Elements of a Successful Home Detention (RF) Program

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Note: This course is limited to home detention technologies. To include GPS (offender tracking technologies) would involve too much material to cover for the timeframe of this course. A course entitled "Elements of a Successful Offender Tracking Program" has been prepared for that information.

A brief history

When we actually entered Rome, they let Paul live in his own private quarters with a soldier who had been assigned to guard him.
Acts 28:16[i]

The concept of house arrest is not new. The Romans used this form of confinement in the first century AD for selected individuals who had status or influence within the community. The Apostle Paul may be the best known early example of this form of alternative confinement. Fifteen centuries later, a Roman inquisition ordered Galileo Galilei to spend the last years of his life under house arrest for adhering to the heliocentric theory of the solar system. What *is* new is the advancement of technology that allows for the remote monitoring of a participant's compliance with terms of home confinement. The assignment of a Roman soldier to enforce a sentence of house arrest is no longer needed!

In 1964, Harvard psychology professor Ralph Schwitzgebel, together with William Hurd, developed a radio frequency system that monitored a few offenders in a concept experiment. The system included a transceiver device assigned to the offender and a series of repeater stations that were strategically located in places where offenders were required to be, including their personal residences. When an offender's transceiver device was in the proximity of one of these repeaters, his presence at that location was displayed on a map at the monitoring station.[ii]

A few years later, Professor Schwitzgebel's "machine" was modified by his twin brother, Robert, also a university professor (UCLA). The enhancements included a positive feedback system that "rewarded" participants when they were at a required location at the right time.[iii] This early system was never intended to serve as a punitive sanction, nor was it ever foreseen as an alternative to incarceration. The system's goal was to reinforce behavior that was deemed to be in the best interest of the participant. The technology remained dormant for nearly 15 years.

In 1977, unaware of the Schwitzgebel machine, the Honorable Jack Love, a district judge from Albuquerque, NM conceived of a system that would remotely monitor the presence of an offender at home while under house arrest. His inspiration came from a Spiderman comic strip that featured a "tagged" villain who was being tracked by the superhero. By 1983, with the help of engineer Mike Goss, also of Albuquerque, the first house arrest home monitoring prototype was developed. It was tested on Albuquerque probationers with less than stellar results. (Note: This author was employed by New Mexico's Probation and Parole office in Albuquerque at this time and was able to witness these events first hand.)

Cash strapped, Mr. Goss took the contraption (which had become known as the "Gosslink") to a small company in Boulder, Colorado, that had developed a feed rationing technology. Cattle wore transmitters encrypted with a unique code that communicated with the device that dispensed the feed. If a cow (or bull) reached its daily allotment, the dispenser would stop providing feed. Although these two technologies seemed worlds apart, Mr. Goss felt the basic elements of the house arrest system were present in the feed rationing system. The Boulder company was BI, Inc., which is now the largest manufacturer of house arrest equipment in the world.

The equipment

The system and its components go by many different names. House arrest, home detention, and radio frequency (RF) are among the more common terms used to describe the monitoring systems. There are two basic components of a monitoring system, the transmitter (typically an ankle bracelet) and the receiver (typically placed in the home). There is also a communications infrastructure and a monitoring center needed to complete the system. This will be discussed later.

The ankle transmitter produces a unique code that is received by the home unit when it is within its proximity. The better systems use a complex encryption system that continuously alters the code in order to make it difficult, if not impossible to duplicate. The transmitter is attached to the ankle (or occasionally the wrist) with a tamper sensitive strap. Most bracelets use fiber optic cables that are embedded into the strap material. If the light traveling through the cable is interrupted (such as when the strap is cut off), a **strap tamper** is recorded. Some vendors use straps made from conductive materials that sense a cut strap when the small current of electricity is interrupted.

