

ELECTRONIC MONITORING

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EXECUTIVE SUMMARY

The concept of electronically monitoring offenders in the community was conceived by an American psychologist, Dr. Robert Schweitzgebel in the 1960s, but it took almost twenty years to become a reality in corrections. Electronic monitoring programs have been introduced in the United States, Canada, the United Kingdom, and many other nations world-wide in an effort to reduce prison populations. Currently, electronic monitoring programs use either continuously signaling or programmed contact devices. Continuously signaling devices have three essential components: a transmitter, a receiver/dialer and a central computer. The transmitter is strapped to the offender's wrist or ankle and broadcasts a coded signal over a telephone line at regular intervals. The receiver/dialer picks up signals from the transmitter on the offender and reports to a central computer when the signals stop and start. In programmed contact systems, a computer calls the offender at random or at specific times, and then reports on the results of the calls. In the future, Global Positioning System (GPS) technology may be used to track offenders' every move.

Electronic monitors can be used on a number of offender and suspect groups and situations, including pre-trial defendants on conditional release and convicted offenders on probation or parole. It may also be used as part of intensive supervision or work release (day parole) programs. In some jurisdictions, electronic monitoring is used to supervise both adults and youths. Corrections research has yet to show that these applications are effective for the various offender groups they target. To the contrary, it appears that recidivism rates are similar for offenders monitored electronically and those who are in the community under traditional forms of supervision.

The issues raised in the electronic monitoring debate concern the constitutionality of monitoring, effects on the offender and his family, cost-effectiveness and net widening. When electronic monitoring was first introduced, there was concern that the constitutional rights of offenders might be violated, for example, electronic monitoring could infringe on an offender's rights to privacy and equality under the law, however, it is generally conceded that offenders are not afforded the same degree of constitutional protection as other citizens. With respect to the effects of electronically monitored supervision on the offender and his family, some studies have shown an association between home confinement and domestic violence, yet offenders feel that having the opportunity to maintain close contact with their families is the greatest benefit of electronic monitoring. Issues of cost are far from resolved. Electronic monitoring costs a fraction of the amount required to house an offender in a prison and monitored offenders can be employed and pay taxes, as well as supervision fees, if required. However, if electronic monitoring is not being used to monitor custody-bound offenders, but rather, those who would have received another community-based sanction, the total cost to the correctional system will rise. There is considerable evidence that electronic monitoring has widened the corrections

net by providing a more intrusive and expensive alternative, not to incarceration, but to regular probation and other community sanctions. Unfortunately, this outcome runs contrary to the original intent of those who conceived of, and developed, electronic monitoring programs - to reduce the number of inmates in correctional facilities.

INTRODUCTION

At a time of increasing public pressure to protect society from criminals, while keeping corrections budgets under control, electronically monitored home confinement is becoming an increasingly popular means by which to supervise and control offenders in the community. In the United States, for example, only 826 offenders participated in electronic monitoring programs in 1987 (Schmidt, 1998); by 1998, this number had increased to over 95,000 (National Law Enforcement Corrections Technology Center (NLECTC), 1999). Other countries, including Canada, the United Kingdom, Australia, New Zealand, Singapore, South Africa, Sweden and Holland have implemented electronic monitoring programs to varying degrees (Dodgson & Mortimer, 2000).

Electronic monitoring, also called 'tagging,' allows justice personnel to quickly and easily confirm that an offender is at a specified location when he or she is required to be present. When an offender is placed in an electronic monitoring program, a tamper-resistant electronic device is attached to his or her wrist or ankle. The device transmits an electronic signal, usually through a telephone, indicating whether the offender has had any unauthorized absences or has tampered with the device. A continuing question in the debate over electronic monitoring is whether it represents the ominous advent of George Orwell's 'Big Brother' or a technological breakthrough that can revolutionize community corrections.

ELECTRONIC MONITORING TECHNOLOGY

The first electronic monitoring device was developed in the mid-1960s by Harvard psychologist Robert Schwitzgebel (Gomme, 1995) who felt that his invention could

provide a humane and inexpensive alternative to custody for many people involved in the justice process. 'Dr. Schwitzgebel's Machine,' as it was called, consisted of a battery pack and a transmitter capable of emitting a signal to a receiver within a quarter-mile range. Although Dr. Schwitzgebel patented the device in 1969, the actual practice of electronically monitoring offenders did not start until the 1980s (Nellis, 1991).

