcement for any kind of defendant violations, and fewer than one in three programs send victims text message notification when defendants violate. While three in four programs share GPS data with law enforcement (e.g., to check an alibi), fewer than half indicate law enforcement personnel respond to alerts.

Practitioners might become more aware of individual victim and defendant characteristics and tendencies if programs utilize numerous features available with GPS monitoring. Of the capabilities described in Figure 3A-7, one in four programs in the DV subsample did not use any capabilities, yet three in five use five or more.

Figure 3A-7. Capabilities utilized by programs (N = 107-111) in the DV subsample



Core to GPS programs is how they respond to alerts of possible defendant violations. Programs can opt to have law enforcement respond to alerts and violations. The survey indicates that in over a third (35.6%) of the programs (N = 101), law enforcement responds to alerts and violations, in 40% the police responds to neither, in 8.9% there is a response only for violations

but not alerts, and in 7.9% of programs law enforcement respond to alerts but not violations. Lacking a coordinated criminal justice response to violations and alerts makes it less likely that GPS technology will serve as a preventative tool, rendering data collected by the device useful only after adverse events have occurred (i.e., confirm suspect was at scene). Programs not reliant on a law enforcement response may have in-house practitioners investigating violations and alerts, or do so in cooperation with a vendor or third party call center.

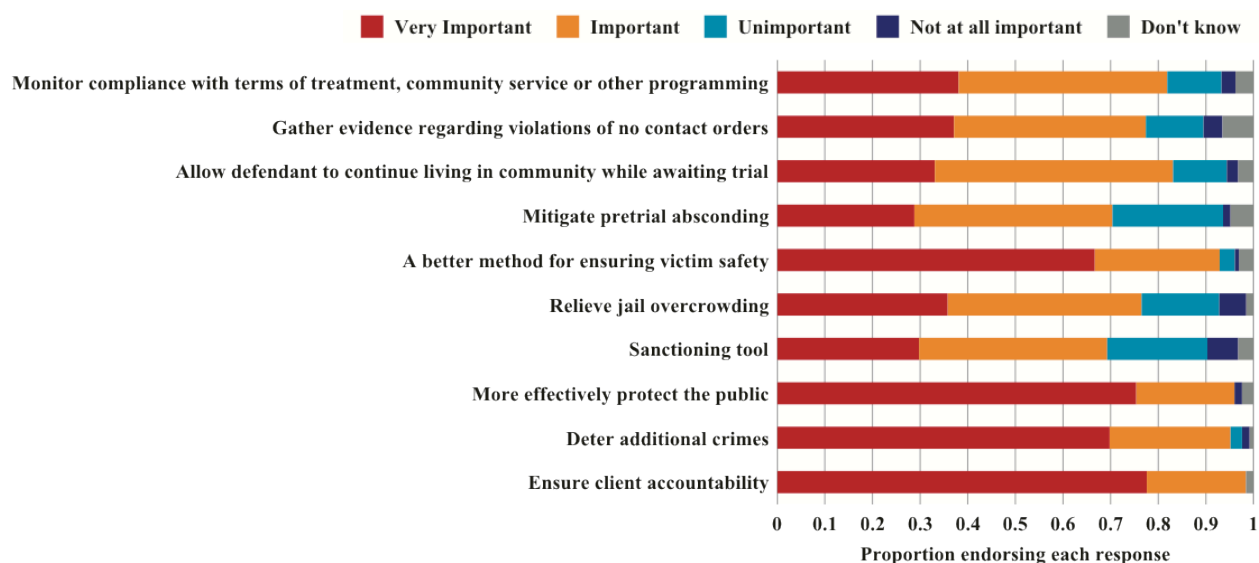
Survey responses about GPS training indicate that equal time is allocated for training on equipment and the program's policies – 11.5 hours each. The training period for a minority (6.4%) of programs consisted of at least 40 hours of training on equipment, and 10.9% of programs had at least 40 hours on programs and policies. Both programs and vendors provided training. Practitioners reported satisfaction with both sources of training, but internal training was associated with greater level of satisfaction, perhaps due to familiarity with local program issues. The functional components of GPS programs provide practitioners with tools, and training can help facilitate effective utilization of the technological resources.

6. Current uses and changing program attributes

The ways programs apply and use GPS may change over time, such that the reasons programs start using GPS may evolve as they continue to rely on the technology. Shifting expectations and the wisdom an organization acquires in the course of implementing the technology also influence this process: limitations become apparent, innovations are incorporated, and a more comprehensive understanding of the implications of using GPS for DV during pretrial develops. Figure 3A-8 presents how various attributes of the programs are perceived by the practitioners. It indicates that the greatest degree of agreement was around the importance of ensuring client accountability, ensuring victim safety, more effectively protecting

the public, and deterring additional crimes. The less important factors in continuing to use GPS were its perceived potential to mitigate pretrial absconding, its utility as a sanctioning tool, and its ability to relieve jail overcrowding.

Figure 3A-8. Percentage of respondents in the DV subsample indicating how important each reason is to the agency when using GPS for supervising pretrial defendants (N = 105–126)

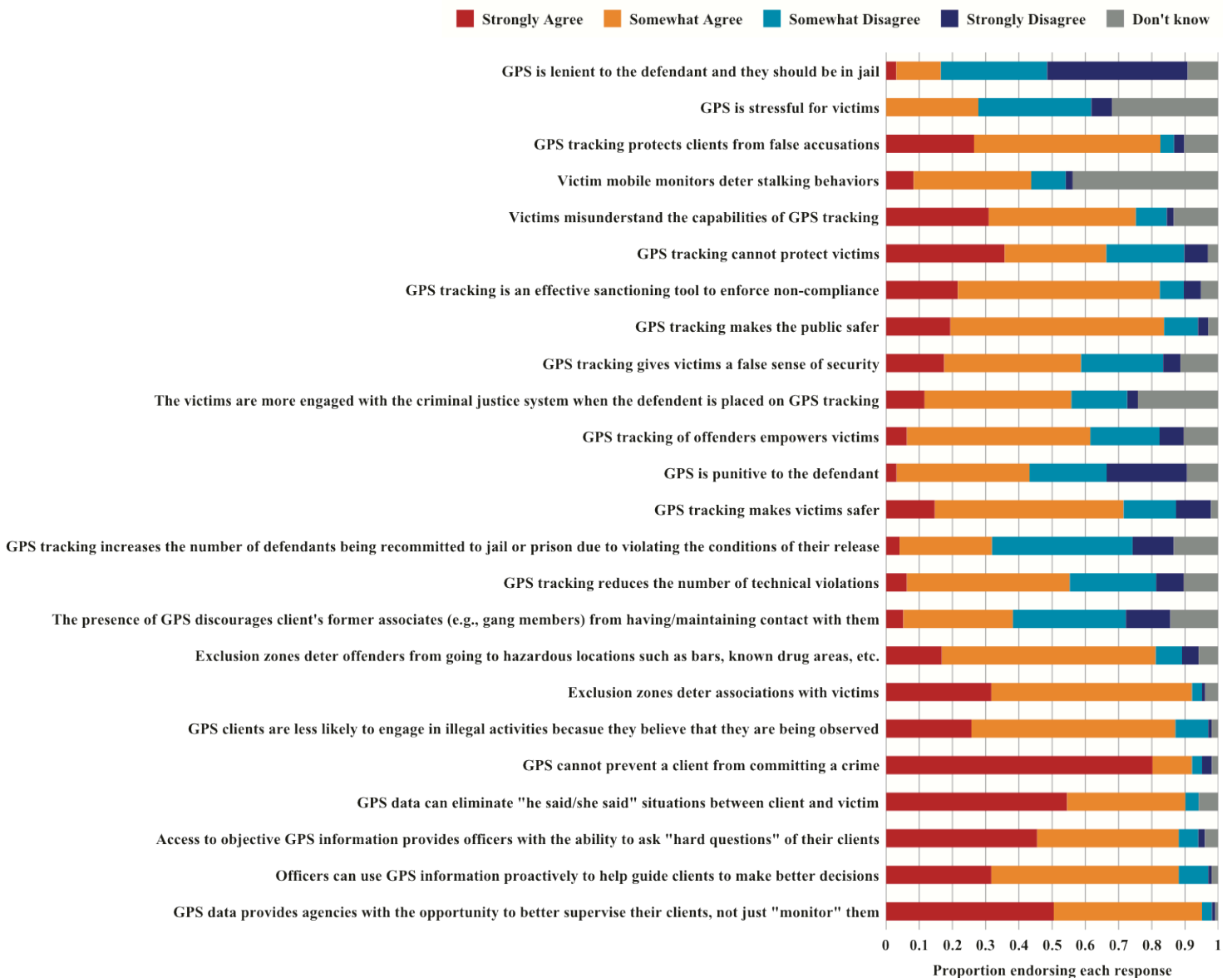


The overwhelming agreement among practitioners as to the importance of GPS in achieving disparate criminal justice goals (e.g., protecting the public *and* relieving jail overcrowding) can be contrasted with differences among the DV subsample concerning various attributes of GPS supervision of DV defendants (see Figure 3A-9). The most agreed upon statement was that “GPS cannot prevent a client from committing a crime.” Yet, over 90% also agreed that “exclusion zones deter associations with victims,” and that “GPS data provide agencies with the opportunity to better supervise their clients, not just ‘monitor’ them.” Further agreement was reported with statements such as “GPS can eliminate ‘he said/she said’ situations between client and victim,” and there was consensus about GPS supervision allowing practitioners to “ask ‘hard questions of their clients’” and “proactively help guide clients to make better decisions.”³⁹ There was disagreement with the statements that “GPS is lenient to the

defendant and they should be in jail” and “GPS tracking increases the number of defendants being recommitted to jail or prison due to violating the conditions of their release.”

These series of responses imply that practitioners do not feel that GPS is too lenient as a pretrial option, or that monitoring increases the number of defendants who are sent to jail or prison for violations. However, there was less agreement among practitioners with the statement that “GPS is punitive to the defendant.”

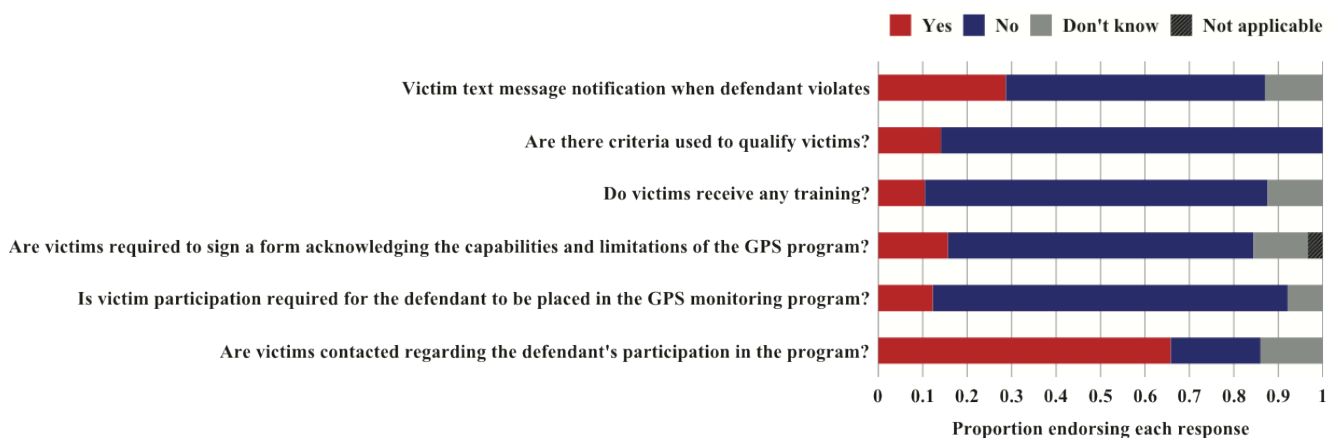
Figure 3A-9. Percentage of respondents in the DV subsample indicating to what extent they agree or disagree with statements regarding using GPS for supervising DV pretrial defendants (N = 95-101)



7. Victim-relevant factors

Programs may have various degrees of victim-centricity. Figure 3A-10 shows roughly two thirds of programs contact victims regarding defendant participation in the program and only 10-15% use criteria to qualify victims, report that victims receive training, require victims to sign documentation acknowledging the capabilities and limitations of the GPS program, and require victims to participate in order to place defendants in a GPS program. In less than a third of programs (30%) victims receive text message notification when the defendant violates, meaning it is the least utilized function.⁴⁰

Figure 3A-10. Victim-centric features of programs in the DV subsample (N = 105-115)



8. Impact of GPS on defendant behavior and other defendant-relevant factors

Figure 3A-9 underscores the idea that GPS monitoring, and its associated restrictions, enable more extensive supervision of defendants, with nearly 90% of respondents agreeing that GPS had a positive impact on defendant supervision. Although respondents agree that GPS monitoring deters defendants from “going to hazardous locations,” (i.e., “bars,” “known drug areas”), a plurality disagree with the statement that GPS discourages defendants’ “former associates” from having contact with them.

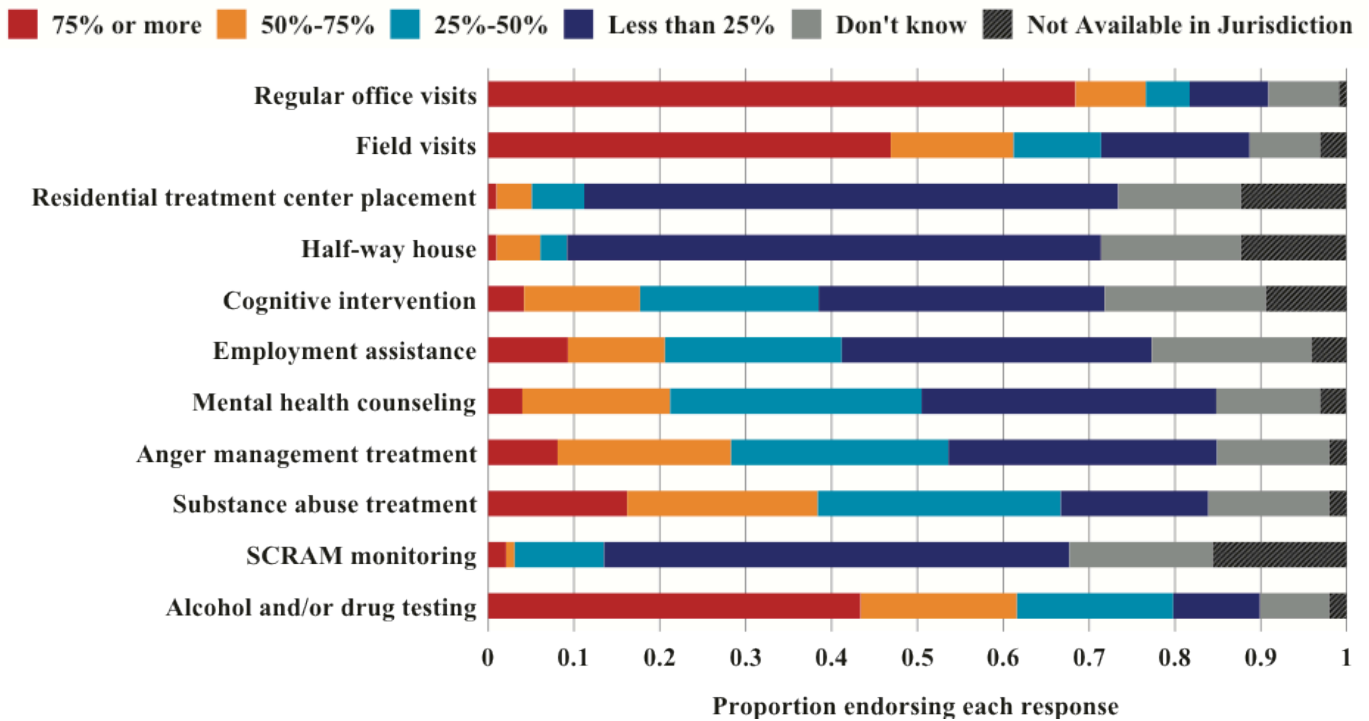
One indicator of how defendants adjust their behavior when placed on GPS may be the degree to which they violate the conditions of their program. The majority (about 60%) indicated that GPS clients violate conditions of their program less than defendants in non-GPS programs, and nearly 25% thought they violated about the same. The majority of practitioners reported that, in an average month, less than 7% of defendants violate the program by entering exclusionary zones (intentionally or unintentionally).⁴¹ Using violation rates as measures of programmatic success can be problematic, however, as low rates may reflect a lack of awareness on the part of the program about actual violations. Considering victim- or defendant-relevant factors that can be targeted for improvement may generate alternative measures of success.

According to survey results, defendants who participate in GPS programs are enrolled an average of 99.5 days (N = 84; SD = 65.6 days), with a minimum of one day and maximum of 365 days, and with clusters at 30 (8.3%), 60 (11.9%), 90 (26.2%), and 180 days (11.9%). The range in days reflects varied usage of the GPS to monitor defendants. Participating defendants are charged an average of \$8.80 per day (N = 86; SD = 5.1), though 16.3% of defendants cannot make payments and are exempted from having to do so, while another 16.3% pay \$10.00. A few programs require defendants pay up to \$18.50 per day or percentages of gross salary.

Respondents were asked about the responsibilities of defendants and the types of programming in which they participate (see Figure 3A-11). Regular office visits were the most frequent expectation for defendants, followed by field visits and alcohol or drug testing. In terms of treatment programs, substance abuse treatment was more common than anger management treatment, and mental health counseling, employment assistance, and cognitive interventions were also reported as being utilized. About one sixth of the respondents did not know whether specific modalities were available in their jurisdiction.

Lastly, only a minority (13%) of programs had ever formally evaluated the effectiveness of GPS tracking for defendants, and only a third employ special procedures to assess the risk of pretrial violent behavior.

Figure 3A-11. Percentage of respondents in the DV subsample indicating the percentage of defendants participating in each program while being monitored (N = 96-99)



B. Varieties of GPS for DV programs: Perspectives of justice personnel in six sites

This section introduces the agencies that participated in the quantitative (West, South, Midwest) and qualitative (West, South, Midwest, East, Southeast, Southwest) components of the study, drawing upon in-depth interviews with criminal justice personnel (N = 83) and NGO-based social service providers (e.g., victim advocates associated with NGO's; N = 19) to characterize their distinctive approaches to organizing GPS for DV programs.

Two sets of value dimensions help identify each agency's approach. First, GPS programs for DV are distinguishable along the *crime control versus due process* continuum associated with criminal justice (Packer, 1968). An emphasis on crime control posits "the repression of criminal conduct" (Packer, 1968: 48) as the most important function of law enforcement," and day-to-day operations are organized on the presumption that offenders within the justice system's purview are "probably guilty." By contrast, an emphasis on due process favors the "doctrine of legal guilt" over actual guilt (Packer, 1968: 53), recognizing the "possibility of error" entering into criminal justice procedures and the importance of being mindful about the civil liberties of offenders (especially non-convicted persons).

Second, the participating GPS programs for DV are distinguishable along the *treatment versus punishment* continuum associated with the ends of criminal justice: to rehabilitate or to sanction. This dimension concerns the extent to which justice responses are oriented toward the "ideal" of rehabilitation (Garland, 2001) versus administering sanctions. A treatment orientation results in efforts to discern the offender's needs and deficiencies – enabling the pursuit of some kind of intervention or remedial regimen. A punishment orientation entails embedding restrictions and deprivations in the offender's everyday life that provide a "taste of punishment," impressing upon him⁴² the grievous nature of his past conduct.

In regard to the crime control versus due process dimension: EM programs have previously been observed to entail “pains of imprisonment” (Payne and Gainey, 1998) on par with those that were once described with respect to the hardships of prison life (Sykes, 1958). Based on the present study’s analysis, however, there is wide variation in the onerousness of GPS for DV programs. All such programs logically entail one rule: that the defendant stays away from a named party, i.e., the alleged victim or prosecuting witness. The defendant is also likely to be required to stay away from the victim’s residence, from any children the two parties have in common, and any areas that either the victim or her children routinely visit (e.g., the victim’s workplace and her family’s residence; the children’s school). Such “exclusion zones” can be defined more or less expansively: More restrictive programs are likelier to broadly define such zones, possibly resulting in inconveniences to the defendant when the zones interfere with his paths of travel (e.g., bus routes taken to work); but because the defendant is presumed to be guilty, he is viewed as capable of causing the victim renewed harm, entailing that the zone be more broadly defined so that program personnel have more time to respond to any possible incursions.

Programs with an underlying “crime control” approach are likely to be reactive as well as proactive. As a result, they erect restrictions that are focused on clients’ lifestyles, routine activities, and social environments as much as their physical location and patterns of movement. Restrictions cover a wide range of areas pertinent to defendants’ liberties and sense of well-being. They establish severe curfew hours and require submission to practices that increase the transparency of defendant’s lives. These restrictions are coupled with a generalized suspicion and unaccommodating attitude toward client requests for last minute changes in set routines, since such requests introduce unknown risks and uncertainty.

The due process orientation emphasizes the idea that restrictions should veer toward what is minimally required to accomplish client supervision, allowing the defendant to otherwise lead life as he would were he under general release on bond: since he is presumed innocent, his freedoms should be respected. Such an approach is apt to value *flexibility* in handling exigencies emerging from clients' situations – such as promptly accommodating changes in work schedules or permitting the defendant to call rather than visit a supervising officer for his weekly check-in. Indeed, flexibility and a willingness to work with the particularities of each defendant's situation, and not treat them all the same, undermines the uniform standardized goal that would otherwise be considered the program's core mission: to reinforce a no-contact order. That is, programs with a more flexible orientation may on occasion allow the defendant to have “non-hostile contact” with the victim in the case. Programs adopting this approach may be concerned to protect the defendant's rights by exercising caution about imposing rules that the client will be prone to violate, especially when those rules are viewed as unreasonable (e.g., tight curfew hours for defendants whose work entails long-distance trucking) and creating needless legal jeopardy for him.

The treatment versus penalty continuum embodies values expressed in efforts to organize the offender-supervisor relationship in either a therapeutic or punitive direction. The agency and the training of its staff are especially determinative of the program's orientation. There is no consensus, either nationally or within the sample of six sites that is the focus of the present study, about what kind of agency is best positioned to run a GPS for DV program. Thus, programs that are staffed by personnel who have been certified as social workers are likely to develop a different way of interacting with clients than are programs staffed by personnel who have law enforcement backgrounds.⁴³

GPS for DV programs focused on rehabilitation are more concerned to establish and address the offender's needs, while programs with a penalty emphasis are more concerned to determine the offender's compliance with court-ordered rules and to administer corresponding controls and punishments. Thus, a case manager with a penalty orientation will listen to a client's statements during routine face-to-face meetings with an ear attentive to signs that the client is involved in activities that run afoul of the court's rules, or pose a danger to the victim. Ensuing warnings, reproaches, and threats may lead the client to view the encounter as investigative (or "Gotcha!" oriented), rather than merely inquisitive – resulting in his becoming increasingly guarded in future encounters. By contrast, a supervising officer with a treatment or rehabilitation orientation will likely listen to the client's statements with a different ear, and probe for information with a different purpose. The officer with a caseworker perspective may listen for issues that pertain to the client's living situation, including whether it addresses his immediate and long-term needs or its potential effects on his state of mind and behavior. Given this focus, the officer will seek to encourage openness and trust in the relationship, and in the spirit of rehabilitation, not penalize clients for "minor infractions," but rather adopt an attitude of making the client's situation "work" so that he is less likely to violate the court's rules, resulting in the client's belief that his caseworker is "trying to help" him.

Crisscrossing the various value elements, and helping to shape and inform the approach that is likely to make the most sense to each agency, are the characteristics of the population commonly or likely to be referred to its GPS program. Programs that routinely receive high-risk clients, or clients with long and varied criminal records, are likelier to develop approaches that are mindful of contingencies associated with those kinds of clients, as opposed to programs that have clients with comparatively milder records. The three (quantitative) impact sites (in Midwest, South, and West) handle different "types" of offender populations, as measured by

offense history, and this difference is important in appreciating the approach to supervision that each agency has adopted.

The remainder of this section presents descriptions of the six agencies to highlight how the values discussed above are manifested in their GPS for DV programs.

1. Midwest: Crime control and penalty

This agency's program is housed within the Sheriff Department's Electronic Monitoring Unit and is led by sworn personnel previously employed in the county's Probation Department as "enforcement officers." Recent arrivals to the unit have backgrounds as patrol or jail officers, and the emphasis on crime control and penalty is a logical extension of their training. Although officers will say that they do not know whether the defendant⁴⁴ is guilty or innocent of his charges, they do have access to his case file and a listing of his prior arrests and convictions, which are likely to be extensive. Midwest GPS enrollees tend to have a relatively high number of prior arrests (mean = 13.3), as shown in Table 3C-2 (see p. 64). The program's predicate is that the client represents a serious threat to the victim and hence rules and restrictions are a vehicle for doing risk management. As an example, clients' "free hours" are tightly controlled: When not at work or at home, the client has five hours per week to conduct "personal business," thereby limiting the client's "opportunity time" for endangering the victim. Clients are also subject to unannounced surprise home visits, during which armed officers wearing bullet proof vests will conduct an "in plain view" search of common living areas and the defendant's sleeping quarters, a procedure that may at times turn into a full-fledged search. The purpose of such searches ordinarily is to detect the presence of controlled substances (e.g., drugs or alcohol) or weapons (e.g., firearms or swords) that might pose heightened risk for the victim.

Personnel are strict in their enforcement of program rules and requirements, to the point of appearing unreasonable and indifferent to the clients. Weekly office visits are required of clients, during which the information exchanged is fairly minuscule (though urine screens will at times be collected during these visits, and the encounters will be more substantial with clients who are suspected of engaging in problematic activities). Nevertheless, all clients are required to appear, often traveling long distances and waiting hours before their visit with their supervisor – at the expense of their weekly allocated “out hours” and the patience of affected employers whose workers run late. Inflexibility is also evident in the drawing up of exclusion zones, or the areas into which the abuser cannot venture: programmed as radii of two miles in circumference, the officer is unwilling to create zones of irregular (non-circled) shape that can accommodate travel routes (interstate highways, bus lines, etc.) that may “clip” the zone, resulting in increased burdens on clients’ commuting plans, especially for those reliant on public transportation.

The rules and restrictions have the merit of highlighting for the officer those clients who have problems in being compliant, and allow the officer to manage the information stream provided by GPS tracking logs. Those who perform poorly with respect to rules and restrictions are likelier to have their patterns of movement studied for indicators of risk to the victim (e.g., is the client having secret rendezvous with the victim? Is he following her when she is outside of the exclusion zone?). The officer may also seize upon minor infractions of the rules to warn the client that whatever limited liberties the client has left may be withdrawn. The client may be threatened with being put “on lockdown” (or total house arrest), or being sent back to jail, should he not “get with the program.” Supervisors are sworn law enforcement personnel, thus such warnings are likely to be viewed by clients as more than empty threats.⁴⁵

The Midwest agency also employs specialized program officers who maintain contact with the victim in the case (the two women are employed as “victim specialists”). These officers

contact victims about the defendants' proposed assignment to GPS, request and document victims' consent to participate,⁴⁶ and announce their availability through a direct telephone number on an as needed basis, twenty-four hours a day. Victims are also encouraged to furnish staff with updates about changes in their residential address, the defendant's circumstances or other pertinent information, and they are offered escort to court appearances in an effort to bolster their resolve to stand by the case and not be intimidated by the defendant or his family. The victim specialists play an important role in sustaining two-way communications between the victim and the agency, and also serve as a conduit to the broader court system.

2. South: Due process and treatment

South's GPS for DV program is housed in the pretrial supervision unit of a community corrections department staffed by a sizable number of probation officers with a social work orientation. The South approach to supervision is premised in the idea that the clients under supervision are flawed rather than (probably) guilty. The presumed flaw becomes the basis for handling the client: as a person with patterns of conduct, feeling, or thinking that result in his getting into trouble. Clients⁴⁷ enrolled into the GPS program are seen as often being socially marginalized, lacking social support or social capital, and their offense histories are comparatively minor (mean prior arrests = 3.8). The supervisory role entails, in part, identifying, and having the client recognize, the sources of their troubles, so that the client will be "motivated to change" and be better able to "successfully re-enter" society, as the agency director put it, adding "GPS is intervention, not punishment."

Rule violations are not taken at face value. They may have an underlying meaning, one not associated so much with risk management issues, but with problems in living that the client is handling unsuccessfully. For example, a client's persistent problems returning home by curfew

may stem from his inability to assert himself to an employer who wants him to work overtime. Or the client's repeated attempts to telephone his previous address may be associated with the client's difficulty in managing being separated from his children. In short, violating behavior requires a diagnosis, not an investigation, and the remedy is apt to be a referral to services or an impromptu counseling session rather than merely violating the client or seeking a bond revocation. The caseworker's task is to help the client determine what is keeping him from being successful; "casework" involves managing the client's path to reentry as much as it entails enforcing court rules. From a casework perspective, violations are an opportunity to address clients' needs and encourage self-insight. Open and honest dialogue is essential to the process; clients should feel that they have nothing to hide (including violating conduct). Evidence that rapport exists between clients and staff is shown in the familiarity and intimacy that they sometimes display (hugging on arrival or departure). Clients' comments about how the caseworker "helps" them deal with various issues, or how the caseworker has become a parental figure to them, offers more evidence.

Wide variation exists in how restrictive or demanding "life on the box" is for clients, illustrating the importance accorded to flexibility and the practice of customizing program participation. Exclusion zones are irregularly shaped and can be of diverse ranges, from as few as 500 feet to as much as a few miles, but can also be drawn up to encompass entire cities or other jurisdictions (i.e., when the victim lives in another city, county or state). Some clients have early curfews, others have very late curfews and, in a handful of cases, no curfew at all. Some clients may be directed to attend mental health related treatment, others to drug counseling or anger management and batterer intervention programs. The program does not create a universal template of rules for clients to follow but rather takes guidance from the presiding judge or magistrate who referred the client to the monitoring program and formulated the terms of pretrial

release. Caseworkers may add new foci to the case management as needs are discovered, such as helping a client who develops an interest in obtaining a GED. Some judges allow clients to have limited, “non-hostile” interaction with victims (e.g., to manage shared business assets or discuss parental issues), and even permit a smaller number of clients to live with their victims (essentially undermining the idea that GPS tracking should be used to shield the victim from the defendant).

Much supervision occurs by telephone. Clients call in advance to announce that they will return home late or leave home early. Supervisors call clients when the transmitter’s signal is weak, lost, or out of range. Defendants are encouraged to call if they have equipment problems, and to inform their supervising officer if they have difficulties conforming to rules or if hardships arise. Some clients call without prompting, just to check-in informally. The telephone-based interaction becomes a basis for reinforcing themes that emerge during office visits. Home visits are rare, conducted by an unarmed field officer, who rarely enters the client’s home premises unless he has to inspect equipment for technical problems. Transmission issues typically prompt home visits, whether related to signal strength or battery or power supply problems. Home visits do not involve searches or efforts to detect risk factors in the residence (officers in South do not have arrest powers). In short, supervision is not invasive, but instead has therapeutic and welfare aims. Intrusive approaches are believed to undermine the rapport and open dialogue essential to a productive client-supervisor relationship.

3. West: Due process and penalty

The West’s due process approach positions the monitoring agency as a neutral collector of information that may be used at a later date in judicial proceedings. GPS “brings data to the table,” as the agency director stated. It is no longer a matter of “he said, she said” where claims

of abuse and unlawful contact are concerned. Given the tracking information that is compiled by GPS technology and put at the DA's, defense attorney's, and judge's disposal, the defendant's⁴⁸ case can be helped or hurt (and the victim's credibility can be enhanced or undermined) by the GPS points logged by the technology. Despite the fact that defendants entered into the GPS program are viewed by staff as "high risk" – more than one in four face charges pertaining to violation of a DV-related restraining order, and the mean number of prior arrests for GPS supervisees is 4.6 – caseworkers are loath to pry into the everyday doings or mental states of their clients. Inadvertent admissions by supervisees make caseworkers legally responsible for relaying any divulged information to the DA, thus transforming themselves into witnesses for the prosecution, which is not how they define their role: as a neutral collector of information.

The supervising officer's role entails neither proactively catching defendants in the act, nor rehabilitating defendants. Although personnel will notify the police if the victim zone is breached and the offender refrains from exiting the area, West agency supervisors claim to "never" mention the word "protection" when the GPS program is described to victims. Victims are reminded that they are responsible for their own safety and should remain watchful of their environment; victims should have "peace of mind," but not a "false sense of security." The GPS program is described to victims as an information tool that will play a role in the legal outcome if required, and not as an entity mobilized to act proactively or reactively with regard to the victim's safety. Indeed, the program has over the years reduced the routine contact it has with victims, who at the time of the study were being serviced by victim advocates at a different location – in the prosecutor's office.

The rehabilitation emphasis of South and the proactive enforcement approach of Midwest presume intensive, face-to-face casework, which is not practiced here. Instead West favors a "teamwork" approach in which caseworkers "share" supervisees, resulting in defendants seeing

different caseworkers from visit to visit. Although the information stream documented by GPS tracking is important to supervision, defendants are not under curfew restrictions and need not return home daily to the same residence; many of the supervisees are understood to be self-employed and thus without regularly set schedules. Exclusion zones are typically set for comparatively narrow radii, on average about 500 feet (though they can be smaller still if the defendant lives closer to the victim) because it is believed that defendants should not be burdened by exclusion zones that cause hardships for the non-convicted. This is especially an issue because this agency sets multiple exclusion zones for each victim (e.g., victim's home, work place, victim's parents' home, places of worship, etc.): If the zones are sufficiently large, entire swaths of the metropolitan area's transportation grid could become inaccessible.

The flexibility that is provided by the absence of curfew restrictions and residential inclusion zones, and the accommodating approach that is evinced by relatively small victim zones, is consistent with a due process approach in that the program's strictures are minimally intrusive and require few behavioral modifications on the defendant's part, but victims are rattled by the sense that their estranged partner moves about unencumbered despite their GPS enrollment. Although defendants are often subject to urine testing – as per a judge's order – there are no routine home visits, and in-person office visit requirements are relaxed over time, so that weekly visits can become once or twice a month events, and supervisees can check in via telephone if needed. Any violations discovered – whether in the form of positive urine screens, victim zone incursions, or equipment tampers – are forwarded to the DA. Staff in the district attorney's office note that they rarely act on violation reports before a case is disposed, however, except when they might seek leverage during plea bargaining.

The most onerous aspect of the program is cost of participation: on average ten dollars a day, though as high as sixteen dollars a day (fees are on a sliding scale that can go down to zero

if the supervisee has a documented inability to pay). The EM program is financially self-sufficient, relying on defendants paying fees on a weekly basis, which may also affect the program's reach and intrusiveness: because the program's survival depends on defendants submitting fees, their continued ability to earn a living is important. A significant portion of the population has an immigrant background (almost half of the GPS defendants have Hispanic or Latino ancestry), and administrators speculated that the experience of being on GPS and paying sizable per diem fees can have the effect of teaching men from cultures with traditions of machismo about the seriousness with which violence against women is addressed in the U.S.

