

**ELECTRONIC (RADIO FREQUENCY)
AND GPS MONITORED COMMUNITY
BASED SUPERVISION PROGRAMS**

**JOHN HOWARD SOCIETY OF ALBERTA
2006**

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EXECUTIVE SUMMARY

As an update of the JHS paper on Electronic Monitoring (2000), this paper reflects two significant developments with regard to this subject over the past six years. First, there have been considerable advancements made in the technological areas for both Electronic (EM) and Global Positioning Systems (GPS) monitoring that have allowed for increasingly affordable, practical and efficient devices to monitor offenders. And second, the debate concerning these community based supervision programs has become more focused, albeit with a more integrative perspective, on issues of cost effectiveness, recidivism, public safety and the impact on the offender.

A substantial body of literature is now available on a wide range of topics related to electronic monitoring and GPS surveillance. Fairly exhaustive bibliographic lists are available from at least three sources – The Justice Institute of British Columbia (<http://www.jibc.bc.ca/Libraryfiles/archive/PDFDownloads/Bibliographies/Electronic%20Monitoring.pdf>), The Centre of Criminology at The University of Toronto (<http://www.criminology.utoronto.ca/library/elecmon.htm>) and the huge list produced by Dr. Marc Renzema (<http://www.renzema.net/index.html>) at Kutztown University in Pennsylvania. This report has drawn heavily from the references cited in these bibliographies. A thorough search on the Internet for the most current information was also carried out.

The idea of developing electronic monitoring strategies evolved in the 1960's through the work of a number of Harvard researchers. One of these researchers, the psychologist Dr. Ralph K. Schwitzgebel, went on to invent and patent his "Dr. Schwitzgebel's Machine" for use in the American justice system. In addition to the commercial use of this device, where offender accountability was of foremost importance, Schwitzgebel also viewed its use as a way where it would be "...possible, with the addition of special security equipment, to use the system as an alternative to the long term incarceration of *certain types of chronic recidivists*" (quoted in Renzema 2003:2; italics ours). Although Schwitzgebel's machine was never commercially viable and his efforts eventually abandoned, it is clear from his extensive writings between 1967 and 1971 (and echoed by the writings of his twin brother, psychologist Robert L. Schwitzgebel, at UCLA) that, as a psychologist, he always envisioned his equipment as "an adjunct to therapy" (Renzema 2003:2). It is equally clear that, by 2006, that vision has not received much, if any, attention, by the courts and those agencies employing EM and GPS today.

The history of the EM (and now GPS) movement since the 1960's is an intricate blend of ever changing factors – "political, economic, ideological and technological conditions,

** Note that while Radio Frequency (RF) and Global Positioning Systems (GPS) monitoring are both forms of electronic monitoring (EM), for purposes of conforming to past usage in the literature, this paper will refer to radio frequency monitoring as EM.*

forces, interests and processes” (Mainprize 1996:3). Mainprize argues that the way in which this movement developed and changed arose “out of, and is sustained by, a convergence and integration of these forces, conditions and interests” (ibid: 4). These forces and conditions resulted in a hiatus of interest in EM during the 1970’s; however, in the 1980’s these same forces encouraged a rapidly developing interest in alternatives to incarceration.

The use of EM and GPS systems for offender monitoring has become increasingly popular in Canada and around the world. In addition to North America, electronic monitoring has been extensively used in the United Kingdom, New Zealand and The Netherlands and is being introduced and used in various degrees of intensity in other EU nations and Australia. Alberta is piloting an EM programme since September 2005 and Nova Scotia has recently introduced EM for offenders serving conditional sentences (Halifax Chronicle – Herald, 21/03/2006). Several states in the USA have followed Florida in the use of GPS for monitoring sex offenders (where it may even become a lifetime feature for very serious such offenders).

Although the technology is continually improved and miniaturized, and there are “active” and passive” systems available, *electronic monitoring* remains a system to **verify** the location of an offender at a set time (usually home or workplace). The *global positioning*, on the other hand, allows for the continuous ability to **track** an offender’s movement around the clock. This represents a significant evolution in the area of social control over an individual’s freedom of movement and raises additional concerns over the inherent dangers of the ever widening “behavioural net” that such closer offender monitoring inevitably encourages.

The “effectiveness” (however defined) of EM and GPS systems of offender monitoring continues to be unresolved. Evaluations of such systems where in use remain limited in both numbers and scope and are often focused on a specific issue (cost/recidivism/social impact on offender). ***What evidence there is available at present would suggest these forms of monitoring have little ameliorative effect on offenders in the absence of therapeutic and social programmes that focus on re-integrating the offender in main stream society.***

Clearly, the role and use of these types of monitoring is closely tied to the societal view of the pervasiveness of crime and its vulnerability to it and upon the changing consensus as to how best “to deal” with offenders. Under the current new federal government regime in Canada, with the oft repeated mantra of “serious time for serious crime”, it will be interesting to follow whether and how electronic and GPS monitoring programs in this country will continue, be expanded or become more limited in scope in the months and years ahead.

MONITORING TECHNOLOGIES

Electronic Monitoring

The first electronic monitoring device was developed in the mid-1960s by Harvard psychologist Robert K. 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, etc) at a specific time.

None of these electronic monitoring devices track an offender's movement. Rather, they simply confirm whether or not the individual is at an approved place at specific times. In recent years, following great strides made in military research (wherein GPS was initially owned and developed – see, e.g.

http://www.colorado.edu/geography/gcraft/notes/gps/gps_f.html;

<http://gge.unb.ca/Resources/HowDoesGPSWork.html>) a number of American companies have adapted and developed tracking systems for use in community corrections. Global Positioning Satellite (GPS) technology is one means by which offenders could be monitored 24 hours a day.

