

INCORPORATING LOCATION TRACKING SYSTEMS INTO COMMUNITY SUPERVISION

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INTRODUCTION

For several decades, supervision agencies have been leveraging a variety of technological innovations to better manage justice-involved individuals in the community. Perhaps no tool has captured the imagination of the criminal justice professionals and the public alike as much as location tracking system (LTS) technology, first introduced in 1996. The ability to track an individual in near-real time represented a substantial improvement over the previous technology, which was limited to monitoring an individual's presence at a fixed location, usually the home.

Since that time, the use of location tracking has achieved acceptance within the criminal justice system. Further, use of an LTS is generally supported by the public, judges, and legislators, who believe this level of monitoring provides greater accountability and control for individuals in the community. By some measures LTS usage is growing rapidly. According to a 2015 survey by the Pew Charitable Trusts, more than 88,000¹ individuals were supervised using an LTS, a thirtyfold increase from the roughly 2,900 reported a decade earlier (Pew Charitable Trusts, 2015). Despite this rapid growth, those under supervision with location tracking represent little more than 1% of the nearly seven million individuals under correctional control and under 2% of the 4.6 million on probation or parole supervision (Kaeble & Glaze, 2016).

Clearly, a case can be made that LTS technology is vastly underutilized, which seems perplexing considering the criminal justice reform movement and the ensuing initiatives instituted by several states to reduce prison and jail populations, including the number of technical violators returned to incarceration. This paper will look closely at how this technology is currently being used, will review its benefits, challenges, and agency considerations, and

¹ This figure does not include the thousands more who are monitored by U.S. Immigration and Customs Enforcement for immigration violations.

will present what research has found. Through this examination, perhaps it will become clear why this tool, whose introduction held out such great promise for use in the criminal justice field, has yet to reach its full potential.

WHAT IS A LOCATION TRACKING SYSTEM?

An LTS is comprised of variety of technologies, including both hardware and software, configured to continuously locate and track community supervision clients in real time. Tracking transmitters may be embedded into a bracelet securely attached to a client or may be carried and linked to the client via a radio frequency body-attached tether. The receiver determines its location (and the client's location, as long as the bracelet remains either on or in proximity to the client) by global positioning satellite (GPS), cellular tower triangulation, WiFi, or other means.

Utilizing the mapping and software capabilities, agencies can establish inclusion zones (areas where the client must be, e.g., home by curfew), exclusion zones (areas where the client must not be, e.g., near a victim's home), and approved routes to and from authorized locations. An LTS is configured to trigger an alert in response to a variety of conditions, including presence in an unauthorized location, a low or dead battery, and removal or circumvention attempts. Based on client risk level and the needs of the agency, tracking can be active (continuous reporting of location and alerts to authorities) or passive (next day, after-the-fact reporting)—or a hybrid approach can be used. It should be noted that the technology is constantly evolving, and some jurisdictions are beginning to track clients via the location-based services inherent in most smartphones.



Location tracking can be a powerful supervision and containment tool—one that provides significant information about a client's daily activities.

APPLICATIONS

The criminal justice system currently uses LTS technology in a variety of ways. For example, it may be used at the pre-trial stage in lieu of detention, post-conviction as part of court-ordered supervision, or in parole supervision. In some cases, supervision with LTS is mandated by statute. Agencies may also use an LTS as part of a graduated sanctions process to ensure all available options are exhausted before going back to court or before a parole board to seek revocation for technical violations. Further, this type of monitoring has been used with a variety of target populations, including juveniles, gang members, and those accused or convicted of sexual or domestic violence offenses. It is important to note that an LTS is not a program, but rather a tool that can help achieve case management objectives with these populations. The following section will discuss some of the key issues that agencies should consider when deciding whether and how to deploy an LTS as part of their operations.

GENERAL CAPABILITIES AND LIMITATIONS

Location tracking can be a powerful supervision and containment tool—one that provides significant information about a client’s daily activities. This information can help determine whether the client is complying with location-specific supervision requirements (e.g., a curfew or required attendance at treatment or school) or whether he/she was at the scene of a crime. Further, it has been hypothesized that monitoring movement patterns and holding individuals accountable to a rigid schedule can help provide structure that may reinforce better lifestyle habits (DeMichele & Payne, 2009). Despite the power of this technology, significant limitations exist that are sometimes overlooked by uninformed stakeholders eager for easy solutions to complex problems. Location tracking has been billed as a panacea, a space-age solution that will solve many of the criminal justice system’s woes (DeMichele & Payne, 2009). Many observers fail to realize that an LTS, like any technology, is only a tool to be used (or misused) as part of a larger supervision strategy.

