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New Zealand's extensive electronic monitoring application: "Out on a limb" or "leading the world"?

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Dr Martinovic has been an academic at RMIT University, Melbourne, Australia for over a decade and is an internationally renowned expert in electronic monitoring technology. Before becoming an academic, she worked as a Community Corrections Officer for Corrections Victoria for four years. There she developed a passion for studying community-based corrections, particularly electronic monitoring, which she researched extensively in her Masters and PhD. Over the last twelve years, Dr Martinovic has published numerous papers on electronic monitoring, and advised governments nationally and internationally on ways to increase the effectiveness of electronically monitored sanctions.

Executive summary

Currently, with around 4,000 offenders and defendants on electronic monitoring (EM) daily, New Zealand is a significant user of EM in the English-speaking world (New Zealand Department of Corrections, 2016). EM in New Zealand can be imposed as a part of various community-based penalties including community detention, home detention, parole, extended supervision orders (ESOs) and intensive supervision. EM is also used in pre-trial electronically monitored bail (EM Bail). Finally, prisoners on temporary release from prison for daily employment in the community and on other temporary releases from prison are also subject to EM. The majority of offenders/defendants on EM sanctions are global positioning systems (GPS) tracked as opposed to radio frequency (RF) monitored. Empirically, EM sanctions in New Zealand have been delivering positive results in terms of recidivism and cost-savings compared to prison, but these sanctions have attracted a disproportionate level of negative media coverage. This article describes the historical developments of EM application in New Zealand, provides an overview and comparison of EM application in other parts of the English-speaking world, and finally discusses large-scale evaluative findings about EM sanctions in relation to recidivism. It concludes that New Zealand's correctional policy of extensive EM application is "leading the world" as it is based on empirical data. Further and ongoing research is, however, required to ensure that it is delivering effective results and appropriately managing community expectations.

Introduction

The pressure of the escalating cost of building and sustaining prisons forced most of the English-speaking countries during the 1980s to search for cheaper but effective community-based sentences. Following the lead of the United States (USA), all of these countries, including New Zealand, initiated their own versions of home detention – with or without electronic monitoring (EM) – in order to divert the increasing number of offenders being sentenced to prison.

New Zealand uses two types of EM technology – radio frequency (RF) and global positioning systems (GPS). RF is first generation EM technology which originated in the 1980s. It typically provides a yes/no answer to the question "is the offender at their monitored location?" (such as their home or workplace) at certain predetermined times. This static technology cannot provide any information about the offender's movements when they are not at their monitored location. For many types of offending groups this basic information is appropriate to manage them safely in the community.

Second generation GPS technology, which originated during the 1990s, fills the gap of broader movements. It is capable of providing an answer to the open question "where is the offender now and where have they been in the past?" This technology allows a whole new dimension of monitoring to be applied; this includes the examination of association of monitored individuals and their behavioural patterns. Further, forensic analysis of offenders' movements can be used in court to convict or exonerate them and as such it serves as a deterrent to criminal behaviour. GPS tracking is used for high-risk offenders such as parolees and those on ESOs.

New Zealand is the only English-speaking country that has boldly set out a goal in 2012 to reduce the financial and social cost of crime in society by "breaking the cycle of re-offending by 25 percent by 2017". One of the key strategies to achieve this was to increase the use of community-based sanctions that utilise EM. This decision was based on empirical data, mostly from the USA, demonstrating that offenders on EM (especially GPS) have higher successful completion rates and lower recidivism rates; hence, lower subsequent costs are associated with re-arrest and re-incarceration of offenders on EM in comparison with non-electronically monitored offenders. (For more information see section below titled "Large scale evaluative findings on recidivism"). New Zealand Department of Corrections' annual report (2016) has indicated that although the rate of re-offending has decreased only moderately, the number of offenders who re-offend has been declining over the past five years, with almost 25 percent fewer re-offenders re-entering the system than in 2011.

The increasing trend to use EM sanctions around the world seems to be due to their surveillance abilities. Further, providing that offenders are motivated to reform themselves, being on EM can facilitate their rehabilitation by encouraging a sense of self-responsibility. Unlike in a prison environment, offenders on EM sanctions can continue to positively contribute to society by working, caring for children and family members, attending rehabilitation programmes and being connected to their family and wider social support networks. It must, however, be remembered that rehabilitation programmes and services must be provided and adequately funded, otherwise these sanctions only impose "mere surveillance" and do not deliver the desired outcomes. New Zealand Corrections offers significant rehabilitation options for all EM sanctions, with the exception of community detention, which is solely a curfew sentence.

Historical developments of EM application in NZ

New Zealand started using EM in the 1990s in order to create a safe, cost-effective alternative to imprisonment for those who would have been sentenced to short prison terms. Subsequently, between

1995 and 1997, a small pilot home detention programme with RF was introduced for convicted offenders who had not committed serious offences. Telephone calls and voice verification were used to check that offenders were complying with the home curfew. Although the evaluation indicated some operational problems with the technology employed, the overall finding was that home detention was an effective alternative to imprisonment. The government subsequently introduced a nationwide active EM home detention scheme in 1999.

