

Electronic Monitoring for Pretrial Offenders

How public safety agencies can leverage EM technology to reduce recidivism and jail expenditures despite limited funds and personnel

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A Numerex Solution

Electronic Monitoring for Pretrial Offenders: *How public safety agencies can leverage EM technology to reduce recidivism and jail expenditures despite limited funds and personnel*

Why electronic monitoring solutions are on the rise

Law enforcement and corrections agencies across the country face a growing issue. As the number of offenders entering the judicial system increases, the costs associated with them put a strain on the entire system.

By 2008, one in 100 adults was in prison or jail, and one in 45 was on probation or parole.ⁱ Between 1979 and 2012, corrections spending nationwide rose by 324 percent to \$71 billion, and the population of state and local corrections facilities surged more than four-fold to nearly 2.1 million.ⁱⁱ

As these numbers continue to grow, law enforcement agencies are looking for ways to monitor more offenders with limited resources. One of the best ways law enforcement can achieve significant time and cost savings is by using offender tracking technologies, also known as electronic monitoring (EM) tools, for tracking nonviolent, pretrial or repeat offenders without direct personal supervision or incarceration. Because EM systems require far fewer resources than physical detention, this technology frees up budget dollars for solving and preventing crimes.

Making the case for an EM system

Agencies nationwide are using EM to monitor pretrial and nonviolent offenders. All 50 states now use some form of electronic surveillance to monitor more than 100,000 offenders.ⁱⁱⁱ

The benefits of implementing an electronic offender monitoring program include:

- Lower personnel costs
- Increased efficiencies in tracking multiple offenders
- Reduced rate of recidivism for repeat offenders
- Reduced crowding in jails and prison systems

Cost savings

Perhaps more significant is the potential for cost savings. According to the Pew Center on the States, one in eight state employees works in corrections.^{iv} The average cost to jail an offender is roughly \$85 per day, and community supervision of nonviolent or paroled offenders by police or corrections personnel is labor-intensive and similarly costly.^v Compare to an estimated \$15 per day to put an electronic ankle monitor on that offender.^{vi} Some departments have reported even lower EM costs, as little as \$5 per day.

Increased efficiency of department personnel

Rather than sending patrol officers to make in-person visits to every offender, EM allows constant remote monitoring of all tracked individuals. The system provides alerts when an officer's attention is needed, enabling officers to focus on more pressing tasks. Because EM requires fewer officers for labor-intensive check-ins, offender monitoring can be effectively accomplished with a smaller staff, which reduces overtime and payroll costs.

For example, the Charlotte-Mecklenburg Police Department in North Carolina began using EM to expand the reach of its offender curfew program in 2006. Lieutenant Lebraun Evans, who manages the EM unit, says his unit of eight sworn officers and two administrative personnel would not be able to monitor the roughly 400 offenders they track each day without an EM solution.

"There just aren't enough of us to go visit people that often," said Evans. "Because it's done automatically, that saves us from having to continually call or check."

Reduced recidivism for repeat offenders

Recidivism and repeat offenses are a serious problem. A study by the Bureau of Justice Statistics reports that about 68 percent of offenders are arrested within three years of release, and more than 76 percent are arrested within five years of release.^{vii}

EM provides an effective community supervision strategy that reduces the need for costly imprisonment and improves public safety. According to a study conducted at Florida State University, EM reduces the likelihood of failure under community supervision by about 31 percent as compared to offenders not placed on EM.^{viii} Charlotte-Mecklenburg reports a 3-5 percent recidivism rate for the offenders in its EM program – compared to roughly 70 percent of offenders nationwide.^{ix} Evans attributes the difference to effective monitoring. “It’s a strong deterrent when you know that if you commit a crime, we’re going to know that you were there,” he said.

Reduced crowding in jails and prison systems

In light of reduced recidivism rates, budgetary savings and reduced need for additional jails and prisons, judges are increasingly likely to consider electronic monitoring as a viable option.

The Kansas City suburb of Lee’s Summit performed a study to gauge the feasibility of EM for pretrial release in its municipal courts. The city jail does not have the capacity to house prisoners overnight for extended periods, and the study determined that an EM option would provide judges with a viable alternative to incarceration.^x

A statewide survey of municipal and county judges cited in the report revealed that more than half view EM favorably. One county judge said, “It provides options and tools we otherwise wouldn’t ordinarily have, so it’s very important to how we effectively control the jail population.” Another judge said, “In many cases, EM is a viable alternative to pretrial incarceration” and suggested that an offender’s behavior during monitoring could assist in consideration for probation.^{xi}

Key elements to look for when choosing an EM system

An EM system comprises a hardware component – the wearable ankle bracelet tracking device – and the software application to manage and monitor the individuals wearing them. Adding an optional beacon unit allows for better indoor tracking and an alternative communication mechanism.