Global Positioning Systems

Until recently, GPS monitoring systems designed to track offenders were heavy, weighing at least five pounds and required recharging daily (NLECTC, 1999; On Guard Plus Ltd., 2000). Great strides forward in the development of GPS technologies in the last five years has resulted in the adoption of GPS monitoring in a growing number of American State jurisdictions. (For some descriptions and examples of current types of equipment available from 2 leading manufacturers, see:

<http://www.isecuretrac.com/products.asp> and <http://www.ptm.com/>). GPS monitoring has been particularly favoured as a means of social control where the offender has been convicted of child sexual offences. In the State of Florida, as well as others, GPS monitoring is now imposed on offenders for life, even after they have served their time, in a number of jurisdictions.

GPS monitoring can be in an “active” or “passive” mode. In the first instance, the offender wears a tracking device that offers continuous pinpointing of the offenders’ whereabouts 24 hours a day. The device can also be programmed so that specific location parameters can be defined from which the offender is precluded from entering (e.g. school areas or playgrounds). Should the subject do so, the breach instantly triggers an alarm at the monitoring station.

A “passive” mode consists recording the subject’s movements during the day which is then periodically downloaded to the tracking station and assessed. Breaches are then identified, although of course, only after it has occurred.

Monitoring Programs

Electronic and GPS monitoring can be used in a number of different ways within the system of criminal sanctions. But these can be summarized as falling within one of three broad areas:

- i) as an element of pre-trial proceedings;
- ii) as a replacement of post sentencing of prison terms (“front door” or “back door” electronic monitoring);

- iii) as an element of a diverse range of correctional programmes (including probation, parole, house arrest or conditional sentences) , allowing for either earlier prison release or temporary releases (e.g. work release (day parole))in transitional programmes.

In Canada, EM has been employed largely in area (iii). The USA has used EM for areas (i) and (iii) while Sweden and The Netherlands (and to some extent, France, The UK and Switzerland) are the only countries to date which have adopted area (ii) as part of their of criminal justice systems (Albrecht 2005).

Canada recently announced (CBC Radio May 24/06) that an intricate supervision program, which included electronic monitoring, will be implemented for its first “terrorist” suspect as part of his release conditions. Again, however, the individual had been incarcerated for some time.

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.

A recent example some of the options available for pre- trial monitoring comes from the State of Indiana. All pre-trial defendants who have posted a bond are allowed to remain at their homes if they agree to be electronically monitored (<http://www.indygov.org/eGov/County/Corrections/Services/Detention/pretrial.htm>). Defendants charged in domestic violence and stalking cases will be required to enroll in a GPS monitoring program (<http://www.indygov.org/eGov/County/Corrections/Services/Detention/gps.htm>). There are daily charges associated with both programs, an issue to be discussed below.

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.

Coopridier 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 with violations of the home curfew terms or of tampering with the equipment. Electronically monitored clients also committed more technical violations than those not monitored. *However, the non-monitored clients had more new arrest rates and violations of failure to appear 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" (Coopridner & Kerby, 1990, p. 35).

Post Trial Monitoring

“Front Door” Monitoring

Participation in electronic monitoring programs at the post-trial stage is determined either by the courts or by corrections authorities. “Front Door” monitoring refers to the process whereby the courts impose EM as part of the sentencing. In Canada, the province of Saskatchewan has a court-based, or “front end,” program, requiring a court order for electronic supervision.

“Back Door” Monitoring

“Back Door” monitoring occurs when the decision to use EM is taken by the correctional officials in consideration of a number of factors relevant to the offender. This approach has been taken by the Provinces of British Columbia, Newfoundland, Ontario and Nova Scotia and is being piloted in Alberta (2005). In such programmes, the offender is given a custodial sentence and correctional authorities decide whether the offender should be electronically monitored in the community or not.

Prison Term Replacement (Complete)

The decision to use electronic monitoring, therefore, can be either of the “front door” or “back door” type. In only a few places, however, has EM been used to replace completely an incarceration period for the offender. The Netherlands, which has both a front and back door model of EM, can impose EM as part of a house arrest sentence where the prison sentence by law would not have exceeded 6 months. In Sweden, which has opted for a “back door” model, prison sentences not exceeding 3 months can be replaced with EM programs. Switzerland and France have followed the Swedish model, with some variations.

A key factor in the determination of the use of EM as a replacement for imprisonment is the length of the prison sentence imposed, in addition to a number of other criteria and conditions (consent of the offender in all cases notwithstanding).

Prison Term Replacement (Partial)

The more common use of EM and GPS has been as a condition for offenders where release from prison occurs before the full sentence has been served.

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 Purpose of EM and GPS Monitoring Programmes

It is clear from the increasingly substantive literature now available about EM and GPS programmes that the specific intent behind the WHY these types of programmes were ever introduced and WHY they are maintained, are still not widely agreed upon. In fact, it is quite evident that there are even contradictory rationales presented by various jurisdictions around the world. What is for certain, however, is that Dr. Schwitzgebel's original goal of offender rehabilitation is rarely, if ever, identified.

Martinovic (2002:3) has listed 5 worldwide aims for electronically monitored programs:

- i) to relieve prison crowding by diverting offenders from prisons into a viable alternative...
- ii) to reduce the public's tax burden by avoiding prohibitive incarceration costs...
- iii) to punish an offender whilst they are confined to their personal residence and their movement is strictly confined;
- iv) to ensure public safety by strict supervision to offenders usually via electronic monitoring;
- v) to protect the offender from the corrupting and stigmatizing effects of institutional incarceration, and the severing of family and community ties

To these 5 criteria might be added:

- vi) to control additional costs of building more prisons
- vii) to reduce social costs because the offender could continue to work, pay taxes and support dependents (Renzema 2003:3).

Renzema (2003:2) also notes the aggressive marketing skills of EM and GPS suppliers, and their successful playing up of the public safety fears as well as media sensationalism of dangerous offenders. These external forces have influenced the justice and correctional systems to the extent that they must be increasingly "viewed" as getting harsher in the area of criminal controls.