Home detention commenced on both a "front-end" (sentencing option) and "back-end" (post-prison release order) basis in October 1999. "Front-end" offenders were those sentenced to a term of imprisonment of two years or less who were approved for release to serve the sentence on home detention for a period of up to 12 months. "Back-end" offenders were those serving prison sentences of more than two years; five months prior to the parole eligibility date these individuals could apply for release on home detention, which (if approved) commenced three months before the release date. Probation officers conducted risk assessments ascertaining offender suitability, the nature of their offence, the likelihood of rehabilitation and reintegration, accommodation and the welfare of the offender's co-residents and community protection. The fundamental objectives of home detention were intensive supervision and incremental reintegration of the offender.

Two key legislations were passed in 2002 which increased the utilisation of EM sanctions in New Zealand. These were the Sentencing Act 2002 and the Parole Act 2002 both aiming to divert increasing numbers of offenders from prohibitively expensive incarceration into much cheaper and more effective community based sentences with EM. Thereby home detention became a "stand-alone sentence"; this meant that greater flexibility was given to judges to impose it as a short alternative to imprisonment. Further, EM became a possible condition of parole. Finally, community detention was introduced which detains offenders at home during times when they are most likely to offend, that is, evenings and/or weekends.

The positive outcomes of home detention were once again confirmed in a large-scale study commissioned by the Australian National Corrections Advisory Group (NCAG). This study analysed the New Zealand home detention scheme from 1999 to 2005 (Henderson, 2006). The findings were as follows:

- During a six-year period, 6,125 offenders were placed on home detention throughout New Zealand. This reflects extensive application of EM in New Zealand.
- Programme completion rates demonstrated an average completion rate of 89 percent; the high success rate may be attributable to the intensity of offender supervision.
- There were, however, mixed reports about home detention's impact on offender's co-residents. Some co-residents likened their role to serving the sentence alongside the offender, highlighting the burdens that are placed upon them. Alternatively, other co-residents reported that offenders were able to spend more time with their children, and that there was an eventual improvement in spousal relationships.

In 2005, EM sanctions started to be used for high-risk offenders in New Zealand. Similarly to the USA and Australia, it introduced extended supervision orders (ESOs) for high-risk sex offenders (and subsequently very high-risk violent offenders) who pose a high-risk of re-offending at the time when they finished serving their original prison sentence/s. Courts can re-sentence these offenders to ESOs for periods of up to 10 years at a time. The conditions of these orders typically involve regularly reporting to a probation officer, attending treatment and counselling, having residence and employment constraints, having restrictions about contact with victims or other people or groups of people, and being subject to EM. The electronic monitoring condition for ESOs usually specifies exclusion zones such as parks and schools rather than imposing a curfew per se. The main aim of ESOs is to prevent future offending by quickly identifying and managing any risks, and in cases when offending does occur, the aim is to have tracking evidence of offending and therefore to swiftly apprehend the offender.

EM was introduced as a condition of regular bail in September 2006. The rationale behind this was the increasingly unsustainable costs of remand in prison. In 2013 a specific EM Bail Act was passed meaning that the courts were granted generic power to impose EM bail. It can be applied to defendants charged with more serious offences who have been remanded in custody. It is granted in about 30 percent of cases. The conditions of EM bail and levels of restrictiveness vary from case to case. In some cases, a 24-hour curfew may be applied, while in others defendants may be allowed to continue working and so an evening curfew is imposed. Initially the police were responsible for running EM bail, but following the 2013 Bail Act changes, the Department of Corrections took over the responsibility to supervise defendants on EM bail.

Outcomes of EM bail have generally been very positive. The Ministry of Justice (2011) reported that the rate of re-offending while on EM bail was quite low, at 7 percent. This is a significantly lower than the average rate of offending on regular bail without the EM component which was 17 percent. In addition, while EM bail was considered more expensive to run than standard bail, it was comparatively significantly less expensive than keeping defendants on remand in prison. Finally, it was concluded that EM bail was particularly useful as an option in cases that demand a long period between charges being laid and trial.

Between 2006 and 2010 New Zealand experimented with the application of GPS technology. Various trials were conducted which tested GPS monitoring functionality, accuracy and usefulness, with the ultimate goal of reducing offenders' recidivism. Consequently, the trials were set up to examine costs and benefits and the possibility of nationwide implementation of GPS technology. The trials led to the use of GPS monitoring for 200 high-risk offenders between 2012 and 2015.

Up until 2015, three different providers of EM equipment were used in New Zealand; these included G4S, Chubb and Buddi. In 2015 the Department of Corrections invited manufacturers of EM equipment, specifically requesting more provision of GPS, to tender, and moved to using a single EM provider for all offenders/defendants. The successful bidder was 3M. It is responsible for installing and removing all equipment as well as responding to all alerts for all EM sanctions.