As for any tool, internal validity issues must be assessed for this technology (assessing how well it performs its function as opposed to whether the desired effect is achieved), and in certain situations the tool does not work as intended or hoped. In the case of an LTS, common limitations include loss of location signal or cellular coverage

in challenged areas, errors in location due to signal “drift,” multi-path effects, false or nuisance alerts, inability to distinguish elevation (i.e., what floor of a high rise building the client is on rather than just the street address of the building), and other uncontrollable environmental factors such as effects of solar flares (Brown, McCabe & Wellford, 2007).



In addition, staff should be supported with sound policy and resources needed to monitor behavior, and they must respond to violations in a timely manner and fully leverage the information that the location tracking technology has generated.

An LTS also requires a fair amount of client cooperation and compliance. A determined client can circumvent monitoring in a variety of ways, such as cutting or removing the body-worn attachment (in the case of a one-piece device), leaving the receiver behind (in the case of a two-piece device), shielding or jamming GPS or cellular signals, or simply letting the device battery die. While an LTS is designed to alert authorities when these events occur, it may be difficult to address the issues in real time.

An inherent limitation often overlooked is that even when an LTS is working perfectly and the client seems perfectly “compliant,” the system can only provide indication of the client’s location, with no way of knowing what the individual is actually doing at that location. For example, an LTS may place the client at home during a curfew time, but in reality that individual may be engaging in criminal activities from within the house. If a client supervised with

LTS is intent on committing a crime, or acts impulsively, it is unlikely that an agency can respond in time to prevent the crime. However, through crime scene correlation such a client can be placed at the scene of a reported crime, which greatly increases the likelihood of arrest and conviction for the new offense. This level of accountability may deter some clients from new criminal activity, at least during the period when they are being tracked. Understanding these basic capabilities and limitations can help establish realistic expectations for the technology, which is important for agencies and stakeholders alike.

MANAGING RISK

Some stakeholders may be deterred from exploring the use of an LTS, choosing to focus on the limitations of the technology or on some highly publicized failures. What is often misunderstood is that there is no perfect technology or, for that matter, perfect method of correctional intervention, and not every client always behaves in a way that is rational or in accordance with measured risk level. One of the fundamental aspects of community supervision is that it is essentially an exercise in risk management. Agencies understand this, and they make thousands of decisions each day based on this concept. Stakeholders may require additional education so that they understand the evidence regarding the risks associated with tracking individuals in the community with an LTS in lieu of incarceration and, more importantly how these risks can be mitigated. As will be discussed, some ways that risk can be mitigated is to use an LTS with appropriate populations and, importantly, in conjunction with a broader case management or containment plan. In addition, staff should be supported with sound policy and resources needed to monitor behavior, and they must respond to violations in a timely manner and fully leverage the information that the location tracking technology has generated.

PROPER USE OF LTS

Identifying best practices for the implementation of an LTS can be difficult due to lack of evidence. Part of the struggle is that these programs may be implemented for various reasons (e.g., internal initiative, judicial order, or statutory requirement) and may have very different objectives based on the target populations (e.g., pre-trial release from detention vs. high risk gang members on parole supervision). Given these limitations, the body of research on evidence-based practices for correctional treatment can provide general guidance. For example, the existing evidence does tell us that the use of an LTS, just as with any intervention, should at a minimum be tied to client risk level and be incorporated into a larger case management plan, and violations should be addressed swiftly and with certainty (Hawken & Kleiman, 2009). Location tracking is a relatively intrusive supervision tool and therefore should be reserved for higher-risk clients.

A large body of corrections research indicates that lower risk clients who are supervised at enhanced levels re-offend more frequently and have overall higher recidivism rates than similar clients supervised at lower risk levels (Lowenkamp & Latessa, 2004). Even so, LTS may also be appropriate as an alternative for lower risk individuals who would otherwise be confined. Research has demonstrated that there is a point of diminishing returns in that many non-violent inmates could be released up to two years earlier without any decline in public safety (Pew Charitable Trusts, 2013). Therefore, the use of an LTS as a means to divert or release lower risk individuals who might

otherwise be detained or incarcerated follows best practices. Beyond these general guidelines, much remains to be learned about implementation strategies, which groups respond best to supervision with LTS, optimal duration or dosage on an LTS for each group, whether outcomes are improved when LTS is used in conjunction with wraparound services, and long-term impacts on recidivism, if any.