The bracelet, together with the strap, is secured to the offender in a variety of ways. Typically, a set of pins or clips are used to lock the device securely on the offender. Some vendors offer an attachment parts that are tamper evident. Any attempt by offenders to remove the pins or clips will result in the pieces breaking and can be easily seen from a safe distance. Any attempt to remove the device that involves disassembling the attachment parts should result in a **bracelet tamper** alert. At a minimum, agencies should assure that the equipment selected offers equipment that detects both strap tampers and bracelet tampers violations. A third tamper

related to the transmitter is a **body tamper**. This alert is generated when the bracelet senses that it is no longer positioned against the body.

Each transmitter is powered by a battery. The battery life should be at least three months with the better designed bracelets working up to a year on the same battery. Some equipment has sealed cases while other designs allow for officers to replace weak batteries in the field. This is a consideration that should be given some thought prior to selecting a vendor. When a transmitter's battery comes close to the end of its functional life, a **low transmitter battery** alert should be generated. This alert should occur several days prior to the battery going completely dead to allow time for the assigned staff to replace the battery (or bracelet) without any interruptions in monitoring the offender.

The receiver, which continuously listens for the signals produced by the assigned bracelet, is typically placed in the participant's home. If possible, it should be positioned in a central area of the residence on a table and away from large appliances that could shield the reception of bracelet transmissions or electronics that produce electromagnetic radiation that could interfere with reception. Because the receiver will need to be connected to power and telephone service, the placement of the device should be near these outlets.

The system should have the capability of detecting a **receiver tamper**. Some offenders will try to disassemble the receiver. Any such attempt can be detected by spring loaded pins, light sensing devices or other technologies designed to monitor the integrity of the receiver's condition. The receiver should also detect and report **telephone line disconnect** and **power cord disconnect** events. If a telephone line and power cord are both disconnected and later reconnected, there is a possibility that the device has been moved to another location. Some

vendors use motion detection technology to help assure that the device remains at the location where it was installed.

If power is lost, the device should continue to work off a back-up battery located inside the receiver. This battery should be able to power the device for two or more days. A **low receiver battery** alert should be generated several hours prior to the device losing auxiliary power.

Many vendors provide receivers that can be placed in a test mode, demonstrating whether the receiver can detect the bracelet transmissions at all locations within the residence. Taking the time to perform this test during each installation can save a significant amount of time responding to false alerts later on. Also, many vendors offer varying reception levels. An offender living in a large home in a rural area may be allowed a longer "leash" than a participant living in a high rise apartment complex in the city. Some vendors' equipment offer three radius settings (short, medium and long). Keep in mind, the environment within the residence should be considered when selecting the reception sensitivity setting. Even a small metallic or adobe structure may require the longest radius setting.

A commonly used optional piece of equipment is the drive by unit. This device can listen for and record the signals of any nearby transmitter. Supervising officers can position themselves near a group counseling meeting and take "electronic attendance". They can drive to an offender's employment and confirm his presence at work without having to physically see him. Users should have the option of powering a drive by device with a rechargeable battery, a car power adapter or a 110 volt outlet. Also, a portable antenna and a magnetic car mount antenna should be offered by the vendor.

Agencies should also consider the breath alcohol detection option offered by many of the vendors. Offenders are periodically called during home confinement periods and instructed to blow into the alcohol detection device that is connected to the home receiver. Voice verification technology or digital images are used to assure the test is taken by the participant, and not someone else in the household. This option is especially valuable to agencies that use home detention for drunk driving convictions or for offenders who violate terms of traditional supervision by abusing alcohol.

The monitoring center

The home receiver monitors the presence or absence of the transmitter device forwards that information, along with any status alerts, to the monitoring center. The monitoring center compares the "enter" and "leave" data received from the field and compares it to the schedule that was established by the agency. Should a **schedule violation** occur, the monitoring station must promptly generate an alert and send it to the appropriate personnel.

The monitoring center can be operated by the vendor or by the agency. Unless there are very good reasons for the contrary, it is recommended that agencies allow the vendor to do the monitoring. They are more likely to be a better staffed, more secure and a better equipped center than most agencies could operate on their own.