In a recent review of the development of EM in Europe, Albrecht (2005:) describes EM as fitting "particularly well in a theoretical framework of critical criminology which centres around commercialization, risk management, privatization and new forms of social exclusion". But more significantly, he believes that EM "represents at most a small element in a general trend which involves the change of systems of sanctions and social control at large" (Albrecht 2005:). The growth of EM across Europe "was due to the heavy concern for costs in the criminal justice systems as well as to its potential to symbolize cost-benefit consciousness and modernity on the one hand as well as its potential to symbolize the crime politicians concern for tough control, strict supervision and credibility of the system" (Ibid).

It is apparent, therefore, that a number of forces (even though not always in harmony) have been influential in the popularization of electronic monitoring programmes in North America, Europe and New Zealand/Australia. What is much less clear, however, remains the rationale behind its continuing (and expanding) usage in these and other parts of the world.

One of the key unresolved issues remains whether electronic monitoring and GPS are meant to serve as a “sanction” or as a “surveillance tool”. This matter has become even cloudier in light of the “front door” models practiced in some countries. When electronic monitoring is imposed as part of the sentencing by the courts, it can be interpreted as an additional punishment upon the individual. The replacement of prison time with a conditional sentence that includes EM is clearly intended to impose a **further** restriction on the offender that imitates actual incarceration.

Since Proulx et al. (), the courts in Canada are increasingly compelled to show that “conditional sentences should generally include a punitive element” and that “house arrest – or curfew – should be the norm, not the exception” (White 2001:3). While the imposition of EM may be viewed as a monitoring tool on the house arrest or curfew, it is also true that such surveillance “is a physical presence in the restriction on liberty” (White, *ibid*) and affects not only the individual but also the entire resident family.

A recent example from the United States of how EM has been used more as a punitive sanction rather than as a tool to ensure public safety, concerned the much publicized release of business executive Martha Stewart in March 2005. Here was a non-violent individual who posed minimum threat to the community and whose re-integration back into the community was not an issue and yet was ordered to be electronically monitored as part of her release. Clearly, this imposition was perceived as a “socially expedient intermediate sanction (that is) more punitive than traditional probation, but less harsh than incarceration” (Gable and Gable, 2005:1)

If EM is to be viewed primarily as a surveillance tool, then a second set of questions arise. What is (are) its purpose(s) in that regard? White (2001:4) identifies three possible goals (in addition to punishment, which she dismisses):

- i) to ensure **compliance** to the conditions set by the courts;
- ii) to make people **pay** for their crime, in that in a growing number of jurisdictions the offender is charged a fee for the use of EM equipment;
- iii) to assist with **rehabilitation**, which of course, is the presumed primary focus of community sanctions.

It is obvious that the use of surveillance monitoring either by EM or GPS provides an increased level of controlling for the compliance of court imposed sanctions on the offender. EM informs authorities whether an offender is at the expected location at a particular time; GPS tracks the exact location of the offender at any time. Both tools allow for greater assurance that the offender is complying with his/her terms of release, although the degree of confidence in the whereabouts of an individual is undoubtedly greatly improved with GPS.

In a number of jurisdictions, it is becoming a feature of EM and GPS programs that the offender pays a fee for the “service”. While it would appear that such a fee is structured around the individual’s ability to pay, the whole concept introduces the idea of yet another punitive sanction against the offender and can have a serious detrimental impact on families at or below the poverty line. This element of EM programming is already found in Ontario (White 2001:8).

The question of the rehabilitative purpose of EM and GPS programs bespeaks the original concept as envisioned by Dr. Schwitzgebel forty years ago (see above). Does the use of EM and GPS surveillance address the issue of recidivism and encourage the re-integration of the offended into the general community? Obviously, the optimum method of answering this question is through evaluation of the various programs in place.

Evaluation of EM and GPS Programs

The challenges facing meaningful and significant evaluations of the effectiveness of EM (and GPS) programs are threefold: (a) achieving statistical significance (i.e. based on a large sample size); (b) comparing studies with identical selection criteria for offenders, and (c) similar parameters in the nature and intensity of additional intervention strategies.

Renzema (per.com. Feb.24, 2006) reports that he and his colleague Evan Mayo-Wilson are examining some 20 out of 120 “so-called” evaluation studies. He notes that many evaluations are initiated by local agencies, are of ten of weak design and rarely published. Renzema stated earlier (2003:16) that most evaluations he has examined that “were actually evaluations of process, not outcomes.”

One may also add that “evaluations” usually focus on the cost benefits of EM versus incarceration and are therefore driven by, and directed to, public budgetary concerns and departmental planning needs.

By far the largest study pending is one based on 15,000 participants (Padgett, Bales and Blomberg – per.com.- Renzema, Feb.24, 2006). Renzema also reports in the same communication that the Australians are also working on a large evaluation but that is it is some time away from completion. All other studies are significantly smaller in size.

Gable and Gable note that “the most common outcome variables (for EM surveillance programs) include recidivism, revocations and recorded infractions” (2005:2). These criteria usually determine the “efficacy” of the EM program as a form of intense monitoring.

Renzema is involved in a very ambitious, very large, international collaborative undertaking called the Campbell Project (as part of the Campbell Collaboration - <http://www.campbellcollaboration.org/index.asp>). As such, he is employing very rigorous criteria in his selection of evaluation studies that he and his associates are examining. The focus of his work is on the rate of recidivism associated with EM programs. Specially designed code sheets are used to examine four primary research questions:

- 1) Can EM suppress criminal offences **during its period** of application?
- 2) Does EM have an independent effect on the continued suppression of criminal behaviour (**after the end** of the monitoring period)?
- 3) Does EM facilitate or augment the impact of other interventions so that criminal offences are suppressed **during the application period**?
- 4) Does EM facilitate or augment the impact of other interventions so that criminal offences are suppressed **after the end** of monitoring? (i.e. do offenders re-offend LESS after a period of monitored time when combined with other interventions).

Renzema's study also includes four rigorous methodological criteria, not the least of which are the inclusion of a "control group" with which to compare the EM group and the inclusion of adequate descriptive data of both types of groups as to their selection, histories, legal status, ages, intervention duration, etc.