Further, criminal justice practice is changing, and LTS usage must be in alignment with these important reform efforts. Those working in this field are being challenged to shift from being “referees” to “coaches,” to providing a system of success rather than a system of punishment, and to leverage what we do with clients in a pro-social way (Kauffman, 2018). The current patterns of using location tracking technology must therefore be re-examined, and agencies should consider how this tool can be used to “catch” clients doing the right thing and to reinforce these positive behaviors rather than using location tracking solely as a monitoring and surveillance tool.

EFFECTIVENESS

Although LTS usage is steadily growing, studies have been limited regarding the effectiveness of deterring future criminal behavior. The two most recent studies examined individuals on community supervision in Florida and California and showed electronic monitoring programs (including those using an LTS) improve compliance with the conditions of supervision. The California study of high-risk parolees convicted of sexual offenses on electronic monitoring also showed better outcomes for recidivism (re-arrest, reconviction, or re-incarceration) (Bales et al., 2010; Gies et al., 2012). Studies on the use of an LTS with individuals accused or convicted of domestic-violence-related crimes indicate that tracking positively impacts client behavior and increases compliance with conditions of supervision (Erez et al., 2012).

LTS effectiveness may be demonstrated in measures other than recidivism. As discussed, there is a potential opportunity to assist client reentry and community adjustment through the application of the structure often associated with LTS programs, with an emphasis on developing pro-social activities for those on community supervision. Location tracking may be able to help provide this structure, as clients typically must live by a strict, and often pre-approved schedule. They must leave and return home at a certain time, with detailed planning for all community activities. Most LTS programs require that the client comply with a tight schedule, devoid of excessive time for discretionary activities. For example, client schedules often only include just enough time to get to and from work and treatment, and individuals must document all of their time in the community. This structure and accountability may help clients develop a different, more productive and prosocial lifestyle.

While research on the long-term impact of leading a prosocial life while connected to an LTS is not yet available, such a lifestyle over a period of time is intuitively helpful and often provides an opportunity to learn new skills and overcome bad habits. Likewise, consistent with criminal justice practice that supports recognizing and acknowledging positive activities, an LTS provides real-time data allowing case managers to provide reinforcements to clients who maintain compliance. The accountability and structure offered by an LTS may also be an important factor with respect to treatment outcomes. Substance abuse continues to be a vexing issue affecting successful outcomes, and, as many studies have illustrated, the relationship between substance abuse and criminal activity is

problematic. A 2000 study found that individuals on electronic monitoring were more likely to complete treatment than those not on monitoring, indicating that secondary goals might also be achieved with the technology (Bonta, Wallace-Carpretta, & Rooney, 2000).

WORKLOAD AND RESOURCE IMPLICATIONS

A substantial amount of information and paperwork is generated every day for each tracked client, and this needs to be sorted through to ensure that serious violations are separated from minor issues and handled appropriately, 24 hours a day. Some have a misperception that LTS technology will reduce the headache of performing such casework duties. Let the bracelet do all the work! However, this is simply not true. Response protocols must be developed and followed, and there must be a complete understanding of workload issues—including providing for around-the-clock coverage (Brown, McCabe, & Wellford, 2007). Consequently, adequate resources need to be available. In worst case situations, agencies that fail to investigate alerts and violations in a timely manner may leave themselves vulnerable to lawsuits if a tracked client causes harm to others.

While no clear size standards for caseloads with LTS clients exist—in part due to the large variance in the amount of work allocated to the vendor or kept by the agency—the American Probation and Parole Association (APPA) recommends a ratio of 20:1 for intensive supervision and 50:1 for moderate to high-risk cases as a general rule (APPA, 2006). Further, agencies should carefully consider information technology infrastructure implications. For example, how many additional work stations will be required to monitor clients? Is the vendor's system compatible with the agency network and case management system? Will officers need mobile computing functionality to access these systems while in the field?

MANAGING AND MAXIMIZING THE POWER OF THE DATA

Each LTS generates a vast amount of data that includes location points, device status, alerts, and violations on a daily basis for each client tracked. Voluminous data sets can be viewed as a boon or a burden depending on perspective and available resources. Many agencies struggle with the amount of data and find themselves primarily responding to alerts and violations (St. John, 2014). Others are taking advantage of software innovations designed to automatically analyze individual movement patterns and alert officers of potential red flags, which might include a sudden break from an established or approved pattern, presence in locations where other tracked clients have visited at different times, or actually congregating with other clients. To optimize the potential of location data, agencies may choose to share this information with their law enforcement partners.