The monitoring center should have redundant power sources including a backup generator independent of public utilities. The center should have redundant servers to allow for a quick and seamless transition should a computer fail. Historical data should be kept in a secure location off site. The monitoring center staff should be well trained to be cordial and helpful. They should be carefully screened for any criminal record that would cause a concern to the an

agency. Also, the monitoring center should be aware of any staff's family members or significant others whose personal situations may give rise to a conflict of interest. The center should be adequately staffed 24 hours each of the year.

The monitoring center should have software in place that anticipates the next scheduled call from each home receiver unit. Should a receiver fail to make one of its scheduled "call-ins", a **missed call** alert should be generated and forwarded to the assigned officer (or designee). Any portion of the software that is designed for agency access should be user-friendly and well thought through. A vendor should not release a new version of software until it has been thoroughly tested and found to be fully functional.

Response protocols

Before an agency begins monitoring offenders, a response protocol needs to be established for each type of alert that will be generated from the system. Once a vendor is selected, the program manager should receive a list of all alerts that the selected system will generated. After fully understanding the significance of each alert, a priority should be given to each one. The response does not need to be the same for each offender. For example, a very high risk offender that has a device that is disconnect to a power source may need to be immediately visited by a field team, regardless of the time of day. On the other hand, a low risk participant whose equipment generates the same alert may be visited the following morning. A response matrix diagram that shows how such a strategy could be implemented is provided on the following page:

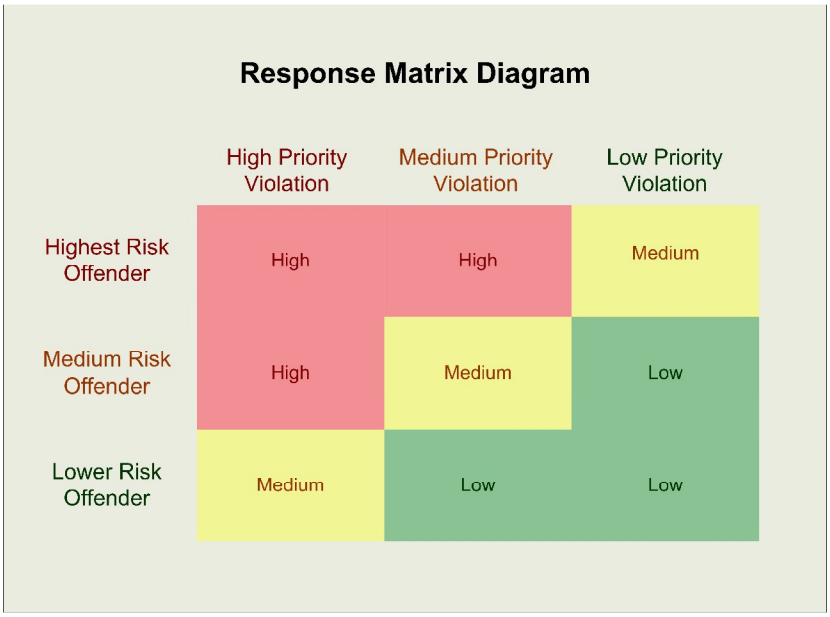

Chart provided by Correct Tech, LLC

A "High" response would typically require immediate action 24 hours each day. "Medium" responses may require action as soon as staff become available while a "Low" response may require a next morning follow-up, perhaps even by telephone. An agency can establish any responses they deem appropriate, as long as consideration is given to the potential risk to the community.