The Offenders' Perspective of Electronic and Global Positioning Monitoring

As indicated above, the majority of evaluative studies carried out to date are focused on operational and implementation issues. And while fewer studies address the matter of whether EM programs actually assist in lessening the likelihood of reducing further, by far the least likely subject of evaluation is how the imposition of EM and GPS programs are perceived by the offender and how such a program affects the individual and their immediate family.

Probably one of the most extensive evaluations of the offenders' perspective of such electronic monitoring published to date remains the Canadian study carried out more than 6 years ago. In the 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 many offenders may even be misguided in that belief.

And the issue may be even more complicated than the Bonta et. al. study identified. A recent paper (Martinovic, 2002) that reviewed a number of related studies "which investigated offenders' perception of intermediate sanctions in comparison with imprisonment" categorized the studies into 3 groups:

- a) those which report on imprisoned offenders who are presented with real – life choices over an electronically monitored sanctions versus imprisonment;
- b) those which report on imprisoned offenders who are presented with hypothetical questions about the severity of sanctions
- c) those which report on electronically monitored offenders' perceptions of severity of electronic monitoring versus imprisonment (Martinovic 2002:5)

The results of the various studies examined are not always what the general public and even justice practitioners might have anticipated. In fact, Martinovic feels that "they (the studies) collectively question the conventional wisdom that incarceration is the most severe sanction in our criminal justice continuum by clearly indicating that some offenders consider intermediate sanctions to be overly punitive" (2002:5). Martinovic concluded that the offenders' personal/social characteristics have an influential role in determining just how punitive a particular offender will view an electronic monitoring program. These characteristic variables included "gender, age, race/ethnicity, health status, living in urban/rural area, living circumstances, employment and education, financial situation, community socialization, and criminality and experience with the criminal justice system"(2002:6).

Through consideration of these variables, the paper demonstrates that there are a number of instances in which an offender would actually prefer incarceration to participating in an EM program in the community. Less educated, underemployed, poorer, older and often unhealthy men from a visible minority with little or no family support structure and a previous history of prison experience are more likely to view incarceration as a more attractive option to EM. All these characteristics describe individuals who are more vulnerable to risks in the greater community and who have few, if any, family "safety nets" to fall back upon if released. At the very least, prison provides an ordered, structured, relatively safe and known community.

Conversely, for those individuals who have a supportive family network, are employed, (often in a profession), have financial means at their disposal to weather the EM

limitations and have usually never been incarcerated, they will view any alternative sanction to time in prison as a better alternative.

The issue of gender is also of special interest in that clearly women with children see being out of prison as much more important to them and their family. Freedom with EM allows for some stability in the family (often single parent headed) that women generally see as crucial.

While these results should perhaps not come as any surprise to social workers, they certainly highlight the importance for sentencing judges to carefully consider the personal/social characteristics of each offender on an individual basis when imposing an electronic monitoring program (2002:13).

Other 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.

EM programs are recognized to impact on the offender's family and co-residents for the period of imposition. These impacts have been the focus of examination in a number of studies that have also been reviewed by Martinovic (2002). In particular, co-residents may find themselves indirectly punished as well, in such areas as having to maintain a free telephone line, a stressful environment at home, a lack of external social activities with the offender and coping with the social stigma of living with a monitored offender.

A recent study (Roberts, 2005) makes the point that although the general public may not believe community sanctions are punitive enough, the results of interviews with offenders and their families demonstrate that such measures (including EM) does impose hardships

on the families. Again, incarceration is in some instances the preferred alternative to remaining in the community.

Interestingly, preliminary results from a study carried out by the Ministry of Justice of the German State of Hesse (Mayer, accessed June 2006) reports that offenders' wives appreciated the better ordered life imposed by EM even though more of the domestic responsibilities now lay with the spouse.

One of the oft repeated concerns expressed by offenders in EM programs is that of stigmatization by others at the workplace or in the general community if they are spotted wearing the monitoring equipment. There is especially a fear that employment may become jeopardized if the offenders' situation becomes known. (Mayer: 4).

In general, however, the European data (Albrecht, 2005:14) suggests that the impact of EM "seems to be assessed rather positively by family members living in the same household".

Finally, one particular source of stress for offenders living with EM is the very real circumstance of technological failure (Corbett and Marx, 1991:7). Any number of technical and equipment errors or breakdowns can occur which would trigger a false indication of a breach of the program and cause undue stress on the part of the offender as the situation would be investigated and resolved.

Key Issues Associated with Electronic and Global Positioning Monitoring Programs

A/ Privacy – Questions concerning the invasion of privacy of the offender and their co-residents, and the larger matter of breaching key elements of human rights, which were key issues during the 1980's and early 1990's, as EM usage was expanding both in North America and into Europe and elsewhere, have been largely resolved. In all jurisdictions where EM programs are available, there is always a selection component as an integral part of the process as to who is eligible for such a program option and who is not. This includes the right of the offender to reject such a program and opt instead for incarceration. If the domestic situation does not support implementation of an EM program, then the option is not offered. In this way, the offender, and his/her co-residents have the right to choose whether they wish to be considered for an EM program. If they consider the possibility of being "at home" an improvement over imprisonment, in spite of some of the hardships associated with such a program, they are then considered to agree to a publicly accepted infringement on their freedom of movement and activity.

B/ Net Widening – The issue of "net widening" can be interpreted in one of two ways:

- i) the imposition of EM on individuals who normally would not be subjected to such a program, either after a jail term or who have not been required to serve a period in jail at all. That is, the danger that EM surveillance is perceived as an extra precaution (just because it is available) to ensure "public safety" even if the offence does not warrant the program (i.e. the "Martha Stewart effect");

- ii) the use of EM surveillance, because of its very nature, may result in an increase of recorded “breaches”, however minor, and therefore in an increase of charges and further sentencing. This aspect of EM also has a considerable impact on policing, correctional and judicial resources, as these additional breaches are dealt with.