Many agencies have implemented manual or automated crime scene correlation systems that can identify tracked clients who were in the vicinity of a crime scene. This information can be critical to identify potential suspects or witnesses but can also potentially exclude from suspicion those tracked clients who were not in the area (Brown, McCabe, & Wellford, 2007).

Some jurisdictions incorporate LTS data as part of their larger Real Time Crime Centers (RTTC) to enhance public safety. These centers analyze, in real time, various data feeds, including video surveillance and ShotSpotter technology, as well as the location of tracked clients (Palumbo, 2014). Agencies considering this level of cooperation should check with their counsel to assure that data sharing is permissible in their jurisdiction. Further, policies and procedures should be developed that outline the relationships and responsibilities of all partners. Finally, agencies should allocate adequate resources to provide the time and information needed for follow-up with law enforcement partners.

COSTS

The costs of operating an LTS program are an important consideration for any agency. Agencies need to plan for expenses such as the purchase or lease of the equipment, lost equipment, staffing, vehicles, and administrative oversight. Not surprisingly, it costs more to supervise a client in the community with an LTS than without (Omori & Turner, 2015). Many agencies struggle with funding and debate over who should pay for these services. Often it comes down to client pay or agency pay models.



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Client-funded programs have been in existence almost since the beginning of electronic monitoring in this country, and the proceeds are used to offset operating costs. That said, easing the financial burden on the agency is not the only advantage to this approach. Some experts argue that there are benefits to the client (Connelly, 2014). For example, every time a client makes a payment, that transaction serves as a cognitive reminder of how past criminal activity has interfered with his or her life. Clients are often forced to learn new skills such as prioritizing their expenses and budgeting. They learn how to pay a bill when it is due and begin to understand that there are consequences when they do not pay on time. With the client-funded approach, the fee

amount is typically based on ability to pay, so basic needs can still be met while in the community (Connelly, 2014). The intent is to have a fair assessed fee that does not overly burden clients who are financially challenged. It should be understood that even if the client pays the entire cost of a leased tracking device, there are a number of other program costs that are not covered by the client pay model.

Some jurisdictions, such as San Francisco County, argue that supervision should be entirely publicly funded, noting that fees can result in debt, and that in turn creates barriers to successful reentry (Sernoffsky, 2018). Regardless of the philosophical approach, agencies should fully understand and plan for the costs involved in operating an LTS program.

There is some debate concerning the cost effectiveness of LTS usage. When viewed as an alternative to detention or incarceration, supervising an individual in the community with an LTS is generally more cost effective. Bales et al. estimate that the cost of imprisonment is six times higher than the cost of electronic monitoring. Other studies have documented that the use of electronic monitoring in lieu of incarceration produces a positive return on investment for dollars spent on the program (Drake et al., 2009; Washington State Institute for Public Policy, 2017). It is important to note that any savings realized from diversion or release from custody to an LTS tend to benefit correctional institutions while adding a burden to the community-based agency. In other words, the savings do not necessarily follow the individual during the transition from incarceration to community supervision.

With respect to the use of location tracking as a tool to monitor those already under community supervision, the research is somewhat mixed. The Iowa Department of Corrections examined cost-benefit analysis models supported by Pew's Results First initiative and concluded that electronic monitoring applied using the RNR (risk, need, responsivity) model can produce a savings of close to \$4,000 per client per year. In other terms, for every dollar invested in electronic monitoring the amount of benefit returned is \$3.70 (Prell, 2013). On the other hand, a California study examined outcomes of high-risk parolees convicted of sexual offenses and concluded that LTS use was not cost effective, at least not in the first year of release (Omori & Turner, 2015). Expenses associated with LTS equipment and reduced caseload sizes contributed to cost of supervision, with LTS supervision being approximately 2.5 times costlier than regular intensive supervision. These costs were not found to be offset by significant reductions in serious new crimes or incarceration costs.