4. East: Due process and penalty

East, a suburban agency within a major metropolitan area of the country, takes an approach similar to that found in West, emphasizing collecting information over controlling crime, and enforcing program rules instead of developing rehabilitative courses of action.⁴⁹ East's approach is embedded within a court culture that practices an evidentiary-based model of prosecution. Justice personnel at this site emphasize that the state should not elevate risk for the victim of DV by having her testify against the defendant. Instead, it is important for the state to proceed with the case independent of whether the victim participates as a witness for the prosecution, which entails collecting information that can be leveraged into the state's case. There is no expectation that defendants ought to pay the costs associated with GPS.

A hybrid of passive and active GPS is used by the monitoring agency: active during business hours, passive during non-business hours. Defendants' GPS points logged during non-business hours are downloaded the following morning by a dedicated monitoring technology specialist, who reviews logs for any indications of technical or moving violations, which are then forwarded to caseworkers who decide what fixes are needed (e.g., a new battery in the case of

power supply issues), or whether to issue warnings to clients or report violations to the prosecutor's office. East's approach is clearly not focused on either proactive or reactive responses to victim endangerment, but rather is organized to document any possible program violations (including contact attempts) and to treat them as matters for the courts to adjudicate, especially if they should occur beyond business hours. Consistent with an evidence-based approach to prosecution, East's personnel are more oriented toward preventing victim tampering than toward victim safety per se. In addition, supervising officers believe that GPS provides a useful pretext for having face-to-face encounters with defendants, during which information pertinent to the case might be gleaned, and which can be more important and accurate than anything that might be learned directly through GPS tracking.

5. Southeast: Treatment and crime control

Staffed by sheriff's deputies, and hence inclined toward a crime control orientation, this agency also adopts a treatment approach, owing to a) the small caseload that the program has to manage, b) a specialization in domestic violence cases among the deputies who do the casework, and c) an outlook typically associated with small towns – one marked by police officers who are familiar with the families who reside in the area.⁵⁰ Accordingly, officers can be both rigorous about investigating the movements of defendants⁵¹ who are enrolled in the GPS for DV program, and also very focused in trying to “help” the supervisees.

This program's motto is, “social work and law enforcement go together.” Deputies might spend an hour studying each defendant's GPS points from the previous day – noting how much time he stayed in one location, the patterns in his driving speeds – to determine whether anything suspicious is happening (e.g., are there signs of stalking behavior?). A “founded” suspicion might provide the basis for a sting operation: a deputy's vehicle might show up at those locations

where a defendant reliably goes during his non-curfew hours, catching him by surprise (officers have full powers of arrest, including in relation to program violations). This kind of intensive “detective” work is supplemented by a touch of the therapeutic approach seen in South: encouraging defendants to rethink ingrained patterns of thought and action, directing them to pursue new opportunities, or make a fresh start. Deputies see clients as risks to be managed, and yet they also believe clients are fundamentally malleable and can be guided in a more non-violent direction. In the short term, however, personnel are focused on preventing contact that might result in injury, or in the defendant’s persuading the victim to withdraw or amend her complaint. The simultaneous focus on treatment and crime control is also seen in the approach taken by the district attorney in this jurisdiction. On the one hand, the DA sees GPS as a “homicide prevention tool.” On the other hand, GPS provides the DA with an opportunity to interact with reluctant victim-participants, who are required to meet with her when they wish to request removal of the GPS requirement. On such occasions, the DA will explain the ramifications of this request to the victim, correcting “purposefully inaccurate information” she receives from her alleged abuser, with the intent of empowering her to follow up with her complaint.

6. Southwest: An ad hoc, make-shift approach

This agency developed its GPS for DV program as a result of jail overcrowding that occurred in the wake of a massive swelling of the county’s population over the past twenty years. Housed within the jail, the monitoring unit was established as a way of allowing non-violent inmates to be released so as to ease pressures that stem from overcrowding. Eventually, judges came to the view that some defendants facing DV charges could be allowed into the program, enabling them to maintain their employment and uphold their familial responsibilities, while

keeping them under some degree of supervision. Supervisory personnel would rather not have defendants with any violent charges on their case load, and, indeed, violent offenses were broadly considered a disqualifying condition, but these clients were referred to them by judges and so had to be accepted for supervision.

The Southwest program is non-programmatic: it has an ad hoc quality, lacking an explicit philosophy. Treatment and rehabilitation elements mix with penalty emphases; defendants⁵² are as likely to be met with a due process sensibility as they are with one focused on crime control. The caseworkers who staff the program and the administrators who oversee it have a background as guards in the county jail. They serve in the GPS program for a two-year stint, after which their assignment rotates them back to a position among the jailers. This kind of perennial rotation does not permit the formation of the kind of institutional memory on which systematic and integrative policies and practices can be established, or clearly understood and conveyed across successive cohorts of staff: as personnel shift, approaches shift. Judges describe the current program as a make-do, but note that it has the potential to become a more systematic and integrative response to the problem of domestic violence.

7. Conclusion

This review of the varieties of GPS programs and their divergent approaches to monitoring alleged abusers is important to keep in mind in contextualizing the findings from the quantitative component of the present study. The Midwest, West, and South agencies discussed above participated in this part of the research project, to which the report now turns.

C. Quantitative impact study (Midwest, West, South)

1. Midwest

a. Description of the domestic violence cases

This section presents findings relating to the impact of GPS or RF⁵³ monitoring on short-term outcomes of violations and re-arrest and the long-term outcome of re-arrest, as well as whether the duration on GPS has an effect on these outcomes. The examination of these issues is also conducted separately for those cases that resulted in a dismissal or acquittal by the court versus those in which the individuals arrested for DV were convicted by the court. Table 3C-1 provides descriptive statistics of the variables used in this analysis based on the entire sample. Of the total sample of 2,052 DV cases, 25.9% were tethered to a GPS device, 22.6% were placed on RF, and 51.5% were not placed on either form of electronic surveillance. The defendants placed on GPS for whom data were available (n = 416) wore the device for an average of 58.82 days, with a median of 36 days, and a range of one to 517 days. Of the 1,813 cases in which the judicial disposition information was available, 40.7% were convicted and 59.3% were dismissed (only six defendants were acquitted). The three outcomes are distributed in the following manner among the cases for which these data were available: 13.4% of the cases violated the conditions of their supervision and 3.3% were re-arrested in the short-term (i.e., during their supervision period). Second, nearly three-fifths (59.3%) of the DV defendants were re-arrested in the long-term period (i.e., the one-year follow-up period).

Table 3C-1 shows that males comprise 92.2% of the cases and the racial/ethnicity groups are as follows; Whites = 37.5%, Hispanics = 2.1%, other races = 0.2%, and Blacks comprise the largest proportion of the total population at 60.0%. The average age of the DV defendants was

32.6 years. Just over one-fifth of defendants (22.4%) were arrested for a felony crime; the average number of prior arrests was 15.4, and the average number of prior convictions was 12.9.

Table 3C-1. Descriptive statistics of variables with all cases: Midwest site

	N	Mean	SD
Number of Days on GPS	416	58.820	67.673
Convicted Cases	1,813	.407	.491
Short-Term Outcome – Violation	2,052	.134	.341
Short-Term Outcome – Arrest	2,052	.033	.178
Long-Term Outcome – Arrest	2,052	.593	.491
Male	1,915	.922	.269
White	1,879	.375	.484
Black	1,879	.600	.490
Hispanic	1,879	.021	.143
Other Races	1,879	.002	.052
Age at DV Incident	1,905	32.550	10.387
Number Prior Arrests	2,051	15.372	15.064
Number Prior Convictions	2,030	12.957	12.716
Current Crime – Felony	1,979	.224	.417
Global Positioning System (GPS)	2,052	.259	.438
Radio Frequency (RF)	2,052	.226	.419
Non-Electronic Monitoring	2,052	.515	.500

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented in subsequent tables include only cases that had no missing data on all of the variables in each model.

Table 3C-2 provides mean comparisons across four groups of interest in the analysis: those placed on GPS, RF, jailed, and bonded (i.e., without EM supervision). Some salient differences across these four groups include the following: GPS cases are the most likely to result in a conviction (55.6%), while defendants bonded out of jail are least likely to be convicted (22.5%). Short-term violations are much more likely to occur among RF cases (41.1%) compared to GPS cases (15.8%) or bond cases (0.0%).⁵⁴ GPS cases are also the most likely to be arrested in the short term (8.9%).⁵⁵ In contrast, the likelihood of cases being arrested in the long term is very similar for GPS cases (58.6%), RF (57.0%), and those released on bond (57.6%) and somewhat higher among jail cases (63.6%).

Females are more likely to be in the GPS sample (10.3%) than in any of the other three groups, and Blacks are likelier to be in the Jail sample (69.3%) than in any other group. The average age is essentially the same across the four groups (32.4 to 32.8 years). The group most likely to have been arrested for a felony crime is the Jail group (30.5%), while the Bond group is comprised of only 14.6% felons. The Jail group also has more serious criminal records as measured by prior arrests (mean = 18.7) and convictions (mean = 15.4). Comparisons in these prior record measures across the other three groups indicate relative consistency in the average number of arrests and convictions.

Table 3C-2. Descriptive statistics (mean values) of variables across four groups: Midwest site

	GPS (N=531)	RF (N=465)	Jail (N=549)	Bond (N=507)
Convicted Cases***	.556	.298	.433	.225
Short-Term Outcome – Violation***	.158	.411	N/A	N/A
Short-Term Outcome – Arrest***	.089	.002	.007	.030
Long-Term Outcome – Arrest	.586	.570	.636	.576
Male	.897	.921	.944	.923
White***	.430	.410	.285	.385
Black***	.532	.564	.693	.597
Hispanic	.028	.018	.022	.016
Other Races***	.000	.009	.000	.002
Age at DV Incident	32.362	32.400	32.812	32.547
Number Prior Arrests ^a	13.275	14.426	18.749	14.773
Number Prior Convictions ^a	11.281	12.457	15.418	12.484
Current Crime – Felony**	.217	.222	.305	.146

*** Indicates significant Chi-Square statistics in crosstabular analysis, $p < .001$.

** Indicates significant Chi-Square statistics in crosstabular analysis, $p < .01$.

^a - T-tests of mean differences across all of the permutations of the four groups found statistically significant differences ($p < .001$) in the number of prior arrests and convictions for GPS vs. Jail, RF vs. Jail, and Jail vs. Bond.

N/A indicates not applicable.

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented in subsequent tables include only cases that had no missing data on all of the variables in each model. The number of cases reflects the maximum number of cases that were used in one or more of the individual variables.

Tables 3C-3, 3C-4, and 3C-5 present Logistic Regression models to address the question of whether the duration on GPS is associated with the short-term outcomes of a violation or re-arrest, and the long-term outcome of re-arrest among all DV defendants in the Midwest site that

were electronically monitored using GPS, as well as among two subgroups – those that were dismissed or acquitted and those in which the DV arrest resulted in a conviction. Because DV cases tend to have a relatively high rate of dismissals (victims are reluctant to testify against their abuser due to emotional or/and economic ties, or are intimidated from following through with the complaint), an examination of the impact of GPS is conducted separately for those cases which resulted in a dismissal or acquittal by the court versus those in which the individuals arrested for DV were convicted by the court. The findings presented in Table 3C-3 demonstrate that the length of time on GPS has no empirical link to whether domestic violence cases were more or less likely to violate the conditions of supervision. This finding is consistent for all DV cases and for the subgroups dismissed/acquitted and convicted when modeled separately. Identical conclusions are derived from the logistic models predicting re-arrest in both the short and long term presented in Tables 3C-4 and 3C-5. The conclusion drawn from this analysis is that, in the Midwest site, increasing the dosage of GPS surveillance has no impact on the likelihood of DV cases failing on supervision through a violation or a new arrest.

Table 3C-3. Logistic regression models of effect of length of time on GPS and short-term outcome of whether violated among all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	.000	1.000	-.003	.997	-.001	.999
Male	.252	1.164	.061	1.063	1.016	2.761
Black	.328	1.388	-.748	.473	.957*	2.604
Age at DV Incident	-.022	.978	-.148*	.863	-.010	.990
Number of Prior Arrests	.024	1.024	.094**	1.098	.002	1.002
Current Crime – Felony	-.058	.944	.338	1.403	-.468	.626
Intercept	-1.806*		.735		-2.536*	
Model Chi-square	5.829		17.989**		7.394	
R-Square	.030		.245		.067	
N	355		149		176	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

The variables Other Races and Hispanic were excluded from the analysis because the model could not properly converge with their inclusions.

Table 3C-4. Logistic regression models of effect of length of time on GPS and short-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	.003	1.003	.003	1.003	.000	1.000
Male	-.141	.868	-.977	.377	-.386	.680
Black	.046	1.047	-1.025	.359	.513	1.670
Age at DV Incident	-.003	.997	-.002	.998	.007	1.007
Number of Prior Arrests	.030*	1.031	.033	1.033	.041*	1.042
Current Crime – Felony	1.540***	4.666	.534	1.706	2.327***	10.250
Intercept	-3.074***		-1.892		-3.265**	
Model Chi-square	28.620		6.454		33.394	
R-Square	.155		.099		.302	
N	316		149		176	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

The variables Other Races and Hispanic were excluded from the analysis because the model could not properly converge with their inclusions.

Table 3C-5. Logistic regression models of effect of length of time on GPS and long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	-0.001	0.999	0.003	1.003	-0.002	0.998
Male	-0.136	0.873	0.75	2.117	-0.97	0.379
Black	0.354	1.424	0.581	1.787	0.197	1.218
Age at DV Incident	-.042***	0.959	-0.02	0.98	-.042*	0.959
Number of Prior Arrests	.037**	1.038	0.028	1.028	.044*	1.045
Current Crime – Felony	-.663*	0.515	-0.759	0.468	-0.271	0.762
Intercept	1.503**		-0.107		2.223**	
Model Chi-square	27.317***		11.894		17.022**	
R-Square	0.1		0.105		0.124	
N	355		149		176	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White, Crime.

The variables Hispanic, Other Races, and Number of prior convictions were excluded from the analysis because the models could not properly converge with their inclusion.

b. Effect of GPS vs. RF on outcomes

Tables 3C-6, 3C-7 and 3C-8 present Logistic Regression models to address the relative effectiveness of GPS technology (i.e., being tracked with house arrest during curfew hours) to the RF method (i.e., being only on house arrest during curfew hours) in producing positive short- and long-term outcomes among all cases, and then separately for cases that were dismissed or acquitted by the courts versus those resulting in a criminal conviction. In terms of the effect of GPS in reducing the likelihood of violations in the short term relative to RF, the model shows a significant reduction in violations among GPS cases ($B = -1.455$, $p < .001$) when controlling for offender demographic characteristics, current crime type, and prior record. The odds ratio of .233 indicates that DV defendants placed on GPS exhibit a reduced odds of a violation in the short term that is 76.7% less than comparable RF cases. Comparable findings in terms of GPS being more effective than RF are found when the cases are distinguished by the judicial outcome of dismissal/acquittal and conviction; however, the GPS effect is stronger among dismissed/acquitted cases ($B = -2.077$, $p < .001$) than the convicted cases ($B = -1.077$, $p < .001$).

The effect of GPS surveillance relative to the less restrictive form of electronic monitoring (RF) on short-term arrest outcomes is quite different. Table 3C-7 shows that GPS cases are significantly more likely to be arrested in the short term than RF cases ($B = 4.107$, $p < .001$) for all cases and among convicted cases only ($B = 3.486$, $p < .001$). A different result occurs when the outcome measure is the likelihood of long-term arrest. Table 3C-8 shows there is no statistically significant effect of being placed on GPS surveillance relative to RF for all cases ($B = .268$, n.s.), dismissed/acquitted cases ($B = .148$, n.s.), and convicted cases ($B = .435$, n.s.).

Table 3C-6. Logistic regression models of the effect of GPS versus RF on short-term outcome of violation for all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	-1.455***	0.233	-2.077***	0.125	-1.077***	0.341
Male	-0.094	0.91	-0.456	0.634	0.903	2.466
Black	.374*	1.453	-0.188	0.829	1.133***	3.104
Hispanic	-0.379	1.46	-0.378	0.72	0.734	2.083
Age at DV Incident	-.043***	0.958	-.072***	0.93	-0.021	0.979
Number Prior Arrests	.019**	1.019	.037***	1.038	0.003	1.003
Current Crime – Felony	-0.001	0.999	-0.132	0.876	-0.049	0.952
Intercept	0.556		1.917		-1.257	
Model Chi-square	105.833***		95.015***		34.453	
R-Square	0.175		0.262		0.155	
N	814		463		306	

* p<.05, **p<.01, ***p<.001.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

Table 3C-7. Logistic regression models of the effect of GPS versus RF on short-term outcome of arrest for all cases and convicted cases: Midwest site

	All Cases		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	4.107***	60.762	3.486***	32.657
Male	-.165	.848	-.429	.651
Black	-.065	.938	.288	1.333
Age at DV Incident	.005	1.005	.011	1.011
Number Prior Arrests	.028*	1.029	.044*	1.006
Current Crime – Felony	1.484***	4.409	2.164***	8.710
Intercept	-7.148***		-6.693***	
Model Chi-square	83.077***		55.605***	
R-Square	.299		.362	
N	816		308	

* p<.05, **p<.01, ***p<.001.

Reference categories: White.

Too few cases existed in the outcome variable with values of 1 (arrested) to calculate a model for the dismissed or acquitted cases. Also, too few cases were in the Other Race variable to include in the models. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

Table 3C-8. Logistic regression models of the effect of GPS versus RF on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	.269	1.309	.148	1.360	.435	1.544
Male	-.154	.857	.502	1.652	-1.014*	.363
Black	.227	1.255	.275	1.316	.119	1.127
Hispanic	-.485	.616	-.346	.708	.041	1.042
Age at DV Incident	-.054***	.948	-.050***	.952	-.047***	.954
Number Prior Arrests	.049***	1.050	.050***	1.051	.056***	1.057
Current Crime – Felony	-.592**	.553	-.675**	.509	-.345	.708
Intercept	1.482***		.873		1.734	
Model Chi-square	87.638***		56.904***		31.468	
R-Square	.138		.157		.131	
N	814		463		306	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

c. Effect of GPS vs. non-GPS on outcomes

This section compares short- and long-term outcomes of DV defendants placed on GPS compared to Non-GPS (RF or bonded out). Table 3C-9 provides results on the effect of GPS on whether DV defendants are arrested in the short term among all cases, and those who were dismissed or acquitted versus those who were convicted. Consistently the models demonstrate that DV cases placed on this stringent form of electronic surveillance are significantly more likely to be arrested in the short term (all cases - $B = 2.003$, $p < .001$; dismissed/acquitted - $B = 1.735$, $p < .001$; acquitted cases - $B = 1.939$, $p < .001$). By contrast, Table 3C-10 shows that when the outcome measure is long-term arrest, the findings indicate that DV defendants placed on GPS are no more likely to be re-arrested than Non-GPS cases (all cases - $B = .212$, n.s.; dismissed/acquitted - $B = .116$, n.s.; acquitted cases - $B = .261$, n.s.).

Of particular interest in this study was whether GPS surveillance has an impact on the likelihood of domestic violence defendants committing further acts of violence against domestic partners in the long term relative to those DV defendants not placed on GPS. The models in Table 3C-11 address this question among all cases, those who had their cases dismissed or acquitted, and those who were convicted by the court. For all cases, the first model demonstrates that DV defendants placed on this stringent form of electronic surveillance are significantly less likely to be arrested for a subsequent domestic violence crime in the long term ($B = -.368, p < .05$). The odds ratio of .692 indicates that the odds of DV defendants placed on GPS to commit future domestic violence in the long term are 30.8% less than comparable DV defendants not placed on GPS. While the effects of GPS surveillance on the likelihood of future domestic violence are not statistically significant when examining dismissed/acquitted and convicted cases separately, they remain in the same direction of lower probabilities of future DV among GPS cases than non-GPS (dismissed/acquitted - $B = -.166, n.s.$; acquitted cases - $B = -.368, n.s.$).

Table 3C-9. Logistic regression models of the effect of GPS versus non-GPS on short-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	2.003***	7.411	1.735***	5.667	1.939***	6.954
Male	-.052	.949	-.733	.480	-.024	.976
Black	-.177	.838	-.731	.481	.101	1.106
Age at DV Incident	-.008	.992	.001	1.001	-.016	.984
Number Prior Arrests	.024*	1.024	.022	1.022	.036	1.036
Current Crime – Felony	1.088***	2.967	.408	1.504	1.645***	5.180
Intercept	-4.419***		-3.732***		-4.173***	
Model Chi-square	67.272***		21.378**		45.523***	
R-Square	.172		.121		.245	
N	1,310		823		412	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

Note: Models in which the Non-GPS control group did not include RF cases resulted in substantively the same findings in terms of the effect of GPS.

Table 3C-10. Logistic regression models of the effect of GPS versus non-GPS on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	.212	1.236	.116	1.123	.261	1.298
Male	.094	1.098	.416	1.516	-.509	.601
Black	.374***	1.454	.372**	1.551	.311	1.365
Hispanic	-.508	.601	-.727	.483	-.118	.889
Age at DV Incident	-.057***	.944	-.052***	.949	-.054***	.947
Number Prior Arrests	.041***	1.042	-.038***	1.039	.048***	1.049
Current Crime – Felony	-.330**	.719	-.250	.779	-.350	.704
Intercept	1.397***		1.049**		1.682***	
Model Chi-square	201.376***		114.099***		67.745***	
R-Square	.143		.135		.140	
N	1,804		1,095		612	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

Note: Models in which the Non-GPS control group did not include RF cases resulted in substantively the same findings in terms of the effect of GPS.

Table 3C-11. Logistic regression models of the effect of GPS versus non-GPS on long-term outcome of arrest for domestic violence for all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	-.368*	.692	-.166	.847	-.368	.692
Male	.215	1.239	.246	1.278	.076	1.079
Black	.127	1.135	.052	1.053	.083	1.086
Hispanic	-.935	.393	-1.015	.362	-.557	.573
Age at DV Incident	-.023**	.977	-.031***	.970	-.002	.996
Number Prior Arrests	.013**	1.013	.010	1.010	.020**	1.020
Current Crime – Felony	-.047	.954	.072	1.075	-.248	.780
Intercept	1.343***		-.989*		-2.057**	
Model Chi-square	27.450***		16.053*		12.419	
R-Square	.026		.025		.037	
N	1,804		1,095		612	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

Note: Models in which the Non-GPS control group did not include RF cases resulted in substantively the same findings in terms of the effect of GPS. In fact, the effect of GPS on the likelihood of future domestic violence arrest was greater when RF cases were excluded for the entire sample ($B = -.525, p < .01, \text{odds ratio} = 0.592$).

d. Effect of RF vs. non-EM on outcomes

This final section compares the effect of using RF for DV cases relative to those not placed on any form of electronic surveillance (hereafter non-EM). Table 3C-12 indicates that RF defendants are significantly less likely to be arrested in the short term relative to Non-EM defendants ($B = -2.130$, $p < .05$). The odds ratio of .119 indicates that comparable RF defendants have an 88.1% less odds of being arrested in the short term than comparable non-EM defendants.

Turning to the effect of RF on the long-term outcome of arrest, the models in Table 3C-13 demonstrate that there is no significant influence of RF on the likelihood of arrest after controlling for several relevant factors. This finding is consistent among all of the cases ($B = -.092$, n.s.), those that were dismissed or acquitted ($B = -.014$, n.s.), and those that were convicted by the court ($B = -.246$, n.s.).

Table 3C-12. Logistic regression models of the effect of RF versus non-EM on short-term outcome of arrest for all cases: Midwest site

All Cases		
	<i>B</i>	Odds Ratio
Radio Frequency (RF)	-2.130*	.119
Male	.007	1.007
Black	-.896	.408
Age at DV Incident	-.028	.972
Number Prior Arrests	.009	1.009
Current Crime – Felony	-.376	.687
Intercept	-2.738*	
Model Chi-square	12.048	
R-Square	.066	
N	1,441	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model. Too few cases were re-arrested when examining dismissed/acquitted cases and convicted cases separately to calculate these models.

Table 3C-13. Logistic regression models of the effect of RF versus non-EM on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: Midwest site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Radio Frequency (RF)	-.092	.912	-.014	.986	-.246	.782
Male	.159	1.172	.301	1.352	-.217	.805
Black	.376**	1.456	.344*	1.411	.298	1.348
Hispanic	-.457	.633	-.846	.429	-.035	.966
Age at DV Incident	-.060***	.941	-.057***	.945	-.057***	.944
Number Prior Arrests	.041***	1.042	.040***	1.041	.048***	1.049
Current Crime – Felony	-.234	.791	-.158	.854	-.332	.718
Intercept	1.439***		1.289***		1.588**	
Model Chi-square	175.763***		107.287***		53.238***	
R-Square	.155		.147		.154	
N	1,441		940		434	

* p<.05, **p<.01, ***p<.001.

Reference categories: White.

Too few cases existed in the Other Race variable to include in the model. Including the number of prior arrests and prior convictions in the model resulted in high levels of multicollinearity, therefore, prior convictions were not included in the model. However, the substantive findings were the same regardless of which prior record measure was included in the model.

2. West

a. Description of the domestic violence cases

This section presents findings relating to the impact of placing DV offenders on GPS monitoring on short term (i.e., the pretrial/predisposition period) outcomes of violations and re-arrest, and the long term (i.e., one-year follow-up period) outcome of re-arrest. We also examined whether the duration of being monitored by the GPS (the “dosage” of GPS) has an effect on re-arrest in the long term.

The examination of the duration effects of GPS includes 446 GPS cases in the West site. Table 3C-14 provides descriptive statistics of the variables used in this analysis. The number of days on GPS is measured as a continuous variable. There are 317 cases with complete data on this measure and, on average, DV cases were tethered to a GPS tracking device for 132 days, with a median of 79 days (the range was from 1 to 1,171 days). Of the 441 cases in which

information about the judicial disposition was available, 57.1% were convicted and 42.9% were dismissed or acquitted. The three outcomes are distributed in the following manner among the cases in which these data were available: 15.2% of the GPS cases violated the conditions of their supervision and 19.5% were re-arrested in the short-term. Second, just over one-fourth (26.1%) of the DV cases on GPS were re-arrested in the long-term period.

Table 3C-14. Descriptive statistics of cases placed on GPS: West site

	N	Mean	SD
Number Days on GPS	317	132.429	174.744
Convicted Cases	441	.571	.495
Short-Term Outcome – Violation	448	.152	.359
Short-Term Outcome – Re-Arrest	447	.195	.396
Long-Term Outcome – Re-Arrest	379	.261	.440
Male	448	.955	.207
White	441	.272	.446
Black	441	.243	.429
Hispanic	441	.460	.499
Other Races	441	.025	.156
Age at DV Incident	446	32.204	9.496
Victim Younger Than Defendant	368	.595	.492
Number Prior Arrests	449	4.601	6.682
Number of Address Changes	450	.409	.909
GPS Due to Violation of Court Order	428	.283	.451
Crime – Simple Assault	446	.451	.498
Crime – Assault/Battery	446	.150	.358
Crime – Burglary/Trespass	446	.076	.266
Crime – Harass/Stalk/Intimidation	446	.054	.226
Crime – Murder/Kidnapping	446	.078	.269
Crime – Arson/Property Damage	446	.020	.141
Crime – Violate Restraining Order	446	.170	.376

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented in Tables 2, 3, and 4 include only cases that had no missing data on all of the variables in each model.

Table 3C-15 provides mean comparisons across three groups of interest in the analysis: those placed on GPS, remaining in jail, or bonded out of jail. Some salient differences across these three groups include the following: Bond cases are the most likely type of case to result in a conviction (71.2%), while those remaining in jail are the least likely to be convicted (56.0%).

Males are somewhat less likely to be in the bond sample (90.4%) than any of the other two groups. However, none of these differences are statistically significant. Blacks make up a higher percentage in the Jail group (39.7%) than any other group, and are the least likely to be part of the GPS group (24.3%), and the differences are statistically significant ($p < .001$). The average age differs significantly across the three samples with the jail sample as the oldest (34.0 years), GPS cases 32.2 years, and Bond cases 30.8 years. No significant differences were found across the three groups relating to age differences between victim and offender, or the number of address changes. In terms of the measure of prior criminal record, the jail and bond groups were quite similar (mean number of prior arrests: Jail = .340, Bond = .352). However, the GPS group had significantly higher prior arrests on average (.451, $p < .001$). Significant differences were found across the three groups in terms of the current offense types of simple assault, assault/battery, burglary/trespassing, and violating a restraining order. These results indicate that while the three samples are comparable on several of the covariates measured, controlling for these measures to determine the unique effect of GPS on the outcomes to derive comparable groups is essential.

To examine the unique effect of the duration on GPS, several control variables were included in the multivariate analysis presented in Tables 3C-16, 3C-17, and 3C-18, which is summarized in this section. Males comprise 95.5% of the cases and the racial/ethnicity groups are as follows: Whites = 27.2%, Blacks = 24.3%, other races = 2.5%; Hispanics comprise the largest proportion of the total population at 46.0%. The average age of the DV defendants was 32.2 years and in 59.5% of the cases, the victim was younger than the defendant. As a measure of community stability, the number of times the defendant changed addresses was captured and the average was .409 times. The defendants in this sample had an average of 4.6 arrests prior to

their instant DV arrest. More than one-quarter of defendants (28.3%) were placed on GPS as a result of violating a court issued restraining order (in this site, any violation of restraining orders result in placement on the GPS assignment). In terms of the most serious charge the DV defendants were arrested for, simple assault had the highest prevalence at 45.1%, followed by violating a restraining order (17.0%), and assault and battery (15.0%).

Table 3C-15. Descriptive statistics (mean values) of variables across three groups: West site

	GPS (N=639)	Jail (N=434)	Bond (N=56)
Convicted Cases	.571	.560	.712
Short-Term Outcome – Violation	.261	N/A	N/A
Male	.955	.960	.904
White	.272	.216	.185
Black***	.243	.397	.315
Hispanic*	.460	.376	.444
Other Races	.025	.012	.056
Age at DV Incident	32.204	34.028	30.811
Victim Younger Than Defendant	.595	.557	.612
Number Prior Arrests	4.601	6.672	5.444
Number of Address Changes	.451	.340	.352
GPS Due to Violation of Court Order	.150	N/A	N/A
Crime – Simple Assault***	.076	.340	.352
Crime – Assault/Battery***	.054	.306	.352
Crime – Burglary/Trespass*	.078	.037	.019
Crime – Harass/Stalk/Intimidation	.020	.044	.093
Crime – Murder/Kidnapping	.170	.090	.092
Crime – Arson/Property Damage	.571	.009	N/A
Crime – Violate Restraining Order*	.261	.141	.037

*** Indicates significant Chi-Square statistics in crosstabular analysis, $p < .001$.

* Indicates significant Chi-Square statistics in crosstabular analysis, $p < .01$.

^a - T-tests of mean differences across all of the permutations of the three groups found statistically significant differences for age at DV incident GPS vs. Jail ($p < .01$) and Jail vs. Bond ($p < .05$) and number of prior arrests for GPS vs. Jail ($p < .001$).

N/A indicates not applicable.

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented in subsequent tables include only cases that had no missing data on all of the variables in each model. The number of cases reflect the maximum number of cases that were used in one or more of the individual variables.

Tables 3C-16, 3C-17, and 3C-18 present Logistic Regression models to address the question of whether the duration on GPS is associated with the short-term outcomes of violations or re-arrests, and the long-term outcome of re-arrests among GPS group defendants, both overall

and by case outcome (i.e., convicted versus dismissed/acquitted). Binary logistic regression analyses are used throughout this section given that the dependent variable (violation or re-arrest) is a dichotomous variable (Allison, 1991; DeMaris, 1992; Menard, 1995). Checks for multicollinearity were conducted on all of the logistic models using ordinary least squares regression and assessing the tolerance statistics for each variable as recommended by Allison (1991) to ensure the coefficients are not unstable. All of the tolerance levels were above .55 and the vast majority exceeded .70, well above the .40 threshold suggestive of a multicollinearity problem (Allison, 1991; Menard, 1995).

Table 3C-16. Logistic regression models of effect of length of time on GPS and short-term outcome of whether violated among all cases, dismissed/acquitted cases, and convicted cases: West site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	.000	1.000	.004	.996	-.000	1.000
Male	----	----	----	----	----	----
Black	.044	1.045	1.264	3.540	-2.142	.117
Hispanic	-.445	.641	.395	1.484	-1.511	.221
Other Races	-.231	.794	.973	2.645	----	----
Age at DV Incident	-.006	.995	-.020	.980	.022	1.023
Victim Younger Than Defendant	.269	1.309	.497	1.644	-.395	.673
Number Prior Arrests	.041	1.041	.030	1.031	.115	1.121
Number of Address Changes	.141	1.151	.116	1.123	.130	1.139
GPS Due to Violation of Court Order	.607	1.836	1.267	3.551	.560	1.751
Crime – Assault/Battery	-.413	.662	.591	1.805	----	----
Crime – Burglary/Trespass	.546	1.725	-.016	.985	1.392	4.021
Crime – Harass/Stalk/Intimidation	.129	1.137	----	----	2.540	12.677
Crime – Murder/Kidnapping	-.884	.413	.639	1.894	----	----
Crime – Violate Restraining Order	-.707	.493	-1.202	.301	-1.131	.877
Intercept	-1.861*		-2.504		-2.025	
Model Chi-square	9.565		8.605		16.777	
R-Square	.072		.121		.258	
N	229		132		97	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White, Crime – Simple Assault.

---- Indicates variables excluded from the analysis because the model could not properly converge with their inclusions. Additionally, the variable Crime – Arson/Property Damage was excluded from the analysis in both models for the same reason.

The findings presented in Table 3C-16 demonstrate that the length of time on GPS has no empirical link to whether DV defendants were more or less likely to violate the conditions of supervision. This finding is consistent for all DV cases and for the subgroups dismissed/acquitted and convicted when modeled separately. Identical conclusions are derived from the logistic models predicting re-arrest in both the short and long term presented in Tables 3C-17 and 3C-18. The conclusion drawn from this analysis is that, in the West site, increasing the dosage of GPS surveillance has no impact on the likelihood of DV cases failing on supervision through a violation or a new arrest.