The data remains ambivalent as to just how much of a problem “net widening” represents. 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.

Somewhat indirect evidence for net widening can be determined from the experience in British Columbia where 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).

C/ Public Safety – It is clear from what surveys have been undertaken of the attitudes of the general public to offenders being “in the community” under whatever conditions - “conditional sentence”, probation, parole or whatever, that concerns of public safety are paramount. It is also quite evident that the public has little understanding of these programs of re-integrating offenders back into the community and that their attitudes to them are shaped largely by media reports and political agendas, and even those, usually only on a sporadic basis when something “has captured” the media’s attention or during electioneering. The current climate in many Western countries of getting “tough on crime” (perhaps now merging with the public conceptions of “terrorism”) is resulting in a diminishing concern for individual rights and freedoms and an increase in punitive attitudes and measures.

The evidence suggests that the judicial and correctional authorities are of two minds concerning the imposition of EM programs. On the one hand, such programs are viewed as best suited for the more risky offenders upon their release into the community, where their behaviour in regards to substance abuse, violence and propensity to criminal acts can be better monitored. On the other hand, and this actually would appear to be the more common approach, EM programs are used for the less risky offenders, who are selected on the basis of having a more stable home environment, employment and little inclination to violence.

In this regard, the imposition of GPS monitoring on sexual offenders (at this point, largely in the USA), even after they have served their time, is an anomaly of how electronic surveillance has been traditionally viewed and employed.

D/ Public Cost – There have been numerous reports and government sponsored assessments of the public costs associated with EM and GPS programs in comparison to incarceration. In fact, as we have reviewed above, one of the driving forces behind the development of EM was the realization that the need for building more prisons and maintaining them was viewed by public officials as far too great an expense to be sustained on the public purse. The average daily cost of maintaining an offender on an EM program, and therefore being at home, was originally touted as a significant cost saving alternative to imprisonment. In many instances, however, electronic monitoring programs proved to be rather more costly than anticipated. 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) – although a revised program is now in effect). 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, 1992:173).

Improvements in the equipment manufacture and the increasing volume of production has reduced the initial capital outlay for EM and GPS equipment. Commercial equipment manufacturers and dealers can now make a strong argument for the imposition of EM and GPS programs as a cost saving measure to political and judicial authorities, who, in turn, have become increasingly supportive. A number of recent State Government assessments (e.g. (Maryland 2005; Minnesota 2006) have all come out in favour of implementing GPS programs for controlling the movements of sex offenders, citing increased public security concerns as their rationale. Most American jurisdictions have taken the lead from the State of Florida after the passing of the Jessica Langford Act (2005) and the financial incentives for introducing electronic monitoring programs included in the Children's Safety Act moving through the United States Congress (Maryland Task Force 2005:7).

It is interesting to note that the recent cost estimates for implementing GPS programs are very similar to the costs previously associated with radio frequency programs and as reported in the 2000 version of this report ("In the United States, it is estimated that electronic monitoring supervision costs between \$5 and \$25 (U. S.) per offender per day (NLECTC, 1999)"). Depending on the nature of the program proposed ("passive" or "active"), the equipment costs range from a low of \$5.00 to \$10.00 /day for the former and \$9.00 to \$14.00 /day for the latter. Additional variance depends on the specific provider selected and the level of technical support (e.g. set up, replacement, repair, etc.) they offer.

At these daily rates, the cost of an EM or GPS program would work out to between \$1825 (US) and \$5475 (US) per year per offender. To be meaningful, of course, these numbers need to be put into the context of estimated incarceration costs and these vary considerably from jurisdiction to jurisdiction, not only with a single country, but quite pronouncedly, across international borders. Fairly recent annual estimates for American prisoners is about \$30,000 while for the United Kingdom it is about double that amount, at about L35,000.

Clearly, the equipment cost of a community based program with EM/GPS is far less onerous on the public budget than incarceration (and to say nothing about the capital cost of building new prisons).

However, in all reported cost estimates, the available quotes are for hardware purchases and maintenance only. What is missing in these assessments is consideration of the additional infrastructural needs and resources required to make these programs work. These include everything from the basic supervisory costs associated with community based programs to the fact that improved monitoring capabilities will inevitably result in a greater number of breaches requiring responses – from correctional, police and ultimately, judicial resources. All of these responses, of course, necessitate the need for additional personnel and the associated funds to maintain them.

One way though which jurisdictions have sought to re-coup some of the associated costs of electronic monitoring programs is to pass on a portion or all of the actual costs to the offender. The rationale behind such a policy is the belief that, since the offender remains within the community, he or she is also employable and therefore able to contribute to the cost of the program. Again, such costs relate only to the actual hardware expenses of the equipment.

The Corrections Department for the State of Indiana charges participants in their Home Detention Program (using EM), Home Curfew Program (a “reward for 45 successful days in the Home Detention – and now on a passive GPS) and GPS Monitoring Pre-Trial Program for domestic violence/stalking cases. For participation in these programmes, individuals are charged an initial \$75 set-up fee and then \$12 a day “supervision” fee (see again <http://www.indygov.org/eGov/County/Corrections/Services/Detention/home.htm>). This is the only explicit reference we have seen to recovering supervisory costs, and it is not entirely clear that that is what it actually is.

Such practices, however, do raise significant issues around the potential selection of candidates for an EM program being influenced by their ability to pay and the question of why impose an extra undue hardship on those families barely able to meet the necessities of life already.

E/ Social Rehabilitation and Re-integration Strategies – Other than a concern for public safety and the perceived need to impose some degree of punishment upon the offender, the ultimate goal of the judicial system is to have offenders return to the community as productive and contributing members of society who will not re-offend. The question over whether or not the use of EM programs improves the extent of success in rehabilitating offenders and successfully re-integrates them within society any better than other strategies (either prolonged incarceration or other community based programs) is one to which there are as yet n clear answers.