IMPACT ON FAMILIES

Using LTS technology as an alternative to incarceration offers many obvious benefits to clients and their families. Compliant individuals are able remain in the community, continue working, and help raise and support their children. The importance of keeping a family unit intact cannot be overstated, particularly for females, as children can be an important protective factor supporting a law-abiding lifestyle. Further, due to the typical restrictions inherent in LTS programs, clients are required to spend much more of their time at home than they may be accustomed to. This can be positive in that clients have the opportunity to work on familial relationships. However, this can also be a source of additional stress in a variety of ways. For example, it can be a burden on the spouse when the client is home but unable to pick a child up at school in an emergency, and relationships can become strained because the client is constantly present in the home, often for the first time. Therefore, it is imperative to provide strong case management to observe and understand the family dynamics, offering assistance as needed.

STIGMA

Although technical improvements have made LTS devices less obtrusive, it remains difficult, if not impossible, to hide these devices from the view of others in public. Further, some devices are designed to make audible alerts. This can have a stigmatizing effect, particular on juveniles, and can interfere with relationships and employment. While it can be argued that any such stigma is less harmful than a period of incarceration, agencies should be cognizant of the issue and implications. Any potential harm can be mitigated if agencies follow best practices and ensure that the “right” individuals are put on the LTS for the “right” reasons and only for the length of time required to meet the objectives.

VICTIMS

Using LTS technology for those accused or convicted of domestic violence (DV) offenses is an area that warrants special attention. DV cases are different than most in that they involve a specific victim who is known to the client. In many cases a restraining order prohibits the client from contacting the victim. If the client is tracked, any attempts to gain proximity to the victim’s residence or place of work can be immediately identified. Without tracking, this behavior can go unnoticed. Furthermore, the technology can allow for the victim to be part of the tracking process. Mobile exclusion zones can warn the victim when the client is in proximity as both are moving through the community. As discussed above, tracking the movement of those with a DV history can change their behavior. That said, the volatility of these type of cases require that agencies carefully consider whether and how to use an LTS. For example, care should be taken to not inadvertently alert the client that he/she has entered a mobile exclusion zone (indicating proximity to the victim). Further, the victim should be informed that the LTS is fallible and should be cautioned to maintain vigilance at all times.

CONCLUSION

Implemented properly, location tracking can be an important community supervision tool. When used as part of a strategy to divert or release lower risk individuals from incarceration, it can save taxpayer dollars, preserve limited space for violent criminals in jails and prisons, assist in reentry and community transition, keep nonviolent individuals from exposure to more serious criminal activity, and promote the practice of prosocial behavior in the confines of one’s home. When used for clients already under community supervision, it can provide enhanced accountability, structure, and better outcomes. Many considerations must be taken into account before the full benefit of community-based monitoring can be fully realized. Some of these considerations are listed below:

- Criminal justice stakeholders must be educated about the value of using location tracking in lieu of incarceration for appropriate individuals who can safely serve their time in the community.

- LTS monitoring should be coupled with risk assessment to prioritize its use in order to ensure public safety and greatest cost-effectiveness for limited public resources.
- LTS monitoring paired with needed services (such as employment programs and substance abuse treatment) can have the greatest impact on reducing future criminal behavior.
- Attention and resources should be at a level sufficient to fully leverage the information generated by an LTS. Data analysis software is encouraged for a more effective program, including crime scene correlation that requires cooperative relationships with law enforcement agencies.
- Agencies should plan for adequate staffing and funding to respond appropriately to alerts and violations.
- Staff and stakeholders must be provided sufficient training so that all are aware of how the equipment works, its limitations, and the kind of information that can and cannot be provided.
- More research is encouraged on the utilization of the different types of technology, when it is or is not used in conjunction with programs, and impact on families and future criminal behavior.

As agencies think about the implementation of LTS programs, they may consider the guidance offered by national leaders through the Statement on the Future of Community Corrections (Harvard, Kennedy School, 2017). Applying the principles of that statement to the present topic would produce the following recommendations: Use an LTS only for those individuals who truly require this intensive level of supervision (as determined by risk assessment or current custody status); use this tracking only for the length of time necessary to accomplish supervision objectives, with incentives for early removal; and eliminate or significantly curtail LTS fees.

As those in the criminal justice field continue to strive for increased efficacy and try to ensure their reform efforts are informed by and consistent with research on best practices, it is hoped that LTS programs will be viewed as part of effective reform. However, use of such tools alone is not enough. What is needed are well-planned programs using this technology. These can be a valuable addition to the spectrum of criminal justice options and, when used optimally, can be a potent force that ultimately provides greater public safety at a reasonable cost in dollars and human life.

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