Table 3C-17. Logistic regression models of effect of length of time on GPS and short-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: West site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	.001	1.001	.001	1.001	.001	1.001
Male	-.034	.967	-1.351	.259	----	----
Black	-.284	.753	-.407	.666	-.108	.897
Hispanic	-.793	.453	-2.037**	.130	.054	1.055
Other Races	-.485	.616	-1.195	.303	----	----
Age at DV Incident	-.044	.957	-.084*	.919	-.011	.989
Victim Younger Than Defendant	.104	1.109	.500	1.649	-.069	.933
Number Prior Arrests	.022	1.022	.060	1.062	.001	1.001
Number of Address Changes	.420*	1.522	.938*	2.555	.194	1.213
GPS Due to Violation of Court Order	.843	2.323	1.183	3.265	.820	2.271
Crime – Assault/Battery	-.849	.428	-.715	.489	-.970	.379
Crime – Burglary/Trespass	-1.289	.275	----	----	-1.051	.350
Crime – Harass/Stalk/Intimidation	.370	1.447	.943	2.567	.105	1.111
Crime – Murder/Kidnapping	.578	1.782	.671	1.956	.456	1.578
Crime – Violate Restraining Order	-.466	.628	-.500	.607	-.482	.617
Intercept	-.065		1.897		-1.199	
Model Chi-square	23.305		24.343		7.460	
R-Square	.152		.276		.111	
N	228		131		97	

* p<.05, **p<.01, ***p<.001.

Reference categories: White, Crime – Simple Assault.

---- Indicates variables excluded from the analysis because the model could not properly converge with their inclusions.

Additionally, the variable Crime – Arson/Property Damage was excluded from the analysis in both models for the same reason.

Table 3C-18. Logistic regression models of effect of length of time on GPS and long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: West site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	-.001	.999	-.002	.998	-.001	.999
Male	1.168	3.214	-2.048	.129	1.168	3.214
Black	1.667	5.295	-1.435*	.238	1.667	5.295
Hispanic	1.045	2.843	-.559	.572	1.045	2.843
Other Races	----	----	-1.581	.206	----	----
Age at DV Incident	-.049	.952	-.077**	.926	-.049	.952
Victim Younger Than Defendant	.574	1.775	.066	1.068	.574	1.775
Number Prior Arrests	.021	1.021	.102**	1.108	.021	1.021
Number of Address Changes	-1.011	.364	-.318	.728	-1.011	.364
GPS Due to Violation of Court Order	1.913	6.776	.613	1.846	1.913*	6.776
Crime – Assault/Battery	.686	1.985	.530	1.698	.686	1.985
Crime – Burglary/Trespass	.728	2.071	1.798	6.038	.728	2.071
Crime – Harass/Stalk/Intimidation	----	----	-2.210	.110	----	----
Crime – Murder/Kidnapping	1.766	5.845	1.796	6.026	1.766	5.845
Crime – Violate Restraining Order	-.973	.378	-.218	.804	-.973	.378
Intercept	-2.562		3.493*		-2.562	
Model Chi-square	16.599		27.275*		16.599	
R-Square	.288		.267		.288	
N	208		131		77	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White, Crime – Simple Assault.

---- Indicates variables excluded from the analysis because the model could not properly converge with their inclusions.

Additionally, the variable Crime – Arson/Property Damage was excluded from the analysis in both models for the same reason.

Tables 3C-19 and 3C-20 present the analysis addressing the question of whether those arrested for DV offenses (DV defendants whose cases were dismissed/acquitted, or convicted) who are placed on GPS are less likely to be re-arrested in the long-term (one-year follow-up period) than comparable individuals who are not subjected to this form of intense electronic surveillance. Table 3C-19 presents descriptive statistics within the GPS and non-GPS samples relating to whether cases were convicted, their likelihood of being arrested in the long-term, and a variety of control variables, including demographic characteristics of the DV defendants, victim/defendant age differences, prior arrest history, and the type of current charge. The GPS

and non-GPS cases have similar judicial outcomes in terms of the percent that are convicted (GPS = 57.1%; non-GPS = 57.8%).

Table 3C-19. Descriptive statistics of GPS and non-GPS cases: West site

	GPS Cases			Non-GPS Cases			Mean Difference: GPS vs. Non-GPS
	N	Mean	SD	N	Mean	SD	
Convicted Cases	441	.571	.495	498	.578	.494	-.007
Long-Term Outcome – Re-Arrest	379	.261	.440	437	.350	.478	-.089**
Male	448	.955	.207	493	.953	.211	.002
White	441	.272	.446	492	.213	.410	.059*
Black	441	.243	.429	492	.386	.487	.143***
Hispanic	441	.460	.499	492	.384	.487	.076*
Other Races	441	.025	.156	492	.016	.127	.009
Age at DV Incident	446	32.204	9.496	499	33.697	9.704	-1.493*
Victim Younger Than Defendant	368	.595	.492	421	.565	.496	.030
Number Prior Arrests	449	4.601	6.682	500	6.766	7.851	-2.165***
Crime – Simple Assault	446	.451	.498	498	.345	.476	.106***
Crime – Assault/Battery	446	.150	.358	498	.309	.462	-.159***
Crime – Burglary/Trespass	446	.076	.266	498	.034	.182	.042**
Crime – Harass/Stalk/Intimidation	446	.054	.226	498	.050	.219	.004
Crime – Murder/Kidnapping	446	.078	.269	498	.092	.290	-.014
Crime – Arson/Property Damage	446	.020	.141	498	.008	.089	.012
Crime – Violate Restraining Order	446	.170	.376	498	.127	.333	.043

t-test mean differences: *p<.05, **p<.01, ***p<.001.

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented later include only cases that had no missing data on all of the variables.

On a bi-variate level, GPS cases are less likely to be re-arrested in the long term (26.1%) compared with non-GPS cases (35.0%), and the mean difference of .089 is statistically significant ($p<.01$). In regard to the demographic characteristics of the GPS and non-GPS defendants, the two groups are essentially the same in terms of the percentage that are male (95.5% vs. 95.3%), while the former group is significantly more likely to be White (diff = .059, $p<.05$), Hispanic (diff = .076, $p<.05$), and younger (diff = -1.493, $p<.05$). In contrast, the non-GPS defendant is significantly more likely to be Black than the GPS one (38.6% vs. 24.3%,

$p < .001$). No significant difference in the two groups was found in terms of whether the victim was younger than the defendant. In contrast to non-GPS cases, individuals placed on the GPS have significantly lower numbers of prior arrests (diff = -2.165, $p < .001$). Among the seven different crime types examined, the data show that DV cases are more likely to involve simple assault (diff = .106, $p < .001$) and burglary or trespass (diff = .042, $p < .01$), but are less likely to involve an assault or battery (diff = -.159, $p < .001$). The comparisons across the GPS and non-GPS cases on several covariates clearly indicate the need to control for these factors that may influence long term re-arrest outcomes independent of GPS surveillance to quantify the unique GPS effect.

Table 3C-20 presents logistic models of the predictors of long-term re-arrest⁵⁶ for all cases ($n = 642$), those cases dismissed or acquitted ($n = 311$), and those resulting in a conviction ($n = 330$). The first model presented, utilizing all of the available cases, indicates that males are significantly less likely to be re-arrested (beta = -1.073, $p < .01$), as are younger offenders (beta = -.045, $p < .001$), and those for which the crime involved harassment, stalking, or intimidation (beta = -1.064, $p < .05$). In contrast, it was found that the individuals with a greater number of prior arrests were significantly more likely to be re-arrested (beta = .074, $p < .001$). The primary variable of interest, GPS surveillance, was statistically significant and indicates that, after controlling for several relevant covariates, offenders who were placed on GPS were less likely to be re-arrested in the long-term (beta = -.514, $p < .001$). The magnitude of the effect of GPS monitoring among domestic violence cases is quantified by the odds ratio of .598, which demonstrates that DV cases placed on GPS have a 40.2% lower odds of being re-arrested than equivalent cases not electronically tethered. The models created among the two groups of acquitted/dismissed cases and those convicted provide similar conclusions. Specifically, for

those DV cases that were dismissed or acquitted by the courts, the effect of GPS on long-term re-arrest probabilities is significant and negative (beta = $-.572$, $p < .05$) and the odds ratio of $.564$ indicates a 43.6% lower odds of re-arrest for those placed on GPS versus comparable individuals without the GPS monitoring. Among cases in which a conviction resulted, similar GPS effects emerge with the odds of re-arrest being 46.1% less than those who were not placed on this form of electronic monitoring (beta = $-.618$, $p < .05$).

Table 3C-20. Logistic regression models of effect of GPS versus no GPS on long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: West site

	All Cases		Dismissed/Acquitted		Convicted	
	B	Odds Ratio	B	Odds Ratio	B	Odds Ratio
GPS	-.514**	.598	-.572*	.564	-.618*	.539
Male	-1.073**	.342	-.992	.371	-.826	.438
Black	.094	1.098	-.856*	.425	1.484**	4.412
Hispanic	.119	1.126	-.894	.538	1.277**	3.585
Other Races	.075	1.077	-.051	.409	1.063	2.896
Age at DV Incident	-.045***	.956	-.051**	.950	-.046**	.955
Victim Younger Than Defendant	.141	1.152	.405	1.499	-.144	.866
Number Prior Arrests	.074***	1.077	.087***	1.091	.059**	1.061
Crime – Assault/Battery	-.086	.917	.052	1.054	-.270	.975
Crime – Burglary/Trespass	.205	1.227	.415	1.515	-.025	.290
Crime – Harass/Stalk/Intimidation	-1.064*	.345	-1.159	.314	-1.239	.543
Crime – Murder/Kidnapping	-.219	.809	.283	1.327	-.610	1.327
Crime – Violate Restraining Order	.076	1.079	-.066	.936	.469	1.599
Intercept	1.327*		2.030*		-2.562	
Model Chi-square	71.481**		43.454***		48.009*	
	*				**	
R-Square	.148		.179		.197	
N	642		311		330	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White, Crime – Simple Assault.

---- Indicates variables excluded from the analysis because the model could not properly converge with their inclusions.

Additionally, the variable Crime – Arson/Property Damage was excluded from the analysis in both models for the same reason.

Taken as a whole, the results in Table 3C-19 indicate a compelling finding, i.e., that the use of electronic monitoring through the application of GPS technology among individuals charged with DV results in a significant reduction in the likelihood that re-arrest will occur in the

future. Additionally, this reduction in the likelihood of re-arrest among the GPS group exists for those who were dismissed/acquitted and those convicted by the courts. In sum, the results in the West site indicate that being on the GPS (rather than the length of time on GPS) is associated with reduction of future violations or re-arrest.

The West site did not have an RF comparison group, and the Bond group was too small to permit a reliable statistical analysis, so an examination of the short-term effect of GPS vs. non-GPS was not performed; only the long-term effect comparing GPS to non-GPS is reported for West.

3. *South*

a. Description of the domestic violence cases

This section presents findings relating to the impact of tethering DV defendants to GPS or RF devices on short-term outcomes of violations and re-arrest, and the long-term outcome of re-arrest. Additionally, the question of whether the duration on GPS has an effect on these outcomes is addressed. An examination of these issues is conducted separately for those cases that resulted in a dismissal or acquittal by the court versus those in which the individuals arrested on DV charges who were ultimately convicted. Table 3C-21 provides descriptive statistics of the variables used in this analysis based on the entire sample of cases in the South jurisdiction. Of the total sample of domestic violence cases, 29.3% were tethered to a GPS device, 27.6% were placed on RF, and 43% were not placed on either form of electronic surveillance. The defendants placed on GPS wore the device for an average of 127 days, the median was 102 days, and the range was from 7 to 508 days.⁵⁷ Of the 533 defendants for which the judicial disposition information was available, 46.7% were convicted and 53.3% were dismissed or acquitted of the

charges filed against them. The three outcomes are distributed in the following manner among the cases in which these data were available: 6.8% of the cases violated the conditions of their supervision, 5.6% were re-arrested in the short-term (i.e., during their supervision period), and 7.8% of the DV defendants were re-arrested in the long-term period (i.e., the one-year follow-up period after their acquittal/dismissal or completion of their sentence, if convicted).

Table 3C-21 shows that males comprise 83.6% of the cases and the racial/ethnicity group distribution is as follows; Whites = 51.3%, Blacks = 48.7%, and Hispanics = 10.8%. The average age of the DV defendants was 33.3 years. In terms of prior criminal involvement, this sample averaged 3.28 prior arrest of any kind and .341 DV arrests. The type of DV crime charged in the current incident most commonly involved an alleged battery (80.8%) followed by an assault (11.9%) and some other form of DV (7.3%).

Table 3C-21. Descriptive statistics of variables with all cases: South site

	N	Mean	SD
Number of Days on GPS	102	127.667	114.603
Convicted Cases	533	.467	.499
Short-Term Outcome – Violation	413	.068	.252
Short-Term Outcome – Arrest	413	.056	.230
Long-Term Outcome – Arrest	592	.078	.268
Male	604	.836	.370
White	604	.513	.500
Black	604	.487	.500
Hispanic	604	.108	.310
Age at DV Incident	604	33.321	10.526
Number Prior Arrests	604	3.281	4.564
Number Prior Arrests for DV	604	.341	.674
Current Crime – DV Assault	604	.119	.324
Current Crime – DV Battery	604	.808	.394
Current Crime – DV Other	604	.073	.260
Current Crime – Weapon Used	604	.157	.364
Global Positioning System (GPS)	604	.293	.456
Radio Frequency (RF)	604	.276	.448
Non-Electronic Monitoring	604	.430	.496

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented in subsequent tables include only cases that had no missing data on all of the variables in each model.

Table 3C-22 provides mean comparisons across four groups of interest in the analysis, those placed on GPS or RF, remaining in jail, or bonded out of jail (without EM supervision). Some salient differences across these four groups include the following: GPS and Jail cases are most likely to result in a conviction (GPS = 58.7%, Jail = 58.8%) while those placed on RF are the least likely to be convicted (48.0%). Violations in the short term are most likely to occur among GPS cases (13.0%). GPS defendants are also the most likely to be arrested in the short term (9.8%). In contrast, the likelihood of defendants being arrested in the long term is very similar for GPS (10.9%) and RF (9.3%) cases, and those released from jail with an electronic tether are only modestly less likely to be arrested in the long term (7.1%).

Table 3C-22. Descriptive statistics (mean values) of variables across four groups: South site

	GPS (N=177)	RF (N=167)	Jail (N=42)	Bond (N=218)
Convicted Cases***	.587	.480	.588	.353
Short-Term Outcome – Violation***	.130	.097	NA	.027
Short-Term Outcome – Re-Arrest	.098	.058	----	.037
Long-Term Outcome – Re-Arrest	.109	.093	.071	.042
Male***	.927	.886	.857	.720
Female	.073	.114	.143	.280
White	.508	.443	.548	.564
Black	.492	.557	.452	.438
Hispanic	.136	.108	.071	.092
Age at DV Incident	33.655	31.802	34.452	33.995
Number Prior Arrests*	3.870	3.479	5.857	2.156
Number Prior Arrests for DV*	.401	.425	.333	.229
Current Crime – DV Assault**	.181	.120	.023	.087
Current Crime – DV Battery***	.684	.814	.857	.894
Current Crime – DV Other***	.136	.066	.120	.018
Current Crime – Weapon Used**	.243	.143	.048	.119

T-tests of mean differences across the following groups are significant at the $p < .05$ level. Age – RF/Bond. Number of prior arrests – GPS/Jail, GPS/Bond, RF/Jail, RF/Bond, Jail/Bond. Prior arrests for domestic violence – GPS/Bond and RF/Bond. *** Indicates significant Chi-Square statistics in crosstabular analysis, $p < .001$.

** Indicates significant Chi-Square statistics in crosstabular analysis, $p < .01$.

Note: Cases that had missing data on each variable are not included in these statistics. The multivariate models presented in subsequent tables include only cases that had no missing data on all of the variables in each model. The number of cases reflect the maximum number of cases that were used in one or more of the individual variables.

Females are more likely to be in the Bond group (14.3%) than in any of the other three groups, Hispanics are most likely to be placed on GPS (13.6%), and Blacks account for a higher percentage of the RF group (55.7%) compared to the other racial/ethnicity groups. The average age is essentially the same across the three groups of GPS, Jail and Bond (33.7 to 34.0 years) but is somewhat lower in the RF group (31.8 years). The Jail group also has the most serious criminal records as measured by prior arrests (mean = 5.9), while the bond cases have the lowest average number of prior arrests (mean = 2.2). The GPS and RF groups exhibit the highest average number of prior DV arrests (.401 and .425, respectively). Bond cases were the most likely group in which the current charge involved a battery (89.4%), whereas the GPS group had the lowest percentage (68.4%). However, the GPS group was much more likely to be charged with DV involving a weapon (24.2%) than the other three groups, and the RF cases were the next highest group to be charged with a weapon related DV offense (14.3%).

Table 3C-23. Logistic regression models of effect of length of time on GPS and short-term outcome of whether violated among all cases and convicted cases: South site

	All Cases		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	-.000	1.000	-.003	.997
Male	-.084	.920	-.454	.635
Black	-.003	.997	.496	1.642
Hispanic	-.151	.860	-.675	.509
Age at DV Incident	.006	1.006	.010	1.010
Number of Prior Arrests	.158	1.171	.203	1.225
Number Prior Arrests for DV	.366	1.442	-.491	.612
Current Crime – DV Battery	.048	1.576	-1.349	.259
Current Crime – Weapon Used	-.499	.607	-2.036	.131
Intercept	-3.439		.594	
Model Chi-square	5.139		7.137	
R-Square	.119		.270	
N	66		34	

* p<.05, **p<.01, ***p<.001.

Reference categories: White.

Too few cases prevented creating a model for dismissed/acquitted cases.

The variables Other Races and Hispanic were excluded from the analysis because the model could not properly converge with their inclusions.

Focusing on DV cases that were placed on GPS, Table 3C-23 presents the empirical link between the length of time domestic violence cases were on GPS and their likelihood of violating in the short term. After controlling for demographic characteristics of the individuals, prior record, and type of current DV charge, the Logistic model indicates that the length of exposure time to this form of EM has no impact on the likelihood of a supervision violation for defendants. This result emerges for all of the cases analyzed and for those who were ultimately convicted of the instant charges.

The impact of the duration of time that DV cases are monitored with GPS on whether a re-arrest occurs in the short term is presented in Table 3C-24. Separate Logistic models are presented for all cases, those that resulted in a dismissal or acquittal, and those in which a conviction was the final disposition. The results indicate that there is no empirical link between the length of time DV cases were on GPS and their likelihood of being re-arrested in the short term. This finding is consistent for all case types, those in which a dismissal or acquittal occurred, and among those which resulted in a criminal conviction.

Table 3C-24. Logistic regression models of effect of length of time on GPS and short-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	-.002	.998	.003	1.003	-.009	.991
Black	1.111	3.038	1.712	5.537	1.616	5.031
Age at DV Incident	.037	1.038	.066	1.069	.024	1.025
Number of Prior Arrests	-.032	.969	.190	.827	-.022	.978
Current Crime – DV Battery	1.049	2.853	---	---	---	---
Current Crime – Weapon Used	1.190	3.288	.137	1.14	2.010	7.469
Intercept	-4.615*		-5.284		-2.516	
Model Chi-square	4.722		2.061		6.189	
R-Square	.123		.137		.275	
N	69		31		34	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

The variables Hispanic and Prior Domestic Violence Arrests were excluded from the analysis because the model could not properly converge with their inclusions.

--- Indicates the model did not properly converge with the variable included as a covariate.

The impact of the duration of time that DV defendants are exposed to GPS on whether a re-arrest occurs in the long term is presented in Table 3C-25. Separate Logistic models are presented for all cases, those that resulted in a dismissal or acquittal, and those in which a conviction was the final disposition. As was found in the short-term analysis, the results indicate that there is no empirical link between the length of time DV defendants were on GPS and their likelihood of being re-arrested in the long term. This finding was consistent for all cases, those in which a dismissal or acquittal occurred, and among those which resulted in a criminal conviction.

Table 3C-25. Logistic regression models of effect of length of time on GPS and long-term outcome of whether re-arrested among all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Number Days on GPS	-.005	.995	-.014	.986	.000	1.000
Black	1.202	3.327	-1.577	.207	---	---
Age at DV Incident	-.005	.995	-.015	.985	.043	1.044
Number Prior Arrests	.089	1.093	.395	1.485	.097	1.102
Current Crime – DV Battery	-2.086*	.124	---	---	---	---
Current Crime – Weapon Used	-1.081	0.339	.584	1.789	.365	1.44
Intercept	-1.405		-2.275		-4.529	
Model Chi-square	10.181		4.313		2.032	
R-Square	.226		.238		.093	
N	101		44		50	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White, Crime.

The variables Male, Hispanic, and Number of prior arrests for domestic violence were excluded from the analysis because the models could not properly converge with their inclusion.

--- Indicates the model did not properly converge with the variable included as a covariate.

b. Effect of GPS vs. RF on outcomes

Tables 3C-26, 3C-27, and 3C-28, present Logistic Regression models to address the relative effectiveness of GPS technology (i.e., being tracked continuously during the day and night) compared to the RF method (i.e., being only on house arrest during curfew hours) in producing positive short- and long-term outcomes among all cases, and then separately for cases

that were dismissed or acquitted versus those resulting in a criminal conviction. In terms of the effect of GPS in reducing the likelihood of violations in the short term relative to RF, the model shows no statistically significant reduction in violations among GPS cases relative to RF cases when controlling for offender demographic characteristics, prior criminal record, and current crime. A null effect of the use of the GPS technology relative to RF is also found in Table 3C-27 relative to the short-term outcome of re-arrest and in Table 3C-28 when the outcome measure is re-arrest in the long term. These findings are consistent for all cases, those in which a dismissal or acquittal resulted and in which a case ended with conviction.

Table 3C-26. Logistic regression models of the effect of GPS versus RF on short-term outcome of violation for all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	.4791	1.615	-.022	.978	.680	1.974
Male	-.236	.790	-.133	.875	-.944	.389
Black	-.218	.804	-1.055	.348	.717	2.049
Hispanic	-.586	.557	---	---	.135	1.145
Age at DV Incident	-.018	.983	-.010	.905	-.014	.987
Number Prior Arrests	.000	1.000	.043	1.043	.006	1.006
Number Prior Arrests for DV	.571	1.770	.925	2.522	.483	1.621
Current Crime – DV Assault	-1.266	.282	.370	1.447	-1.395	.248
Current Crime – DV Battery	-.791	.454	-.916	0.400	-1.066	.344
Current Crime – Weapon Used	-.550	1.733	---	---	-.407	.666
Intercept	-.948		.554		.298	
Model Chi-square	6.84		6.428		5.355	
R-Square	.068		.197		.108	
N	195		91		72	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White and Current Crime – DV Other.

--- Indicates the model did not properly converge with the variable included as a covariate.

Table 3C-27. Logistic regression models of the effect of GPS versus RF on short-term outcome of re-arrest for all cases and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	.580	1.786	1.293	3.644	.248	1.282
Black	1.088	2.969	1.692	5.431	1.052	2.864
Age at DV Incident	-.002	.998	-.001	.999	.006	1.006
Number Prior Arrests	-.002	.998	-.346	.708	.124	1.132
Current Crime – DV Battery	-.111	.895	-.398	.672	.110	1.116
Current Crime – Weapon Used	.848	2.334	.414	1.513	1.102	3.010
Intercept	-3.579**		-3.840		-3.491	
Model Chi-square	7.157		6.289		6.108	
R-Square	.086		0.190		.147	
N	195		91		72	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

The variables Male, Hispanic, Current Crime – DV Assault, and Number of prior arrests for domestic violence were excluded from the analysis because the models could not properly converge with their inclusion.

Table 3C-28. Logistic regression models of the effect of GPS versus RF on long-term outcome of re-arrest for all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	0.048	1.049	0.257	1.293	.619	1.857
Male	0.501	1.65	----	----	----	----
Black	0.662	1.939	-0.043	0.958	1.397	4.041
Hispanic	-0.462	0.63	----	----	----	----
Age at DV Incident	-0.036	0.964	-0.080	.923	-.087*	0.917
Number Prior Arrests	0.059	1.061	.151*	1.163	.039	1.040
Number Prior Arrests for DV	0.132	1.141	----	----	----	----
Current Crime – DV Battery	-1.352	0.259	-1.09	.336	-1.747**	.174
Current Crime – Weapon Used	-0.031	0.97	-0.196	.822	-1.132	.322
Intercept	-1.349		0.133		.241	
Model Chi-square	24.920**		9.535		18.196	
R-Square	0.149		0.152		.238	
N	336		133		151	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

--- Indicates the model did not properly converge with the variable included as a covariate.

c. Effect of GPS vs. non-GPS on outcomes

This section compares short- and long-term outcomes of DV defendants placed on GPS compared to Non-GPS (RF or bonded out). Table 3C-29 provides results on the effect of GPS on whether DV defendants are arrested in the short term among all cases and those who were dismissed or acquitted or were convicted by the court. The models demonstrate that the placement of DV defendants on this form of electronic surveillance had no statistically significant impact on the likelihood of individuals being arrested in the short term. Table 3C-30 shows that when the outcome measure is long-term arrest, the findings indicate that DV defendants placed on GPS are no more likely to be re-arrested than Non-GPS cases.

Table 3C-29. Logistic regression models of the effect of GPS versus non-GPS on short-term outcome of re-arrest for all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	.650	1.915	.630	1.877	.995	2.704
Male	.299	1.348	.210	1.234	.938	2.555
Black	1.072*	2.922	2.153	.613	1.035	2.815
Hispanic	-.542	.582	1.292	3.642	----	----
Age at DV Incident	-.010	.990	.011	1.011	-.021	.979
Number Prior Arrests	.064	1.066	.011	1.011	.152	1.173
Number Prior Arrests for DV	-.352	.703	-.591	.554	-.488	.614
Current Crime – DV Battery	-.616	.540	-.983	.374	-.514	.598
Current Crime – Weapon Used	.954	2.598	.990	2.69	.764	2.147
Intercept	-3.411**		-4.706*		-3.516*	
Model Chi-square	18.971*		11.678		12.821	
R-Square	.129		.166		.187	
N	413		223		144	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reference categories: White.

--- Indicates the model did not properly converge with the variable included as a covariate.

Table 3C-30. Logistic regression models of the effect of GPS versus non-GPS on long-term outcome of re-arrest for all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Global Positioning System (GPS)	.140	1.15	.034	1.034	.619	1.856
Male	.674	1.963	.644	1.903	.454	1.575
Black	.219	1.245	-0.574	.563	.842	2.321
Hispanic	-.245	.783	-1.488	.226	.816	2.261
Age at DV Incident	-.028	.972	-.048	.953	-.055	.947
Number Prior Arrests	.055	1.057	.122	1.13	.024	1.024
Number Prior Arrests for DV	.380	1.462	.230	1.259	.435	1.546
Current Crime – DV Battery	-1.267**	.293	-0.842	.431	-1.863**	.155
Current Crime – Weapon Used	.540	1.715	1.134	3.107	-.689	.502
Intercept	-1.978*		-1.36		-1.085	
Model Chi-square	37.955***		20.927*		22.292**	
R-Square	.148		.174		.213	
N	592		282		246	

* $p < .05$, ** $p < .01$, *** $p < .001$.
Reference categories: White.

d. Effect of RF vs. non-EM on outcomes

This final section presents analysis of the effect of the use of RF among DV cases relative to cases not placed on any form of electronic surveillance (non-EM). Table 3C-31 indicates that the placement of DV cases on RF technology (i.e., house arrest only) has no significant impact on the likelihood of being re-arrested in the short term relative to non-EM cases. Additionally, Table 3C-32 also shows a null effect of the RF surveillance modality on the long-term outcome of re-arrest relative to offenders not placed on EM.

Table 3C-31. Logistic regression models of the effect of RF versus non-EM on short-term outcome of re-arrest for all cases: South site

All Cases		
	<i>B</i>	Odds Ratio
Radio Frequency (RF)	.245	1.277
Male	-.210	.810
Black	1.610*	5.003
Hispanic	.719	2.052
Age at DV Incident	-.012	.989
Number Prior Arrests	.117	1.124
Number Prior Arrests for DV	-1.043	.353
Current Crime – DV Battery	-1.366	.255
Current Crime – Weapon Used	.696	2.006
Intercept	-2.990*	
Model Chi-square	17.888*	
R-Square	.180	
N	321	

* p<.05, **p<.01, ***p<.001.

Reference categories: White.

Table 3C-32. Logistic regression models of the effect of RF versus non-EM on long-term outcome of arrest for all cases, dismissed/acquitted cases, and convicted cases: South site

	All Cases		Dismissed/Acquitted		Convicted	
	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio	<i>B</i>	Odds Ratio
Radio Frequency (RF)	.435	1.546	-.215	.806	.740	2.097
Male	.299	1.349	.456	1.577	.056	1.057
Black	-.417	.659	-.712	.491	-.220	.802
Hispanic	.006	1.006	-1.425	.240	.933	2.543
Age at DV Incident	-.040	.961	-.060	.942	-.052	.949
Number Prior Arrests	.042	1.043	.071	1.073	.033	1.034
Current Crime – DV Battery	-.813	.444	-.900	.407	-1.193	.303
Current Crime – Weapon Used	1.293*	3.644	1.943**	6.981	-.189	.828
Intercept	-1.796		-.868		-.980	
Model Chi-square	30.979***		21.655**		7.444	
R-Square	.188		.237		.128	
N	417		225		166	

* p<.05, **p<.01, ***p<.001.

Reference categories: White.

D. Victims and defendants: Views and experiences

This section reports on findings from qualitative interviews conducted with victims and defendants in the jurisdictions described in section B, “Varieties of GPS for DV Programs” (victims and defendants were interviewed separately, individually and in groups). Patterns and variations in the experiences and concerns of these parties are highlighted in the presentations.

1. Victims

The safety of victims is the main rationale for the use of GPS during the pretrial period. Their experiences with having their alleged abusers enrolled on GPS tracking are therefore important to consider in evaluating GPS for DV programs. Victims who were interviewed spoke about the benefits of having their abusers on GPS and the sense of freedom that the technology provided. But they also described various legal, technological, and practical problems that arose during the time that the defendant was involved with the GPS program.

a. The sample of victims interviewed for the study

Victims were interviewed at four of the six agency sites that participated in the qualitative study – West, Midwest, East, and South. The 34 victims interviewed were all female and included 7 White, 19 Black, three Hispanic/Latino, and 5 "other" (biracial, Native American) women. Their ages ranged from 19 to 59 with a mean of 32.9 years. They represent a cross section of the population, including 4 professionals (e.g., college instructor) or self-employed women (e.g., business owner), 5 skilled (e.g., nurse, office manager) and 13 unskilled or semi-skilled laborers (e.g., hostess, hairstylist), 5 students (e.g., college or medical school), and 7 who were unemployed. Twenty-six of the interviewees reported that they had dependent children, averaging 1.8 per respondent, and one victim was pregnant at the time of the interview.

b. Victim experiences with abuse before GPS

As with most victims of domestic violence, many of the interviewees had been subjected to lengthy abuse, intimidation, and threats. Victims described being physically injured, stalked, harassed, and controlled by the respective defendants. In some cases, the defendants' family, friends, or other proxies also perpetrated the harassment. Victims lived in fear, perpetually alert and with constant awareness of their surroundings. In many cases, despite lengthy periods of abuse, victims delayed reporting their victimization to authorities; instead, they endured until reaching the point of "enough is enough."

Prior to placement on GPS, victims stated that abusers were able to harass them with total impunity. Many abusers, particularly those who had experience with the criminal justice system, were able to circumvent detection by law enforcement officials while contacting the victim. Absent tangible evidence, interviewees reported feelings of frustration at law enforcement officials' inadequate responses to their complaints about abuse. Without GPS, it was often impossible to connect the defendant to harassment or prove his presence in the victim's vicinity at the time in which stalking, damage, or vandalism of the victim's property occurred. Abusers with circles of friends and family participating in the misconduct were particularly successful in making the victim's life difficult. Victims were frustrated by the responses of justice officials and the abuser's ability to evade detection:

He was breaking out my windows and pouring gasoline around my house and sending girls to beat me up. Um, it was just really hard. You know, I would try to report these things, cops would say, "I can't do anything about it." It was just very frustrating to know that nobody can do nothing about it even though I know it's him, but I can't prove it's him... It has always been really frustrating because in my thinking he's one step above the law. Somehow he always gets away with everything.

c. Being introduced to GPS and initial experiences

Agencies varied in the amount of information they provided victims regarding the GPS for DV program, from minimal to detailed explanations. Most agencies informed victims that their abuser had been placed on GPS and explained the restrictions related to entering exclusion zones, but did not elaborate on the workings of the technology, or explain the rules of the program. Agencies that informed victims about their abusers' being on GPS usually represented GPS as a measure intended to deter abusers from making physical contact with the victim, or to track offenders' movements, although the programs were not foolproof and could be defeated by an intent party. Thus, most victims were made aware that GPS did not guarantee their safety. A typical way in which victims learned about the purpose of GPS was relayed by one victim:

I think the prosecutor, the DA, had told me in the [month of] May case that, "we can put this monitor on him" and they told me, "it's not really to protect you, it's just to really see what he's up to," where he's at. And they said, "no this doesn't, it doesn't [protect you], just because he has this on, it doesn't necessarily mean that he can't take it off or let the battery die or, you know." Cause, they said it has a delayed time on it as well. So, there could, it could be anywhere from ten seconds to thirty seconds to a minute to five minutes. So, by the time that they would be able to notify me, he could already be in my house.

Victims particularly valued programs that offered services such as police visits to the victim's house to explain the technology. Victims also appreciated the approach of jurisdictions that employed special victim advocates as liaisons, as they commonly felt that their advocates were caring and helpful. One victim explained:

I have one victim advocate, she's a really good, a really nice lady. She's not assigned to me but she keeps up with me, you know, she'll call me every once in a while, see how I'm doing, see if I need anything... My other victim advocates, I barely learned their names... Before, someone will randomly call me and say, "Hey, I'm a victim advocate for you" and the case number, you know, whatever.

Those who were not advised about the details of the program or the advantages associated with GPS monitoring thought that such information would have been beneficial to them, and would have helped them to better cope with their anxiety and fear:

I'll say if I would have been more aware of, as you were saying, "the technology of it," just knowing that it was GPS, knowing that they could pinpoint where he was at, not just thinking that he could just roam wherever between his working hours, that would have been a plus for me.

Despite problems associated with GPS, which will be discussed later, victims who were aware that their abuser was being monitored, or who were cognizant of the tangible evidence that GPS monitoring produces about contact attempts, usually found the program beneficial.

d. The benefits of GPS for victims

Having the abusers on GPS provided significant benefits for the victims. Although many details about how the GPS technology works were either missing, inaccurate, or not fully understood by the victims, most still noted a variety of benefits to the GPS program. First and foremost, victims deeply appreciated the relief that they received from the incessant abuse and harassment, the increased number of areas they could visit, and the peace of mind they experienced knowing that their abuser could no longer ignore restraining/protection orders without consequences. Victims participating in a focus group agreed with an interviewee who noted, "once he was put on the GPS and couldn't contact me, I felt free."

The procedure through which victims were commonly alerted about the defendant's presence in their proximity was described by one interviewee:

When they called me those couple of times that he was coming into my zone, they told me I should "lock [my] door," you know, "stay in a room" and "just don't come out," you know, "until we call you," or whatever, "until he leaves the area." I would go upstairs into a locked room. Um, and I would just wait there until they would call me back and say, "Okay, he's gone."