In 1977, Judge Jack Love of Albuquerque, New Mexico was inspired by an episode in the Spiderman comic book series to explore the possible use of electronic monitoring for offenders. Spiderman, the comic book hero, had been tagged with a device that allowed a villain to track his every move. Judge Love persuaded an electronics expert, Michael Goss, to design and manufacture a monitoring device and in 1983, Love sentenced the first offender to house arrest with electronic monitoring (Gomme, 1995). Palm Beach, Florida quickly followed Albuquerque and adopted the device in its program to reduce jail overcrowding (Nellis, 1991). Electronic monitoring schemes grew rapidly in the United States and, by 1988, there were 2,300 offenders in 32 states who were being electronically monitored (Schmidt, 1998). Ten years later, the use of electronic monitoring had skyrocketed: in January of 1998, over 95,000 electronic monitoring devices were in use (National Law Enforcement Corrections Technology Center (NLECTC), 1999), which is more than a forty-fold increase from 1988 to 1998.

There are two basic types of electronic monitoring equipment, continuously signaling and programmed contact. Continuously signaling, or 'active' systems have three essential parts: a transmitter, a receiver/dialer and a central computer (Schmidt, 1998). The transmitter is strapped to the offender and broadcasts a coded signal over a telephone line at regular intervals. The receiver/dialer picks up signals from the offender's transmitter and reports to a central computer when the signals stop and start. The computer compares any signal interruptions with the offender's curfew schedule and alerts correctional officials to unauthorized absences.

In a programmed contact (or passive) system, a computer is programmed to call the offender at random or at specific times, and then reports on the results of the calls. Programmed contact devices are referred to as 'passive' since the offender's presence at home is only noted when the computer calls. When a call is placed to his or her residence or place of work, an offender may verify his or her presence in a number of ways. Some offenders may wear a device strapped to their wrist that is inserted into a verifier box connected to the telephone to verify that the offender is present when the computer calls (Schmidt, 1998). Some programmed contact systems use voice verification technology that analyzes the offender's voice when he or she answers a call (NLECTC, 1999). The voice print recorded at the time of the call is matched to a print recorded when the offender entered the program. Other systems may require the offender to wear a pager and call a specified number when the pager beeps. Caller-ID technology establishes whether the offender is at an approved location (home, work, school, etcetera) at a specific time.

None of the monitoring devices currently used can track an offender's movement. Rather, they simply confirm whether or not the individual is at an approved place at specific times. Recently, a number of American companies have developed tracking systems for

potential use in community corrections. Global Positioning Satellite (GPS) technology is one means by which offenders could be monitored 24 hours a day. If an offender were to violate the conditions of a electronic monitoring order, the GPS could pinpoint his or her precise location, making the offender's apprehension by law enforcement authorities a relatively easy task. At present, GPS monitoring systems designed to track offenders are still in the development stage. Prototypes currently being tested are heavy, weighing at least five pounds and require recharging daily (NLECTC, 1999; On Guard Plus Ltd., 2000). It may, therefore, be some time before tracking technology will be introduced as a means to electronically monitor offenders.

ELECTRONIC MONITORING PROGRAMS

Electronic monitors can be used on a number of offender and suspect groups and situations, including pre-trial defendants on conditional release and convicted offenders on probation, parole or house arrest. It may also be used as part of intensive supervision or work release (day parole) programs. While most of these applications have been operational for years, corrections research still shows no clear consensus on whether these applications are effective for the various offender groups they target. In this section, a variety of electronic monitoring programs will be described and studies of these programs will be reviewed. Three general groups of offenders or suspects will be considered: adult offenders awaiting trial, adults who have been sentenced and juvenile offenders.

Pre-trial Monitoring

If a decision is made to release an accused on a recognizance bond (a bond that does not require a payment to be made to the court) in some areas in the United States, a judge may order that the accused be monitored electronically. Monitoring at the pre-trial stage allows offenders with limited financial resources to return to their homes to await trial, rather than spend weeks or months in custody. Without monitoring, some argue, poorer individuals would be more likely to remain in custody until their trial finishes.

Coopridier & Kerby (1990) studied the implementation of pre-trial electronic monitoring for adults in Lake County, Illinois. In 1983, Lake County was facing a major jail overcrowding crisis. In response, the Lake County Division Court Services established a Pretrial Services Unit, whose main goal was to provide the court with information on defendants who were eligible for release on a recognizance bond, thereby alleviating the overcrowding crisis by reducing the need for a cash bond. In February 1986, a Pretrial

Bond Supervision (PTBS) component was added, which includes the use of electronic monitoring as one of its supervision tools.

Cooprider and Kerby (1990) provide statistics comparing the pre-trial violation rates and success/failure rates of Lake County clients who were electronically monitored and those who were not over the three years from 1986 to 1988. The Lake County program statistics indicate that pre-trial electronically monitored clients committed more violations (19%) than those not electronically monitored (13%). This could be explained, in part by the risk level posed by the electronically monitored clients. In general, the riskier clients - more serious charges, repeat offenders, offenders already on some other form of community supervision, those with a history of failure to appear or chemical dependency - were the ones supervised with electronic monitoring. Also, the intrusive nature of electronic monitoring increases the chances of getting caught in a home curfew or tampering violation. Electronically monitored clients also committed more technical violations than those not monitored. However, the non-monitored clients had more new arrest and failure to appear violations than electronically monitored clients.