Although a number of studies/assessments have been published to date which would suggest that recidivism rates are low and that compliance (and completion) rates to the programs are high, it is also clear that in most instances there have been no use of control groups against which to compare the results (Black and Smith, 2003:5). And has been

pointed out above, the criteria for selecting candidates for EM programs are in many (if not most) cases predisposed towards those offenders the least likely to fail.

Renzema and Mayo Smith (2005) have put any evaluation of the effectiveness of EM program into sharper focus by distinguishing the period of time **during** the program as separate from the time **after** the program is completed. Obviously, the real success of any program would be determined by the degree to which offenders do not re-offend in the future, not only during their time of being monitored. And in this regard, Renzema and Mayo-Smith's analysis of some 381 articles and abstracts on moderate to high risk offenders echo an earlier conclusion by Bonta, *et.al* that "EM does not have a post-program impact on criminal behaviour" (1999:25).

With the exception of the life time imposed GPS programs for dangerous sex offenders in Florida (and increasingly elsewhere in the USA), EM programs tend to be of short duration – never longer than 6 months and most commonly between 1 – 4 months. For periods longer than 6 months, EM programs have been found to lose their effectiveness.

"It is hardly surprising that recidivism has not been reliably reduced by an intervention that is typically short, applied in a standard fashion, and applied to a diverse group of offenders for whom it may or may not have any relevance to their motives for offending. Extant EM programs seem akin to giving aspirin to a mixed group of hospital patients and then wondering why their underlying diseases have not been cured" (Renzema and Mayo-Wilson 2005).

A recent article in Federal Probation highlighted the fact that "few, if any, programs have used EM *primarily or exclusively* as a positive reinforcement tool" in rehabilitation programs (Gable and Gable 2005:5). These authors suggest that while punishment may have a useful, albeit temporary, role to play in suppressing negative or dangerous behaviour, *sanctions only* programs usually result in high compliance over the short term but do nothing to change longer term behaviour.

Gable and Gable argue that more positive strategies are needed to legitimately alter behavioural patterns and that these steps can be undertaken as part of an EM program. The principles they advocate include: i) reward small steps; ii) vary the value of incentives; iii) vary the timing of incentives; iv) develop two way communication with the subject, and; v) actively intervene when required (Gable and Gable 2005:5-7). They argue, therefore, that use EM as an initial control/suppressant tool, but focus on the positive strategies for the longer term benefits.

The approach advocated here touches upon an aspect that is common to most evaluation studies of EM programs and this concerns the *crucial* role played by the supervisor responsible for the offender. The importance of getting to know and understand the individual, ensuring their compliance to terms of their sentences, working with them in re-establishing their footing in the community and being prepared to address issues and problems as they arise are instrumental in re-integrating an offender into the community. The more effective this re-integration is managed, the greater the likelihood that recidivism will be significantly reduced.

GENERAL DISCUSSION AND CONCLUSIONS

From its earliest development in the '60's, the rationale for electronic monitoring had a number of underlying, and sometimes contradictory, motives. It is clear from the review of the relevant literature up to today, that these tensions remain, albeit perhaps more transparent, still largely unresolved.

On one level, the question is whether the ultimate purpose of electronic monitoring programs, be it through radio frequency or GPS technologies, is to punish the offender, to impose sufficient restrictive controls on the offender as to appease public concerns about community safety or to assist in the rehabilitation of the offender to become a productive member of society? Or is it a combination of these intents, and if so, in what proportion?

On another level, is the reasoning for EM programs much more mundane and less altruistic – have these programs ballooned in popularity around the world because of growing public concerns about, and resistance to, seemingly out of control public expenditures on more and larger prisons? Is the real motivation for developing these programs largely driven by issues of cost savings married to the concern for public safety?

One can argue that the imposition of GPS monitoring, perhaps the most restrictive of non-incarceration sanctions available today, is very much a tool to maximize public safety and to be perceived as doing as much as is technologically possible to allay community fears. Hence it's broad appeal as a tool to monitor sexual offenders who are released back into the community. In several US States, some dangerous child sexual offenders will be on a GPS program for the remainder of their lives (e.g. Florida).

GPS is also used in cases where there is safety concern for specific individuals (e.g. spouses, common law relations and children) or where there are potential threats other than sexual assault in the offender's history.

Unfortunately, there is always a momentum that arises out of such security measures that lead politicians to wish to expand their usage in the interests of public safety. A recent debate in the State of Minnesota Legislature about extending the usage of GPS monitoring from the current 20 "Level 3" sex offenders to an additional 300 "Levels 1 and 2" offenders is a case in point (<http://minnesota.publicradio.org/display/web/2006/02/16/gpstracking/>). Interestingly, The Department of Corrections Head, Mike Fall, stated that such increased expenditure would be a waste of resources at the "expense of maintaining (other) resources. "The public likes quick fixes and this appears to be a quick fix. The reality is it's (GPS) a tool, but it's not a quick fix. It doesn't solve all problems. It does not prevent offenders from committing crimes" (ibid).

There is also recent evidence that GPS will be used to monitor released offenders charged with (or suspected of) terrorist activity (as in the case of Mr. Harkat in Canada – CBC TV National News, July 10th 2006).

But the rationale for EM programming remains more diverse around the world where it is implemented. The pressures exerted on financial and human resources by the increasing number of incarcerated offenders in many countries strongly encourages the study, development and implementation of EM programs. As societies grow increasingly intolerant of criminal behaviours and seek to punish offenders by serving at least some period of jail time, there has been a steady rise in prisoner populations in most countries of the world. This seemingly unending growth is viewed as unsustainable by many politicians and fiscal conservatives on the one hand and interestingly, social activists on the other.

In that context, electronic monitoring of offenders is seen as an appropriate compromise for treating offenders who would otherwise be imprisoned. These programs can be applied to a number of different scenarios – including everything from an early release from prison for those evaluated to be appropriate candidates for return to the community, or as part of a sentencing structure that includes a reduced period of incarceration followed by EM, to a period of EM only in lieu of imprisonment.