Victims shared stories of diligent and steadfast efforts by the monitoring center and/or agency to notify them about the defendant being nearby:

They would call me every time he would go. He would violate it at least two or three times a day. They would call me like two or three times, "Where are you at? Are you okay? He's by your house, don't leave your house, lock your door." You know, they would call me periodically, every day.

Two victims described the enhanced sense of safety and comfort they experienced when their partners were on GPS:

[The GPS] absolutely creates a buffer for me. That is, like, alright, here's the space that's defined by my house and I claimed that. And then in my house I even have a smaller nook that I've made a little retreat in the house that makes me feel really cozy and safe and comfortable. But then around the house is my neighborhood, my neighbors, and then around that is this zone that I know he can't be in. And, um, so it's like layers of buffer[ing], you know, layers, or walls, or something [tangible].

Life was much better, much better. The day that Sheriff called me and told me that they were putting [a GPS bracelet] on him and everything that would happen, if he came within a two mile radius of me, oh my God, it just, I felt almost free again, I felt like I could just go outside and just sit on the porch if I wanted to or I could go shopping, I could just, I just felt free. I felt free.

The GPS effect spilled over to other areas of victims' lives and into their previously abusive relationship with their partner:

But once the GPS started, I didn't have any of it [abuse, harassment, stalking]. You know what I'm saying, there wasn't the constant "you've got to do," "you've got to be connected even though I'm not connected with you," and it made my life like, "whew," settle down.

Some victims thought that placing their abuser on GPS was preferable to having him in jail. In the words of one victim:

... I'm sitting here thinking that in some ways it's probably a whole lot better that they put him on a GPS system versus putting him in jail. Because he may be nasty to me, but he's not going out [and committing new crimes], he's still an active contributing member of society whereas if they had put him in jail and then let him out, he wouldn't be.

Having the GPS in place was more important than the specifics of the restrictions imposed on abusers or the size of the exclusion zone:

Well, I didn't really think about it and [within] the two mile radius I just felt free, I just felt, just really free because I knew that if he came anywhere near me they would know it. So it didn't matter if it was two or three miles, it didn't matter. I was free because he couldn't bother me.

Many victims were aware that GPS technology enabled authorities to detect the presence of the defendant inside exclusion zones – areas in which they were not supposed to be present – and which would presumably lead to the defendant being charged with a violation of the protection order should he breach it. Victims whose abusers were monitored by agencies that kept victims “in the loop” often received detailed information about the behavior of the abuser, thereby increasing victim satisfaction with the protection and generating the sentiment that authorities pay attention to victims' safety. Several victims stated that they could not imagine functioning without the knowledge that their abuser was being monitored. This was particularly true for victims whose abusers did not have a permanent residence or home, but were moving from one temporary residence (e.g., hotel) to another.

Victims were likewise gratified by the opportunity to have a say in the determination of geographic areas from which the abuser would be excluded. In some agencies, victims could choose not only the areas in which they wished to be protected (exclusion zones), but also whether the zones should be known or unknown⁵⁸ to the defendant. Victims appreciated the option of not disclosing their current address to their abuser:

So I got to pick three or four exclusion zones that he couldn't be around. They could be known or unknown. Um, my house was known because he, he found out where I lived. Um, my job was, was an unknown but he found out where I worked. So, it's a known zone... and the other one I put was a friend's house that I usually went to and stayed at... and then the last one I put was for my babysitter's house, um, cause it's a family friend and he doesn't know where she lives, but I just want that protection just in case, you know, cause my daughter's there.

Victims also received useful information on the abuser's efforts to figure out what the victim was doing or where she was residing:

I think he was trying a lot harder to try and find me. Because when he got on the monitor in May he didn't know where I lived. Well, he would pass by my house periodically to find out where I lived. Like, he would drive two miles an hour down the street and the GPS people called me and they're like, "Is there any reason for him to be going that slow?" [I replied:] "No, there's only one stop sign by my house and he shouldn't be going that slow," two miles per hour by the house. So, they thought maybe he was looking for me. He did the same thing at my friend's house. He would drive by really slow and there was no reason for him to drive by slow.

Some victims thought that having the defendant monitored with GPS for a longer period of time would habituate him to avoid that area. Others believed that GPS monitoring of abusers accomplished more than ending the harassment and abuse – it also led to other positive changes in the defendant's behavior, including his relationship with women:

After the GPS he seems [different]; the girlfriend he's with now and what not seems to be [a] healthier relationship than mine and his. But when it comes to his mentality I think it really had an impact on the way that he was living life and he realized, he was [the one who needed to change], like 'cause I would always say something about, not trying to be disrespectful, but say something about the way he was raised.

The extent and duration of prior abuse have some influence on how victims experience GPS monitoring of their estranged partner. Those who had been subjected to lengthy abuse found the GPS helpful, as it provided them relief. Victims for whom the instant offense was a surprise and shock, and who felt it was "out of character" for their partner to be verbally or physically abusive, often did not consider GPS as critical for their safety. Still others initially viewed GPS monitoring as positive, but with time, as the shock related to the assault wore off, and the teaching moment for the abuser was no longer needed, felt it was intrusive and gratuitous, particularly when GPS interfered with their partner's employment or fulfillment of familial responsibilities.

Having their estranged partners on GPS provided victims a sense of control over their lives and their relationships with their abusers. Victims who wanted to be updated about their partners' social life or activities found ways to stay abreast, for instance, through social media

like Facebook. Other victims intimidated that they visited, or even stayed overnight, at their intimate partner's new residence, knowingly undermining the program's aim of separating the parties. Some of these victims expressed satisfaction that they could see the defendants "on their own terms."

e. Problems associated with having estranged partners on GPS monitoring

While most victims felt they benefited from the technology, others identified challenges and problems faced when dealing with abusers who were monitored with GPS. Some of the issues pertained to interactions related to the abusers; other problems concerned the technology, or related to how the justice system handled the defendants' case.

Certain problems victims relayed about dealing with their abusers were particularly disturbing to their peace of mind. Many victims described controlling and manipulative abusers, and expressed fears that their estranged partners would manage to circumvent the technology by finding ways to "fool" it or obstruct its proper functioning. One victim explained:

He knows how to rig it or something, he done been on it before. He puts some aluminum foil or something, he did something because it didn't work. He come and go to the store, we see him out on the porch, down the steps. He brings my sister to my house, he was just doing whatever, it didn't work. He put that [GPS bracelet] up on the dog or something, he did something.

Others felt that GPS would not reduce the danger they experienced, or that it might even pose additional risk to their well-being. Some victims feared that the numerous restrictions the abuser would be forced to abide by if he were placed on GPS would make him "even more crazy and [likely to] retaliate." Several victims discussed the need to be extra alert because of the GPS, and described how they entered a hyper-vigilant mode, continuously "checking their surroundings." In some jurisdictions, exclusion zones were narrowly drawn (i.e., around the victim's residence

or work place), exacerbating the problem, and leaving the victim with an uncomfortable feeling while walking in her neighborhood or even sitting on her balcony.

Many victims remained fearful and cautious despite the defendant being monitored with GPS. Victims whose partners were viewed as especially manipulative (e.g., “charming” or “slick”) expressed concerns that the GPS agencies were understaffed, or not savvy to the defendant’s ways, resulting in staff being unable to “connect the dots.” Other victims remained watchful because the offender used proxies (e.g., current girlfriend, friends and family members) to harass, intimidate, or abuse them. One victim described how she was handling herself in light of the harassment she had received from proxies, some of whom eventually also were placed on GPS tracking in reference to her case:

His family – I’m just always cautious. And I’m always having to look over my shoulder, I’m always hav[ing] to check the car behind me, [to] see the license plates of people who follow me. And I know they follow me cause, I go in a square and they stay, you know, two rights and a left, you know. And that’s how I get their license plate numbers, and I just, I’m always, you know, looking behind my shoulder, to the side, to the left, you know, watching cars... Thinking if someone’s following me, I don’t go where I’m going to go. And just, it’s just always been that way for me... I still – haven’t let my guard down... Like, even though his friends are on the monitors, like, I don’t ever sleep. You know, like, I’m up all night, I feel like I have to be on watch, just because I’m scared.

Victims who were technologically savvy feared that the equipment would malfunction or become disabled due to normal wear and tear, or that the abuser would not properly maintain the GPS device, thereby putting the victim in danger:

I think having it kind of gave me that sense of relief, so that’s why I kind of pushed for [him to be monitored with GPS]. But the downside, where, you know, he could let the battery die or he could let any of those things happen.

Enrollment of the abuser on GPS generated additional difficulties for victims. Several victims felt that organizational practices meant to protect them were paradoxically helping abusers. Victims who requested that authorities not disclose their new residence to abusers described numerous ways defendants would fish for information on their whereabouts, or make

efforts to find their location. Some victims stated that by giving defendants a map of their exclusion zones, the agency revealed their approximate location. Several victims were concerned that in its efforts to prevent disclosing their location to abusers, the monitoring center was in fact helping abusers close in on the victim's sanctuary. One victim explained:

I'm not sure if it's, he would go to a certain location every day. The GPS people would call me every day. And he would just be at this location. Well, he told the GPS monitor people, "well, I'm in a band and I have to go to practice," at this location near my house. It was, like, a couple blocks away, one or two blocks away. And he said, "I play in a band and I have to go to these practices. That's why I keep violating." Well, the whole time I've known him, he's never played an instrument in his life, to my knowledge. So, I was kind of like, that's a little fishy. And so the [GPS people] would call him, because [defendants] have to carry, like, a phone with them. Um, they would call him and tell him to go out of that zone. So, I guess that kind of gave him clues to where I was.

A financial pitfall was noted in jurisdictions that required fees for GPS program participation; some victims complained that the fee ended up hurting them. This was particularly disturbing for victims who requested the lifting of the GPS requirement, as they felt that there was no need for their abuser to be on GPS tracking. In some cases the victim ended up paying the program fees, or if the abuser paid for the GPS monitoring, his fulfillment of other financial responsibilities (e.g., child support, rent, health insurance) decreased.

Agencies varied in the amount of information they conveyed to victims about their abuser's GPS status or related details. Therefore, in many cases, victims had a general picture or vague idea about the aims, potential, or actual workings of the technology. Interviews revealed that victims were confused about the technological features, unsure of the capabilities or limitations of GPS, and were unclear about the meaning and use of known or unknown zones. Agencies also varied with respect to whether they informed victims when the GPS device was removed from their abusers (e.g., due to motions by the defense). While such notification demonstrated responsiveness to the victim's welfare, victims found such calls unnerving.

f. Concerns associated with the justice system and GPS monitoring

Victims reported disconcerting impediments to engagement with justice system hearings related to their abuser's enrollment in the GPS program. In some cases victims began to question the wisdom of relying on the system for protection. Like most victims who become involved with the justice system, they expressed frustration with their lack of familiarity with court procedures and they found navigating the system to be difficult and confusing. One victim commented:

It's just more work for me [to learn the system]. You know, I'm the victim, I'm supposed to be... they're supposed to be telling me this information. Cause I don't know the whole legal system, I don't know, really, you know, I'm taking classes, but it's not like I'm, I'm majoring in it... I don't know what's going on. I don't know the process. I don't know, I've never had anything like this in my life. And so, I feel like they should be contacting me, they should be telling me what's going on, just as the DA's supposed to be telling me what's going on.

The defendant's participation in the GPS program added another source of confusion. Victims often felt unsure about which steps to take in order to participate in the GPS program, and generally felt that they were at a disadvantage when it came to understanding the procedures and restrictions placed on their estranged partners:

You know, what we all feel is we're kind of on our own. Not with just the GPS monitoring system but with everything. You know, like, right now we're trying to look for lawyers and, you know, different people that will help us with this case.

Moreover, victims felt that at times the court did not thoroughly check the facts pertaining to their abuser's status as presented in their case, or was inclined to accept defendants' excuses for violations of GPS rules. Consequently, victims felt that abusers were not sanctioned for their violations or were let off the hook too easily, particularly when they had a "good lawyer." For instance, in one case, a defendant who worked delivering mail was not violated for

cruising slowly around the victim's home because his lawyer argued that he needed to do it for his job, describing him as a postal worker in the neighborhood.

It wasn't treated as anything. They brought him in, wanted to know why he was violating so much and... the lawyer sat there and told the judge, "Well, it's because he's a U.S. postal man. He delivers the mail." The judge said, "Okay" ... They didn't even check to see, you know, what his real job is, what, you know, anything. He just said "Okay."

In other cases, where friends, relatives or proxies perpetrated abuse on behalf of the defendant, victims complained that the court did nothing to prevent such abuse in circumvention of court orders for no contact.

The interviews revealed several paradoxes associated with the use of GPS for DV. For example, victims who had prior experience with bilateral RF technology for DV noted the absence of a receiver, or other tangible evidence in their home that indicated the defendant was being monitored while out on bond, causing them anxiety.⁵⁹ Paradoxically, even though defendants were continuously tracked with GPS, and thus GPS victims were "objectively" safer than their bilateral-RF counterparts, they felt less safe because GPS provided no visual feedback that the defendant was in fact being monitored.

Victims reported other paradoxes associated with their experience of GPS: some recounted that they felt safe when the agency frequently called to notify them that the defendant was in the zone, though it was "unknown." Yet when the defendant learned the victim's new address and avoided the area, and the agency ceased calling to alert the victim about any defendant incursions into the now "known" zone, the victim became alarmed. The agency had no need to call the victim, as the defendant was being compliant, but the victim perceived the lack of calls as a sign that the agency was no longer doing its job. One victim explains her confusion as follows:

Um, it was kind of like both ways. It was kind of like, maybe they're not doing their job, maybe he's in my zone and I just don't know. And then it was just kind of like, well

maybe this is a good thing, maybe he's not in my zone, maybe he's kind of staying away now. It was kind of both sides.

In sum, whether the victim's residential location was known or unknown to the defendant, victims experienced apprehension and anxiety about their circumstances vis-à-vis their abuser.

Many victims also felt ambivalence and trepidation about the agency's alertness on their behalf. Although they appreciated the agency's efforts at providing a measure of protection by notifying them of zone perimeter breaches, victims were unsure how to handle calls that informed them such breaches had occurred. Some victims were conflicted as to whether they wanted to be notified when the defendant entered their area. While victims claimed that alerts signified that their abuser was being watched and that the agency was looking after them, such notifications often scared them, raising their anxiety levels. As one victim noted about receiving alerts via telephone:

Um, I don't think I would mind [receiving an alert]. I think it would help me, just because, you know, when you're sleeping you're kind of wondering too, like, "ah, maybe he's not, maybe he is." And, with them calling me saying, "He's in your zone," would kind of alert me a little bit, make me a little scared. But then it would [be] kind of, "okay, maybe they'll tell [me something important]."

Some victims questioned the justice system reasons for instituting GPS programs. They suspected that the technology was designed to protect the justice system from liability, or to show that something was being done, rather than reflecting any genuine interest in increasing the safety or improving the welfare of the victim. This was particularly the case for those who were harassed by the abuser's proxies while the abuser was on GPS. These victims reported remaining cautious despite knowing that their abuser was on GPS.

To me... it seems like, they're just basically monitoring from the court, for the courts... I think it's more protecting them than it's protecting me. Cause it's kind of like, you know, they get protected because if something happens to me, "Hey, this guy was over there at this time, we have him on a monitor."

g. Ancillary problems

The intersection of GPS monitoring, domestic violence, and court procedures developed to respond to it created other types of problems for participating victims. For example, many victims noted the court's insensitivity to, or non-awareness of, their concerns while participating in proceedings. In the midst of legal proceedings, whether related to the pending case or in related cases in other legal venues (e.g., family courts during determination of custody or guardian ad litem requirements), victims might have to reveal important private information that they felt the defendant could use to further harass them. The defendant might learn personal details about the victim, or discover confidential information that victims wished to conceal from the abuser (e.g., her home or work address, visits to the family doctor, names of baby sitters, phone records). Thus, looming court dates were fraught with anxiety for victims, as they were uncertain about when the defendant's attorney, or the court itself, might leave important lines of defense exposed.

The context of domestic violence is often fraught with claims and counter-claims by estranged partners. Justice personnel at times become enmeshed in intimate partners' conflicts, as one party – often more experienced with the system – attempts to use court procedures and restrictions to harass or drain the other. The justice system often struggles to sort out disputes about who is the abuser and who is the victim, a struggle in which an experienced abuser may have an advantage in comparison to a less experienced victim. In an especially troubling scenario, GPS technology may become one more tool that unscrupulous parties can use to “punish” their adversary. Thus, some victims described how their abuser managed to turn circumstances in his favor, resulting in the victim being placed on GPS. As described in the section on defendants' experiences, victims as offenders – victims whose abusers succeeded in

turning the tables against them and having them placed on GPS – were found among the female defendants who were interviewed.

2. *Defendants*

Defendants have direct experience with GPS program policies and procedures, and hence are a valuable source of insight into their repercussions, both positive and negative. Defendants repeatedly focused on particular themes, including the effectiveness and reliability of GPS technology, the restrictions that are coupled with GPS, relations with program personnel, the emotional impact associated with being on GPS, and the impact program policies and procedures can have for their economic wherewithal.

a. The sample of defendants interviewed for the study

Defendants⁶⁰ were interviewed at four of the six agency sites that participated in the qualitative study – West, Southwest, Midwest, and South. Interviewed defendants (N = 74) ranged in age from 18 – 62, with a mean age of 33.6. Two thirds of the defendants were male, one third were female. Demographically, 59.5% were Black, 31.1% were White, 6.8% were Hispanic/Latino, and 2.7% were other (e.g., identified as bi-racial, Native American). The majority of defendants (58.1%) were single, 20.3% were married, 12.2% were divorced, and the remaining 9.5% were separated or in the process of becoming separated or divorced. While 31.1% of defendants reported having no dependent children, the mean number of dependent children for the sample of defendants was 1.68⁶¹. Regarding employment status, 44.6% of defendants were engaged in semi-skilled or unskilled work (e.g., manual labor, food service industry, child or elder care, drivers), 27.0% were unemployed, 10.8% had managerial jobs or jobs requiring special skills (e.g., court reporter, nurse aide, chef, foreman, department

supervisor), 9.5% were students, 4.1% were professionals or independently employed, and 2.7% were unable to work due to disability.

b. Entering the program

GPS programs can hasten release from jail following arrest, but they can also act to delay resumption of a “normal life,” as observed in the initial stage of program participation. Arrestees in several of the study sites who face DV charges and are unable to afford posting bond are often presented with an alternative scenario, namely, release from jail with GPS enrollment as a condition of bond instead (which typically can mean either having to post no monetary or collateral bond, or having a lowered bail amount). Many clients noted that the GPS program allowed them to keep their jobs, as sitting in jail would have likely resulted in their termination at work, and for this benefit they expressed gratitude to the program. Nevertheless, problems occurred for others, when the EM agency refused to release the client from a “lockdown” situation (i.e., kept him under total house arrest) because of a shortage of GPS units: the defendant had to remain at home until he could be “hooked up,” despite his having already been released from jail. Employers could be unforgiving about this situation, and some clients reported losing their jobs in the delayed interim between release and return to work.

Defendants must agree to abide by GPS program rules and restrictions in order to be admitted, but such agreement is secured under conditions not conducive to informed consent or full disclosure (usually expressed in the form of, “I didn’t know what I was getting into”), since agreement is secured in a rush of processing, typically while trying to bond out of jail and without benefit of adequate legal counsel. Arriving at the EM agency to be “hooked up” after release from jail, what has been consented to is documented during an initial intake, at which point the defendant will likely be told that his principal responsibility is to stay away from the

victim to preclude returning to jail.⁶² He may also be told that the staff or sworn personnel can stop by his residence for equipment checks. In one of the more strenuous programs, defendants are told that personnel are “going to come to your house, [...] going to search it [to] make sure that there is no alcohol, drugs and firearms or what not.” The paperwork that is filled out during the intake process, however, and the listing of the myriad rules and restrictions, can be quite intricate. Clients may be preoccupied with a number of pressing issues after having been in jail for several days, resulting in their not always fully appreciating what they have agreed to, even if the points are spelled out on a handout as well as verbalized to him:

[The program is] very demanding to me. I mean, like the guy was telling me earlier when I was out in the lobby he was asking me what level I was on, I was like I didn't even know what level I was on. I forgot that there was even levels. They give you a sheet of paper telling you about it or what not, but I think I lost that awhile back. So I found today I'm on level 2 and that means I got to call whenever I get ready to go to anything important, like an appointment or something like that, or if I'm scheduled to go to court or whatever.

The early sense of relief over having been released from jail therefore can fade with time, as the defendant comes to the realization that the program carries burdens – rules, requirements, expectations – of its own:

Ah, in jail with no bond, I mean, obviously, emotionally, even though I felt degraded and what-not in there, I mean, anything's better than that. So, being released at first was kind of, ah, gave me, eh, a chance to exhale a little bit. I was happy to be out of jail... Ah, so there was some relief there. But as the months wore on, ah, y-you kind of start realizing that this really, in some circumstances, isn't, isn't, ah, necessarily a civil way of treating a defendant. It kind of, in my opinion, abolishes, like the, ah, the presumption of innocence. But, that's not a civil right, so there's no law that requires them to presume somebody's innocent before their trial.

The sense of their having been enrolled in a program that is far more demanding than was earlier implied can feed defendants' resentment about the injustice of the program itself, and the difficulty of successfully abiding by its rules.

Program personnel typically keep defendants in the dark about the extent to which they will be supervised. Supervisors rarely volunteer fully accurate information to the defendant about what kinds of tracking is occurring at what point, whether passive or active GPS is in use (or even if GPS is being used at all), or what the function of the ankle device is relative to the portable tracking device, preferring to keep clients guessing. Instead, defendants are given maps on which have been circled perimeters into which they must not enter, or they are told general areas that they cannot visit, or they are told more explicitly that they cannot show up at the victim's home, workplace, or hangouts. Nevertheless, a common way in which the defendants learn about the capabilities of the technology, its nature and reach, is through encounters with supervisors, during which the latter indicate that the defendant's whereabouts were known about, despite the defendant not having said anything about it:

The house arrest people take care of that, like if I get too close, "beep, beep, beep," they know where I'm at because when I went to go to the hospital, I guess when it's really an emergency I don't have to like call, like if I'm out of it, like unconscious, feeling real sick, throwing up, I just can't, I'm not in a position where I could get on the phone and talk I can just go straight to the emergency room. Like when I had went to the emergency room a few weeks back when I had a viral infection and I got out of the hospital, my pretrial officer called me and she already knew where I was.

Text messages and cellphone calls from supervising officers also inadvertently reveal to defendants that they are being tracked in real time, or that their location is known by their supervisor: when they warn him he is entering an exclusion zone, for example, or when he is told he is late home for his curfew. As a result, the defendants come to experience the passing of time and their movement in space in ways that are quite vivid and certainly different from their previous, unmonitored life. Some defendants readily admit that the technology thereby helps keep them in check, giving structure to their daily lives and inducing a sense of accountability for what they do with their time and movement. But more defendants seem to see the program

primarily as an unjust hindrance and source of stress, one that really does not prevent one from harming the victim in the case, if the defendant is so inclined:

If your intent was to go out there and hurt and murder somebody, [GPS] is not going to stop you.

Every situation is different. Everybody's not trying to kill their girlfriends or their ex-wives or their wives and that's what this is pretty much saying to everybody across the board. You know, 'we're going to make sure that this does not happen.' And you really can't, it's not foolproof with that either because if it's going to happen, it's going to happen.

c. Living with an uncertain technology

As many defendants see it, the technology is not perfected and supervisory staff compensate for the technology's defects by overreaching and being more intrusive in their handling of the defendants, asking more questions, putting up more or wider exclusion zones, mandating earlier curfews – such that the defendant bears the brunt of the technology's limitations.⁶³ For example:

If they're trying to keep me from [her], they're fearful that I'm going to make an attempt to go abuse my girlfriend, I can respect that. But, if they're trying to harass me for certain issues with a unit that doesn't have perfected technology and then laying me out, like I'm not taking care of, like, like I'm being uncooperative. Basically, they're making it sound like I'm being an uncooperative party as a defendant in my case.

In interviews, defendants on GPS for DV usually express an understanding that someone has made a determination that they represent a danger to a particular person: the alleged victim in the incident for which they have been arrested – a characterization of dangerousness to which they often take exception. In describing how they adapted themselves to “life on the bracelet,” defendants are prone to talking about settling into a permanent state of anxiety: trying to anticipate technological failures induces a sense that if one is not careful, one will have one's bond modified or revoked through no fault of one's own. Participants point to numerous

examples that illustrate their perspective. For instance, the logistics of keeping the signal going can be quite difficult:

They think that you should be always connected to the satellite. You know, I mean, that's my other concern about this job that I interviewed for. The office is in a big high-rise, not downtown, but a big high-rise office building and, I mean, what are you supposed to do? Just go out constantly, you know? It's on the fifth floor of this office, so I guess every hour you're supposed to go run outside so you can reconnect to the signal.

A crew leader employed in a warehouse described being on edge throughout his shift for fear of running afoul of the GPS signal requirement:

Yea, so I would definitely have a lot less stress, absolutely. And I definitely would be, have a lot less stress on a daily basis, an hourly basis of making sure this thing can read a signal somewhere, but still being able to carry out my job and make sure I'm leading this group of people through a successful night at work. So, yea, absolutely, there's definitely a huge amount of stress just by having this thing that, that is completely unjust.

Defendants describe the different kinds of things that they do to camouflage the device and, when it cannot be camouflaged, how they will try to explain it away (a popular cover story is that the portable unit is a "walkie-talkie" used on the job). Some defendants are actually successful in concealing their GPS enrollment (as well as the presence of the ankle monitor and portable unit) from their peers and employers at work. The problem with this gambit, however, is that the device makes noises that can result in the eventual discovery of the defendant's association with the program. Especially at work, defendants fret about ensuring that their portable unit is nearby, lest it emit a loud and obtrusive noise. Forgetting the unit at any point in time and walking away from it can result in inadvertent disclosure of their status as monitored defendants in a pending case. This scenario is described by a woman who so far has managed to keep her involvement with the program a secret from her employer and co-workers, concealing in her purse the large and bulky receiver (referred to as a "monstrosity" by one interviewee), rather than wearing it on her hip, as she has been instructed:

I spend so much time worrying it will go off in the middle of a meeting, or while I'm working that it makes it hard to focus or concentrate on my job. [Inhales deeply] Because I cannot be more than fifty feet away from the GPS device or the receiver I have to take my purse to the bathroom, the kitchen, upstairs to other people's offices, et cetera, including into meetings or to other areas of our office building, which is also embarrassing and noticeable to others.

Another defendant's work entails that he spend much of his time in a freezer, which interferes with his GPS signal, resulting in his being threatened with being "violated":

I have to wear this on my waist, [and I work] in a freezer. So every time I put it in my pocket: "low signal." So "low signal" [means] they can't find me. So they call me and say if I lose it, if I put it down on purpose... they want to lock me up. Try to lock me up and stuff.

A lack of confidence in the technology's reliability can show up in extraordinary measures that defendants will take to ensure that the signal will remain continuous, an example of which is provided by one defendant's precautions, taken before sleep:

You know, it's just, I, I think that's just part of the stress that I'm under. I'm not able to sleep at night. Ah, you know, I'm constantly making sure that this thing can [get a signal], and I'll even so much as point it at a window, pull the antennae out to make sure that, you know, if I have to prop it on a pillow so it lays at an angle, I mean, I get a little, just, emphatic about it, which, I'm sure, it doesn't have to be. I mean, I think whatever signal it picks up in, in realistic concepts, it's going to pick it up no matter what.

The importance of concealing one's equipment was noted by many defendants. One interviewee who works in maintenance for a commercial real estate company, noted:

I have a hundred and fifty tenants that we take care of. You know, if any one of those tenants knows what happened, the charges that I got, they might not want me in their suite. And if they don't want me in their suite, you know, word gets around and I don't have a job.

The urge to conceal is not limited to the workplace, but also emerges in the context of the defendant's ordinary social life, making it difficult to be fully relaxed in the residence that is hosting him, as indicated by another defendant's story. He has been taken in as a houseguest by a new, churchgoing female friend:

I've been having to try to hide this because she has kids and she don't want them to see it. Cause they will know, she has a 15 year old son and an 11 year old daughter and the 15 year old son would know what it is.

The emotional burden and sense of isolation associated with the experience of concealing program enrollment from others was succinctly conveyed by one defendant as follows:

So, I broke it down to, like, emotional burden, financial burden, and then other difficulties. Um, so, under emotional burden [...] it's completely humiliating and I'm extremely fearful that someone at work will see the equipment or find out about it and then it will jeopardize my job. I have not told many of my friends about it because it is so depressing and humiliating and I'm afraid that people will not understand and I will lose friends or lose the respect of people I know and associate with.

d. Living with restrictions

Program participation demands that the defendant be mindful of many rules, including remaining within proximity of the transmitter at all times and having the transmitter in tow when departing from home. Especially in the early days of GPS enrollment, defendants can easily forget this aspect of program participation. As one defendant put it:

I mean [laughs], I, ah, didn't do it very many times, you know, I'd walk out the front door and then realize that I didn't have it on. I did it one time where I got maybe two blocks down the road and realized I didn't have it. Turned around.

In one site, the limited "out hours" the unemployed are allotted each week can be consumed by the mandatory visits to the office for check-ins with the supervising officer, making the very idea of having "free time" to carry out personal tasks (like going grocery shopping or doing laundry) seem unrealistic:

I got to catch three buses to, just to get down here [i.e., downtown to report to the supervising officer]. And I got four hours out and the bus take an hour and forty five minutes to get down here. So, by the time I get down here I'm sitting here, and then I got to, like basically, I got to rush back to the house.

The entire time I was on it, I was just worried about keeping my job. How I was going, you know, go to court and missing time at work and coming down here every Wednesday and missing time at work, see if they'd still keep me.

Automated text messages that are programmed for delivery in response to possible violations or violations in progress (e.g., “You are entering an exclusion zone. Turn around immediately!”) seem to lack any empathy for the defendant’s situation, reinforcing the impression that the program is unfeeling and indifferent to the exigent circumstances the defendant can be faced with at any point in time; he is monitored constantly, but always incapable of explaining himself to his officer:

Like I got stuck in traffic one day and it went off saying, “GO HOME NOW!” That’s what the message says, and I’m stuck in traffic. Where am I going to go at? [Laughter] You’ve got two cars and a jack knife in the middle of the road, where I’m going? I can’t go nowhere!

Some defendants report trying to reach their officer to explain their delay or their apparent exclusion zone breach (perhaps their bus unexpectedly detoured into a forbidden area), without success, or at risk of being scolded by an officer who does not want to receive telephone calls from clients.

In some jurisdictions, the large number of rules and restrictions associated with program participation can make it seem easy to violate one or more of them, leading some defendants to surmise that an arrestee is better off remaining in jail until the case is disposed, rather than running the risk of being violated and arrested on new charges:

You might as well go to jail and save yourself all the hurting because if you do not successfully complete the program your time starts over again in jail anyway... it’s easy to violate with all these restrictions.

As another defendant put it, were he to do it over again, “I would, you know, just do my jail time. If I, you know, start in November, October I would have done did my time and been out, been out of this.”

Programs that are relatively lax in terms of behavioral restrictions and expectations can nonetheless seem onerous to defendants who are expected to pay mandatory per diem fees.

Program participation that entails regular payment of fees, including by the defendants who have just gotten out of jail, without a job or a certain place to live, strike many of the defendants as highly unrealistic, even ludicrous:

I'm unemployed, I'm homeless, car-less. I didn't have anything coming in, that was, they automatically were expecting me to pay them this pretty exorbitant amount of money on a weekly basis without [my] having any, any place to live, without having a car, without having a job.

Although the GPS for DV programs that were studied do not offer direct financial assistance to defendants, agencies that require payment from enrollees also offer special dispensations, such as sliding scales and delayed payment dates, so that defendants will remain in compliance with the program's rules:

It took me a few weeks to find a job. They, um, I told them I had some financial hardship right now. They didn't have, you know, I didn't have any money coming in so they reduced my fee a little bit, but still expected a weekly payment. And, to put me on a payment plan to catch up the first three weeks that I was behind on paying.

Per diem expenses can greatly contribute to the stress experienced by defendants, especially if they are simultaneously continuing to provide for dependent children or a residence (rent, mortgage) from which they are currently excluded, as well as paying expenses toward a new, temporary dwelling. It is unclear whether sliding scale fees adopted by the participating sites take into account defendants' actual expenses in making adjustments to fees, or are based instead on absolute income to cost ratios.

e. Becoming transparent

The concerns that defendants have with GPS technology pertain not just to the reliability of its component devices and communications infrastructure, or to the ramifications that might accompany inadvertent disclosure of their program enrollment, or to the difficulties entailed by compliance with rules and restrictions. Defendants' concerns also pertain to the transparency that

their lives acquire after being enrolled in the GPS program. Complaints about transparency are typically voiced in terms of the problem of intrusiveness: how the program's operations result in defendants being treated as persons without privacy, subject to a long reach that can intrude on their personal boundaries without prior notice, whether virtually (via tracking, though apparently not a major concern) or actually (more of a concern, as manifested in surprise home visits and drug/alcohol testing). One defendant describes a surprise visit by his case officer:

They came in and did a search of everything for me. And, he told me he wasn't going to give me the breathalyzer, or whatever, because I answered the door in my drawers. Basically, I was asleep on the couch. He was like, 'I see what you was doing and no point of giving you a breathalyzer.' I'm like, 'I don't even drink.' And he start searching my house, I start putting everything out for him.

Despite the compliance displayed in the defendant's description of the moment, his solicitous attitude evident in how he "puts everything out" for his supervising officer, the latter does not seem to take very well to the assistance, resulting in a somewhat tense situation:

I don't think – the only thing that stuck out to me is when he went back to my back closet. Cause I was, remember, I was pulling my, uh, my couch pillows off everything, opening everything up and, remember I was trying to go to something, and he's like, 'Hold on!'... And I'm like, 'I'm trying to help you out so you can get out.' Like, you see what I was doing, shit, go about your business!

The resentment is especially pronounced when others in the defendant's orbit, whether co-habitants (e.g., hosts) or visitors, are subjected to treatment that they consider aggressive and disrespectful. An especially interesting example is female company that may be present in the home during an officer's home visit: In more stringently run programs, supervising officers may consider such a woman suspicious; for all the officer knows, she may be the victim or prosecuting witness in the case, which in turn means that the officer will take an intense interest in them, to the consternation of the defendant:

Alright, well, for me it was the, um, like, constant checking in. Like, I be asleep at twelve o'clock, that whole night and they just knocking at the door at twelve o'clock at night. Like, or, I be just chilling with my company and like, it's a female, they want to go harass

her. Like, 'where your I-D?' and all this, 'what you doing here.' All this, like, interrogating her. And, like, that's not necessary either. And then, another time they come and they just be checking people house and stuff. Like, after like, it'd make me feel guilty. Like, [the officer] shouldn't be in that person's house because [the host has] got to compromise a lot of things already. And then you going through their house and checking up on them. It's like, every time you come, you putting everybody else in the house in jeopardy. You know what I mean?