The researchers drew several conclusions from the Lake County program data. First, as an alternative to pre-trial detention, supervision with selective use of electronic monitoring was deemed a viable option. With the use of electronic monitoring, a higher risk clientele could be released with the assurance that effective supervision would be provided and compliance with court-ordered conditions maintained. However, according to the researchers, electronic monitoring "cannot in total replace officer surveillance or casework... but it does change the nature of community supervision" (Cooprider & Kerby, 1990, p. 35).

Post-trial Monitoring

Participation in electronic monitoring programs at the post-trial stage is determined either by the courts or by corrections authorities. In Canada, the provinces of British Columbia and Newfoundland have corrections-based electronic monitoring programs. Corrections-based, or 'back end,' programs do not require that a judge order an offender to participate. Instead, the offender is given a custodial sentence and correctional authorities decide whether the offender should be electronically monitored in the community. The province of Saskatchewan has a court-based, or 'front end,' program, requiring a court order for electronic supervision.

British Columbia was the first province to implement an electronic monitoring program which commenced in 1987 and is currently the largest in Canada (Bonta, Rooney & Wallace-Capretta, 1999). To participate in the B. C. program, an offender must pose only a minimum risk, be non-violent and have four months or less remaining in his sentence. If these criteria are met, the offender is released on a temporary absence and allowed to return his home while under the supervision of corrections workers. In a recent study of electronic monitoring in Canada, Bonta et al. (1999) found that 89.3% of participants in

the B. C. program completed the program successfully. The authors note that this can be explained by the low risk level posed by the participants (approximately 80% of the offenders had a non-violent crime listed as their most serious offence) and by the short duration of participation in the program (an average of 37.3 days). The recidivism rate one year after completion was 30.4%.

Newfoundland established a corrections-based electronic monitoring program in 1994 that specifically targets moderate risk, non-violent offenders - low risk offenders may be released without electronic surveillance. If an incarcerated offender meets these criteria, he or she may be released on a temporary absence and placed in the electronic monitoring program, under the direct supervision of a probation officer. Additionally, offenders admitted to the electronic monitoring program are required to participate in the Learning Resources Program (LRP) offered by the John Howard Society of Newfoundland. In the LRP treatment program, offenders focus on substance abuse and anger management issues in group sessions and additional one-on-one counseling is offered to address employment issues or other personal concerns. Bonta et al. (1999) found that the Newfoundland electronic monitoring program was "relatively successful in targeting those offenders that it was designed to manage" (p. 12) - over 50% of participants were moderate or high risk. The average duration of program participation in the monitoring program was 72 days, and the success rate of participants was 87.5%. The recidivism rate for electronically monitored offenders in Newfoundland one year after program completion was 32.1%.

The province of Saskatchewan experimented with electronic monitoring in the early 1990s, and by 1996, offenders in all parts of the province could participate in electronic monitoring. The Saskatchewan program was designed as an alternative to incarceration for certain custody-bound offenders, particularly Aboriginals, who are greatly over-represented in the incarcerated population, and females, for whom there are inadequate correctional facilities and treatment programs (Vancise, 1997). The Saskatchewan program differs from those in B. C. and Newfoundland in that it is court-based, that is, a judge must include an order for electronic supervision in the sentence he or she hands down. Another difference is that in Saskatchewan, electronic monitoring is a component of probation, not a custodial sentence. It was found that 84% of offenders under electronically monitored supervision were successful in completing the program, and of those who completed successfully, 17.3% committed another crime within one year of the last day of participation (Bonta et al., 1999). The average duration of monitoring was 20 weeks.

At first glance, it appears that the Saskatchewan participants were considerably less likely to recidivate - 17.3% of offenders in the Saskatchewan program committed another offence within a year of completion, compared to 30.4% in B. C. and 32.1% in Newfoundland. When the researchers controlled for offenders' risk and needs levels, however, they found that "there were no statistically significant differences in recidivism" (Bonta et al., 1999, p. 26). The differences in program completion rates for the three Canadian programs also lacked statistical significance. Therefore, it does not seem to make a difference in which program an offender participates - an offender's success can be predicted largely based on his or her risk and needs assessment.

In their study, the researchers included two comparison groups to assess the effect of electronic monitoring on recidivism: released offenders who were unmonitored in the community and unmonitored probationers. Electronically monitored offenders had the lowest rate of recidivism, at 26.7%, while 33.3% of probationers and 37.9% of released inmates committed an offence within one year of release or program completion. Interestingly, however, they found no statistical differences in recidivism between the electronically monitored offenders and the other two groups when they controlled for offender risk and needs. On average, electronically monitored offenders were classified as lower risk than the probationers and released offenders, even though electronic monitoring was intended to be used for moderate and high risk individuals. The authors conclude that it is risk level and not type of supervision that influences recidivism. Bonta et al's findings lend support to the conclusion of Courtwright, Berg and Mutchnick (1997)- that increased monitoring or surveillance has little or no impact on offenders' chances for success.