The biggest limitation to creating effective responses to program alerts is manpower. Most probation and parole agencies have enough staff to cover one shift during weekdays. Obviously, offender monitoring alerts can occur at any time, and happen most frequently during curfew hours when staff availability is scarce. An agency considering a house arrest program must dedicate sufficient personnel resources to the project. Agencies that simply place their week day staff on call to handle alerts will quickly realize that their programs are not sustainable. Officers will quickly tire of being awakened at night and burn out. Staff turnover will soon

plague the agency. The agency will spend a disproportionate amount of time dealing with employee grievances, non-productive employees (due to sleep deprivation) and union issues that they will question their decision of starting a program.

A much wiser approach is to schedule staff around the clock. A relatively small number of well trained employees can address alerts that occur during the evening and weekend shifts. These staff members must not only thoroughly document their activities through case ledgering, they should also provide a full debriefing to the next shift that comes on duty. By establishing a good communication process, an agency will find that sharing the responsibilities of offender supervision with several shifts can be accomplished with little difficulty.

Budget planning

Obviously for a program to be successful, it must be properly funded. Unfortunately, many agencies underestimate the cost of implementing a home detention program. Vendors will often entice agencies to begin a program to alleviate a prison or jail overcrowding problem. The average daily cost of incarceration is compared to the daily lease rate of the equipment, leaving the administrator with the mistaken impression that the difference will be savings realized by the agency.

There are many other costs that must be considered when planning a budget for a monitoring program. As mentioned in the last section, **personnel costs** will be significant. Increased staffing levels are required to address the increased workload. **Overtime expenses** will escalate because shifts must be covered. If an employee takes leave, another must take his place, perhaps leading to an overtime situation. A **program manager** should be hired to oversee the implementation and day to day operation of the program. **Training costs**, **transportation**

expenses, **office supplies** and **furnishings** all need to be accounted for. After a careful evaluation of all program costs, there should still be significant savings over costs of incarcerating the participants. However, these savings may be significantly less than were initially anticipated.

Many agencies begin monitoring programs with no funding, instead relying on an offender pay approach. This strategy is seldom successful. The offender population is typically a poor risk for the timely payment of financial obligations. Many offenders struggle to find meaningful employment and have many personal financial obligations, not to mention other court imposed financial sanctions such as restitution, supervision fees, fines and other obligations. This often creates a classic "set up to fail" scenario. An offender may be allowed to stay in the program for a month or two before the agency realizes that the bill will not be paid. Also, offenders arrested for new criminal activity will more than likely not pay their balances owed. These situations will occur with all programs, and should be properly considered when planning a budget.

It has been the experience of many agencies to experience as little as a 25% to 40% collection rate. Vendors are not happy when their invoices go unpaid. Many agencies unexpectedly find themselves in the position of having to pay the balance, causing significant budgetary problems. If an offender pay model is utilized, it is best to think of their fees as a contribution to fiscal requirements of the budget, but not as a totally offender funded program.

Evaluation and adjustments

All successful programs must be regularly evaluated. Clear, measurable goals should have been established from the outset. Progress toward reaching these goals should be regularly

measured. If an objective of the program was to reduce jail overcrowding, the number of jail beds were freed by the program should be counted. If the objective was to provide an alternative to probation revocation, the number of probation violators that successfully finished the program should be tallied.

With this data in hand, a manger can demonstrate to policy makers that tax dollars spent on well-run offender monitoring programs are wisely spent. Public officials seldom hear of any positive news coming from the criminal justice system. When they learn of a program that is working, they will likely be eager to continue its funding and may even increase the size and scope of the program. Utilizing this technology to help solve nagging criminal justice problems is an exciting proposition. Agencies that operate well-run programs almost always have staff that responds with positive attitudes that are fully committed to the program's success. This enthusiasm is often shared with the offenders who welcome the opportunity to be given a second chance and do their best to make positive and meaningful changes in their lives while participating in the program.

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[i] Peterson, Eugene H, The Message: The Bible in Contemporary Language, NavPress, 1993, Colorado Springs, CO
[ii] Gable, Ralph Kirtland, "Electronic Monitoring: Positive Intervention Strategies", *Federal Probation*, Volume 69, Number 1
[iii] ibid