The defendant does not appreciate the officer's perspective here, namely, that he does not know who the woman is and hence has reason to worry that she might be the victim in the criminal case. Instead, the defendant sees the inquiry into the woman's identity as a spillover of his transparency onto a truly private party, testament to the deteriorated zone of privacy he now inhabits.

Defendants cite how their participation in the program affects others, often in unexpected ways. The affected parties can be their estranged partner, members of the household or family, extended family members, co-workers and employers, as well as friends and acquaintances. One defendant described how his friends have concerns about visiting him, for fear of having an officer discover them with a banned substance during surprise home visits.

They could just be coming through to say hi to you but you know a lot of people might smoke weed they might have a little joint or whatever and they can come through to say hi to me and the police can walk right behind them and they going to jail. It's crazy.

The implication of this dynamic can flow in different directions. On the one hand, it can mean that certain influences are no longer present in the lives of the defendants, which presumably can be helpful to their immediate circumstances (staying out trouble). On the other hand, the effect of such a law enforcement presence can mean that the defendant is increasingly socially isolated, giving rise to feelings of loneliness and an inability to resume a normal social life as well as stay connected to contacts with information about possible job prospects. In this case, an adult daughter's liquor is seized by deputies employed by the monitoring unit:

I don't have company any more. Nobody comes over because they, like, they were at my house last night, three of them come. Searched everything. Flipped the couch, was all in my bed, in the closet, in the refrigerators. First time they come I had my daughter had – she's twenty-three – she had some, you know, expensive beer in the refrigerator and they weren't mine. I drink the cheap stuff, so I went and told the cop that. You know, like, 'these ain't my beers.' He, he made me dump them out. You know, like, man.

What is experienced as “harassment” by guests (as well as the risk of being arrested because of discoveries made by law enforcement while in the defendant's residence) account for both why the defendant's visitors may visit less and less over time, and why defendants may find themselves being asked to move out by hosts unwilling to endure intrusions entailed by program participation. More restrictive programs, however, limit the number of times a defendant can move during his tenure in the program. Therefore, at some point the onerous demands of the program can result in the defendant being frozen out of his temporary place of residence – as his sources of social support abandon him – as well as being frozen out of the program entirely.

Many of the female defendants who were interviewed for this study were previously or simultaneously victims of domestic violence, and they now found themselves in the position of being the defendant. These defendants are a special but increasingly important sub-group, especially with a growing trend for courts to refer female defendants to GPS programs. As people who have experienced victimization, they now find themselves being the accused and feeling even more isolated and vulnerable. The programs tend not to take that particular background into account, however, and so do not provide them with victim services, nor do most NGO victim services programs. Victims turned defendants may experience house arrest, or curfews, quite differently than ordinary defendants. As one woman put it, she felt like a “sitting duck,” because her abuser knew exactly where she was at all times. Women defendants in this position are especially vulnerable to the extent that their networks of social support may have

atrophied during their time in an abusive relationship. Finding herself without persons to rely upon, one female defendant relayed the following:

After I lost my job last year, I started thinking very seriously about [moving away from the area]. Um, but it's hard, you know, first of all when you're alone. My situation would be, first of all trying to pick a place to go, whatever place that may be, with no job, no support system, no money, because I'm essentially broke. Um, and two domestic violence convictions, which I think, you know, no matter where I live, is going to, ah, make it difficult to, to find a job. And I think, I think it may have made it difficult for me here. I think the G-P-S situation is making it even more difficult.

f. Unexpected benefits

Defendants came to understand, usually either upon reflection, or at the counsel of their attorney, that their participation in the GPS program was actually a benefit: their "GPS points" shielded them from false accusations that might be made by a vengeful, estranged partner. Some former defendants spoke about how their tracking histories had given them an alibi after the alleged victim had accused them of harassing her at a specific time and location, thus diminishing the victim's credibility as a witness for the prosecution. Defendants who characterized their lives as largely directionless or without proper guidance during childhood spoke glowingly about their pretrial officers, especially at the treatment-oriented site, saying that the life coaching that their officer had given them was invaluable. Defendants from various sites also talked about using their time in the program, and away from the alleged victim, as an opportunity to engage in various kinds of beneficial pursuits, including rebuilding relations with family members, looking for work, returning to school, and reimagining their lives without the victim as a part of it.

Defendants also talked about how their experience had given them a newfound appreciation of their family and social networks, which may have been mostly dormant before their getting into trouble (as with the defendant who found himself now babysitting his nieces

and nephews – and enjoying it, or the grown man who was now spending more time with an elderly mother whom he had before seen only sporadically).

The importance of having family ties that one can rely upon when living under the program's various disabilities cannot be overstated. Since defendants are required to establish a separate residence apart from the alleged victim, if they happened to be living with her, being able to move in with a family member can be essential to being released from jail. Assistance with paying mandatory per diem fees enabled this defendant to remain out of jail:

And then finally, I, I didn't, I still didn't have a job, I was borrowing money from my family members just because they kept threatening to put me back in jail if I didn't have the money paid. So, I had to borrow money from family members until I got a job lined up to, to start paying for it.

Family support also comes into play with the child support that can be provided to mothers, with dependent children, allowing the women some relief from that role:

All I do is just watch her, back when I could I'd do for her when I had a job, but pretty much they [family] have to do everything, all I do is watch her. They get her her milk, her pampers, they even help me watch her when um, whenever they get off from work they watch her in the nighttime cause I have to have her all throughout the day. And really my father mostly have her all the time cause he adore her so, he watch her throughout the night time or whatever and whenever he's off he'll watch her throughout the day so that's a big help to me, because added on the stress of being on house arrest and then having thoughts running through your head and then having to deal with a baby.

It was not uncommon for defendants to get choked up as they talked about the assistance family members provided them, often at great sacrifice. Since GPS for DV programs are often inflexible with respect to rules pertaining to those who have dependent children, parents can struggle to attend to the needs of their kids within the confines of the uniform number of "out hours" that they are provided. As one woman put it, "My children are under house arrest with me." On the other hand, helping kin with child or eldercare can assuage feelings of guilt for defendants with familial duties.

Another unexpected benefit described by some men pertained to their masculinity.

Although many defendants mention that “being on the box” makes it difficult to pursue intimate relationships with potential romantic or sexual partners, some men believe that their status as a GPS defendant can add to their sexual cachet, underlining a kind of potency, or “bad ass” status that some women find appealing:

Defendant: And what, what he was saying about, about love making, or whatever, it depends on what type of level of girl you mess with. See, I'd mess with people that ain't very educated, or whatever, so basically we call them ghetto. So, the real ghetto girls, they think it's sexy though. 'Let me see your box.' I get that all the time, 'let me see your box.' Like, 'show me, I ain't never seen it.' I'm like, 'yea, here, mm hmm.' But it's all, you know, real ignorant people. 'Let me see the box.' 'You can see it!' You know what I mean?

Interviewer One: So, it kind of, you're saying it sort of adds, it adds to your allure. I guess is what you're saying.

Defendant: Mm hmm [agreeing]. Yea.

Interviewer Two: Makes you more of a man.

Defendant: Yea. Like, like, 'oh, you be getting in trouble.' Like, 'you're not scared to go to jail.' Shit, yes I am [laughs]. I ain't going to tell you [interested women] that though.

If nothing else, this defendant seems to be suggesting that participation in the program added luster to masculinity claims. None of the women who participated stated that they had found their femininity enhanced by involvement with the program. On the contrary, their femininity was diminished, in their own eyes and the eyes of onlookers.

g. Conclusion

Defendants' participation in a GPS program can be an experience with emotional highs and lows. The defendant may find that his tenure with the program gives him a certain kind of time and space that can be used “productively,” functioning as a “wake up call” to turn his life around and move on from the current relationship. Others feel that the program is so

burdensome, and the unresolved nature of the legal case so overwhelming, that they experience themselves as being in limbo, not certain of where they are headed, a sense of irresolution that is exacerbated by the fact that they cannot have contact with the victim. Unable to talk her into reneging on the stand, or talk her out of attending the various legal hearings leading up to and including a possible trial, the defendant is largely kept in the dark about his fate. Such uncertainty can lead to an inability to move on with one's life, or make plans for one's near or remote future, as expressed by this interviewee:

You know I can't go get a job because I don't know what's going to happen with the case here, you know and uh I can't make plans for going back to [my home state] cause I don't know what's going to happen here...

Since GPS is rarely used during the post-sentencing period, it is likely that defendants' experiences with the program will terminate with a conviction, dismissal, or acquittal. None of those who participated in the interviews in the present study, however, stated that they would at any time soon forget the experience of being on GPS.

Chapter 4: Conclusions

In this chapter we summarize, discuss, and integrate the findings from the three prongs of the study, outline implications for public policy and practice, review limitations of the present study, and suggest directions for future research.

A. Discussion

1. *Web-based survey*

The national survey of agencies that use GPS for DV documents current trends in the adoption of GPS, highlighting the mechanisms in place to address DV during the pretrial period, as well as how agency professionals view the efficacy of their programs. There is no singular approach to how GPS may be used for controlling DV offenders, although certain trends and tendencies do emerge from the data. The survey's "snapshot" of the disparate ways in which GPS is applied to DV by pretrial programs in the U.S. provides a backdrop for situating the results from the in-depth quantitative and qualitative components of the study within the national context.

The goals of keeping victims safer and enhancing supervision of alleged abusers provided significant impetus to the creation of GPS for DV programs. Enactment of state legislation on these matters has led to a substantial increase in programs nationally. Though unified in their desire to protect victims of domestic violence, practitioners express awareness that GPS tracking cannot protect victims during the pretrial period. Respondents also note that victims often misunderstand the technology's capabilities. However, it is not evident how conversant agency personnel are with victims' views or experiences, as demonstrated by the high numbers of respondents who answered they did not know the impact of various aspects of GPS program on

victims (e.g., whether GPS is stressful for victims, or if victims are more engaged with the criminal justice system when the defendant is tracked with GPS). It may be that current GPS for DV programs generate a limited number of contacts with victims, which in turn may account for why victims misunderstand GPS capabilities. Historically, the agencies in which these programs are housed have focused on defendants. They are not known for working extensively or sensitively with DV victims, some of whom practitioners have viewed as unreliable (e.g., because of recanting). The inclination to focus on offenders, while endemic to *criminal* justice, can create blind spots relative to victim's welfare or interests. The latter may be evidenced by justice decisions pertaining to defendants that are not considered for their impact on victims (e.g., the victim is not notified by the agency when the defendant is granted an early release from GPS).

In implementing their mission, GPS programs rely on the ability of their officers to supervise or monitor defendants closely. Thus their reduced caseload seems to be enabling GPS officers to spend more time managing their clients, especially in terms of processing the large volume of information generated by the advanced technology – on average GPS officers monitor less than half as many clients as non-GPS officers. At the same time, agency personnel agree that GPS is not a lenient practice, suggesting that GPS for DV programs may be oriented more towards penalty than treatment.

Finally, the issue of self-assessment in programs aimed at protecting victims who are at risk is significant. Survey respondents felt internal and vendor training (both about the program and the technology) prepared staff well to use GPS on the job. However, only a minority of programs has ever formally evaluated the effectiveness of GPS tracking for defendants or employed special procedures to assess the risk of pretrial misconduct. Lack of ongoing evaluation may suggest that assessing the effectiveness of managing defendant risk and related

victim safety concerns is not considered a high priority. Furthermore, it remains to be seen to what extent agencies are prepared to incorporate victim interests, experiences, and preferences in measuring program effectiveness.

2. The quantitative impact study

The goal of the quantitative prong of the study was to determine whether enrollment in a GPS for DV program during the volatile pretrial period had a discernible impact on defendants a) during the time they were enrolled in the program (i.e., before case disposition), referred to as the short term, and b) once they exited the program, referred to as the long term (i.e., a one-year follow-up period beginning after either case disposition or completion of sentence). Performance was measured by new arrests (in the short and long terms) and in relation to compliance with program strictures, including the defendants' observance of the court's no contact orders (in the short term). These measures indicate that program enrollment has an impact on defendants' behavior, both in terms of compliance with the law and with the terms of their release from jail following arrest. Factors that are known to be related to recidivism were controlled for, including the number of prior arrests, defendant's race and age, and severity of the current offense. Three mature GPS programs with a sizable number of cases and contrasting approaches to GPS-based supervision, participated in this component of the study. Although the comparisons and outcome measures varied somewhat from agency to agency (because of the vagaries of local record-keeping, agencies' diverse approaches to managing defendants' during the pretrial period, differences in relevant legislation, and levels of access to criminal justice data bases), the findings often point in common directions, although differences in GPS effectiveness results were also detected.

a. The short term

In the *Midwest* site, the number of contact violations by GPS defendants was negligible – most violations pertained to substance abuse, curfew or other non-contact restrictions – bolstering confidence in the idea that GPS tracking reinforces a spatial buffer between the victim and defendant in the post-arrest period (interviews with victims reinforce the idea that GPS functions as a spatial buffer between victims and defendants.). A bivariate comparison (Table 3C-2) shows that the RF group has a significantly higher chance of violating program rules than does the GPS group (the other groups – defendants who remained in jail or who were bonded out without EM enrollment of any kind – were not subject to program rules and hence were excluded from the analysis). The bivariate analysis (Table 3C-2) also showed that the GPS group has a higher likelihood of being re-arrested while being monitored in the pretrial period than either the RF or Bond group, most likely due to the tracking. A multivariate analysis of program violations (Table 3C-6) by defendants participating in GPS- and RF-based monitoring programs confirmed that GPS enrollees are significantly less likely to violate program rules compared to RF defendants, but a multivariate analysis (Table 3C-7) showed a statistically significant higher likelihood of being re-arrested for GPS defendants when compared to RF defendants during the pretrial period.⁶⁴ The likelihood of being re-arrested (Table 3C-4) or having a program violation (Table 3C-3), however, was not associated with the length of time in the program: mere program enrollment was a sufficient basis for having a greater likelihood of being re-arrested.

The lower likelihood of program violations for GPS defendants is counter-intuitive in that GPS defendants are under a more extensive set of program rules (including, most importantly, being subject to exclusion zone restrictions, unlike RF defendants who only need to comply with curfew restrictions, but not with exclusion zone boundaries) and endure greater transparency

(Midwest GPS defendants are tracked in real time, while RF defendants are not tracked), hence creating greater liabilities stemming from program rules and expectations. The higher degree of compliance associated with GPS indicates that the program is exercising a controlling influence on the behavior of GPS defendants, more so than the influence that the less rigorous RF program has on its defendants.⁶⁵ Although the higher likelihood of being re-arrested for GPS defendants seems to be inconsistent with the program violations finding (i.e., that GPS defendants have a lower chance of violating program rules), it is important to see the two findings as continuous: Program violations, when they occur, are taken more seriously in the Midwest's GPS program than in its RF program. As discussed in the previous chapter, the Midwest's GPS program is highly crime control oriented, with a punitive thrust. The supervising officers in the GPS program (who have arrest powers and are focused specifically on handling domestic violence cases) are trained to respond proactively to any hints of the defendants possibly veering off course. They are less tolerant of program violations (including contact attempts or even "bad" Breathalyzer readings) and, as a risk management strategy, likely to treat such incidents as occasions for arrest. Officers in the RF program carry a general (non-DV focused) caseload and are less versed in understanding the dynamics of DV (as discussed in chapter Three). Therefore, the more important measure of program impact on GPS defendants in the Midwest site is the differential in program compliance rather than in re-arrests: the former speaks more to the behavior of the defendants; the latter speaks more to the behavior of the supervising officer.⁶⁶

In *West*, defendant-initiated contact violations (whether face to face, or by telephone, mail or proxy) were also almost non-existent, as documented in agency records. Violation reports pertained mostly to substance abuse, curfew, equipment maintenance, and payment of program fees. There is practically no evidence to suggest that defendants on GPS tracking are breaching restricted perimeters or exclusion zones in an attempt to contact the victim.

The West agency did not have a parallel RF-based program in which referred defendants were placed if they did not enter the GPS program. Those who could not post the bond remained in jail. The few defendants who could post the bond, and who were released without any kind of supervision, typically had an attorney who successfully entered a motion to have the GPS order lifted. However, this comparison group – bond – was too small to permit a statistical analysis. Therefore, the multivariate analysis of violations (Table 3C-16) and re-arrests (Table 3C-17) in the short term was conducted using as the independent variable the number of days that defendants were on GPS. Duration of time on GPS did not significantly affect the likelihood of being re-arrested or having a program violation. Variations in the amount of time that defendants are in a GPS program are not associated with variations in the probability of their committing violations or being re-arrested during the enrollment period. The predictors found to be significant instead were the classical criminological variables associated with recidivism, namely prior record and age at first offense.

The absence of a duration on GPS effect (also found in the other two sites), as distinct from an enrollment in GPS effect per se, is important from a civil liberties perspective. One of the concerns GPS programs raise for some defense attorneys and civil libertarians is that placing clients in GPS for DV programs increases their chances of re-arrest (e.g., Buchanan, 2008) – because of their more transparent status to state authorities – with potentially damaging results for their pending court case (or, more generally, their criminal record). The analyses show, however, that being on GPS for a shorter or longer period of time, even in the more onerous program of the Midwest, does not seem to increase or decrease a client's chances of being found in violation of program rules or of facing re-arrest, and hence does not represent an added risk for the clients' court cases.

The *South* agency, like the Midwest site, also has an RF program, permitting comparisons of how GPS and RF defendants fare in the short term. South defendants on GPS had a higher level of violations in the short term, a finding that likely results from their being tracked (unlike the situation with RF defendants, who are under house arrest without tracking). Also, as with the other two sites, length of stay on GPS was not related to violations. Despite the higher number of program violations by GPS participants, there were no significant differences in mean number of arrests between GPS and RF defendants during the pretrial period, an outcome consistent with the GPS program's treatment approach to handling violations (see Chapter Three).

b. Legal outcomes

Whether GPS monitoring has an effect on conviction is another important consideration in evaluating the use of GPS for DV cases at the pretrial stage. Conviction percentages were examined for the three sites, Midwest, West and South. The results reveal significant differences in the conviction percentages for GPS versus non-GPS defendants across the three locations, and both similarities and differences when the analysis compares GPS defendants with the sub-groups of RF, Jail and Bond defendants. In Midwest, GPS defendants were the likeliest of all four groups to be convicted: 56% versus 23% (Bond cases), 30% (RF cases), and 43% (Jail cases) respectively (see Table 3C-2). Overall, the GPS conviction percentage was 56%, compared to 32% for non-GPS cases.

The finding that the Midwest GPS conviction rate is significantly higher than the combined conviction rate of the three Midwest non-GPS groups – Bond, Jail, RF – deserves attention. This disparity occurred despite the fact that the Midwest GPS group has significantly fewer mean prior arrests and mean prior convictions than all the other groups; the difference between the GPS and the Jail groups is particularly striking across all measures of legal history:

prior arrests (mean = 13.3 vs. 18.7), number of prior convictions (mean = 11.3 versus 15.4), and presence of felony charge in the current offense (22% versus 31%) (see Table 3C-2).

In contrast to the conviction pattern that was observed in Midwest, the West figures revealed similarities rather than differences in the conviction percentages associated with GPS and non-GPS groups (57% versus 58%, respectively; the Jail group alone had 56% with a conviction outcome). Here too, GPS defendants were likelier to have less extensive criminal histories, as measured by prior arrests (GPS mean = 4.6 versus 6.7 for the Jail group), and more likely to be facing less serious charges in their current offense (e.g., more likely to be charged with simple assault (GPS = .45 versus Jail = .34), burglary and trespass (GPS = .08 versus Jail = .04), and less likely to be facing serious charges such as battery (GPS = .05 versus Jail = .31) (see Table 3C-15). The GPS group, however, is likelier to have a restraining order violation in their record (26% versus 14% for the Jail group).⁶⁷

In the South site, the likelihood of conviction also varied between the groups, with the GPS group again being most similar to the Jail group. The conviction percentage for the GPS group is 59%, which is similar to the outcome for the Jail group (59%), and which is much higher than the bond (35%) or RF (48%) groups' results. The findings resemble those observed in Midwest in the sense that defendants on GPS have a similar likelihood of being convicted as do those who remained in jail, and a higher likelihood than those who were on RF or released on bail without an EM requirement. Overall, the GPS conviction percentage was 59%, compared to 43% for non-GPS cases. As in Midwest, the GPS defendants appear to carry less legal liabilities, as measured by prior arrests and current charge(s), relative to those who remained in jail: Defendants on GPS have 3.8 prior arrests, compared with 5.8 for those who had remained in jail. Only 68% of GPS defendants face the more serious "DV battery" charges, unlike the 86% of jail

defendants who do. However, it is also the case that GPS defendants are far likelier to have used a weapon in the commission of the offense (24% versus 5%).

These findings suggest that GPS defendants incur a legal liability (as evidenced by their higher prospects of conviction), both in the more onerous Midwest program and in the more treatment-oriented South program, and fare no differently from non-GPS defendants in the more due process-oriented West site (despite the latter having less extensive/serious offense records). It appears that the legal process that results in convictions for defendants in the West site is unaffected by whether one is or is not enrolled in a GPS program for DV cases, while the reverse seems to be the case in the Midwest site and in the South site (though to a somewhat lesser degree in the latter). A plausible interpretation regarding how different GPS programs affect legal processes and outcomes pivots around victim involvement in GPS cases and the relief from defendant pressure that GPS can provide. It was commonly understood by justice personnel that victims' failure to appear in court, or their recanting on the stand, substantially affects the likelihood of a successful prosecution, and results in either a dismissal or an acquittal instead.

The flip side of the conviction rates, namely, the dismissal/acquittal rates, are telling: The combined dismissal/acquittal percentages are disparate in the Midwest site (GPS = 44%, Jail = 57%), but quite similar in the South (GPS = 41%, Jail = 41%) and West (GPS = 43%, Jail = 42%) sites. The difference in outcomes is likely attributable to differences in the extent to which the agencies' programs are victim-centric. First, the practice in Midwest to work closely with the victims and support them during the pretrial period so that they will not renege on or withdraw their complaints may contribute to this outcome. The Midwest agency has dedicated victim support staff whose primary role is to work with the victims, part of which entails accompanying them to court and otherwise encouraging them to remain steadfast. There is no similar, dedicated victim support officer in the South or West agencies who works closely with victims. Second,

the more onerous GPS program may be hampering GPS defendants' covert efforts to weaken the state's case by contacting the victim and persuading her to recant or renege. Because the Midwest GPS defendant senses that the program renders his activities especially transparent, he may be dissuaded from reaching out to the victim, unlike non-GPS defendants in Midwest, and unlike either the GPS or non-GPS defendants in South or West, where victim tampering is likelier to escape official notice (but note that even in West, GPS defendants with lesser records and charges are convicted at the same rate as non-GPS defendants, suggesting that they may also be tampering less than would otherwise be the case, though not with the same impact as in Midwest). Third, because the Midwest GPS defendants appear to be likelier to stay away from their alleged victims, the local court's supervision and control of the defendant bolsters victim confidence. The victim thus has a heightened sense of safety and morale, and hence is likelier to cooperate with the prosecution. In sum, the legal liability that the defendant on GPS incurs stems not so much from the technology as from how the agency applies it within a program of supervision and victim-related services. The differential application of the technology results in particular agency - defendant - victim - prosecution dynamics, which in turn yields differences or similarities in conviction patterns in the three sites.

Finally, the fact that GPS and Jail defendants fare similarly on conviction rates, and are acquitted at lower rates than RF defendants (in South), suggests that GPS programs pose for defendants a similar liability toward conviction as does remaining in jail during the pretrial period. The lack of defendant contact with the victim may be allowing her to continue with the complaint, reinforcing her resolve to appear in court and testify. In this respect, the less costly means of forced separation between defendant and prosecuting witness (i.e., GPS) appears to be just as effective as the more expensive one (i.e., jail).⁶⁸

c. The long term

Over the long term (i.e., during a follow up of one year), enrollment in the GPS program had a significant impact on re-arrest outcomes in two of the three sites – Midwest and West. In Midwest (Table 3C-11), when the outcome was measured as overall arrests, GPS did not have an effect on re-arrest; however, when DV offenses were examined as the outcomes, the analysis shows that being on GPS is associated with a lower likelihood of future DV arrest – those who were placed on GPS were less likely to be arrested for DV in the follow up period.⁶⁹ In West (Table 3C-20), GPS enrollment had a deterrent effect on re-arrest for new offenses overall (or for all types of offenses), regardless of GPS enrollees' conviction status at program termination (i.e., whether their charges were dismissed/acquitted or resulted in conviction).⁷⁰

There were no differences in re-arrest among the GPS enrollees based upon their length of time in the Midwest, West, or South programs; but in West and Midwest, mere enrollment in the GPS program was enough to produce an effect in the long term in the direction of lower recidivism.⁷¹ The West findings indicate that the long-term effect of program enrollment for GPS defendants is in the direction of increased compliance with the law. Defendants who were placed on GPS were less inclined to recidivate as measured by re-arrests within the one-year follow-up period. In Midwest, on the other hand, the impact of GPS enrollment on compliance with the law was restricted to the domestic violence area. General compliance with the law was not reinforced by GPS enrollment for defendants in Midwest as it was for defendants in West. The differential impact of GPS documented in the long-term analyses suggests the importance of two kinds of considerations: differences in GPS program implementation as well as social and legally relevant characteristics of the defendants, such as age at the time of current arrest, number of prior arrests, and nature of the current offense.

The findings raise the question of why the program seems to be effective, either in overall desistance (West) or in focused desistance (Midwest). As indicated, there was a pronounced contrast between the West and Midwest sites, with the latter more crime control and victim safety focused, and the former more due process oriented and accommodating toward defendants' routines. These differences lead to dissimilar degrees of reorganization of everyday life: wholesale in Midwest, relatively minor in West. As stated in Chapter Three, defendants in Midwest have little free time to engage in personal pursuits. Most "out hours" are accounted for by work and commuting time. The agency imposes this structure because of a victim safety orientation that is informed by an awareness of the records of the typical clients who enter its program: Midwest GPS defendants, with an average age of 32, have already accumulated an average of 15.4 prior arrests and 13 prior convictions. Midwest defendants are thus likely to be involved with lifestyle patterns or focal concerns (Miller, 1958) that are severely impacted by having out hours restricted, by being "locked down," or generally being forced into leading more transparent lives. Being released from the program represents the resumption of "freedom" and with it the possibility of resuming the lifestyle that can produce a high volume of arrests. Desistance from DV thus would appear to be motivated by a concern to avoid re-experiencing the wholesale shutdown of their activities based outside the domestic sphere, which would occur should the former defendant hurt his intimate partner. Another possibility is that Midwest GPS defendants are less likely than their Midwest counterparts to reunite with estranged partners after the conclusion of the case, or for a while avoid becoming involved with a new partner, in light of the GPS program's indelible impression. However, even if a new relationship is initiated, the emergence of a DV dynamic may not develop during the one-year follow-up period.

By contrast, although West GPS defendants are also at an average age of 32, they only have accumulated 4.6 prior arrests (prior convictions were not available in the data set). The due

process approach, with its presumption of clients' innocence and flexible accommodation of their schedules and routines, is more tenable given the less serious offense history. Focal concerns for this sample appear to center around the home and provider role,⁷² and the chief burden cited by West clients concerns the program fees that must be paid on a per diem basis (even though the program applies a sliding scale for fees, down to zero).⁷³ The experience is costly both in financial as well as social-emotional terms, given what seems to be a self-identification as family men and providers. Thus, desistance from DV is directed toward staying out of trouble more generally because of a concern over the financial burden associated with involvement in the criminal justice system.

As indicated above, in South, GPS enrollment had no significant long-term effect during the follow-up period. Several possible explanations may account for the lack of a GPS effect, either for overall arrests or for DV arrests. Since GPS can have an effect under certain conditions, the absence of a GPS enrollment effect in South may be related to the sampling frame by which cases were selected for the four comparison groups – jail bookings of those charged with DV offenses.⁷⁴ It is also possible that use of a different method for selection of cases impacted the results – in South, the study relied on administrative data that list a DV charge as the qualifying event, whereas in the other two sites the sample was comprised of a pool of alleged batterers who were referred to a GPS program by a magistrate or judge. The latter approach lends itself to generating more comparable groups – distinguished primarily in terms of those who were hooked up and those who were not. The method used to collect data in South may have underestimated the population that should have been included in the study (i.e., GPS clients whose offenses include DV dynamics but which did not have “DV” listed in their qualifying charges), possibly resulting in dilution of the sampled groups.

The lack of findings may also be related to the type of population enrolled in the program. Perusal of the descriptive statistics of the population of DV offenders in South shows, for instance, that their criminal records are less extensive than found in the other two jurisdictions (especially Midwest) and that more women are included in the comparison groups. The related issue of differences in program practices may also have relevance to these results. Interviews with criminal justice personnel in this jurisdiction reveal that individuals may enter the GPS program for reasons other than risk to the victim or community. GPS enrollment makes possible defendants' release from jail when they have not been able to post bond for an extended period of time, even though they would not have been assigned to GPS based on risk alone. Furthermore, because judges understand the ancillary benefits associated with entering the GPS program in the South agency (attributable largely to the staffs' social work emphasis), judges sometimes send defendants to the program because it can offer different kinds of assistance to the client (e.g., finding employment, housing, educational opportunities, or counseling). In short, the sample of GPS defendants in the South dataset is far more heterogeneous than was found in the other two sites, potentially diluting the impact.

3. Qualitative findings

The qualitative data highlight several salient themes underlying the experiences of defendants and victims in relation to GPS-based programs for DV. Especially consequential for clients are the hardships related to the intensity of program supervision and control, restrictions affecting one's ability to carry out work duties or secure employment, making and adjusting to new living arrangements, and restrictions on contacting children or the victim herself. Especially important for alleged victims is whether they participate in a program that adopts a victim-welfare approach and whether they develop ties with someone working in the criminal justice

system. Also important is whether the victim has an extensive history of being dominated by the defendant or is emotionally, psychologically, or financially dependent on him.

a. Defendants/clients

EM programs have been observed to entail “pains of imprisonment” (Payne and Gainey, 1998) on par with those that were once described with respect to the hardships of prison life (Sykes, 1958). Based on our comparative analysis of how GPS for DV programs are operated across six sites (Midwest, West, East, South, Southeast, Southwest), there is wide variation in how onerous program restrictions are and how strictly they are enforced. These programs logically entail one rule: stay away from a named party, i.e., the alleged victim or prosecuting witness. In addition to refraining from contact with the alleged victim, the defendant is commonly required to stay away from the victim’s residence, and often to stay away from any children the two parties have in common (especially when there is a protection order that lists those children’s names). Clients who are fathers often report being especially emotionally challenged by prohibitions that pertain to their children or restrictions that affect their time with the children (e.g., playing outside, attending school functions or sporting events).

Based on the philosophy of the agency and its conception of the purpose of the program, however, there are many restrictions that may or may not be layered on top of these base line restrictions. Generally speaking, the more restrictions the program builds atop these base rules, the more clients will find the terms for program participation to be burdensome. Programs that lay great stress on victim protection tend to have the most supervisory mechanisms in place for monitoring clients. Given their aims, these programs are likely to be reactive as well as proactive, instituting measures accordingly. Reactive measures entail monitoring clients’ physical location and patterns of movement. Proactive measures include restrictions that are

focused on clients' lifestyles, routine activities, and social environments. On the other hand, EM programs that situate monitoring within the context of an evidentiary-based model of prosecution may be more concerned to treat the program as the basis for ensuring that victim tampering is minimized, or it may function as a kind of pretrial investigation that reports to a judge on how a client behaves under court supervision, to be consulted in conjunction with sentencing. Hence, such programs may take a less rigorous approach toward responding in real time to clients' conduct while under supervision, for client behavior is subject to review in a legal deliberation rather than as an emergency response to a situation with public (or victim) safety dimensions.

Restrictions that seem to have the most impact on clients in everyday life are those that relate to curfews. Curfews create a sense of anxiety for many clients: they have to be sure to not leave before the appointed hour, and they must take care to return before their "out hours" end. Especially when enrolled in a program that is victim-centric and hence proactive, a client is likely to be asked to account for any lapses in curfew observance, and many clients cite awareness of supervisorial watchfulness as a source of great stress. Clients who are unemployed and enrolled in proactive programs are likeliest to have the most restrictions placed on them: because they are not gainfully employed, they will likely be under house arrest, save for a few hours a week that they might be allotted to take care of personal business, such as consulting with an attorney, grocery shopping, doing laundry, medical appointments, and/or attending religious services. Unemployed clients in proactive GPS programs hence experience numerous restrictions and report becoming "stir-crazy."

Although most defendants remain resentful of the restrictions that they must observe in order to remain in good standing with their case manager, some clients in these GPS programs spoke of the benefits of being on GPS. Positive aspects include acquiring a newfound appreciation for the comforts of home, feeling relieved of pressure to be "on the street" every

night, thus helping in the severing of ties with “bad company,” i.e., those who participate in activities that introduce legal jeopardy for someone who has “caught a case.” These defendants may see their tenure with the program as an opportunity, in fact, using it to spur themselves toward altering their ordinary practice, thereby marking a turning point in their lives. It may entail something as simple as finally finishing a home improvement project; it may involve something more emotionally rewarding, such as renewing ties with one’s parents or other important persons who otherwise the client would have found little reason to spend time with. References to this moment as a “wake up call,” for example, were not uncommon in interviews. In particular, the experience may lead some defendants to ruminate on patterns in their interpersonal relations with women. In other cases, defendants may see their estranged partner in a new light that is less favorably disposed toward continuing the relationship once their tenure in the program is completed.

Surprisingly, it is worth noting that the experience of being tracked, per se, is not singled out as oppressive by defendants; indeed, some defendants believe that they benefit from being tracked in that it offers them protection from false accusations about trying to make contact with the victim in the case. More burdensome is the practice adopted by some jurisdictions of requiring that clients remit payments on a per diem basis, especially when coupled with the other expenses they face (including those associated with maintaining a new residence, keeping up child support, and paying attorney fees).

b. Victims

The decision to develop a victim-centric GPS for DV program is of utmost consequence in shaping the experiences of victims whose alleged batterers are under supervision. Several aspects of GPS for DV program design inform whether a program can be considered victim-

centric. A commitment to “victim protection” is one such characteristic. Victim protection entails around-the-clock responsiveness to possible incursions of the regions where the victim is typically present, including her personal residence, workplace, school, parental residence, social club, and gym. Generally speaking, programs that operate on a 9-to-5 schedule cannot be considered as oriented toward victim protection. Such programs are likelier to utilize passive rather than active GPS, and are likelier to be linked to evidentiary-based prosecution rather than victim-centric models of GPS programs. A second attribute of victim-centric GPS programs is whether they have dedicated staff to deal with victims’ concerns. Such staff are available to attend to different victim needs, and will often make a concerted effort to encourage victims to stand by their original story, or to continue to appear in court, despite pressures from various sources to renege or fail to appear.