Leaving aside the whole question of the rehabilitative role of electronic monitoring for the moment, there have arisen several factors over the past few years that have complicated the purpose and outcomes of the seemingly straightforward EM alternative to incarceration. First, applications of EM programs have broadened to include offenders who in the past would have been treated under traditional supervisory programs (with or without prison terms) and as a result, are largely low risk individuals (the “Martha Stewart Effect”). This development has been spurred on by media sensationalizing criminal activities and public safety threats, politicians building on these fears and advocating simple “get tough” solutions and aggressive EM/GPS equipment dealers capitalizing on both and “demonstrating” huge cost savings with their alternative.

Second, it is clear from a number of the studies examined world-wide that the selection criteria for eligible participants in EM programs is restrictive enough that its impact on existing incarcerated offenders is minimal (and to say nothing of those eligible who in fact reject the option of an EM program) and that the low risk focus of most programs is such that many of the EM participants might never have faced prison time at all anyway. 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.

Third, as additional laws are passed responding to more areas of criminal activity and subsequent punishment becomes harsher, there are, in fact, more people being charged, convicted and sentenced to prison than ever before. The widely touted anticipation, therefore, that EM programs would reduce prison population pressures on existing facilities has not been met.

And fourth, the widely promoted financial savings that were to result from the implementation of EM programs (fewer inmates and fewer new prisons needed) have largely not materialized when OTHER factors are taken into consideration. These include the propensity for electronically monitored individuals to be more easily exposed to be in

breach of their sentencing orders than regular offenders of probation or parole, and therefore that these breaches require additional personnel to track and respond to more frequent situations (either real or technologically induced) and the realization that even with the removal of some offenders from prison to participate in an EM program, there has not been a corresponding reduction in prison guard personnel. 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

The earlier version of this paper by JHS argued that 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. Even 6 years on from that observation, there is as yet, no such published data.

Finally, of course, there remains that elusive, yet most fundamental question, associated with any aspect of criminal justice – how does society rehabilitate and reintegrate those members of the community who have, for whatever reason, transgressed its current laws. Electronic monitoring was first developed as a tool to assist the judicial system in the restoration of an individual as a productive member of society through a behavioural therapy approach (http://web.cgu.edu/faculty/gabler/electronic_monitoring2.htm). What was integral to this model was the role of direct and ongoing human supervision of the offender. This supervision would not only be the correctional officer assigned to the individual, but also an additional set of professionals who be incorporated in the therapeutic rehabilitation program as required. Only a detailed program that treats each offender on his or her own merits and reflects a flexible, responsive and customized approach to what is needed will have any real chance at successful rehabilitation.

Public support for electronic monitoring of offenders “free” within the community should be clearly established on the basis of understanding and supporting an overall program that focuses on what is required to re-integrate the individual to that community. Acceptance of electronic and GPS monitoring should be viewed as a “tool” to aid in the modification of anti-social behaviours, and, **if warranted**, to increase the level of public safety if such behaviours are deemed dangerous.

Otherwise, properly funded, staffed and trained supervisory methods have as much chance, if not greater, for successful rehabilitation of offenders than EM. Unless clearly defined as to what role EM and GPS programs are meant to play, they are at risk of being just a “fashionable trend” with no clear purpose and outcomes. The only certainty then would be the considerable financial cost.

REFERENCES CITED

- Albrecht, Hans-Joerg 2005 Electronic Monitoring in Europe
- Beck, J.L., Klein-Saffran, J., & Wooten, H.B. 1990 Home confinement and the use of electronic monitoring with federal parolees. **Federal Probation**, 54(4), 22-31.
- Black, Matt and Russell G. Smith 2003 Electronic Monitoring in the Criminal Justice System in **Australian Institute of Criminology**, Trends and Issues, #254, May 2003
- Bonta, J., Rooney, J., & Wallace-Capretta, S. (1999). **Electronic monitoring in Canada**. Ottawa: Public Works and Government Services Canada
- Coopridge, K.W., & Kerby, J. 1990 A practical application of electronic monitoring at the pretrial stage. **Federal Probation**, 54(1), 28-35.
- Corbett, Ronald and Gary T. Marx 1991 Critique: No Soul in the Machine: Technofallacies in the Electronic Monitoring Movement, in **Justice Quarterly**, Vol.8 No.3 (assessed on March 22/06 at <http://web.mit.edu/gtmarx/www/critique.html>)
- Courtwright, K. E., Berg, B. L., & Mutchnick, R. J. 1997 Effects of house arrest with electronic monitoring on DUI offenders. **Journal of Offender Rehabilitation**, 24(3/4), 35-51.
- Dodgson, K., & Mortimer, E. 2000 Home detention curfew- The first year of operation. **Research Findings** (110).
- Dodgson, K., et. al. 2001 Electronic monitoring of released prisoners: An evaluation of the home detention Curfew scheme, <http://www.homeoffice.gov.uk/rds/pdfs/hors222.pdf>
- Gable, Ralph Kirkland and Robert S. Gable, 2005 Electronic Monitoring: Positive Intervention Strategies, in **Federal Probation**, vol.69, No.1, Pgs.1 -7
- Gomme, I. M. 1995 From big house to big brother: Confinement in the future. In N. Larsen, Ed., *The Canadian Criminal Justice System* (pp. 489-516). Toronto: Canadian Scholars' Press
- Mainprize, S. (1992). Electronic monitoring in corrections: Assessing cost-effectiveness and the potential for widening the net of social control. **Canadian Journal of Criminology**, 34(2), 161-180.
- Mainprize, Steve 1996 Elective Affinities in the Engineering of Social Control: The Evolution of Electronic Monitoring, **Electronic Journal of Sociology**