Should an agency decide to pursue an EM solution, it’s important to know what to look for in an offender tracking system. Reliability, accuracy, coverage, false alerts and ease of use vary by solution. Potential pitfalls include gaps in knowing offender whereabouts, increased work for officers due to false alerts and a frustrating application interface.

Here are eight things every law enforcement agency should consider to choose the right solution.

1. Support for multiple mobile operators

The ankle bracelet should be certified for use by Tier 1 mobile cellular service operators such as Verizon and Sprint. These providers typically have large coverage areas, extensive infrastructure and substantial financial resources, plus several roaming partners.

Access to a variety of operators enables agencies to use electronic monitoring for a broader range of offenders who may live in disparate areas not covered by a single operator. Choosing a vendor that offers devices supported by multiple operators provides flexibility to select the most suitable device based on coverage of specific offender home and work areas.

2. Two-way communications

EM systems have evolved in recent years to enable law enforcement to communicate with offenders in addition to tracking their movements. A modern system should allow officers to contact the offender directly by triggering the ankle bracelet to vibrate or beep. In turn, the system should enable the offender to provide acknowledgement of contact by pressing a button on the anklet or calling the monitoring agency.

This feature can be used to minimize recidivism or flight by reminding offenders who approach their geofence boundaries that they are being tracked at all times, as well as to remind offenders that it’s time to charge their ankle bracelets.

“It saves us a lot of time and manpower compared to sending someone out when we can’t get a hold of someone,” said Evans. “We know that we can reach you because the device that’s communicating with you is attached to you.”

3. *Mobile apps*

The use of mobile technology continues to grow in policing. Smartphones and tablets empower officers to act on notifications immediately, anytime, anywhere, without having to wait to reach a computer, and a successful EM system should enable officers to monitor offenders while on patrol for faster response times and greater access to actionable intelligence in the field.

4. *Intuitive interface and customization*

The user interface should be intuitive and easy to use so agency staff can quickly and easily set up and change allowed zones, alerts and other features. A general rule of thumb is that an officer should be able to reach the screen of most frequently performed actions in less than two clicks from any place in the application. This enables staff to be more productive.

A mobile EM solution should provide alert notifications through text or email to equip officers in the field with real-time data. Such alerts reduce the workload for officers and other staff, who can spend less time personally monitoring each offender's behavior. This further reduces the number of operators needed to manage offenders tracked via EM.

5. *Geofencing options*

Control applications should give officers and other staff the ability to create a wide variety of geofence inclusion and exclusion zones for individual offenders or offender types. Inclusion zones can vary by time of day to reflect when an offender is at work, or when a curfew dictates that he or she must be at home.

Some examples of inclusion zones include:

- An offender's workplace
- An offender's home
- Probation office

Some examples of exclusion zones include:

- A victim's home
- A victim's workplace
- Schools and playgrounds

The system should provide options for alerts. For example, a monitoring agency might want to establish one-mile buffer zones beyond the boundaries around forbidden locations to give officers time to respond by pre-emptively contacting or intercepting the offender or victim. In addition, a system that allows officers to establish and apply public geofences that apply to multiple offenders, such as geofences around schools for sex offenders, saves officers time when setting up new individuals for monitoring.

6. *Multiple location technologies*

An EM solution should include multiple channels – short range (RF/beacon), GPS and cellular – to provide fail-safes and multiple layers of location technology for reliable and accurate tracking. Because all these technologies are not available at all locations, an ankle bracelet that can use multiple location technologies increases your agency's ability to track its whereabouts at all times. Multiple locating options also extend the battery life of the tracking device because it can conserve power by using the strongest available signal at any given time.

For maximum accuracy, look for a GPS-first solution. GPS provides greater location precision than any cellular network can provide by itself, making it a must-have feature. There is a 6 percent improvement rate in the reduction of supervision failures for offenders placed on GPS supervision relative to offenders placed on RF supervision.^{xii}

Cellular and satellite signals can enhance coverage but may encounter gaps when an offender is indoors or in crowded or GPS-impaired environments. Assisted GPS (A-GPS) leverages the cellular network for downloads and triangulating an offender's location when he or she is in areas with poor satellite signals that decrease the effectiveness of GPS. An added RF beacon can further ensure connectivity and accuracy in places with poor cellular coverage or in densely populated areas such as high-rises and apartment buildings.