A third characteristic of such victim-centric programs is that they cultivate relations between victims and agencies. Victims thereby regularly provide updated information about their residence or work situation, but can also serve as resources to be consulted in the event a supervising officer is investigating some aspect of the clients’ conduct. The corollary is that these programs will keep the victim “in the loop,” informing her when the client has been violated, for example, or when the client has been released as the result of a motion to lift the GPS requirement, or if the client has tried to enter into her “safe zone.” As a result of such interactions, these programs tend to develop cooperative, working relations between criminal justice staff and victims, providing the latter with a sense of empowerment that can carry over into new experiences the victim may have with domestic violence beyond the current case.

Victims in victim-centric programs will clearly have a different experience than will those who have participated in programs without such attributes. Victims who are in victim-centric programs are likelier to use the program as an opportunity to make a fresh break from a

problematic relationship, because there will be a sense that the court-ordered distance between estranged parties is in fact being enforced rather rigorously. By contrast, victims who are not kept “in the loop,” who do not receive assurances of immediate response in the event of a zone incursion, and who are not in regular contact with criminal justice professionals are less likely to feel that they are living a life that is qualitatively different than the one they led before their partner was arrested. Defendants in such programs are not as likely to be frequently and emphatically warned of repercussions emanating from making contact with victims, and hence are likelier to be relatively emboldened about pursuing such communications. Programs that are not victim welfare-oriented may not have personnel who interact with the victim at all, such that the victim does not notice any differences between her abuser being released from jail with or without GPS program restrictions in place. The victim will not know whether her alleged abuser is on an electronic leash, but – if she happens to uncover this fact – is unlikely to understand what digital surveillance means for her safety. Such “victim peripheral” programs face concerns stemming from risks of liability: In the event the victim develops a false sense of security, she may unwittingly place herself in jeopardy – a serious concern when the programs are not staffed to respond to emergency situations in a timely fashion. Victims in such programs are not likely to experience the gradually expanding sense of freedom and self-confidence that is rooted in a more victim-centric GPS for DV program. The dominant emotion is likelier to be fear of retribution for having signed a complaint and these victims will be under intense pressure to retract it. In short, these victims will more likely resemble traditional recipients of domestic abuse who live in post-arrest environments.

B. Summary and conclusion

The findings derived from the three prongs of the study – a national survey of agencies using GPS to monitor domestic violence, quantitative studies in three jurisdiction that apply GPS to defendants charged with DV related-offenses, and in-depth interviews of stakeholders in the applications of GPS to domestic violence cases (victims, defendants, and criminal justice personnel) – indicate that the impact of GPS technology on DV cases is manifold and affects several areas of public concern. Although victim safety is the ultimate justification for attaching the GPS condition to the terms of a defendant’s release from jail following arrest, victims as well as program administrators commonly express awareness that a determined party will be able to harm a protected party, regardless of whether they are tethered to a GPS tracker.⁷⁵ Despite the absence of guarantees to a victim’s safety, the question becomes one of the overall utility of GPS tracking for DV cases at the pretrial stage, and what trade-offs ought to be considered in the adoption of such programs, especially for victims and defendants.

For victims, the trade-offs seem relatively clear cut. They may experience peace of mind during the period following an alleged abuser’s arrest knowing that he is being tracked and monitored on his approach to “victim zones” (i.e., the victim’s house or place of employment). Having relief from harassment and abuse can assist the victim in rethinking her relationship and reimagining her future. Thus, some women return to school, or pursue a new career, and generally seek to become more independent. The downsides include having less financial support from an estranged partner (who may not find employment because of the stigma of GPS enrollment or its restrictions, or be unable to work overtime because of curfew restrictions, or be required to pay GPS monitoring-related fees), developing a false sense of security (in cases where victims are not properly apprised of the limits of GPS monitoring), and adopting self-

segregating practices (such as when victims curtail their travel strictly to the “victim zone” due to fear). The victim may also undermine the program by contacting the defendant or rendezvousing with her estranged partner “on her own terms,” unbeknown to the monitoring staff, thereby endangering herself despite the defendant’s enrollment in the program. Finally, the higher conviction rate associated with GPS participation may be of value to the victim, as it may ultimately lead to what the victim often wants: for the defendant to get help (e.g., anger management). However, a conviction can also place a burden on a household’s finances if a record of a DV conviction poses an employment disability for the convicted party.

The trade-offs are also quite evident for defendants. Participation in the program may allow defendants to be released at a lower amount than would otherwise be the case, or allow indigent defendants to be released from jail if they cannot raise bail. Because they are tracked, program enrollment may protect them from false accusations made by the victim about contact attempts or harassment. The program’s restrictions may provide “structure” to unorganized lives; by forcing defendants to abide by schedules and reporting rules, elements of time management and day planning are instilled. Some defendants also may use their time on the program to seek employment, return to a neglected hobby, or renew relationships with other family members (especially in cases where the defendant has moved into the dwelling of a family relation). Defendants may treat their time on the program, under conditions of forced separation from a partner, as an opportunity to rethink the relationship, and ponder (and rehearse) an existence without her presence in their lives. At the urging of a defense attorney, and sometimes on their own initiative, a defendant may join a batterer intervention or anger management program, possibly hoping to impress a judge at sentencing, but incidentally acquiring skills that can serve them well after case disposition.

On the other hand, there can be downsides to participating as a defendant in a GPS for DV program. Most glaringly, defendants lose many liberties. Curfew restrictions, forced observance of exclusion zones, reporting requirements, home visits by personnel, and greater transparency (e.g., forced submission of urine screens for drugs and alcohol) combine to make the life of a defendant on GPS difficult. There are numerous stressors for defendants on GPS: managing the equipment (e.g., making sure to always have it in one's possession, fully charged), covering or camouflaging the signs of the equipment and anticipating the loud sounds it can suddenly emit, maintaining a clear and constant signal for the monitoring system, navigating encounters with others so as to minimize problems of stigma and embarrassment, and getting home in the requisite time frame. Furthermore, the program's demands may result in losing employment or being unable to find employment, and the fees associated with participation can be painful, despite the agency's use of a sliding scale. Finally, participation in a GPS for DV program carries with it a higher risk of being convicted of criminal charges relative to those who are released on bond without EM restrictions, possibly creating employment disqualifications for them if they are involved in working in occupations or careers that exclude felons (e.g., the "helping professions").

There appear to be trade-offs for other parties as well, including criminal justice personnel and the justice system as an institution. Judges can use GPS to reduce jail overcrowding, releasing indigent or higher-risk defendants, but with the reassurance that they will be under remote tracking and personal supervision. Defense attorneys can show clients that they managed to get them released from jail, with the added bonus of being protected from false accusations. For the justice system as a whole, adopting such programs may help in assuring the public that caution is taken in addressing victims of domestic violence, i.e., that the court is "making a statement" about the seriousness of DV by employing a tool that puts "teeth" into

restraining orders, thereby justifying the direction of dwindling criminal justice resources toward DV victims during the volatile post-arrest period. Prosecutors may gain a measure of assurance that victim tampering is being deterred and that convictions are more certain. The trade-offs faced by the criminal justice system and its personnel are the risk of defendants absconding, harm occurring to the victim, and becoming subjected to grievances about violations of defendants' rights to due process.

C. Implications for policy and practice

The results reported raise a number of important issues for public policy and practice. GPS for DV programs function as a form of intervention, separating defendants from their alleged victims and reorganizing defendants' everyday routines. When applied to DV arrestees who are referred to the program as a condition of pretrial release, the intervention is not formally a criminal penalty, but it may be experienced as a form of punishment without benefit of trial or conviction. The intervention affects alleged abusers regardless of whether they are convicted (indeed, about half of the GPS clients in the quantitative study had their cases dismissed), and therefore has potentially far-reaching consequences, both for defendants and for how the justice system responds to DV.

The present study found that in all sites, GPS defendants stayed away from the exclusion zones from which they were banned, thereby showing that GPS monitoring buttresses the no contact orders of the court – at least in regards to physical contact⁷⁶ taking place within the programmed exclusion zones. The study also shows that in two of the three sites, GPS enrollment has a long-term prophylactic effect on recidivism (either for domestic violence or for overall offending), despite varying degrees of onerousness and flexibility in the programs. Program administrators thus face ample choices in developing GPS for DV programs, suggesting

that key aspects of GPS implementation merit careful consideration. Central to the discussion are fundamental questions about a) whether GPS for DV programs are appropriate for all of those who can technically be brought under their purview, b) the optimal or suitable approach to take with those who are to be subjected to court-imposed restrictions on their liberties, and c) whether the program will function as one in which victims are a central and overriding focus.

Ideally, deliberations about how to design GPS for DV programs will take into account the needs and circumstances of DV victims, on the one hand, and the rights and interests of defendants, on the other. A balanced approach that considers victims' welfare (including their safety) as well as defendants' rights is the preferred scenario. But there may be a trade-off between safety and due process concerns, and the resulting policies will likely be shaped by a number of local factors, including the characteristics of the defendants who are referred to the program, the resources at the respective agency's disposal, the training, staffing, and caseloads of personnel, and the overall criminal justice philosophy that directs a given jurisdiction's approach to handling criminal cases. Notwithstanding the liabilities that defendants incur by virtue of enrollment in a GPS for DV program, and the transparency their activities acquire during their time tethered to GPS, it is important to note that such efforts can have ancillary benefits for defendants under certain conditions, providing a basis for supporting these initiatives that may offset a traditional civil liberties framing of the issues.

Initially, EM was adopted by courts in jurisdictions across the U.S. as a way to ease jail and prison overcrowding, typically by diverting non-violent offenders (e.g., drunk drivers, property and drug offenders) into the intermediate sanction of house arrest through remote supervision. In recent years, however, EM has increasingly been used with offenders classified as "violent" or high risk, including sex offenders and batterers. GPS programs for DV offenders succeeded RF-based house arrest programs, promising to provide around-the-clock tracking of

clients during their period under supervision, while allowing defendants greater flexibility in discharging family duties and exercising personal liberties, precisely because their movements could be remotely monitored in real time (in an active GPS scenario). Programs potentially could aim at simultaneously maximizing defendants' freedom, while managing risks and safety for presumed DV victims.

The sense that programs have a "win-win" dynamic perhaps accounts for why interviewed professionals from across the justice system often spoke about what they perceive as the positive attributes or ramifications of GPS for DV. They include prosecutors who can address victim concerns, judges who can release defendants with some degree of assuredness that he is monitored, and defense attorneys who see it as a tool for getting their clients out of jail as well as a bulwark against false accusations made by the victim (though defense attorneys' enthusiasm for the programs was certainly more qualified than that of other justice professionals). Consequently, judges and other legal personnel may consider enrollment of DV defendants into GPS programs who might otherwise not be included.

A danger with having such powerful (though not infallible, as discussed below) technology at the disposal of a court or justice agency, therefore, is that it will be used as an alternative means for confronting challenging problems in the administration of criminal justice that are not necessarily specific to DV. For example, in an era of overcrowded jails, a judge may release a low-grade offender who cannot post bail into a GPS program meant for serious offenders, despite the fact that such enrollment could result in severe difficulties for the defendant. Indeed, once a GPS for DV program is established, particularly following high-profile cases in which defendants on pretrial release committed serious or lethal injury to a victim, judges and magistrates may become risk-averse in setting bail for DV arrestees: The mere availability of the technology may prompt judges to assign it out of concern that they will be

held responsible for any new harm that DV victims experience at the hands of defendants to whom they have granted pretrial release. Given the potential repercussions for victims' safety as well as judges' careers on the bench, adopting a "better safe than sorry" approach is the likely outcome, as documented in the statements made by judges who were interviewed in the present study. Although the generous use of GPS for DV can seem consistent with the spirit of the new laws and policies, the phenomenon of net widening (Cohen, 1985) may also at times occur, i.e., enrollment of defendants who otherwise do not resemble the "classical" kind of abuser who triggered the relevant legislation or policy, or who inspired the program. Blanket imposition of GPS in DV cases, without consideration of the suitability of the technology in the particular case, not only diverts resources from cases that could benefit from its application, but also causes hardships for those tethered to the technology, especially when the programs are organized to supervise higher risk or volatile defendants.

Therefore, a risk that agencies run involves the problem of mismatch between program design (including resources) and case characteristics (including offender and victim attributes). Mismatch can involve enrolling "non-hardened" abusers into GPS for DV programs that are organized to manage high-risk offenders. Likewise, programs designed for non-hardened or low-grade "abusers" (e.g., those arrested on an initial occurrence, or those arrested in a minor family disturbance between a mother and daughter that became heated) may enroll offenders who pose serious risk into a non-rigorous supervision regime. To the extent that programs seek to have a consistent set of rules and restrictions by which defendants must abide (whether these are extensive or sparse), and to the extent that such programs have a mix of clients across the spectrum of DV arrestees, there are likely to be a series of "misfittings" of a logistical nature – borne by staff and defendants – with psychological and emotional consequences – borne directly by defendants.

Common scenarios in which logistical problems emerge include the following: for staff, observing rigorous supervision regimes to the point where it results in officers spending more time with low-risk and less time with high-risk defendants than would otherwise be warranted; for defendants, having employment prospects subverted by requiring in-person office visits during business hours, and having clients obtain employment verification that deters employers from hiring applicants. Examples for the emotional and psychological repercussions may be found in the low-grade defendant who becomes demoralized when he can no longer work overtime because of a rigorous program's non-flexibility regarding work hours, or because he is repeatedly rejected on a job search due to program restrictions on mobility.

The individual client's risk level and the agency's program rules and procedures should bear logical connection. But because such an approach might ultimately preclude placement of arrestees who could otherwise benefit from the program (or deny victims the indirect but tangible benefit of defendants' entry into the program), the alternative is to design GPS for DV programs that are comprised of graduated degrees of rules and restrictions, based on the client's risk levels, whether the latter be understood to be fixed or changing. Nevertheless, it is important for programs to remember that not all GPS defendants are convicted (and may never be convicted) and can thus become resentful when extraordinary restrictions on their liberties are set, with their concomitant logistical, psychological, social, and emotional repercussions. Programs should seek to be as flexible and accommodating of the defendants' ongoing concerns as much as is feasible without elevating risk to victims. Programs can also attempt to communicate to defendants the idea that the GPS program can work to their benefit. Such benefits may extend beyond their relationship with the victim or their legal circumstances.⁷⁷

GPS for DV programs are organized in ways that result in victims being central or peripheral to their focus and operations. Irrespective of whether the approach is victim-centric,

the program should be based on an understanding of the dynamics of DV, rather than utilizing the GPS program as a way of handling problems with the justice system (e.g., jail overcrowding). This implies that the program should have a DV-focused identity, in recognition of the accrued expertise that proper management of DV cases requires, and such expertise can be embodied in both victim-centric and non-victim-centric programs (e.g., approaches that follow an evidence-based prosecution model).

Nevertheless, the decision to create a program in which victims are either central or peripheral is highly significant and likely to directly affect the nature of the agency's relations with the victim, including the quality of the information that the victim and agency share with one another, as well as the assistance that the victim receives during the period when the defendant is enrolled in the program. Employing dedicated personnel to work with victims, or its efforts to coordinate operations with existing victim services inside and outside the system – both signs of a victim-centric orientation – are likely to yield dividends in a variety of ways. However, approaches that are not victim-centric should also consider how such initiatives might prove beneficial. Pursuit of such initiatives need not represent additional financial burdens to the agency. Specially trained officers can be redeployed from other assignments, and agencies can reach out to existing victim services and programs, incorporating their skills and experiences. Such solutions may comprise cost-effective and knowledge-based approaches to enhancing victim welfare and safety.

Victims who participate in victim-centric programs are more apt to be kept abreast of developments in the case, are likelier to develop ties with contact persons in the system, and are in a better position to interact frequently with agency personnel. Consequently, notification systems are apt to be more effectively organized and based on accurate and up-to-date information. In programs adopting such an approach, the victim is likelier to be viewed as an

opportunity – as a candidate for empowerment, or as someone who may offer personnel insight into how to supervise the defendant more effectively (for knowledge of his customary habits and practices) – and not merely as a responsibility or liability who represents a drain on an agency’s resources.

By contrast, in jurisdictions where the program is not victim-centric, victims may be less of an ongoing concern, and hence have less contact with the agency, with foreseeable consequences for the marginalized victim. Practices that discourage victim-agency interaction generate information about the victim that is less reliable (e.g., not updated with respect to changes in residence or work address) or comprehensive (e.g., limited in the number of areas programmable as exclusion zones). Further, the victim’s insights into the offender’s personality and conduct are less likely to come to the attention of the agency. These practices may make it more challenging for victims to be contacted during emergency situations. Meanwhile, victims may feel that they are “in the dark” about what exactly the program is doing with respect to client supervision or her safety. Accordingly, programs should consider providing victims with a point of contact in the agency should victims have concerns, or be in need of reliable and up-to-date information – exchanges during which personnel can also update their information on the victim and client.

In agencies that are not victim-centric, the responsibility for interacting with victims is likely to be assumed by other professionals in the jurisdiction, such as personnel based in the prosecutor’s office. However, the latter may have a limited understanding of GPS or the program in which it is housed. Segmenting responsibilities related to victims and offenders in different offices creates the possibility of undesirable situations: that differences in understanding among local justice agencies will result in partial or inaccurate information being given to victims, or

lead to information gleaned from victims not being shared with the agency responsible for client supervision.

GPS for DV programs should be watchful for possible discrepancies between victims' expectations for program performance and the program's actual capabilities and practices. Programs that are not aware of victim's expectations are likely to engender a sense of frustration, loss of confidence in the system, disappointment, and fear, or the victim can develop a false sense of security and thus unwittingly compromise her safety. For example, if a program uses passive GPS, it ought to apprise the victim of this fact, rather than let her assume that active GPS is being used (i.e., that her abuser is being monitored around-the-clock in real time). Providing accurate information to victims about the capabilities and limitations of the GPS platform is critical for victim welfare and safety. When non-technically-oriented professionals are entrusted with explaining monitoring practices to victims, misinformation can readily be conveyed, resulting in victims presuming a degree of "protection" (via GPS tracking and law enforcement responsiveness) that simply does not exist. Victims who are correctly informed about the absence of protection may not feel safe, but their actual safety will thereby be enhanced as they now take precautions that are congruent with how defendants are actually supervised. It may not always be possible to provide victims with the resources that they should optimally have; nevertheless, training victims on how to do safety planning (within and beyond the GPS context) is essential and should be consistent with the local justice system's capacities and resources, including the extent of agency supervision and law enforcement responsiveness.

The procurement of victim consent is characteristic of victim-centric approaches, even though the victim's consent is technically not required in order to supervise a defendant in a GPS for DV program. However, seeking victim's consent helps cultivate relations between victims and programs, allowing the agency to learn of concerns that victims have about their case and

circumstances, as well as the program. Solicitation of victim feedback about agency standards and practices can be important to a program, especially during its learning phase. Agencies may learn of victims' concerns with program fees their alleged abuser must pay, resulting in less money being channeled toward family expenses. Such feedback may become the impetus for the establishment of a sliding scale-based fee structure, or to explore alternative revenue streams for program funding (e.g., grants). Agencies may also learn victims are concerned the alleged batter will be told of specific exclusion zones, fearing that – based on their shared history – he would then be able to deduce her exact location within the zone: where he knows she is likely to be residing, working, or visiting.⁷⁸ Addressing victim fears, the agency might develop new monitoring strategies, including the programming of “unknown zones” that the defendant is unaware of, incursion into which should result in officer follow-up and, potentially, victim notification. Incorporating victims' feedback empowers them to share individualized concerns, transforming victim input into a catalyst for innovation. In turn, the newfound flexibility enables otherwise reluctant victims to access the program, with defendants spending less time in jail as a byproduct in jurisdictions where GPS referrals who cannot be “hooked up” must remain confined for the duration of their case.⁷⁹

Learning from mistakes, misunderstandings, blind spots, and limitations, is critical to a program's continued improvement. Such improvement entails staying abreast of technological innovations, becoming familiar with the situations of defendants and victims, and developing greater coordination among all relevant stakeholders who provide services to or interact with defendants and victims (e.g., monitoring agency personnel, judges, victim advocates, attorneys, shelter workers, and police). Continuous training can address a wide range of issues, from those internal to the agency as well as those pertaining to inter-agency communication and coordination. Some may entail financial resources, such as updating technology, but others will

require no cost or even result in savings to the agency (e.g., partnerships with victim service organizations). Promoting greater understanding of the purpose and value of GPS for DV programs among all stakeholders within the local justice system may ultimately spearhead community efforts to develop a coordinated response to domestic violence, thereby integrating the GPS for DV programs into their planning.

Finally, it is important to remember that GPS for DV programs are imperfect, subject to sources of fallibility that can undermine their proper and effective functioning. At their most basic level, they are fallible because of possible technical problems, such as the strength and accuracy of the GPS signal. Presumably, the technology will continue to improve, rendering technical problems less of a concern. Sources of fallibility that stem from actions of the defendant, agency personnel and the victim herself are also an abiding concern. The defendant on GPS is not physically prevented from harming the victim and if he is sufficiently determined, he can outwit the system of controls that have been established by the program. Short of incapacitating him, or relocating the victim to an area out of the defendant's reach, he can still harm her if he is resolute. For such clients, active GPS monitoring is clearly the preferred technological platform; but this approach presumes a degree of staffing that can be mobilized to remain on top of such a client's case. Larger caseloads per officer can mean that the officer has less time to interpret tracking histories, to see signs in patterns of clients' movements that call for a tighter degree of supervision. Less time to devote to each client can also mean that the supervising officer does not become aware of how defendants, with the cooperation of victims, can undermine the system, for example, by rendezvousing beyond exclusion zones. Nor may the officer become aware that the victim regularly visits the defendant at his residence; because she is not tracked, the officer would not notice such meetings. The victim's safety can also be imperiled due to chance encounters with the defendant taking place beyond an exclusion zone.⁸⁰

These possibilities need to be addressed because the victim's safety can be compromised at such points. One possible solution is to track not only the alleged abuser but also the victim, supplying her with a GPS-enabled device (such as a smart phone) synchronized to the agency's monitoring system, thereby alerting the agency to possible inadvertent encounters between victims and defendants, as well as those that might be unilaterally or bilaterally sought. Such a procedure, however, raises issues of privacy and may be experienced by the victim as yet another hardship atop the original victimization. Agencies considering this remedy must be certain to make such "reverse tagging" voluntary for victims, subject to their continuous consent, and with full disclosure of the limitations and drawbacks that such participation might have for victims.

D. Limitations of the study

Like most research in social science, particularly in the area of criminal justice, this study is not without limitations. The national web-based survey may suffer from problems of reliability and generalizability. It is not clear that survey respondents are equally knowledgeable regarding the items queried. Because the survey is respondent- rather than agency-based, it is possible that some agencies are over-represented as a result of more than one employee responding. However, the web-based survey results are generally consistent with the findings from the in-depth study of six sites that are presented in this report. The web-based survey data were limited in that the absence of agency-level attributes confined the analysis to descriptive statistics, and precluded hypothesis testing of the relationship between agency characteristics and program-based responses to DV. For example, delivery of services, including responses to alerts and violations, may be impacted by the size of the agency, its resources, and orientations. Also, measures of agency practice that might have been helpful in constructing the national portrait of GPS for DV programs are missing. Especially important is whether the agencies contact victims through

means other than text notification, e.g., telephone calls, or whether they provide victims with pagers or cell phones to ensure contact can be made with victims who are away from home or without a mobile device.

The limitations of the quantitative impact study stem from the nature of the research design and the data that were available to measure key attributes and examine outcomes. The ideal approach to examining treatment effects, namely, experimental design with random assignment of individuals to comparison groups, could not be utilized in this study because referral of DV defendants to GPS programs is a function of judicial discretion. It is well known that judges are reluctant to delegate legal decisions to randomization procedures, especially when there is a risk of harm to the general public or a specific victim. Therefore, in lieu of random assignment, this study utilized a quasi-experimental design with relevant controls. Efforts were made to derive non-GPS and GPS groups that were as equivalent as possible on factors known to influence the outcomes, and this was achieved by statistically controlling for covariates that were observable in the three locations – a standard approach in research on criminal justice.

The use of quasi-experimental design (with statistical controls) may have compromised the comparability of the groups. Although it seems that the variables in the data set that are most related to the non-comparability of the groups – number of prior offenses or seriousness of current charge(s) – have been controlled for in the analysis, measures of socioeconomic status – such as income, occupation, education, employment – were not systematically available, precluding an assessment of possible SES bias in the sampled groups. Of particular importance to assessing treatment effects among populations under pretrial release is the problem of defendants' inability to post bond.⁸¹ However, because the level at which the bond amount is set may denote charge seriousness, a defendant's inability to pay bond may signify either a more

serious charge, lack of economic means, or a combination thereof. Lacking SES-related data for all groups, it is impossible to untangle when one or another scenario is at work.

In addition to the problem across the three sites involving inability to post bond, there were site-specific issues pertaining to the constitution of the sampled groups that may have affected their comparability. In the two sites where samples were derived from defendants referred to the GPS program (West and Midwest), reasons for not being hooked up varied: some relate to SES (e.g., inability to afford establishing a landline telephone), but others relate to program design (e.g., the requirement that the victim consent to participate, in Midwest) or technological concerns (inability by the programs to establish a constant GPS signal in either the victim's or defendant's zones). Thus, SES may have had some effect on being enrolled in GPS, but other considerations also play a role in enrollment outcomes. In addition to the issues described above, in South, problems with the comparability of the groups resulted from the method employed to construct the sample. The use of jail bookings with "DV" listed in the charges, rather than common referrals to a GPS program, meant that there was not a common assessment of elevated risk to a victim behind a defendant's inclusion in the sample. Furthermore, judges might place a defendant who is unable to post bond into a GPS or RF program, despite the absence of heightened risk to the victim. Finally, individuals who were assigned to GPS, but who did not have "DV" listed in their charges, were not captured by the data set. Thus, differences between the sampled groups were likely diluted, as both low-risk and high-risk individuals could be placed in the various comparison groups.

The data available for the creation of equivalent non-GPS and GPS defendant groups in the three sites limited the controls that could be used and analyses that could be pursued. To the extent that more control variables could have been included in the statistical models, the results may have varied. The disparate definitions and recording practices in use at the various sites may

have affected the quality of the data. Also, the measures were compromised to varying degrees due to missing data. The use of administrative data to test hypotheses in criminal justice research is accepted practice, however, even if problematic, as it surely will be when the data are from multiple agencies and jurisdictions, each of which may have unique legal codes and procedures.

Another limitation was introduced by the outcome measures used in the study. The measurement of repeat domestic violence offenses (or crime in general) through re-arrest is likely to miss incidents in which offenders perpetrate abuse but the offending behavior is not reported or detected. This problem is particularly common in domestic violence cases where victims, for a variety of reasons (e.g., financial considerations, emotional dependence, or fear), do not report abuse. However, it was not within the scope of this project to obtain data from victims about unreported abuse or to survey DV defendants regarding self-reported offending behavior.

The qualitative component of the study was limited in that it primarily relied on interviews as the method for documenting the perspectives and experiences of personnel, victims, and defendants. Although in-depth interviewing is a preferred method for grasping people's meanings, ideally it is complemented with extensive observational fieldwork, as the latter provides insights into taken-for-granted understandings that may not emerge in the course of being interviewed. Field observations were conducted during site visits with the supervising officers who manage defendants, and in the local courts, in order to comprehend the supervision approaches taken by officers at different agencies. Observations conducted in courtroom settings helped the researchers understand the local culture and procedures of the criminal justice system. However, observational fieldwork was not a feasible pursuit with respect to the defendants or victims. Also, in some sites victims and defendants were not available for interviewing. In such

cases, the researchers interviewed advocates for victims and defendants, who were familiar with the views and experiences of their respective clients.

E. Implications for future research

The quantitative part of the impact study used quasi-experimental design in three sites. Future research applying the "gold standard" of research design and randomly assigning GPS to DV defendants would produce the most defensible findings. However, considering that current assignment to GPS is assumed to reflect defendants' level of risk, it will be difficult to convince jurisdictions to engage in such experimental design assignments. In the absence of such an option, researchers may consider using Propensity Score Matching or Precision Matching on a larger sample to determine the unique effect of GPS on outcomes.⁸²

Future research that compares the relative effectiveness of GPS for DV cases (where the purpose is to protect one or more victims) versus other types of offenders placed on GPS (e.g., sex offenders, where certain classes of persons are to be protected rather than individual victims) may enhance our understanding of the conditions under which the technology impacts outcomes. Whether these future studies are focused on DV or other offenses, or on defendants or victims, it is important to bear in mind the infinite customizability of GPS, and the diverse approaches to establishing programs or supervision regimens.

The current study suggests that GPS has a deterrent effect in both the short and long terms, i.e., in relation to program (particularly in-person contact) violations, and in relation to the likelihood of being arrested after disposition of the criminal case (whether for DV offenses or for offenses more generally). The results also suggest that GPS defendants face a risk of being convicted at a higher rate, most likely because these programs interrupt the victim-defendant dynamics that ordinarily prevail following arrest for DV. Combined with data drawn from

interviews with victims and defendants, it appears that enforced separation between parties to DV cases due to GPS affects changes in both how many victims engage involvement with the legal case, and how defendants behave toward the victim post arrest. In addition, it is evident that participation in GPS programs is considered by defendants to be burdensome and not something that they wish to repeat.

Based on the findings from the quantitative component of the current study, future research should expand the long-term follow-up period beyond one year. It may be that the effects of GPS program involvement become more evident over a longer time frame. If, as is documented in interviews with defendants, these programs are burdensome (certainly in comparison to milder RF-based programs and to being bonded out without EM supervision of any sort), then it may be that the lingering relative impact of these post-arrest conditions (e.g., jail, GPS, RF, bond release without supervision) survives at different rates.

More information about whether repeat DV offenders who participate in GPS programs reoffend with the same victim or a new victim is also important. It may be that when former GPS defendants recidivate, they do so with a new partner. Since it may take longer than one year for the dynamics of DV to take hold in a new relationship, and come to the notice of law enforcement (and hence to GPS programs), future research should attempt to document whether the program leads to displacement of IPV rather than actual desistance.

An important component of victims having a sense of safety is their confidence in the criminal justice system that administers the GPS. Hence, future research can also do more to quantify victims' satisfaction with different program components, including degree of victim services that are offered, amount of information that is relayed, and responsiveness to concerns regarding safety and various aspects of the court case. Such an approach should consider the social dynamics and context in which GPS is implemented, which may further highlight how a

victim's sense of safety emerges and how victim-centric attributes of different programs contribute to quantifiable measures of victims' actual and subjective sense of safety.

Agency-based respondents in the national email survey reported that GPS for DV enhanced defendant supervision. Future work that canvasses GPS for DV programs at a national level should examine whether the effectiveness of GPS in deterring violating behavior by defendants is attributable to the presence of the technology alone, or whether the technology is effective in concert with the expanded or more intensive human supervision that GPS enables. The use of GPS may lead to an increase in violation rates, as supervisory personnel are able to denote and document violations that do occur. But the presence of the GPS device alone may deter defendants from violating, independent of the extent of human supervision.

On the qualitative side, future research should endeavor to complement the kind of interview-based work that was done in the present study by pursuing other means of qualitative investigation. Extensive and site-focused participant-observation should be undertaken, documenting encounters between program staff and defendants/victims. Such research could verify how these programs are being explained, the kinds of questions/concerns that defendants and victims have about the program, how program staff manage the encounter, how staff address problems that emerge over the course of a defendant's time on the GPS, the kinds of follow-up questions that victims have over the course of their tenure with a program, and how differing GPS program orientations are reflected throughout these interactions. Interviewing remains a valuable tool to employ for work in this area. Such interview-based research might focus on pursuing retrospective interviews with former defendants and past victims (for example, those who are two or three years removed from the GPS experience), to determine the impact the program subsequently had on the relationship, and on the two parties' approaches to interpersonal relations with intimate partners. Such research could ask the question, qualitatively,

whether these parties remained in the problematic relationship that resulted in GPS enrollment, and if so, whether it improved or deteriorated even further. Or, if they have entered new intimate relationships, whether patterns of abuse have re-emerged or have developed in a new direction. This inquiry may also help in determining whether GPS programs displace interpersonal violence or bring about substantive changes in how alleged abusers treat their intimate partners.

Lastly, the impact of GPS on other family members besides the victim (e.g., children) also warrants study. Such research should examine how family members experience the benefits or hardships associated with GPS, in terms of the spatial and temporal restrictions on a parent's mobility, as well as the effects associated with payment of fees. Questions such as whether a child's schooling or extracurricular activities are affected, or how GPS impacts the defendant's ability to parent the child, may be of particular interest, as would information regarding what the children understand of the technology and how they feel about it. Conversely, it may be worthwhile to examine how family members are affected by having the victim in the case freed from contact with the alleged abuse.

Digital and information technologies will likely continue to be incorporated into the practices of criminal justice to resolve public safety problems. Future research should carefully consider the benefits, drawbacks, and trade-offs associated with each innovation. The current study demonstrates that GPS has multiple effects on, and ramifications for, defendants, victims, and the justice system that processes the often entangled cases involving intimate partners. Future research should continue to unravel the impact and repercussions that GPS has on all stakeholders in DV cases wherever it is practiced throughout the U.S.

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Dissemination of research findings

The gendering of pretrial justice: Female offenders on GPS supervision for domestic violence. Paper presented at annual meeting of the American Society of Criminology, Washington, D.C., November, 2011.

Results from a national survey: Agencies utilizing GPS electronic monitoring technologies in cases of domestic violence during pretrial. Paper presented at annual meeting of the Midwestern Criminal Justice Association, Chicago, IL, September, 2011.

Electronic monitoring technologies and domestic violence: Practices, dilemmas, and legal considerations. Paper presented at annual meeting of the Midwestern Criminal Justice Association, Chicago, IL, September, 2010.

GPS monitoring technologies and domestic violence: Preliminary results from an evaluation study. Poster presented at annual meeting of The National Institute of Justice Conference, Washington, D.C., June, 2009.

Appendices

A. Web-based survey

You are invited to complete an Internet survey about the use of Electronic Monitoring (EM) technologies developed by the University of Illinois at Chicago. Your input will be used to help achieve a better understanding of protective potentials, costs, accuracy, reliability, versatility and ease of implementation of EM technologies. Please take the time to fill out this survey and give us your feedback. We thank you for participating and hope that these results will help to improve the use of EM technologies.

We ask that you review the following information before completing this survey:

Your participation in this project is voluntary and you are free to withdraw at any time.

If you agree to participate, you will be asked to complete a survey that should take approximately 30 minutes of your time.

Besides any discomfort you may feel answering questions, there are no anticipated risks to you for participating. If you do not feel comfortable answering a question, you may skip that question and go on to the next question.