Additionally, as part of their electronic monitoring study, Bonta and his colleagues assessed the effectiveness of treatment in reducing recidivism among electronically monitored offenders. The LRP program, which is compulsory for all electronically monitored offenders in Newfoundland was assessed as part of the study, and it was found to be highly effective at reducing recidivism in higher risk offenders. 31.6% of the higher risk offenders who received treatment through participation in the LRP program recidivated, while 51.1% of higher risk offenders who were incarcerated acquired a new criminal charge after release. Low risk offenders placed in the LRP program were not less likely to recidivate than untreated low risk offenders sentenced to prison. The authors suggest that electronic monitoring programs targeting high risk offenders should include intensive treatment programming.

Unlike Canada, the United States has electronic monitoring programs designed for parolees. Beck, Klein-Saffran and Wooten (1990) conducted a study of a monitoring program for federal parolees. The released offenders were participants in the Community Control Project, which provides intensive supervision with electronic monitoring in the Central District of California and the Southern District of Florida. The Community Control Project was designed for offenders who were eligible to reside in a halfway house, but who had a residence to live in and did not require the services that halfway houses usually provide. Offenders participating in the program were tagged with an electronic monitoring device and were supervised directly by Community Control Project workers and peripherally, by federal probation officers.

Beck et. al (1990) note that the performance of the equipment at the outset of the program was unsatisfactory. This is not surprising, however, since the study was conducted in 1988 through to the end of 1989, and electronic monitoring technology was still early in its development. Early in the study, an inordinately large number of tamper signals were registered. These electronic signals notified monitoring staff that a parolee was attempting to remove or modify the equipment. Almost all these signals proved to be false, due to equipment problems.

As a result of the faulty design of the equipment, assessing the violation rate for

electronically monitored offenders posed some challenges to the researchers. Violation signals are caused by several types of incidents, including arriving late, leaving early, making unauthorized exits, missing call-backs, tampering and losing power or telephone service. When a violation signal was received in the monitoring office, project staff tried to determine whether or not a violation had actually occurred before calling the probation officer. If the parolee could not be contacted within 30 minutes, the probation officer was called. Of the 357 offenders in the program, 13% were returned to prison for parole or supervision violations.

In the United Kingdom, an electronic monitoring program was piloted in 1989 as a means to supervise pre-trial offenders released on bail, but was abandoned after 5 ½ months. According to Nellis (1991, pp. 304-305), "almost 60% of those monitored violated their curfews, absconded or were alleged to have committed a further offence during the monitoring period." It was not until 1995 that electronic monitoring resurfaced, however, the new pilot program was designed to target offenders given curfew orders. Between July 1995 and June 1997, 82% of offenders completed the program successfully (Mortimer, Pereira, & Walter, 1999). Following the success of these electronic monitoring trials, the Home Detention Curfew (HDC) scheme was introduced in January of 1999 (Dodgson & Mortimer, 2000) which allows prison authorities to release eligible offenders up to six months before the completion of their sentence and place them under electronic surveillance in the community. To be eligible for HDC, an offender must be serving a sentence of three months or more, but less than four years. Additionally, he or she must pass a risk assessment, have a fixed address and agree to be electronically monitored.

In a study of the Home Detention Curfew in its first year of operation, Home Office researchers Dodgson and Mortimer (2000) found that 95% of prisoners who were released onto HDC in the first year were able to complete the program successfully. Of those recalled to prison, 68% were recalled for violating one or more curfew conditions. Only 1% were recalled because they posed a risk of serious harm to the community. A total of 14,000 prisoners were released onto HDC in the first year since its introduction; this number was lower than anticipated, representing 31% of all eligible offenders, considerably lower than the 50% expected. With a low rate of release and a high rate of program completion, Dodgson & Mortimer (2000) note that prison officials and probation workers are likely relying heavily on risk assessments and granting release onto HDC to low risk offenders, not those who pose a higher risk.

THE ELECTRONICALLY MONITORED OFFENDER'S PERSPECTIVE

A number of program evaluations include attitudinal data gathered from offenders who

have participated in an electronic monitoring program. Beck, Klein-Saffran, and Wooten (1990) interviewed 45 federally sentenced parolees who participated in one of two electronic monitoring programs, either in the Central District of California or the Southern District of Florida. The majority of offenders interviewed indicated that the most stressful part of the program was the time restrictions. For example, some said it was sometimes hard to get home from work on time when the traffic was heavy. Others complained about calls from the contractor to check equipment and having telephone calls interrupted by the monitoring computer. Though most of the parolees thought the program was originally quite restrictive, they indicated it was not as onerous as prison. The majority of the offenders felt that electronic monitoring was preferable in that it allowed them to be home with their families.