- Martinovic, Marietta 2002 The Punitiveness of electronically monitored community based programs (Paper presented at the Probation and Community Corrections: making the Community Safer Conference, Perth, Australia)
- Mayer, Markus **Evaluation of a Pilot Project on Electronic Monitoring**
http://www.iuscrim.mpg.de/forsch/krim/mayer_en.html
- Mortimer, E., Pereira, E., & Walter, I. 1999 Making the tag fit: further analysis from the first two years of the trials of curfew orders
Research Findings (105).
- National Law Enforcement Corrections Technology Center. (NLECTC) (1999). Keeping track of electronic monitoring [On-line]. Available:
<http://nlectc.org/txtfiles/ElecMonasc.html>
- Nellis, M. 1991 The electronic monitoring of offenders in England and Wales. **British Journal of Criminology**, 31(2), 165-185
- Renzema, Marc 2003 (revised) Electronic Monitoring's Impact on Reoffending
<http://www.campbellcollaboration.org/doc-pdf/elecmon.pdf>
- Renzema, Marc 2005 Alphabetic Bibliography Internet Site:
<http://www.renzema.net/BIBLIOS/EMXbyauthmay05.pdf>
- Renzema, Marc and Evan Mayo-Wilson 2005 Can Electronic Monitoring Reduce Crime for Moderate to High-Risk Offenders? In **Journal of Experimental Criminology** Vo.1, No.2 :215-237
- Roberts, Julian V. 2005 **The Virtual Prison: Community Custody and the Evolution of Imprisonment**. Cambridge University Press
- Rubin, B. 1990 Electronic jails: A new criminal justice concern.
Journal of Offender Monitoring, 3, 8-11.
- Schmidt, A. 1998 Electronic monitoring: What does the literature tell us? **Federal Probation**, 62(2), 10-19.
- Vancise, W. J. 1997 Home alone - but not forgotten: Is electronically monitored house arrest an effective alternative to imprisonment? Available:
<http://www.acjnet.org/capcj/en/law/publications/elecmoni.html>
- White, Elizabeth 2001 Electronic Surveillance: Where Do We Draw the Line? Paper presented to the Conference of Judges, "Electronic Monitoring" May 2001

Newspaper and Radio Reports

CBC Radio May 24/06

Halifax Chronicle – Herald, 21/03/2006

Website Links

American Probation and Parole Association <http://appa-net.org>

Campbell Collaboration Website
<http://www.campbellcollaboration.org/index.asp>

Dana, Peter H. The Geographer's Craft Project, Department of Geography, The University of Colorado, http://www.colorado.edu/geography/gcraft/notes/gps/gps_f.html

Indiana Government Websites
<http://www.indygov.org/eGov/County/Corrections/Services/Detention/pretrial.htm>

<http://www.indygov.org/eGov/County/Corrections/Services/Detention/gps.htm>

Isecuretrac Company (GPS) <http://www.isecuretrac.com/products.asp>

Justice Institute of British Columbia 2005 Electronic Monitoring Bibliography Internet Site: <http://www.jibc.bc.ca/Libraryfiles/archive/PDFDownloads/Bibliographies/Electronic%20Monitoring.pdf>

Langley, Richard Department of Geodesy and Geometrics Engineering, University of New Brunswick <http://gge.unb.ca/Resources/HowDoesGPSWork.html>

Minnesota Public Radio
<http://minnesota.publicradio.org/display/web/2006/02/16/gpstracking/>

National Law Enforcement and Corrections Technology Center (NLECTC)
<http://www.nlectc.org/>

Pro Tech Corporate Website <http://www.ptm.com/>

Renzema, Marc <http://www.renzema.net/index.html>

Schwitzgebel, Robert
http://web.cgu.edu/faculty/gabler/electronic_monitoring2.htm

U.K. National Statistics and ONS: <http://www.national-statistics.org.uk>

University of Toronto, Centre of Criminology
<http://www.criminology.utoronto.ca/library/elecmon.htm>

ADDITIONAL REFERENCES Cited in 2000 JHS Publication

Bonta, J., Rooney, J., & Wallace-Capretta, S. (1999). Electronic monitoring in Canada. Ottawa: Public Works and Government Services Canada.

Del Carmen, R., & Vaughn, J. (1986). Legal issues in the use of electronic surveillance in probation. **Federal Probation**, 50(2), 60-69.

Fay, S. J. (1993). The rise and fall of tagging as a criminal justice measure in Britain. **International Journal of the Sociology of Law**, 21, 301-317.

Fox, R. (1987). Dr. Schwitzgebel's machine revisited: Electronic monitoring of offenders. *Australia and New Zealand Journal of Criminology*, 20, 131-147.

Maedel, T., & Brown, G. (1993). Electronically monitored home confinement: Issues and opportunities facing the Correctional Service of Canada. Vancouver: Vancouver District Parole Office.

Mainprize, S. (1992). Electronic monitoring in corrections: Assessing cost-effectiveness and the potential for widening the net of social control. **Canadian Journal of Criminology**, 34(2), 161-180.

Muncie, J. (1990). 'A prisoner in my own home': The politics and practice of electronic monitoring. *Probation Journal*, 37, 72-77.

On Guard Plus Ltd. (2000). Frequently asked questions:
<http://www.onguard-plus.com/faq.html>

Petersilia, J. (1988). A man's home is his prison. **Criminal Justice**, 2, 17-19, 40-42.

Roberts, J. V. (1999). The hunt for the paper tiger: Conditional sentencing after Brady. *Criminal Law Quarterly*, 42, 38-66.

Schmidt, A., & Curtis, C. (1987). Electronic monitors. In B. McCarthy (Ed.), *Issues in Criminal Justice: Vol. 4. Intermediate punishments: Intensive supervision, home confinement and electronic surveillance* (pp. 153-168). New York: Criminal Justice.

Solicitor General Canada. (1998). Corrections population growth: Second progress report for the federal/provincial/territorial Ministers responsible for justice: <http://www.sgc.gc.ca/epub/corr/e199810c/e199810c.htm>

Vaughn, J. (1989). A survey of juvenile electronic monitoring and home confinement. *Juvenile and Family Court Journal*, 40,(4), 1-36.