This survey is anonymous; it does not ask for any information that could be used to identify you or be linked to you. When submitting the survey, your Internet Service Provider (ISP) address may be sent along with your answers. Your ISP address gives only the host name (AOL, for example) with which you access the Internet. No effort will be made to locate senders through their ISP.

All responses will be kept in a secure location to which only University researchers have access.

Your participation in this survey will give you the opportunity to voice your concerns about public safety issues. By giving us feedback about this survey, you are helping to develop a new method for collecting reliable information from all neighborhoods.

If you have any questions, concerns, or complaints about this research or your rights as participants, we encourage you to contact Professor Edna Erez, at 312-996-5262 or by email at eerez@uic.edu or Professor Peter Ibarra, at 312-413-2475, or by email at pibarra@uic.edu. If you wish to address someone other than the investigators, or if the investigators are unavailable, you may contact the Office for Protection of Research Subjects (OPRS) at University of Illinois at Chicago, at 312-996-1711 (local) or 1-866-789-6215 (toll-free) or at uicirb@uic.edu, before you complete this survey.

Feel free to save or print a copy of this form for your personal records.

Remember: Your participation in this project is voluntary. You are free to withdraw at any time or refuse to answer questions you are not comfortable answering.

I have read the above information. By clicking on the "next" button below, I agree to participate in this research.

Does your organization use electronic monitoring (EM) technologies to supervise pretrial defendants?

- Yes
 No

What type of defendants do you monitor with EM technologies? (Please, check all that apply)

	GPS	Radio Frequency	Bi-lateral Radio Frequency	SCRAM	Remote Alcohol Monitoring (not SCRAM)	Equipment-Free Monitoring	Other
Domestic violence (DV) or intimate partner violence (IPV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other violent offense defendants (not DV/IPV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sexual offense defendants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DWI/DUI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other alcohol/drug offense defendants (not DWI/DUI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Juveniles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gang members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="text"/> <input type="text"/>						

Does your organization use global position system (GPS) technology to supervise domestic violence (DV) or intimate partner violence (IPV) pretrial defendants?

- Yes
 No

Does your organization use Global Positioning Systems (GPS) technology to monitor any type pretrial defendants?

- Yes
 No

The rest of the survey is about your GPS monitoring program for domestic violence (DV) or intimate partner violence (IPV) pretrial defendants. While you may have other electronic monitoring programs, the purpose of this survey is to better understand the use of GPS in DV/IPV cases.

- Yes, I understand the following questions are about the GPS program for monitoring DV/IPV defendants.
 No, we do not have a GPS program for monitoring DV/IPV cases.

In what year did your organization begin using GPS technology for tracking defendants?

Overall, how satisfied is your organization with using GPS for monitoring pretrial defendants?

- Very satisfied
- Somewhat satisfied
- Somewhat dissatisfied
- Very dissatisfied
- Don't know

Listed below are several reasons that GPS programs are started. Please, rate how important each of these were to the agency when deciding to use GPS for supervising defendants?

	Very Important	Important	Unimportant	Not at all Important	Don't Know
Legislation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high profile case or incident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jail overcrowding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to provide enhanced supervision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to keep victims safer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost savings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Positive experiences with GPS for other types of defendants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Positive experiences with other EM technologies like RF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative experiences with other monitoring technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A good relationship with vendor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information about positive experiences with technology in other jurisdictions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

Listed below are several reasons for using GPS technology. Please, rate how important each of these are regarding your program.

	Very Important	Important	Unimportant	Not at all Important	Don't Know
Ensure client accountability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deter additional crimes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More effectively protect the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sanctioning tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relieve jail overcrowding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A better method for ensuring victim safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mitigate pretrial absconding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allow defendant to continue living in community while awaiting trial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gather evidence regarding violations of no contact orders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monitor compliance with terms of treatment, community service or other programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

In an average month, how many defendants are referred to the GPS program?

In an average month, of those referred to be placed on GPS monitoring how many are enrolled or hooked up?

Below is a list of common reasons for defendants not to be enrolled in a GPS program. Please rate on a scale from 1 to 5 how often your defendants are not enrolled for each of the following reasons.

	Very Often	Often	Occasionally	Never	Don't Know
Lack of GPS equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of victim cooperation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical issues with GPS equipment or software (i.e., offender or victim lives in a location where signal cannot be received)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant cannot pay the required fees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant does not meet the program requirements (i.e., doesn't have a stable living environment separate from the victim, does not have a telephone landline, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant refuses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

What is the average length of time (in days) a defendant is in the program?

What is the average caseload for officers who monitor defendants on GPS?

What is the average caseload for officers who do not monitor defendants on GPS?

On a scale of 1-5 indicate the overall impact of GPS on the agency's workload.

- 1 = Very Negative
- 2 = Negative
- 3 = Neutral
- 4 = Positive
- 5 = Very Positive

Has your organization ever formally evaluated the effectiveness of GPS tracking for defendants?

- Yes
- No
- Don't know

Are victims contacted regarding the defendant's participation in the program?

- Yes
- No
- Don't know

Is victim participation required for the defendant to be placed in the GPS monitoring program?

- Yes
- No
- Don't know

Are victims required to sign a form acknowledging the capabilities and limitations of the GPS program?

- Yes
- No
- Don't know
- Not applicable

What do you like most about using GPS to monitor defendants?**What do you like least about using GPS to monitor defendants?****Who is the current vendor for your GPS technology?**

- BI
- ElmoTech
- ISECUREtrac
- Pro Tech
- Sentinel
- STOP-LLC

Other (please specify)

Overall, how satisfied are you with your current vendor?

- Very Satisfied
- Somewhat Satisfied
- Somewhat Dissatisfied
- Very Dissatisfied
- Don't Know

What is the cost per day per defendant of your GPS equipment?**What is the return rate for technology failure of your equipment?****What is the return rate because of damage to the equipment?**

For your current GPS technology, please indicate which of the following capabilities your agency utilizes.

	Yes	No	Don't know
Exclusion zones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inclusion zones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victim text message notification when defendant violates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Law enforcement dispatch for defendant violation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant alert (i.e. in exclusion zone, low battery, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant receipt alert acknowledgment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant's current location (i.e., real time mapping)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mapping defendant's movements in the community over time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>		

How many person-hours of training did each staff member receive when your GPS product was initially deployed?

Hours Training on Equipment:

Hours Training on Program/Policies:

On a scale of 1-5, indicate your impression of how well vendor training prepared staff to use GPS in your job.

- 1 = Very Poorly
- 2 = Poorly
- 3 = Neutral
- 4 = Well
- 5 = Very Well

On a scale of 1-5, indicate your impression of how well internal training prepared staff to use GPS in your job.

- 1 = Very Poorly
- 2 = Poorly
- 3 = Neutral
- 4 = Well
- 5 = Very Well

In addition to initial training, is there any on-going or supplemental training?

- Yes
- No
- Don't know

Do victims receive any training?

- Yes
- No
- Don't know

Has your organization changed its policies about the use of GPS because of a high profile incident reported in the media (e.g., newspaper, TV, local news, etc)?

- Yes
- No
- Don't know

Please explain what policies were changed.**How are most of the defendants referred to the GPS monitoring program?**

- Legislation
- Judicial order
- Prosecutor request
- Victim request
- Supervising agency recommendation
- General policy

Other (please specify)

Is there legislation in place that mandates defendants be placed on GPS?

- Yes
- No
- Don't know

If the defendants are not being monitored with GPS, would policy or legislation dictate that these defendants be in jail?

- Yes
- No
- Don't know

Listed below are several criteria used for choosing who is placed on GPS monitoring. Please, rate how important each of these are when deciding to use GPS for supervising.

	Very Important	Important	Unimportant	Not at all Important	Don't Know
Seriousness of offense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Order of protection issued by court	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victim requests defendant be placed on GPS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant's prior criminal history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant's prior history of alcohol or drug use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant's employment status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defendant's income	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

How much are defendants required to pay (per day) to be enrolled in the program?

Per day:

On a scale of 1-5, indicate the impact of GPS in assisting with defendant supervision.

- 1 = Very Negative
- 2 = Negative
- 3 = Neutral
- 4 = Positive
- 5 = Very Positive

Are there criteria used to qualify victims?

- Yes
- No

What are the criteria used to qualify victims?

About what percent of defendants participate in other programs while on GPS monitoring?

	Less than 25%	25% to 50%	50% to 75%	75% or more	Don't know	Not Available in Jurisdiction
Alcohol and/or drug testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SCRAM monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substance abuse treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anger management treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental health counseling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cognitive intervention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Half-way house	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Residential treatment center placement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Field visits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular office visits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Who is responsible for monitoring GPS defendants?

Do law enforcement personnel respond to alerts?

- Yes
- No
- Don't know

Does your organization share GPS data about the defendants with law enforcement?

- Yes
- No
- Don't know

In an average month, what percent of defendants violate the program conditions by entering an exclusionary zone?

Do you think the GPS defendants violate the conditions of their program more, less or about the same as defendants placed in non-GPS tracking programs?

- More
- Less
- About the same
- Don't know

Please, indicate whether you agree or disagree with the following statements.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Don't Know
GPS data provides agencies with the opportunity to better supervise their clients, not just "monitor" them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Officers can use GPS information proactively to help guide clients to make better decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to objective GPS information provides officers with the ability to ask "hard questions" of their clients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS data can eliminate "he said/she said" situations between client and victim.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS cannot prevent a client from committing a crime.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS clients are less likely to engage in illegal activities because they believe that they are being observed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exclusion zones deter associations with victims.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exclusion zones deter offenders from going to hazardous locations such as bars, known drug areas, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, indicate whether you agree or disagree with the following statements.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Don't Know
The presence of GPS discourages client's former associates (e.g., gang members) from having/maintaining contact with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking reduces the number of technical violations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking increases the number of defendants being recommitted to jail or prison due to violating the conditions of their release.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking makes victims safer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS is punitive to the defendant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking of offenders empowers victims.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The victims are more engaged with the criminal justice system when the defendant is placed on GPS tracking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking gives victims a false sense of security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, indicate whether you agree or disagree with the following statements.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Don't Know
GPS tracking makes the public safer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking is an effective sanctioning tool to enforce non-compliance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking cannot protect victims.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims misunderstand the capabilities of GPS tracking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victim mobile monitors deter stalking behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS tracking protects clients from false accusations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS is stressful for victims.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GPS is lenient to the defendant and they should be in jail.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What is your gender?

- Male
- Female

What race do you consider yourself to be?

- Black/African American
- Hispanic or Latino/Latina
- White/Caucasian

Other (please specify)

What year were you born?**Highest level of education**

- Less than high school
- High school graduate
- Some college
- Associates degree
- Bachelors degree
- Masters or Advanced degree
- Ph.D

Other (please specify)

What is your program's schedule of operation for the interviewing staff? (e.g., 24 hours/day, Monday to Friday during court hours, 7 days/week, etc.)**What is your program's annual budget?****Has your program implemented any special procedures to assess the risks of pretrial misconduct of people charged with domestic violence (DV) or intimate partner violence (IPV) offenses?**

- Yes
- No
- Don't know

Indicate the type of jurisdiction served by your program.

- Local jurisdiction (county or city)
- More than one county
- Entire state
- Other

What is the approximate population of the jurisdiction that your program serves?

- Fewer than 50,000
- Between 50,000 and 100,000
- Between 100,001 and 500,000
- Between 500,001 and 1,000,000
- More than 1,000,000

Where is your program located administratively in the criminal justice system?

- Probation department (state)
- Probation department (county)
- Courts (state)
- Courts (county or municipal)
- Prosecutor
- Public defender
- Sheriff or jail
- Private, nonprofit organization.
- Other

Pretrial Program Information

Name of Agency:	<input type="text"/>
Address:	<input type="text"/>
City/Town:	<input type="text"/>
State:	<input type="text"/>
ZIP:	<input type="text"/>
Phone Number:	<input type="text"/>

B. Midwest coding sheet for GPS

Control # _____

Enrollment: EM Jail Bonded out **X for GPS**

1. Date of program offense: ____/____/____
 2. Date referred to program: ____/____/____ Same as program offense date
 3. Date of disposition of instant offense: ____/____/____
 4. Date of termination from program: ____/____/____ Same as disposition of instant offense date
 5. Date of birth: ____/____/____
 6. Sex: Male Female
 7. Race: White Black Hispanic Asian Other
 8. Marital Status: Married Divorced Single Separated Widowed
 9. Education: Some High School High School Grad Vocational School Some College
 College Degree Professional Degree
 10. Employed at time of admission to program/referral? Yes No
 11. Is the person required to pay child support? Yes No
 12. Mental or physical problems: _____
 13. Original bond ordered by Judge: _____
 - 13a. Bond paid by defendant (or conditions): _____
 14. Name of Disposing or Referral Judge: _____
 15. Did TPO/CPO/RO/Stay Away order violation immediately precede referral? Yes No
 16. Level of most serious instant offense: Felony1 Felony2 Felony3 Felony4 Felony5
 Misdemeanor1 Misdemeanor2 Misdemeanor3 Misdemeanor4 Minor Misdemeanor
 17. Offense Category: Violent/Crimes against person(s) Sex Drugs Property Traffic (DUI)
 Other
 18. Did the instant offense involve: Bodily harm to spouse/partner Property damage
 Threat of bodily harm to spouse/partner Threat of lethal harm to spouse/partner
 Kidnapping or false imprisonment
 19. Was the injury *** in the instant offense: Mild Serious Severe None
- ***Mild: minor, visible marks, or no marks but allegations of a 'minor' physical event, such as grabbing forearms or pushing against wall. Serious: Treatment at scene or moderate marks, such as bruising, hand imprint, bleeding. Severe: Hospitalization required. None: No physical harm or allegations involve verbal threats, or verbal abuse only.
20. Did the instant offense involve charges involve: Drugs Alcohol No

21. Did the offender: Participate in Academic Training
 Participate in vocational training
 (Check Receive employment assistance
 all that Participate in sex offender programming
 apply) Receive emotional/psychological counseling/services
 Receive drug abuse counseling
 Receive alcohol abuse counseling
 Receive services for anger/rage management
22. Reason for termination from program: Successful Completion Transfer
 Unsuccessful completion-tech violation Unsuccessful completion-new crime misdemeanor
 Unsuccessful completion-new crime felony Administrative release Other
- 22a. Termination status change to: _____
23. Offender status at termination: Released from community supervision
 Sent to state/federal prison Jail incarceration
 Absconder/AWOL Basic Supervision
 Incarceration on other charges (prior pending) Other
24. Employment Status at termination: Employed Unemployed School
25. Number of home visits: _____ NA
26. Number of alcohol/urine samples taken: _____ NA
27. Number of positive test readings for alcohol/illicit drugs: _____ NA
28. Number of violation reports: _____ NA
29. Number of violation reports that are: A. Drug/Alcohol related _____
 (Fill in # for all that apply) B. Attempt at contact related _____
 C. Curfew related _____
 D. Fraudulent documentation _____
 E. Weapons related _____
 F. Other _____
30. Number and type of TPO violations:
 _____ Face to Face _____ Telephone _____ Proxy _____ Weapons
 _____ Property _____ Mail _____ Other NA
31. Number and type of Stay Away Order violations:
 _____ Face to Face _____ Telephone _____ Proxy _____ Weapons
 _____ Property _____ Mail _____ Other NA
32. Bond Revocation: Yes, what was date? ____/____/____ No
- 32a. Was revocation for TPO/Stay Away Order violation: Yes No

33. Number of arrests while in program (EM), on bond, or in jail: _____
- 33a. Date of first arrest in program, on bond, or in jail: ____/____/____
- 33b. Was their bond revoked because of an arrest? Yes No
34. Was any arrest related to domestic violence including TPO/CPO/RO/Stay Away order violation?
 Yes No
- 34a. Date of the DV related arrest: ____/____/____
- 34b. Did the DV related arrest result in bond revocation? Yes No
35. Reinstatement into what program after revocation? EM Jail Bonded out GPS
 Other: _____
36. Final disposition for instant offense: Guilty Not guilty Dismissed Ignored
 Other: _____
- 36a. If guilty, what was sentence: _____
- 36b. Was electronic monitoring part of sentence? No Yes, what type? EM GPS
- 36c. Date released from supervision related to instant offense: ____/____/____

37. Total number of **pre-program** arrests and convictions (excluding instant offense arrest):

ArrestsConvictions

- | | |
|---------------------------------|-------------------------------------|
| _____ Any type of arrest | _____ Any type of conviction |
| _____ Domestic violence arrest | _____ Domestic violence conviction |
| _____ Violent offenses arrest | _____ Violent offenses conviction |
| _____ Disorderly conduct arrest | _____ Disorderly conduct conviction |
| _____ Drug and alcohol arrest | _____ Drug and alcohol conviction |

38. Total # of **pre-program** incarceration in state/federal prison: _____

For next questions, 1 year follow-up time period: from ____/____/____ to ____/____/____

39. Date of first **post-program** arrest: ____/____/____ NA

- 39a. What was the 1st arrest offense category?

- Domestic violence/violation of TPO, CPO, or stay away
- Violent/Crimes against person(s)
- Sex Drugs Property Traffic (DUI)
- Other: _____

40. Total number of 1 year **post-program** arrests and convictions:

Arrests

_____ Any type of arrest
_____ Domestic violence arrest
_____ Violent offenses arrest
_____ Disorderly conduct arrest
_____ Drug and alcohol arrest

Convictions

_____ Any type of conviction
_____ Domestic violence conviction
_____ Violent offenses conviction
_____ Disorderly conduct conviction
_____ Drug and alcohol conviction

41. Attach Affidavit to reverse side

42. Attach Complaint to reverse side

Attach Intake and Termination forms

C. Midwest coding sheet for non-GPS groups

Control # _____

Enrollment: EM Jail Bonded out

1. Date of program offense: _____/_____/_____
 2. Date referred to program: _____/_____/_____ Same as program offense date
 3. Date of disposition of instant offense: _____/_____/_____
 4. Date of termination from program: _____/_____/_____ Same as disposition of instant offense date
 5. Date of birth: _____/_____/_____
 6. Sex: Male Female
 7. Race: White Black Hispanic Asian Other
 8. Marital Status: Married Divorced Single Separated Widowed
 9. Education: Some High School High School Grad Vocational School Some College
 College Degree Professional Degree
 10. Employed at time of admission to program/referral? Yes No
 11. Is the person required to pay child support? Yes No
 12. Mental or physical problems: _____
 13. Original bond ordered by Judge: _____
 - 13a. Bond paid by defendant (or conditions): _____
 14. Name of Disposing or Referral Judge: _____
 15. Did TPO/CPO/RO/Stay Away order violation immediately precede referral? Yes No
 16. Level of most serious instant offense: Felony 1 Felony2 Felony3 Felony4 Felony5
 Misdemeanor1 Misdemeanor2 Misdemeanor3 Misdemeanor4 Minor Misdemeanor
 17. Offense Category: Violent/Crimes against person(s) Sex Drugs Property Traffic (DUI)
 Other
 18. Did the instant offense involve: Bodily harm to spouse/partner Property damage
 Threat of bodily harm to spouse/partner Threat of lethal harm to spouse/partner
 Kidnapping or false imprisonment
 19. Was the injury^{***} in the instant offense: Mild Serious Severe None
- ***Mild: minor, visible marks, or no marks but allegations of a 'minor' physical event, such as grabbing forearms or pushing against wall. Serious: Treatment at scene or moderate marks, such as bruising, hand imprint, bleeding. Severe: Hospitalization required. None: No physical harm or allegations involve verbal threats, or verbal abuse only.
20. Did the instant offense involve charges involve: Drugs Alcohol No

21. Did the offender: Participate in Academic Training
 Participate in vocational training
 (Check Receive employment assistance
 all that Participate in sex offender programming
 apply) Receive emotional/psychological counseling/services
 Receive drug abuse counseling
 Receive alcohol abuse counseling
 Receive services for anger/rage management
22. Reason for termination from program: Successful Completion Transfer
 Unsuccessful completion-tech violation Unsuccessful completion-new crime misdemeanor
 Unsuccessful completion-new crime felony Administrative release Other
- 22a. Termination status change to: _____
23. Offender status at termination: Released from community supervision Jail incarceration
 Sent to state/federal prison Absconder/AWOL Basic Supervision
 Incarceration on other charges (prior pending) Other
24. Employment Status at termination: Employed Unemployed School
25. Number of home visits: _____ NA
26. Number of alcohol/urine samples taken: _____ NA
27. Number of positive test readings for alcohol/illicit drugs: _____ NA
28. Number of violation reports: _____ NA
29. Number of violation reports that are: A. Drug/Alcohol related _____
 (Fill in # for all that apply) B. Attempt at contact related _____
 C. Curfew related _____
 D. Fraudulent documentation _____
 E. Weapons related _____
 F. Other _____
30. Number and type of TPO violations: _____ Face to Face _____ Telephone
 _____ Proxy _____ Weapons _____ Property _____ Mail _____ Other
 NA
31. Number and type of Stay Away Order violations: _____ Face to Face _____ Telephone
 _____ Proxy _____ Weapons _____ Property _____ Mail _____ Other
 NA
32. Bond Revocation: Yes, what was date? ____/____/____ No
- 32a. Was revocation for TPO/Stay Away Order violation: Yes No

33. Number of arrests while in program (EM), on bond, or in jail: _____
- 33a. Date of first arrest in program, on bond, or in jail: ____/____/____
- 33b. Was their bond revoked because of an arrest? Yes No
34. Was any arrest related to domestic violence including TPO/CPO/RO/Stay Away order violation?
- Yes No
- 34a. Date of the DV related arrest: ____/____/____
- 34b. Did the DV related arrest result in bond revocation? Yes No
35. Reinstatement into what program after revocation? EM Jail Bonded out GPS
- Other: _____
36. Final disposition for instant offense: Guilty Not guilty Dismissed Ignored
- Other: _____
- 36a. If guilty, what was sentence: _____
- 36b. Was electronic monitoring part of sentence? No Yes, what type? EM GPS
- 36c. Date released from supervision related to instant offense: ____/____/____
37. Total number of **pre-program** arrests and convictions (excluding instant offense arrest):
- | <u>Arrests</u> | <u>Convictions</u> |
|---------------------------------|-------------------------------------|
| _____ Any type of arrest | _____ Any type of conviction |
| _____ Domestic violence arrest | _____ Domestic violence conviction |
| _____ Violent offenses arrest | _____ Violent offenses conviction |
| _____ Disorderly conduct arrest | _____ Disorderly conduct conviction |
| _____ Drug and alcohol arrest | _____ Drug and alcohol conviction |
38. Total # of **pre-program** incarceration in state/federal prison: _____
- For next questions, 1 year follow-up time period: from ____/____/____ to ____/____/____
39. Date of first **post-program** arrest: ____/____/____ NA
- 39a. What was the 1st arrest offense category?
- Domestic violence/violation of TPO, CPO, or stay away
- Violent/Crimes against person(s)
- Sex Drugs Property Traffic (DUI)
- Other: _____

40. Total number of 1 year **post-program** arrests and convictions:

Arrests

_____ Any type of arrest
_____ Domestic violence arrest
_____ Violent offenses arrest
_____ Disorderly conduct arrest
_____ Drug and alcohol arrest

Convictions

_____ Any type of conviction
_____ Domestic violence conviction
_____ Violent offenses conviction
_____ Disorderly conduct conviction
_____ Drug and alcohol conviction

41. Attach Affidavit to reverse side

42. Attach Complaint to reverse side

D. Midwest agency intake form

1. County code _____ (see list)
2. Last Name _____ First Name _____ Middle Initial ____ Nickname _____
3. Date of Birth ____/____/____ (mm/dd/yyyy)
4. Funded Program Type
 1. Correctional Facility
 2. Halfway House (HWH), Jail Diversion, Prison Diversion
 3. Electronic Monitoring (HWH)
5. Reason Placed in Program
 1. Condition of Probation/Comm. Control
 2. Judicial Release
 3. Violation of Probation/Community Control
 4. Condition of Parole/Post Release Control (HWH only)
 5. Parole/Post Release Control Violation (HWH only)
 6. Readmitted (within 6 mos.)
 7. Transitional Control (HWH only)
 8. Other
 9. Pre-trial
 10. Boot Camp/IPP/DUI (HWH only)
 11. Intervention in Lieu-of-Confiction
6. Social Security Number _____
7. Case / Institution Number _____
8. Admission Date ____/____/____ (mm/dd/yyyy)
9. Sex
 1. Male
 2. Female
10. Race

1. White	4. Native American/Alaskan Native
2. African American	5. Bi-racial/Multiracial
3. Asian/Pacific Islander	6. Other
11. Hispanic Origin
 1. Yes
 2. No
 3. No info
12. Marital Status

1. Single (Never Married)	4. Divorced
2. Married or Living as Married	5. Separated
3. Widowed	99. No information
13. County of Conviction _____ (see list)

14. Highest Grade/Degree Completed _____ (0-24 years, GED = 12, 99 = No Information)
15. Employed at Time of Admission to Program? _____ (1 = Yes, 2 = No, 99 = No Information)
16. Does the Offender Have a History of Drug Abuse? _____ (1 = Yes, 2 = No)
17. Does the Offender Have a History of Alcohol Abuse? _____ (1 = Yes, 2 = No)
18. Level of Most Serious Instant Offense
- | | |
|-------------------------|------------------------|
| 1. First Degree Felony | 5. Fifth Degree Felony |
| 2. Second Degree Felony | 6. Misdemeanor |
| 3. Third Degree Felony | 7. Unclassified Felony |
| 4. Fourth Degree Felony | |
19. Offense Category (Most Serious Instant Offense)
- | | |
|-------------------------------------|----------------------|
| 1. Violent/Crimes Against Person(s) | 6. Other |
| 2. Sex | 7. DUI |
| 3. Drug | 8. Domestic Violence |
| 4. Property | 9. Non Support |
| 5. Traffic | |
20. Total Number of Adult Felony Convictions _____ (0 = None, 99 = No Information)
21. Previous Conviction of Violent Offense _____ (1 = Yes, 2 = No, 99 = No Information)
22. Total Number of Adult Juvenile Convictions _____ (0 = None, 99 = No Information)
(excluding minor traffic violations)
23. Is the Offender Required by Court Order to (check all that apply)
- | | |
|--|--|
| <input type="radio"/> Pay Restitution | <input type="radio"/> Pay Other Program Fees |
| <input type="radio"/> Pay Court Costs and/or Fines | <input type="radio"/> None |
| <input type="radio"/> Pay Child Support | <input type="radio"/> No Information |
| <input type="radio"/> Pay Supervision Fees | |
24. Total Number of Adult Incarcerations to State/Federal Prison _____ (0 = None, 99 = No Information)
25. Does the Offender Have a History of Emotional, Psychological, or Mental Health Counseling?
_____ (1 = Yes, 2 = No)
26. Recommendation (Check all that apply)
- | | |
|---|---|
| <input type="radio"/> Community Control | <input type="radio"/> Correctional Facility Placement |
| <input type="radio"/> Incarceration (Prison or Jail) | <input type="radio"/> HWH Placement |
| <input type="radio"/> Shock Probation/ Judicial Release | <input type="radio"/> None Included |
| <input type="radio"/> Intensive Supervision | |
| <input type="radio"/> Work Release | |
| <input type="radio"/> Other | |

Following Required for Correctional Facility Placement Only

27. Name of Assessment Instrument _____ (99 = No Information)

28. Risk Score _____ (99 = No Information)

29. Needs Score _____ (99 = No Information)

Additional Information

1. Street Address _____

2. Apartment Number _____

3. City _____

4. State _____

5. Zip Code _____

6. Last Name of Supervising Officer _____

7. Last Name of Supervising Judge _____

8. Number of Dependent Children _____

9. Local Field 1 (numeric) _____

10. Local Field 2 (numeric) _____

11. Local Field 3 (numeric) _____

12. Local Field 4 (numeric) _____

13. Local Field 5 (numeric) _____

14. Local Field 6 (date) ___ / ___ / _____ (mm/dd/yyyy)

15. Local Field 7 (date) ___ / ___ / _____ (mm/dd/yyyy)

16. Comments _____

E. Midwest agency reassessment/termination form

1. Last Name _____ First Name _____ Middle Initial ____ Nickname _____
2. Date of Birth ____/____/____ (mm/dd/yyyy)
3. Funded Program Type
 1. Correctional Facility
 2. Halfway House (HWH), Jail Diversion, Prison Diversion
 3. Electronic Monitoring (HWH)
4. Reassessment/Termination _____ (1 = Reassessment, 2 = Termination)
5. Reassessment/Termination Date ____/____/____ (mm/dd/yyyy)
6. Employment Status at Time of Reassessment/Termination _____

1. Employed Full Time	5. Unemployable
2. Employed Part Time	6. Retired
3. Unemployed (Lost job since intake)	7. Employed (Lost employment due to termination from program)
4. Unemployed	
7. Type of Offender Fees Collected While in Program (check all that apply)

<input type="checkbox"/> Restitution	<input type="checkbox"/> Supervision
<input type="checkbox"/> Court Costs and/or Fines	<input type="checkbox"/> Other Program Fees
<input type="checkbox"/> Child Support	<input type="checkbox"/> None
8. Other Services Provided to the Offender While in Program (check all that apply)

<input type="checkbox"/> Chemical Dependency Counseling	<input type="checkbox"/> Drug and Alcohol Testing
<input type="checkbox"/> Community Work Service	<input type="checkbox"/> Probation Basic Supervision
<input type="checkbox"/> Day Reporting	<input type="checkbox"/> Residential Treatment
<input type="checkbox"/> Domestic Violence	<input type="checkbox"/> Restitution Program
<input type="checkbox"/> Electronic Monitoring	<input type="checkbox"/> Victim Offender Reconciliation
<input type="checkbox"/> House Arrest	<input type="checkbox"/> Work Release
<input type="checkbox"/> Intensive Supervision	<input type="checkbox"/> Sex Offender Program/Counseling
<input type="checkbox"/> Jail Case Management	<input type="checkbox"/> Vocation Education Services
<input type="checkbox"/> Mental Health Treatment/Counseling	<input type="checkbox"/> Not Applicable
9. Amount of Money (Gross) Earned Since Intake _____ (0 = None, 99 = Not Applicable (Re-Assessment Only), 99 = No Information (For Termination Only))
10. Amount of Restitution Paid Since Intake _____ (0 = None, 99 = Not Applicable (Re-Assessment Only), 99 = No Information (For Termination Only))
11. Amount of Court Costs and/or Fines Paid Since Intake _____ (0 = None, 99 = Not Applicable (Re-Assessment Only), 99 = No Information (For Termination Only))
12. Amount of Child Support Paid Since Intake _____ (0 = None, 99 = Not Applicable (Re-Assessment Only), 99 = No Information (For Termination Only))

13. Number of Community Service Hours Completed _____ (0 = None, 99 = Not Applicable (Re-Assessment Only), 99 = No Information (For Termination Only))
14. Did the Offender Complete Home Detention, Electronic Monitoring, or Curfew Monitoring Program Since Intake/Last Reassessment? _____
1. Yes, Completed
 2. No, Failed to Complete
 3. Still In
 4. Not Applicable
15. Did the Offender (check all that apply)
- Participate in Academic Training
 - Participate in Vocational Training
 - Receive Employment Assistance
 - Participate in Sex Offender Programming
 - Receive Emotional/Psychological/Health Counseling
 - Receive Drug Abuse Counseling
 - Receive Alcohol Abuse Counseling
 - Receive Services for Anger/Rage Management
 - None
16. Was the Offender Convicted of a Felony Since Intake _____
(1 = Yes, 2 = No, 99 = Not Applicable (Re-Assessment))
17. Reason for Termination from Program _____
1. Successful Completion
 2. Unsuccessful Completion – Technical Violation
 3. Unsuccessful Completion – New Crime Misdemeanor
 4. Unsuccessful Completion – New Crime Felony
 5. Unsuccessful Completion – Other (HWH only)
 6. Administrative Release
 7. Other
 8. Not Applicable (Reassessment Only)
18. Offender Status at Termination _____
1. Released from Community Supervision
 2. Transferred to Basic Supervision
 3. Transferred to Other Program/Sanction
 4. Transferred to Other Jurisdiction (Excluding Prison)
 5. Sent to State/Federal Prison
 6. Local Jail Incarceration
 7. Absconder/AWOL/Capias
 8. Incarcerated on Other Charges (Prior Pending)
 9. Administrative Close of Interest
 10. Abatement by Death
 11. Other
 12. Not applicable (Re-assessment Only)
 13. Transferred to Intensive Supervision
 14. Transferred to Correctional Facility
19. Name of Assessment Instrument _____ (99 = No Information)
20. Risk Score _____ (99 = No Information)

21. Needs Score _____ (99 = No Information)

Optional Fields

1. Last Name of Supervising Officer _____
2. Number of Alcohol/Urine Samples Taken Since Intake/Last Reassessment _____
(0 = None, 99 = No Information)
3. Number of Positive Test Readings for Alcohol/Illicit Drugs Since Intake/Last Reassessment _____ (0 = None, 99 = No Information)
4. Did the Offender Successfully Complete Substance Abuse Treatment Since Intake/Last Reassessment?
 1. Yes, Completed Treatment
 2. No, Failed to Complete Treatment
 3. Still in Treatment
 4. Not Applicable
 5. No Information

For 5-10, 0 = None, 99 = No Information

5. Number of Face to Face Contacts with Offender in Office Since Intake/Last Reassessment _____
6. Number of Face to Face Contacts with Offender (other) Since Intake/Last Reassessment _____
7. Number of Collateral Contacts Since Intake/Last Reassessment _____
8. Number of Face to Face Jail Contacts Since Intake/Last Reassessment _____
9. Did the Offender Participate in Life Skills Training? _____
10. Did the Offender Participate in Parenting Training? _____
11. Local Field 1 (numeric) _____
12. Local Field 2 (numeric) _____
13. Local Field 3 (numeric) _____
14. Local Field 4 (numeric) _____
15. Local Field 5 (numeric) _____
16. Local Field 6 (date) ____/____/____ (mm/dd/yyyy)
17. Local Field 7 (date) ____/____/____ (mm/dd/yyyy)
18. Comments _____

F. West coding sheet for GPS

CONTROL NUMBER: _____

Program Information

Date (Month/Day/Year)

Date of incident..... / /

Referral to program..... / /

Hooked up..... / /

Terminated from program..... / /

Condition of Bond? Yes No Other _____

Referring agency: County Court District Court Other

Name of referral judge: _____

Was case bound over to District Court? Yes No

Name of disposing judge: Same Other _____

Was restitution ordered? Yes No NA

Was alcohol/drug screening ordered? Yes No NA

Did defendant successfully complete substance abuse training? Yes No

Did the defendant participate in? (Check all that apply)

Academic training	<input type="checkbox"/>	Counseling services	<input type="checkbox"/>
Vocational training	<input type="checkbox"/>	Drug abuse counseling	<input type="checkbox"/>
Employment assistance	<input type="checkbox"/>	Alcohol counseling	<input type="checkbox"/>
Sex offender program	<input type="checkbox"/>	Anger/rage management	<input type="checkbox"/>