A Los Angeles survey (Rubin, 1990) sought to assess the attitudes and personal outcomes of 186 offenders who had completed an electronically monitored home confinement program. Seventy-four percent of the respondents thought their sentence was "about right," while less than 9% thought their sentence was unfair; 20% felt their sentence was too long and two respondents said they should have had a longer sentence. All respondents said they were less likely to commit another crime after being on monitored house arrest, with 70% indicating it was very unlikely they would commit another crime. Respondents showed a significant reduction in alcohol use during program participation: 75% of offenders reported that their drinking patterns had changed after participating in the program, 22% showed unchanged drinking patterns and 1 offender stated that his drinking increased afterwards.

A part of a recent study of the electronic monitoring programs in British Columbia, Newfoundland and Saskatchewan, Bonta, Rooney and Wallace-Capretta (1999) asked offenders to answer a series of questions designed to assess their views on electronic monitoring. The researchers found that only a minority of offenders felt that participation in the program was more difficult than they had envisioned. 95% of the offenders surveyed pointed to at least one personal benefit as a result of participation in an electronic monitoring program. The most commonly noted benefit was the ability to maintain close contact with family members: 86% of the British Columbia participants, 79% of the Saskatchewan offenders and 89% of Newfoundland offenders indicated that the program was beneficial in this regard. In the opinion of many offenders surveyed, participation in an electronic monitoring program also allowed them to maintain employment, care for their children and attend treatment programs. When questioned on their relationship with their supervisor, the majority of offenders in Saskatchewan and Newfoundland felt that they could talk to their supervisor about personal issues and that the supervisor was truly helping them. In B. C., slightly less than half of the offenders surveyed answered these questions affirmatively. A minority of offenders in all three provinces stated that they would have changed supervisors, if given the opportunity.

From these studies, it appears that most offenders find electronic monitoring to be an acceptable form of community supervision, even though certain aspects of the programs (time restrictions, phone calls in the night, etcetera) were sources of stress. It may be the case, however, that the monitored offenders' responses are based on the assumption that

they would have been sent to prison were it not for electronic monitoring supervision. This assumption may then colour their attitudes toward the program. For instance, if an offender believes that he would have been given a custodial sentence, he would be less likely to feel that electronic monitoring was intrusive or the source of great hardships for himself or for his family. On the other hand, if the monitored offender believes that he would have otherwise received regular probation, he would be more likely to find electronic monitoring to be intrusive and stressful. Because electronic monitoring programs were intended to reduce prison populations, it follows that most offenders would assume that they were 'diverted' from a prison term, but as we will see later in this paper, many offenders are wrong in this belief.

ISSUES SURROUNDING ELECTRONIC MONITORING

The increasingly widespread use of electronic monitoring, especially in the United States, has forced politicians, corrections workers, members of the judiciary and countless others to grapple with a number of important issues. Since the initial implementation of electronic monitoring programs in the early 1980s, the focus among these issues has shifted. Initially, legal issues occupied much of the debate, but by the late 1980s, economic and systemic issues had moved to center stage. Meanwhile, issues related to the social impact of electronic monitoring on the offender and his family persisted in discussions about electronic monitoring.

Legal Issues

When electronic monitoring was first introduced, there was concern that the constitutional rights of offenders might be violated, for example, electronic monitoring could infringe on an offender's rights to privacy and equality under the law. In the United States, the constitutionality of electronic monitoring has been affirmed and these issues are no longer the focus of much debate. It is generally conceded that offenders are not afforded the same degree of constitutional protection as other citizens.

Privacy

Concerns about the implications of electronic monitoring on the privacy rights of offenders and their families were raised early in the development of monitoring programs

around the world. Some have argued that electronic monitoring technology introduces a situation in which an offender's home is his prison. Others fear that the widespread use of electronic monitoring and home arrest could result in the type of society described in George Orwell's novel, 1984, in which citizens' communication and movements were strictly monitored by government authorities. These concerns are rarely mentioned in recent debates on electronic monitoring, however, because monitoring is imposed with the full consent of the participant, and its intent is to be an alternative to incarceration. A prison cell is seen as far more intrusive than any house arrest program could be (Petersilia, 1988).

Consent

Consent is seen to play a major role in determining the legal acceptability of electronic monitoring. To be effective, consent must be without coercion and fully informed. The typical offender is not well educated, so it becomes particularly important that a clear explanation and demonstration of the device and its operation be provided. Also, it must be clearly understood by the participant that the use of the device is an alternative, that there are consequences for violations and exactly what those consequences are. The participant must not only understand the terms of the monitored release, but agree with them.