7. Low false-alert rate

Alerts are the key to electronic monitoring, but a deluge of false positives undermines that benefit – sometimes with deadly consequences. In some cases, the sheer volume of false alerts and the associated workload has meant that serious violations went unheeded.^{xiii}

For example, corrections officials in Orange County, Florida, had so many false alerts that they shut off real-time notifications for all events except device removal. That allowed one offender awaiting trial to violate his curfew 53 times in a single month, during which he shot three people, killing a man who was supposed to testify against him.^{xiv}

Look for a system with a low false-alert rate to avoid overwhelming staff and wasting resources. Multiple location technologies provide more accurate tracking and improved battery life to minimize false positives. Device design is also important.

A 2012 DOJ study of California’s EM program for high-risk sex offenders found that strap/device tampering accounted for 13 percent of alerts.^{xv} For example, an alert like “potential jamming alert” is not conclusive and requires an officer to investigate whether the offender is interfering with the ankle bracelet. Ankle bracelets with tamper-proof features such as single-piece design greatly reduce the rate of false positives and ensure that your agency is dedicating time and resources to investigating real violations.

8. Aging alerts

Another important feature is aging alert notifications. When an alert appears in the monitoring application, the agency should take steps to investigate, address the issue and close the alert, but sometimes an alert is unattended to or persists for various reasons. By calling attention to any outstanding alerts, aging alert notifications provide a tool for greater visibility to keep offenders from slipping through the cracks. Aging alerts should be configurable so that each agency can set the appropriate time limits for their needs. For example, an agency could designate a time limit of two hours for acknowledgment of low battery reminders. If an agency receives a low battery alert and contacts that offender to charge his or her battery but that offender does not reply within two hours, that alert becomes an aging alert, highlighted in the application for follow-up.

Omnilink, a Numerex solution

To see how these technologies come together for a holistic solution, consider Omnilink, which consists of the OM400 ankle bracelet and FocalPoint monitoring app, operating on the Numerex network. The ankle-worn electronic monitoring device provides two-way communication to track and alert offenders 24/7, and the FocalPoint app leverages the GPS built into an officer’s smartphone to help navigate to an offender’s location. This enables faster response times and eliminates the delay and potential inaccuracy of a manual address search. The OM400 device minimizes false positives and negatives with features such as a patented no-cut strap design, longer battery life and multiple location technologies. The single-piece design avoids separation, which is a source of false alerts with two-piece models that consist of body-worn and body-attached devices. The OM400 ankle bracelet can precisely verify in-home locations within 11 meters using both GPS and cellular¹ signals, and an optional RF beacon extends battery life and the ability to verify indoor locations.

Each device contains a custom-designed antenna precisely tuned to its RF signature, and the firmware cycles each GPS receiver on and off at a much faster rate than a cellphone for added data and longer battery life. Further, the FocalPoint application refines each offender’s locations on the agency’s server to reduce false alerts.

Conclusion

Electronic monitoring provides the most cost-effective approach for many offenders and has the potential to greatly reduce the burden on law enforcement to track these individuals.^{xvi} At least one major study has found that GPS monitoring reduces recidivism rates.^{xvii}

A successful EM solution will include the eight features described in this whitepaper:

1. Support for multiple mobile operators broadens the reach of an EM system, providing a broader range of coverage.

¹ Cellular triangulation accuracy depends on the cellular tower density of the area.

2. Two-way communications are essential to ensure that officers can contact offenders directly and receive acknowledgement.
3. Mobile apps enable officers to track offenders using smartphones and tablets in the field for rapid response.
4. A highly intuitive user interface with easy site-level customization enables agency staff to efficiently manage offenders' authorized zones and other features without vendor intervention, saving time and money.
5. Ample geofencing options track and restrict an offender's movements, and the system should provide alerts when offenders are not where they are supposed to be.
6. Multiple channels of connectivity, with GPS as the primary mode, provide fail-safes for reliable and accurate tracking.
7. A highly accurate system with a low false alert rate conserves valuable time and resources for addressing actual violations. Look for devices with tamper-proof features and a smart monitoring application that recognizes behavior patterns.
8. By calling attention to any outstanding alerts, aging alert notifications provide a tool for greater visibility to keep offenders from slipping through the cracks.

Choosing the right electronic monitoring solution means your agency can successfully supervise more offenders with limited resources to make the most of your available staff, reduce repeat offenses and recidivism and better serve the community by improving public safety.

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