Other types of concurrent monitoring: _____

Curfew hours: _____

Exclusionary Zones

Total Number	Average size 1,000 feet		
	Yes	No	Don't Know
Victim's residence			
Victim's work			
Children's school			

If there are any other exclusionary zones, please explain: _____

Does defendant know the location of exclusionary zones? Yes..... No, please explain:

Number of office visits: _____ Number of home visits: _____

Original Qualifying Charges

Was the referral to GPS because of a violation of a Restraining Order? Yes... No

Charges that resulted in being placed in GPS program: _____

Did the incident involve..... Bodily harm Threat of bodily harm

Threat of lethal harm Property damage Kidnapping/false imprisonment Unknown

Level of victim injury None Mild..... Serious

Severe Unknown

Type of attorney Private Appointed by the court..... Unknown

Bond Type Professional Cash Amount: \$ _____

Defendant Demographics

Date of birth_____/_____/_____

Sex Male..... Female

Race White..... Black Hispanic Asian Other

Marital Status Unknown Married Divorced Single Separated Widowed

Education Unknown Some high school High school grad

Vocational school Some college.... College degree Advanced degree

Employed at Admission to program? Yes No In school Unknown

Employed at Termination from program? Yes No In school Unknown

Any financial problems (including social assistance)? Yes No Unknown

Any balanced owed to GPS Program for fees? Yes No

Any mental health problems noted in records? Yes No

Relationship to victim Mar Div Sep Acquaintances None Other Unknown

Living arrangements Alone Family Friends Group living Other Unknown

Zip code where defendant was staying when he/she entered the program: _____

Number of address changes while in program: _____

Victim Demographics

Date of birth_____/_____/_____

Sex Male..... Female

Violations while in GPS Program

Number of positive alcohol/drug tests: _____

Total number of violation reports: _____

Number of violation reports that are:		Number & type of Restraining Order violations:	
Type	Number	Type	Number
Contact or attempted contact with victim		Face to face	
Exclusion zone penetrations		Telephone	
Drug/alcohol related		Mail	
Curfew related		Email	
Weapons related		Text message	
Fraudulent documentation		Proxy	
Other		Weapons	
		Property	
		Other	

Number of arrests while on GPS: _____

Number of arrests on GPS that involve crimes against original DV victim: _____

Bond revocation Yes NoWas bond revocation for exclusion zone violation? Yes NoWas bond revocation for violation of TPO/Stay Away Order violation? Yes..... NoWas bond revocation for new offense against original DV victim? Yes..... NoWas defendant reinstated into GPS program after revocation? Yes..... No

Other reason for bond revocation: _____

Program Termination

Reason for termination from program

 Successful completion Transfer Unsuccessful completion – violation of restraining order Unsuccessful completion – technical violation Unsuccessful completion – new chargesmisdemeanor Unsuccessful completion – new charges felony Administrative release Unsuccessful completion – old charges misdemeanor Unsuccessful completion – old chargesfelony _____

Defendant status at termination

 No longer a Condition of Bond and released from GPS supervision State/federal prisonincarceration County jail incarceration Absconder/AWOL District Courtprobation/supervision County Court probation/supervision Incarceration on other charges _____

Outcome of Original Charges for Dismissed or Acquitted Cases

Final disposition date ____/____/____ Case: Dismissed Acquitted

Release date from GPS ____/____/____ or same as disposition date

Defendant's Recidivism - Post Disposition (Case Dismissed/Acquitted) Criminal Information (in participating city)

Case disposition ____/____/____

Release date from GPS..... ____/____/____

Date of 1st arrest ____/____/____ Check here if none: _____

Date of 1st domestic violence arrest ____/____/____ Check here if none: _____

Date of 1st conviction ____/____/____ Check here if none: _____

Outcome of Original Charges for Convicted Cases

Final disposition date ____/____/____ Sentence date ____/____/____

Guilty charge for: _____

Was defendant ordered to stay in the GPS program as a result of conviction? Yes No

Sentenced to:

State/federal prison for _____ yrs months

Paroled on ____/____/____

Released from parole on ____/____/____

Parole violation Yes No If yes, what date ____/____/____

Placed back in prison ____/____/____

Released from prison ____/____/____

County jail for _____ yrs months days

Released on ____/____/____

District Court probation/supervision for _____ yrs months

County Court probation/supervision for _____ yrs months

Was restitution ordered?..... Yes No

Were classes and/or counseling ordered?..... Yes No

If yes what type _____

Violated probation Yes No If yes, what date ____/____/____

Placed in custody Yes No If yes, what date ____/____/____

Released from custody/case ____/____/____

Successfully completed probation on ____/____/____

Pre Disposition Criminal Information (in participating city)

Released from GPS ____/____/____

Disposition date..... ____/____/____

Date of 1st arrest ____/____/____ Check here if none: _____

Date of 1st domestic violence arrest ____/____/____ Check here if none: _____

Date of 1st conviction ____/____/____ Check here if none: _____

Defendant's Recidivism -- Post Disposition / Release from CUSTODY Criminal Information (in participating city)

Case disposition ____ / ____ / ____
 Release date from custody..... ____ / ____ / ____
 Date of 1st arrest ____ / ____ / ____ Check here if none: ____
 Date of 1st domestic violence arrest ____ / ____ / ____ Check here if none: ____
 Date of 1st conviction ____ / ____ / ____ Check here if none: ____

Defendant's Recidivism -- Post Disposition / Release from PROBATION Criminal Information (in participating city)

Case disposition ____ / ____ / ____
 Release date from probation..... ____ / ____ / ____
 Date of 1st arrest ____ / ____ / ____ Check here if none: ____
 Date of 1st domestic violence arrest ____ / ____ / ____ Check here if none: ____
 Date of 1st conviction ____ / ____ / ____ Check here if none: ____

Defendant's one year post release Recidivism (in participating city)

1-year post release date ____ / ____ / ____

1-year post-release Arrests	Number	1-year post-release Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	
# drug/alcohol related		# drug/alcohol related	
# FTA		# assault	
# assault			

Defendant's Prior Criminal History (in participating city)

Program start date ____ / ____ / ____

Pre-program Arrests	Number	Pre-program Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	
# drug/alcohol related		# drug/alcohol related	
# FTA		# assault	
# assault			

Total number of times incarcerated in state/federal prison prior to program: _____

Was defendant ever enrolled in an electronic monitoring program prior to being place on GPS program?

Unknown No Yes (if yes what type of monitoring) _____

Defendant's Criminal records check (in participating city)

Date ____ / ____ / ____

Total post-release Arrests	Number	Total post-release Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	
# drug/alcohol related		# drug/alcohol related	
# FTA		# assault	
# assault			

G. West coding sheet for non-GPS groups

CONTROL NUMBER: _____

Case Information

Date of incident ____/____/____

Referral to program ____/____/____

Condition of Bond Yes No Other _____Referring agency: County Court District Court Other

Name of referral judge: _____

Was case bound over to District Court? Yes No

Name of disposing judge: _____

Original Qualifying ChargesWas the referral to GPS because of a violation of a Restraining Order? Yes... No

Charges that resulted in being placed in GPS program: _____

Did the incident involve..... Bodily harm..... Threat of bodily harm Threat of lethal harm Property damage Kidnapping/false imprisonment UnknownLevel of victim injury None Mild Serious Severe Unknown

Bond Set Amount: \$ _____

Bond Reduced No Yes Amount: \$ _____GPS removed as a Condition of bond No YesDefendant bonded No Yes Date: ____/____/____Type of attorney Private Appointed by the court..... Unknown**Defendant Demographics**Date of birth ____/____/____ Sex Male FemaleRace White..... Black Hispanic Asian OtherAny mental health problems noted No YesRelationship to victim Mar Div Sep Acquaintances None Other Unknown

Zip Code at time of arrest... _____

Victim Demographics

Date of birth ____ / ____ / ____

Sex Male Female**Post Release/Pre Disposition Criminal Information (in participating city)**

Arrests	Number	Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	

Outcome of Original Charges for Convicted Cases

Final disposition date ____ / ____ / ____ Sentence date ____ / ____ / ____

Guilty charge for: _____

Sentenced to:

 State/federal prison for _____ yrs months

Paroled on ____ / ____ / ____

Released from parole on ____ / ____ / ____

Parole violation Yes No If yes, what date ____ / ____ / ____

Placed back in prison ____ / ____ / ____

Released from prison ____ / ____ / ____

 County jail for _____ yrs months days

Released on ____ / ____ / ____

 District Court probation/supervision for _____ yrs months County Court probation/supervision for _____ yrs monthsWas restitution ordered?..... Yes NoWere classes and/or counseling ordered? Yes No

If yes what type _____

Violated probation Yes No If yes, what date ____ / ____ / ____Placed in custody Yes No If yes, what date ____ / ____ / ____

Released from custody/case ____ / ____ / ____

Successfully completed probation on ____ / ____ / ____

Outcome of Original Charges for Dismissed or Acquitted Cases

Final disposition date ____/____/____ Case: Dismissed Acquitted
 Release date from custody.. ____/____/____ or same as disposition date
 Date of 1st arrest ____/____/____ Check here if none: _____
 Date of 1st domestic violence arrest ____/____/____ Check here if none: _____
 Date of 1st conviction ____/____/____ Check here if none: _____

Defendant's Recidivism -- Post Disposition / Release from CUSTODY Criminal Information (in participating city)

Case disposition ____/____/____
 Release date from custody..... ____/____/____
 Date of 1st arrest ____/____/____ Check here if none: _____
 Date of 1st domestic violence arrest ____/____/____ Check here if none: _____
 Date of 1st conviction ____/____/____ Check here if none: _____

Defendant's Recidivism -- Post Disposition / Release from PROBATION Criminal Information (in participating city)

Case disposition ____/____/____
 Release date from probation..... ____/____/____
 Date of 1st arrest ____/____/____ Check here if none: _____
 Date of 1st domestic violence arrest ____/____/____ Check here if none: _____
 Date of 1st conviction ____/____/____ Check here if none: _____

Defendant's one year post release Recidivism (in participating city)

1-year post release date ____/____/____

1-year post-release Arrests	Number	1-year post-release Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	
# drug/alcohol related		# drug/alcohol related	
# FTA		# assault	
# assault			

Defendant's Prior Criminal History (in participating city)

Arrest date ____/____/____

Pre-program Arrests	Number	Pre-program Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	
# drug/alcohol related		# drug/alcohol related	
# FTA		# assault	
# assault			

Was defendant ever enrolled in an electronic monitoring program prior to being placed on GPS program?

Unknown No Yes (if yes what type of monitoring) _____

Defendant's Criminal records check (in participating city)

Date ____/____/____

Total post-release Arrests	Number	Total post-release Convictions	Number
Total # arrests		Total # felony convictions	
Total # DV arrests		Total # domestic violence	
# drug/alcohol related		# drug/alcohol related	
# FTA		# assault	

Endnotes

¹ The term intimate partner violence (IPV) reflects the social phenomena associated with varying kinds of abuse between intimate partners. The term domestic violence (DV) is typically used in the legal arena and has broader reference, denoting violence between those who reside together, including family members. EM programs for DV historically have been focused on intimate partners.

² As of 2010, states with laws directing agencies to use GPS in DV cases include Alaska, Hawaii, Florida, Mississippi, Arkansas, Louisiana, Oklahoma, Texas, Colorado, Utah, Arizona, Washington, North Dakota, Minnesota, Michigan, Illinois, Indiana, Kentucky, Connecticut, Massachusetts, and New Hampshire (Gur and Erez, 2010; Gur, Erez, and Ibarra, 2011).

³ Literally, “pretrial” refers to the period before trial. However, we use the term “pretrial” to refer to the period that encompasses the post-arrest, pre-trial, and pre-sentencing phases, i.e., the pre-disposition period. The present research determined that roughly 150 U.S. agencies currently employ GPS to monitor domestic violence defendants during the pretrial period, broadly conceived.

⁴ Erez et al. (2004) refer to RF for DV programs as “bilateral electronic monitoring” (BEM) because, in the two agencies that were studied, both the offender’s and the victim’s homes are monitored by the agency. By placing a receiver in both homes, monitoring personnel could make in-real-time determinations about whether the defendant was in range of his or the victim’s residence; in the event he approached the latter’s address, authorities as well as the victim could be notified of the incursion. The present research found that a bilateral RF-based technology is no longer supported by vendors. References to RF in the present study’s comparison of GPS and RF, therefore, should be understood as denoting traditional house arrest programs rather than the previously examined bilateral form of RF.

⁵ “Active” GPS tracks defendants in real time; passive GPS maintains data on an offender’s whereabouts around the clock, but this log is only accessible after an officer has downloaded it.

⁶ Exclusion zones are areas that the defendants are prohibited from entering. Inclusion zones are areas in which he must remain, either during certain hours (e.g., at home during curfew, or at work during business hours) or in general (e.g., the local county, the state, or region).

⁷ Regardless of the technology, the offender’s geo-location can only be confirmed if the transmitter is being worn and functioning properly (e.g., transmitting a readable signal).

⁸ Current and previous research (Erez et al., 2004) has found that most DV victims who participate in GPS programs as “protected” parties are women, and hence in this report the masculine pronoun is used to describe the putative abuser and the feminine gender case to refer to the alleged victim or prosecuting witness. Where female defendants are addressed in the current study, they are identified by the feminine case.

⁹ Neither the Erez et al. (2004) study nor the present effort have parallel data on in-person contacts attempted by victims in the case, since victims' movements are not typically monitored by RF or GPS-based programs in the United States (but see Römken [2010], who reports on an approach – a variant of “reverse tagging” [Satine, 2008:268-9] – in which the victim's moving location can be detected by Dutch authorities in the event that women who are fearful of abuse encounter estranged partners who have compromised their safety). Other kinds of contacts are also not registered by electronic monitoring technology. For example, encounters at court, telephone calls, contacts by proxy, chance meetings on the street, sent flowers and mail, postings to social media sites, text messages, etc., are not subject to RF- or GPS-based detection. Defendants in the RF study (Erez et al., 2004) spoke about having been contacted and sometimes harassed by the victims, typically by telephone, and some mentioned that the women drove by their dwellings repeatedly, as if to taunt them. Some women admitted driving by the defendants' residences, claiming that they wanted assurance that he was where he was supposed to be during curfew hours; others admitted to driving past his dwelling to check whether their field-monitoring devices were operational. Some defendants claimed that the victims made conjugal visits to their homes, which the victims denied. However, a supervising officer, during a surprise home visit, found a victim hiding in a defendant's shower, leading to the latter's arrest for violating the no contact order. Finally, some victims stated that they initiated telephone calls to the defendant, but only for some practical reason, such as to make arrangements for a child to be picked up or dropped off. According to these women, an intermediary, such as a friend, family member or program support staff usually placed the call on their behalf (Erez et al., 2004).

¹⁰ In other words, the offender's route (whether by car or public transportation) momentarily takes him within range of the victim's home region.

¹¹ Most face-to-face violations were the result of ostensibly chance meetings in public places, during which the defendant might make a provocative comment to the victim. One common way in which defendants communicated face-to-face, albeit at a distance, was in the courtroom or in the court's hallways. Such communications were usually comprised of non-verbal gestures, at times in the presence of unaware judges and attorneys (Erez and Ibarra, 2007).

¹² It is common knowledge – both among researchers as well as court personnel – that the high dismissal rate in IPV cases is directly connected to prosecuting witnesses' failure to appear in court (e.g., Ford, 2003), and this was confirmed in interviews with judges and prosecutors (Erez et al., 2004).

¹³ Post program offense categories that were incorporated to measure repeat victimization included disorderly conduct, domestic violence, harassment, assault and stalking. Control variables included demographic attributes like race, level of education, employment at time of admission to the program, and number of pre-program adult arrests for domestic violence.

¹⁴ Women who participated in the RF program described how being involved with the EM program resulted in a greater willingness to notify authorities about contact attempts or renewed abuse by the defendant, compared to prior occasions of abuse, suggesting that the difference in recidivism rates between RF and non-RF clients cannot be accounted for by lower reporting rates among RF victims (Erez and Ibarra, 2007).

¹⁵ EM for DV programs have also been the subject of criticisms pertaining to their potential for racially discriminatory impact (Buchanan, 2008) and an attenuation of civil liberty and due process protections along with the greater transparency resulting in heightened legal vulnerability (Satine, 2008; but see Hinson, 2008). In general, writings that consider issues pertaining to the jeopardy incurred by controlled parties on GPS tracking fail to distinguish between pretrial and sentenced cases. In many respects, the issue of legal jeopardy is especially serious with respect to pretrial defendants, as information collected during their time on a tracker could potentially be used to weaken a criminal defense or plea bargain.

¹⁶ Defendants in the RF and non-RF group were comparable in that both were referred to the EM program for hook up. Those who remained in jail or who posted bond without EM enrollment did not differ in terms of offense history, seriousness of offense, and other legal variables.

¹⁷ Citing estimates from 1999, Crowe et al. (2002: 44) state that the average daily cost of RF-based electronic supervision ranges from \$3.00 to \$4.50, while GPS-based supervision costs between \$15.00 and \$25.00 a day. (“Intermittent Global Positioning” is cited by these authors as ranging in daily costs from \$4.00 to \$6.50 daily). Based on our more recent discussions with agency personnel, vendors and manufacturers, GPS monitoring is between two to ten times more expensive than RF, although the ultimate costs depend on how the program is administered, the equipment that is ordered, and the contribution expected of the offender. Costs for agencies participating in the present are reported in Chapter Three: Findings.

¹⁸ Margaret (Peggy) Conway is the editor of the *Journal of Offender Monitoring*.

¹⁹ <http://www.surveymonkey.com/>

²⁰ Special thanks to Cherise Fanno Burdeen at Pretrial Justice Institute (PJI), Joe Russo at National Law Enforcement and Corrections Technology Center (NLECTC), and to American Probation and Parole Association (APPA) Members.

²¹ A third organization declined the request to have its members participate in the survey, citing a preference for empirical evaluations of research questions over the canvassing of members’ views and experiences.

²² One set of responses was excluded from the analysis when it was determined that the respondent represented an agency based in a European country. See Whitfield (2001) for a discussion of the use of EM in Europe and internationally.

²³ Because the focus of the survey is on agencies utilizing GPS for DV during pretrial, two questions were used to verify that respondents were aware of the research focus and the importance of only responding if appropriate. Only those whose responses were consistent across both questions were included, providing the 149-agency sample. The first question asked: “Does your organization use global position system (GPS) technology to supervise domestic violence (DV) or intimate partner violence (IPV) pretrial defendants?” Answer options were “Yes” and “No.” The second question stated: “The rest of the survey is about your GPS monitoring program for domestic violence (DV) or intimate partner violence (IPV) pretrial defendants. While you

may have other electronic monitoring programs, the purpose of this survey is to better understand the use of GPS in DV cases.” Rather than selecting “Yes” or “No,” respondents had to indicate that “Yes, I understand the following questions are about the GPS program for monitoring DV defendants.”

²⁴ A subset of 43 agencies that indicated they did not use GPS for DV during pretrial, but did use GPS to monitor other types of pretrial defendants, also completed the entire survey. Their responses are not analyzed in this report, which focuses on the use of GPS for DV.

²⁵ The cooperating agencies’ GPS programs have been in operation for varying lengths of time. They each started as RF-based programs during the 1990s, but each had transitioned to GPS programs for DV by the early to mid-2000s.

²⁶ DeMichele and Payne (2009: 35) state that “active GPS monitoring (...) systems rely upon cellular telephone technology to relay alert information in near-real time. Near-real time is an important qualifier here because it takes a variable amount of time for the GPS receiver to send the location points through a cellular phone. Most vendors allow agencies that contract with them to make reporting decisions based on each client, with normal time delays ranging from one to five minutes.”

²⁷ Three agencies (“Southwest,” “East,” and “Southeast”) that did not participate in the impact study participated in the qualitative prong of the study.

²⁸ This is supported by evidence from the national survey. While just over 68% of agencies utilizing GPS for DV during pretrial reported being able to hook up 100% of all those referred, one agency reported only being able to hook up 13% (2/16), another 20% (30/150). Five reported 50% hook-up rates, and five reported 80% hook-up rates.

²⁹ Research on court responses to IPV shows that judges do not honor researchers’ requests to randomly assign defendants to treatment modalities in cases where violence has been alleged (e.g., Erez, Gregory, and Ben-Porath, 2003; for objections by district attorneys, see Feder, Jolin and Feyerherm, 2000; see Vollum and Hale, 2002, for a discussion of the lack of experimental design in EM studies during the pretrial period; also see Maxfield and Baumer, 1992). Thus, although experiments are known to be powerful tools in assessing the effectiveness of interventions (Feder and Boruch, 2000), and true experimental design is ideal for an impact study (Dunford, 2000; Weisburd, 2003), judges are unlikely to randomly assign high- or moderate-risk DV defendants to GPS tracking. Quasi-experimental design offers an alternative, rigorous basis for evaluating the impact of GPS monitoring on recidivism.

³⁰ Midwest judges’ orders’ sometimes read as “bond or GPS plus lower bond,” giving defendants a “choice” of whether to pay a lower bond in exchange for participating in the GPS program. Also, if a victim does not consent to the defendant’s being placed on GPS – either because she refuses outright or because she cannot be reached – the judge may order the defendant onto the RF-based program (essentially house arrest with curfew and without GPS tracking).

³¹ The bonded-out group was relatively small and thus was combined with the other non-GPS group, i.e., those who remained in jail.

³² The follow-up period in South and Midwest for persons sentenced to probation began with the disposition of the case. The follow-up period in West for persons sentenced to probation began following release from probation. The latter measure may have resulted in underestimating the impact of GPS on participants in the West program.

³³ Interviews with vendors who manufacture GPS devices for the programs under study were attempted but unsuccessful. Although they were friendly and hospitable, vendors seemed to suspect that the interviewers were engaged in some kind of industrial espionage (i.e., were trying to steal company secrets), and were unwilling to sign consent forms or offer full responses to probing questions, diminishing the value of such interviews.

³⁴ An important issue to consider is how victim support and offender supervision are built into the design of the program. Levels of support and supervision vary by agency (Erez et al., 2004), and the implications of these different intensities may influence various outcomes, including contact violations and victim willingness to cooperate with authorities (Erez and Ibarra, 2007). For a discussion of the role of human supervision in electronic monitoring programs, see Ibarra (2005).

³⁵ States not captured in the survey are: Delaware, Louisiana, Maine, Mississippi, New Mexico, Rhode Island, and Vermont. Five of the same states also lack representation in the “2009 Survey of Pretrial Services Programs” (Pretrial Justice Institute, 2009), which does include one agency from Maine and one from New Mexico.

³⁶ Connecticut and Wyoming are represented because practitioners working in those states viewed the survey, but none used EM during pretrial.

³⁷ It might be hard to disentangle the impetus for a referral. For example, if a defense attorney requested GPS for their client, it would still require a judicial order for the referral to be made.

³⁸ This recoding technique is not sensitive to the number of people each program monitors at each cost, as this information was not collected in the survey (i.e., it is not known how many persons were monitored at each level of cost). Results from Brown, McCabe, and Wellford (2007: B-1) show that some agencies monitor the majority of defendants with active GPS (e.g., 90%), while in others passive GPS is used for the vast majority of clients (e.g., 98%). For costs associated with each level of monitoring, see Crowe et al. (2002: 44).

³⁹ It is assumed that “client” was understood to refer to the defendant, rather than to the victim.

⁴⁰ It is possible that victims receive other forms of notifications such as telephone calls, electronic, or other methods of communication. The use of text messages to notify victims can be automated in tandem with various parameters, including exclusion zone incursions, and thus represents a good indicator of agency efforts to integrate victim protection with digital technology. However, such an agency runs the risk of over-notifying victims, i.e., issuing false

alerts, to the extent that text messages are sent automatically, without verification by an officer of the actual risk a zone incursion poses for the victim.

⁴¹ Some respondents provided precise percentages, which seemed to indicate that they were checking program records, whereas other answers were more general.

⁴² As stated earlier, in this report we use the masculine pronoun to describe the putative abuser and the feminine gender case to refer to the alleged victim or prosecuting witness. The feminine case is employed when female defendants are referenced.

⁴³ In addition, a program can be influenced by external forces, as when advocacy groups press for particular approaches; or the program can be influenced by the nature of the caseload relative to the amount of resources that the program has at its disposal: more resources and fewer cases can mean that an agency can take on a more classical casework approach than would otherwise be allowed or expected.

⁴⁴ Supervisees are referred to interchangeably by program personnel as both “defendants” and “clients.”

⁴⁵ The present researchers witnessed clients being arrested during both home and office visits.

⁴⁶ From a technological point of view, consent is not required in order to enable GPS tracking. The practice appears to be a holdover from the bilateral RF program, which required the victim’s consent in that a receiver had to be placed in her actual residence. When victims do not consent to participate, the judge is likely to place the defendant in the less onerous RF program (which imposes curfew restrictions on participants).

⁴⁷ Supervisees are referred to as “clients,” reflecting the social work orientation of the officers.

⁴⁸ Consistent with the legalistic approach of the agency, supervisees are referred to as “defendants.”

⁴⁹ We found that defense counsel, especially private attorneys, more than supervising officers, were likely to adopt the role of urging clients to take special courses of treatment, such as anger management, drug or alcohol counseling, or participation in batterer intervention program. Such attorneys noted that these efforts stood to benefit the defendant not only personally, but also in terms of the impression such initiatives would have on the judge at sentencing (should the client be found guilty), thereby leading to less severe sentences. Some private defense attorneys in this jurisdiction talked about how they had in the past recommended to their clients that they give serious consideration to procuring private electronic monitoring, at their own expense – to the tune of \$600 dollars per month – since being on EM could allow their clients to be released pre-trial, provide tangible proof of their movements, and thus inoculate them from allegations about contact attempts that might be made by the victim.

⁵⁰ Observed standing at the court’s entrance, the uniformed program administrator of the GPS for DV program (a Sheriff’s deputy) was warmly greeted by defendants and previously

convicted offenders, as well as regular townsmen. The officer referred to them by their names and inquired about how they were doing, exhibiting familiarity with their familial, personal and work situations.

⁵¹ Supervisees are referred to as “defendants” or “offenders,” perhaps reflecting the law enforcement training of the staff members, but thereby concealing the balance of law enforcement and social work that this agency attempts.

⁵² Supervisees are referred to as “defendants” at this site.

⁵³ In some agencies, judges may use RF, i.e., house arrest with curfew hours, as an alternative to GPS. In Midwest, judges imposed RF if the victims did not consent to having the defendant placed on GPS. In South, judges assigned defendants to GPS rather than RF when the defendant did not have a landline, when they had concerns about the defendant remaining a certain distance from the victim, or when the defendant had a history of substance abuse issues.

⁵⁴ Defendants who remain in jail do not have opportunities to violate EM program rules because they are not enrolled in an EM program.

⁵⁵ Defendants who remain in jail do not have opportunities to be re-arrested in the short term.

⁵⁶ The analysis is based on re-arrest for any type of offenses. Analysis using only DV offenses as the outcome variable was not possible because of the small number of DV arrests in the re-arrest data.

⁵⁷ In discussing the wide variation observed in GPS case duration, justice system personnel noted that judges are receptive when presented with motions for continuances on behalf of GPS defendants. Judges appear to believe that extending the time to disposition will not pose a hardship for the GPS defendant since he is essentially unencumbered in his liberties compared to those who are in jail, and will not pose additional risk to victims, who are viewed as under a degree of protection.

⁵⁸ Known zones are areas that the defendant is explicitly told to remain out of (i.e., exclusion zones), or remain in (i.e., inclusion zones, such as the defendant’s residence during curfew hours). Unknown zones are programmed zones that generate alerts to supervising officers, but which do not necessarily generate sanctions or warnings to defendants. Victims may not want a zone to be defined as off-limits to a defendant, for the victim fears that the defendant would then be able to figure out her location. Instead, the supervisor makes a decision about how to follow up in the wake of unknown zone incursions, including whether to notify the victim, investigate the defendant's intent, or redefine the area as an explicit exclusion zone.

⁵⁹ The absence in the victim’s home of an RF receiver whose green light indicated that the defendant was not nearby (the light would turn red and the RF receiver emit loud noises, if the perimeter of the victim’s residence was breached by the wearer of the synchronized ankle bracelet) led GPS victims who had experience with bilateral RF technology to feel unsafe,

despite the real-time tracking offering by the GPS technology that RF monitoring could not match.

⁶⁰ Between them, the 74 defendants had 98 charges against them in the case that resulted in their placement on GPS. Most (N = 61) defendants had only one charge against them. Among the 98 charges, there were 37 stemming from a DV-related charge (e.g., DV, DV by strangulation, domestic battery, DV against children), 10 that involved a violation of a TPO, probation, or a restraining order, 15 mentioning assault (e.g., with a weapon, felonious), 11 mentioning aggravated offenses (e.g., stalking, assault, battery, burglary, menacing), and other serious charges (e.g., rape, use of deadly weapon, felonies).

⁶¹ A high standard deviation (1.63) indicates the importance of considering how programmatic responses could differ based on whether defendants have dependent children. The 20.4% of defendants who have 4 or more dependent children may require different provisions than those without children, as the former may have more occasions to violate because of their parental responsibilities.

⁶² This rule is infrequently modified at a later stage, usually in response to a defense attorney's motion that complete lack of contact between the parties has created untenable hardships (because of shared business interests between the estranged partners, for example). Under such circumstances, judges will at times permit contact between the parties, but only if it is focused on specific points of mutual interest and only insofar as it remains "non-hostile."

⁶³ "Drift," for example, refers to the phenomenon whereby GPS points are read such that the GPS device wearer appears for a moment to be elsewhere than he actually is. Agencies may compensate for this problem by drawing wider exclusion zones (two mile radii rather than 500 foot radii), which creates more distance between defendant and victim, but also produces more hardship for the defendant.

⁶⁴ A comparison (Table 3C-9) of the likelihood of being newly arrested in the short term for GPS versus non-GPS (i.e., the RF and Bond groups, and excluding the Jail group) further confirmed that GPS enrollees were likelier to be re-arrested than were others.

⁶⁵ The fact that clients are being tracked is usually apparent to them, and this accounts for the controlling influence of GPS. The portable unit is often called a "tracker," for example, and at times they may be told that their "GPS signal" is weak. Supervising officers may also reveal to defendants how much they know about the latter's travels, such as whether they were speeding or driving slowly on a particular street, or visiting a certain place, such as a bar.

⁶⁶ As data were not available on the exact nature or context of arrests, this interpretation of the discrepancy requires more detailed data on the nature and context of arrests.

⁶⁷ The Bond-only group in West stands out in having a much higher conviction percentage (71%) than either the Jail or GPS groups. This group also has a higher mean number of prior arrests (5.4) than the GPS group but a lower mean number than the Jail group. The Bond group is also likelier to be facing a serious battery charge than the GPS group (.35). Only 4% of the Bond

group has a restraining order violation in the current case. Due to the small sample size of the Bond group compared to the other ones (Bond = 56; GPS = 639; Jail = 434), and the unclear mechanisms through which members of this group end up in the Bond situation, interpretation of the results for this group is not possible.

⁶⁸ Administrators who were interviewed at the sites reported that the average cost of having a defendant on GPS is \$8.90 per day, compared to a cost of \$65 per day for defendants in jail. However, average GPS cost does not include the auxiliary expenses involved with providing victim services or staffing officer positions.

⁶⁹ This finding pertains to the whole sample of convicted and dismissed/acquitted DV defendants as a group.

⁷⁰ In this jurisdiction there is no separate “DV” charge that would identify new DV offenses cases – which would be required to conduct a separate analysis of program impact on DV re-arrest patterns. The overall finding, however, makes it likely that the result subsumes DV-related offenses.

⁷¹ Control variables that were found to have a significant effect on likelihood of long-term arrest were age at instant offense and number of prior offenses.

⁷² This impression is partly based on interviews with personnel and defendants, and partly based in information derived from the defendants’ files, e.g., the employment rate for GPS West defendants was twice as high as that for defendants in Midwest.

⁷³ The high number of GPS defendants who are of Hispanic descent – almost half – is important to note in this regard, as many of them were sending remittances to their ancestral countries, making the per diem an especially difficult burden on their familial responsibilities. In Midwest, burdens stem entirely from extensive restrictions and heightened transparency, rather than from fees: there are no GPS program fees that participating defendants are required to pay.

⁷⁴ As noted in Chapter 2, in the South site at the time of the study, the presiding judge decided, based on various consideration related to defendant risk and severity of the offense, whether a defendant should be placed in the more rigorous GPS program, in its less restrictive RF counterpart, or release him on bond (with or without non-EM supervision). In the Midwest site, judges referred defendants to GPS, and if the victim did not consent to GPS, the judge’s back-up order would assign the defendant to RF for the duration of the pretrial period. In the West site, most defendants who were referred to GPS ended up on it, or remained in jail if they could not raise the bond; a small group of defendants successfully motioned to have their GPS assignment lifted, and so were released on bond without EM supervision.

⁷⁵ Nevertheless, the study sites reported no cases of victims being harmed by GPS defendants during the years covered by the study.

⁷⁶ GPS technology cannot document other kinds of contacts (e.g., telephone calls, email, texting, social media), but this should not be taken to mean that GPS programs ought to ignore the importance of such alternative forms of contact.

⁷⁷ Although this study focused on pretrial supervision, the broader policy points that are discussed also apply to GPS programs that monitor sentenced DV offenders. Presumably such GPS enrollees will be less resentful about their participation in the program, given their convicted status. This is, however, an empirical question.

⁷⁸ Typically, these are victims who believe their abuser has no fear or respect for authority or law, being so determined to hurt her that he will quite readily disobey a judge's order or a supervising officer's warning about staying away from the victim – despite the fact that his movements are tracked with GPS.

⁷⁹ Similarly, soliciting defendant feedback may also be useful in adapting the program to better suit defendants' needs.

⁸⁰ The emergence of social media (e.g., Facebook, Myspace, Twitter, foursquare) has resulted in new ways for direct or indirect contact to occur between defendants and victims, whether intentionally or not. As social media become viable venues for social interaction, and as a source of information about what users are doing, thinking, and feeling, jurisdictions will have to consider whether and how to address social media practices in their program design.

⁸¹ Inability to post bond is a general problem for all evaluation studies examining pretrial populations. Inability to pay GPS fees in the kinds of programs examined by the current study could conceivably be an additional issue. In the sites included in the present study, either there were no program fees (Midwest), or program fees were based on a sliding scale or ability to pay (South and West), although the latter may still pose problems for defendants, particularly if they are unemployed.

⁸² Recent research (Bales and Piquero, 2012) has addressed the question of whether the use of Propensity Score Matching, Precision Matching, or multivariate statistical methods – the latter being used predominantly in the social sciences and applied to this study – produces different results. The study indicates that these approaches to deriving equivalency across a control and experiment group produce substantively similar findings.