Search and seizure

A question has been raised concerning whether the installation and subsequent monitoring by electronic transmitters constitutes unreasonable search and seizure. This constitutional guarantee states that police and other justice system officials cannot enter an individual's house without a search warrant. Corrections personnel counter this with the argument of diminished rights; that because the offender waives certain rights in order to participate in the program, he or she has no right to expect privacy (Petersilia, 1988). While there is growing agreement in the courts that submitting to warrantless searches as a condition of probation is not a violation of constitutional rights, there is much less agreement to date as to whether these searches should be restricted to just probation officers or should include police officers as well. A circuit court in the state of Arizona handed down a ruling limiting it to searches by probation officers only, but the Arizona Supreme Court upheld its decision allowing warrantless searches by both police and probation officers. Meanwhile, the Utah Supreme Court chose to be even more restrictive by placing specific limitations on the circumstances under which parole officers could carry out searches. It ruled that parole officers could carry out searches only upon demonstrating that it is part of their duties. The Utah Supreme Court further maintained that conditions for warrantless searches did not constitute a waiver of the probationer's constitutional rights (Del Carmen & Vaughn, 1986). Though there are few legal problems being encountered at present around this constitutional right, the courts may yet take another look at electronic

monitoring as an illegal search as monitoring programs evolve and become more sophisticated.

Equality under the law

Discrimination against youths and the poor can arise when electronic monitoring programs charge user fees. Most electronically monitored house arrest programs charge \$100 to \$200 per month and the offender must have a court-approved residence and a telephone. Offenders lacking these resources may find themselves faced with no other alternative but prison. Some programs have attempted to address these potential inequities by having a sliding fee schedule, while others provide telephones for those who do not have them (Petersilia, 1988).

Cruel and unusual punishment

While the right to be free from cruel and unusual punishment is often invoked by inmates in court challenges of prison conditions, it is seldom used in reference to probation, parole, and other types of community-based supervision. The use of an ankle device has not been seen to violate the cruel and unusual punishment standard used by the courts in corrections cases. Its effects are not viewed as oppressive and it does not subject the user to humiliation or degradation. Compared to incarceration, it is seen as less restrictive and more humane.

Impact on the Family

Electronic monitoring is sometimes criticized for having a detrimental impact on offenders' families. Muncie (1990) found that electronic monitoring is associated with a slightly higher chance of violence within the home. Families often experience stress as a result of the financial burden of participation in the program, the unpredictable phone calls that may come in the middle of the night, damage to the offender's self esteem and reputation in the community. A significant amount of stress within the family can set the stage for violence, particularly when the offender is forced to spend more time than he usually would at home.

On the other hand, the benefits of electronic monitoring to offenders' families may outweigh the negative consequences. From the offender's point of view, electronic monitoring is beneficial in that it allows them to have more contact with their family members and maintain employment. Less than 5% of Canadian participants in electronic monitoring programs felt that their monitoring interfered with family life (Bonta et al., 1999). A study of monitored offenders in the B. C. program revealed that offenders were

able to remove themselves from the influence of criminal peers and spend more time with their spouses (Doherty, cited in Maedel & Brown, 1993). An American study (Rubin 1990), found that 86% of monitored offenders surveyed felt that their relationships with their families improved as a result of home confinement, 13% noted no change and 1 pointed out a loss of parental respect when children see their father unable to leave the house for normal activities.

When assessing the impact of electronic monitoring on offenders' families, there is often an underlying assumption that the offender would have been incarcerated but was placed in a monitoring program instead. Compared to incarceration, then, electronic monitoring seems to benefit families. However, if we take into account the possibility that the offender might have been given probation without electronic monitoring, the perceived benefits of monitoring vanish. Unmonitored probationers are allowed to remain in their homes, care for their children and keep their jobs.

Cost

In the United States, it is estimated that electronic monitoring supervision costs between \$5 and \$25 (U. S.) per offender per day (NLECTC, 1999), which translates to a range of \$1,825 to \$9, 125 per year. The costs vary depending on whether the offender is monitored intermittently or 24 hours per day, whether the equipment is leased or purchased and whether the job of overseeing the program is contracted out. Justice officials are quick to point out that electronic monitoring costs a fraction of the amount required to house an offender in a prison and that monitored offenders can be employed and pay taxes, as well as supervision fees, if required. Offenders with families can continue to support their dependants and save the costs in social services that might otherwise be expended on the family. American programs are deemed to be cost effective primarily because offenders themselves are contributing significantly in fees (Mainprize, 1992). Nellis (1991) reports that fees are charged in 75% of electronic monitoring programs. The first electronic monitoring program in Florida initially charged participants \$9 per day, and within the first 14 months of the program the user fees paid for the initial investment in electronic monitoring equipment for the program (Schmidt & Curtis, 1987), but did not pay for the full cost of their supervision (Fox, 1987).

In other countries, many electronic monitoring programs have proven to be rather costly. In Canada, an Ontario pilot program was abandoned in 1989 because it was found to exceed the cost of prison by \$216,000 (Bonta et al., 1999). The Electronic Monitoring Supervision (EMS) program in British Columbia originally planned for five correctional workers to supervise 125 offenders. However, it was later conceded that for province-wide implementation of the EMS program, 44 new officers would be needed to supervise 175 offenders, "a far cry from the earlier estimate..." (Mainprize, 1992, p. 173). Originally, workers were to be reassigned from positions within correctional facilities to the EMS program, but instead, new staff had to be hired (Mainprize, 1992). In the United Kingdom, electronic monitoring trials that were run in 1989 were anything but cost-effective:

tagging of only 50 offenders cost £700,000 (Fay, 1993) or roughly \$1,750,000 in Canadian dollars.

A number of authors argue that cost comparisons between prison and electronic monitoring programs are inaccurate, misleading and, on the whole, irrelevant. Cost comparisons of prison and electronic monitoring are inaccurate for a number of reasons. When estimating the cost of electronic monitoring, the cost of re-arresting and incarcerating those who violate the conditions of their supervision order is often not included. Studies show that failure rates in electronic monitoring programs range from about 3% to 30% (Bonta et al., 1999); the offenders who 'fail' are often incarcerated after violating a condition of their supervision order. Other comparisons are in error because they look only per diem costs and not at start up fees and the hiring of program staff (Fay, 1993). Also, these comparisons seem to imply that offenders will be diverted from prison to electronic monitoring programs, and a cost-savings will result. However, because prison budgets are largely based on staff salaries, building construction and maintenance, diverting a few offenders from prison will not affect the number of staff, the number of correctional facilities or the expenditures on building maintenance to significant extent. The addition or subtraction of a small proportion of offenders is unlikely to affect the prison budget. Furthermore, Mainprize (1992) argues that a cost analysis comparing electronic monitoring to prison is irrelevant because offenders who would normally be granted probation or other community-based sentences, and not those who are custody-bound, are being routed into electronic monitoring programs. Given that electronic monitoring is more costly per capita than other forms of community supervision, electronic monitoring may provide no cost savings at all. Compared to non-monitored house arrest, for example, electronically monitored supervision programs are more expensive because they require the purchase or lease of the monitoring equipment.

As yet, there is insufficient information available to indicate that electronic monitoring programs provide a cost savings to the justice system. To affect a cost savings in the corrections budget, a reduction in the number of offenders sent to custody must be achieved. By giving a substantial portion of custody-bound offenders a sentence of home confinement with electronically monitored supervision, the number of prison staff could be reduced and perhaps whole correctional facilities could be shut down. There is no evidence to date that shows a decline in the number of prison staff or in the number of prisons themselves as a result of the introduction of electronic monitoring. Any savings achieved by diverting a small proportion of truly custody-bound offenders to electronic monitoring programs are in marginal categories such as food and clothing (Bonta et al., 1999).

Net Widening

The metaphorical net of social control is widened when a new sanction is introduced to replace another sanction, but is misapplied. As a consequence, more offenders are dealt with formally by the justice process and the number of personnel required to supervise

offenders also increases. Historically, community-based sanctions designed to reduce the use of custody have become little more than supplementary sanctions to incarceration (Gomme, 1995). Instead of sentencing custody-bound offenders to probation or community service, for example, judges have chosen to reserve these penalties for low risk offenders for whom custody is not appropriate. As more community-based sanctions are introduced, the number of offenders dealt with formally by the justice system increases and the corrections net itself grows as program staff are hired and facilities in which to house community programs are acquired.

There is considerable evidence suggesting that electronic monitoring widens the corrections net in terms of increasing both the number of correctional personnel and the number of offenders given formal sanctions. In Saskatchewan, Bonta et al. (1999) found that electronic monitoring is applied to offenders in a lower risk category than those placed on intensive supervision probation without monitoring, even though electronic monitoring is considered a more intrusive sanction. The researchers also found that monitored offenders were less likely to complete the program successfully. Apparently what has happened in Saskatchewan is that moderate to low risk offenders are being given a harsher penalty than they would have otherwise been given, and because they are faced with more conditions than others on probation, they are more likely to make a mistake and be sent to prison.

To fully understand the issue of net widening, a distinction must be made between programs in which electronic monitoring is a sentencing option and those in which it is a corrections classification option. If it is a sentencing option (as it is in Saskatchewan), electronic monitoring causes a greater risk of offender net widening. As a classification option, however, the offenders who will be subject to electronic monitoring would be drawn from a prison-bound population. Mainprize (1992) notes that even as a classification option, electronic monitoring may still influence judges' decisions. Additionally, corrections-based electronic monitoring programs can widen the net by increasing the number of personnel that work in the justice process. In British Columbia, as mentioned previously, the electronic monitoring program was supposed to be staffed by corrections workers reassigned from prison duties, however, new staff had to be hired as the number of inmates in custody had not decreased sufficiently to allow for reassignment of many staff (Mainprize, 1992).

DISCUSSION

The rationale for the introduction of electronic monitoring was that its use would reduce

the number of offenders in custody while providing a greater degree of surveillance for offenders in the community. In theory, this rationale is plausible: thousands of custody-bound offenders could be diverted from custody and be monitored to ensure compliance with the conditions of their supervision orders. Since the cost of monitoring an offender is less than the cost of housing him in a correctional facility, electronic monitoring should save taxpayers a significant amount of money. In practice, however, electronic monitoring programs have not had a significant impact on incarceration rates. In Saskatchewan, for example, electronic monitoring supervision has been available to offenders across the province since 1996 (Bonta et al., 1999), yet the average annual incarcerated population count in 1998-1999 was higher than it was in 1995-1996, the fiscal year before the full implementation of Saskatchewan's electronic monitoring program (Solicitor General of Canada, 1998). The relatively small capacity of Canadian electronic monitoring programs and the restrictive selection criteria that the programs use may explain why electronic monitoring has not reduced the numbers of offenders in prison. A more likely explanation, however, is that many individuals placed in electronic monitoring programs are not those who would have been incarcerated, but would have been given another community-based sanction instead. Even in corrections-based programs like those in the United Kingdom and British Columbia, low risk offenders approaching the end of their sentence would likely have been given temporary absences without monitoring or would have been granted early release if electronic monitoring was not an option. Electronic monitoring was intended to reduce the use of custody, but it is being used in such a manner that it serves mainly to toughen community corrections.

Correctional net widening is inextricably linked to cost. With no substantial reductions in offender counts in prisons and with the establishment of electronic monitoring programs requiring staff, offices, monitoring equipment and, in some cases, treatment programming, it is difficult to argue that monitoring programs are cost effective. Even though, in this regard, government and corrections workers continue to compare the relative per capita, per diem costs of incarceration and electronic monitoring, we should not be misled to believe that these comparisons are evidence of cost savings. If net widening is indeed occurring, as a number of researchers maintain, then the corrections system is incurring more costs as a result of electronic monitoring. The bottom line is that cost issues are unresolved in all of the countries currently running electronic monitoring programs. To prove to the public that electronic monitoring saves taxpayers money, governments need to release prison expenditures before and after the implementation of monitoring programs. It must then be demonstrated that the costs associated with electronic monitoring are outweighed by the reduction in prison expenditures. So far, we have yet to see such data.

Electronic monitoring is also problematic because it is used for offenders awaiting trial, on probation, on temporary absences from correctional facilities, on parole and those sentenced to home confinement. Furthermore, it is used for adults and youths of all risk levels, not just those who are moderate to high risk. Applying the same measure to many different types of offenders runs counter to the principle of proportionality - that a punishment must fit the crime and the offender's criminal history. Is it fair that a first-time, low risk offender is given the same treatment as a high risk offender with a long criminal

record? The low risk offender is unlikely to recidivate, so is electronic surveillance necessary? Additionally, we must question the appropriateness of electronic monitoring for pre-trial offenders who are presumed not guilty until a conviction is reached by the court. Should those not yet found guilty of any offence be treated in the same manner as those who have been convicted of a crime? Most jurisdictions target only one or two groups of offenders, but the point remains that electronic monitoring is touted as a correctional option for virtually everyone who commits a crime.

It is not yet clear whether electronic monitoring will become a widespread community sanction in Canada as it has in the United States. Recently, it has been proposed as a means with which to toughen the conditional sentence of imprisonment, introduced in 1996. The conditional sentence was designed to allow custody-bound offenders to remain in the community under strict conditions, but evidence suggests that the sentence has been misapplied and offenders who would have been given probation receive the conditional sentence (Roberts, 1999); consequently, a greater percentage of offenders found guilty of an offence are sent to prison than they were before the introduction of the conditional sentence of imprisonment. Apparently, the judiciary is wary of handing down 'soft' sanctions to offenders for whom custody is an appropriate sanction. Some have suggested that if electronically monitored home confinement were used as part of the conditional sentence of imprisonment, more judges would be willing to use this sanction as it was intended to be used.

Keeping in mind that electronic monitoring has not been successful in reducing the use of custody or recidivism as a component of probation and temporary absences, it is unlikely that its use will make the conditional sentence more palatable to the judiciary.

In sum, electronic monitoring appears to widen the correctional net both in terms of the number of personnel needed to supervise offenders and the number of offenders supervised. And because of its net widening effect, electronic monitoring cannot be considered cost effective. There is evidence to suggest that offenders are not being diverted from custody to electronic programs, but from other community-based sanctions or other forms of release. There are numerous alternatives to custody available to judges and corrections officials that can provide intensive supervision at a reasonable cost, while providing the offender with more human contact and opportunities for rehabilitation and reintegration. Why are they being neglected? Why is electronic monitoring seen, by many, to be a more reasonable alternative to custody, particularly when it does not reduce recidivism or costs? These questions are not easy to answer, but they need to be considered before electronic monitoring is widely implemented as a correctional measure.

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