In late 2016 EM legislation was passed^[1] to enable two additional community based sanctions – temporary release from prison on conditions and intensive supervision. At sentencing, probation staff can recommend EM to be imposed as a condition of one of these sanctions. For offenders already on these sanctions, the district manager or lead service manager can apply to the court to vary an offender's conditions of the sanction by additionally imposing EM.

The Department of Corrections provides the courts with pre-sentence reports that outline whether offenders are suitable to have their whereabouts restricted and be electronically monitored. These pre-sentence reports are likely to target the following sub-populations of offenders sentenced to a short prison sentence or intensive supervision:

- family violence offenders who pose a high risk to their victims
- gang-affiliated offenders who pose a high risk to public safety
- high-risk sex offenders.

The latest evaluative outcomes reported by the New Zealand Department of Corrections indicate that EM sanctions are continuing to produce effective results. After serving a sentence on EM versus imprisonment offenders are less likely to re-engage in further offending. This is seen by the 19 percent re-conviction rate for those on home detention (within 12 months of sentence start date) versus 42 percent for those imprisoned (within 12 month of date of release). Further, placing an offender on home detention, instead of in prison, results in savings of between 75 to 80 percent for taxpayers. More specifically, the daily cost of an offender on home detention is \$59.87 compared to \$239.17 for keeping a remand prisoner or \$307.53 for keeping a sentenced prisoner (New Zealand Department of Corrections, 2016).

Despite the empirical facts that indicate that EM sanctions in New Zealand are delivering very positive results in terms of recidivism and cost-savings compared to prison, EM sanctions have attracted a disproportionate level of negative media coverage. In the past few years, plentiful stories have appeared about offenders/defendants on EM sanctions who cut off their straps and abscond. However, the reality is that 99 percent of offenders/defendants on EM sanctions adhere to their order requirements. There are between 0.5 and 1 percent of offenders/defendants on EM sanctions who remove their trackers and are not apprehended on any one day. Hence, of those who do remove their trackers the vast majority are caught very quickly. It is also worth noting that during 2015/2016 only 13.5 percent were convicted of a new offence during the period of absconding (New Zealand Department of Corrections, 2016).

Another set of stories that have appeared in the New Zealand media have been about the "inadequate" strength of EM straps. The fact is that the strap which is used to hold the device "cannot be unremovable", because it must meet global health and safety standards which require it to be able to be removed in an emergency.

It should also be noted that the New Zealand Department of Corrections seems to currently have a suitable process for managing tamper alerts. If a tracker is tampered with or removed it sets off an alarm at the monitoring centre and 3M must take action within 60 seconds. The field officer must be dispatched within 10 minutes of the alert and attend the offender/defendant's address. If the offender/defendant has absconded, Corrections must be notified immediately and then Police. In cases of high-risk offenders, 3M contacts Corrections' specialist GPS Immediate Response Team who decide how to respond to an alert depending on the nature of the incident and sentence being served (New Zealand Department of Corrections, 2016).

Overview of EM application in English-speaking countries

USA

In 2016, about 125,000 offenders were reported to be on EM sanctions throughout the USA at any one time (Pew Charitable Trusts, 2016). This number has increased 140 percent over the last 10 years. Two-thirds of these offenders were on GPS monitoring, and one third was on RF monitoring. The use of RF monitoring has typically targeted lower-risk offenders with the aim of reducing overcrowded correctional facilities in a cost-effective manner. GPS monitoring, on the other hand, has been usually applied to high-risk offenders as a means of additional social control on community-based sentences such as probation, parole and ESOs. EM is used in all fifty USA states, the District of Columbia, and the federal government.

Australia

In Australia, there were about 1,000 offenders on EM sanctions at any one time in 2016 (Personal communication, Lis 2016). Six out of eight Australian states and territories are using EM monitoring, and the other two are planning its application. The application of EM varies across the states and territories, nevertheless across the country it is used in all stages of the criminal justice process including pre-trial as part of bail, as a sentence, as early release from prison, and as part of supervision post sentence. The majority of offenders on EM in Australia are high-risk sex offenders on the equivalent of ESOs. These offenders are typically electronically monitored, supervised by corrections officers and engaged in rehabilitative programmes. All Australian states and territories have transitioned to solely using GPS monitoring due to its technical abilities.

Canada

Recent offender numbers on EM sanctions in Canada seem to be unavailable, even though EM is currently used nation-wide. Traditionally, it was used for offenders on probation, but in 2013 legislative changes mean that it can be used for high-risk offenders on day passes, work release and parole. A comprehensive evaluation of a GPS monitoring pilot was conducted in the Ontario region between 2008 and 2009. The evaluation indicated a number of issues with the GPS technology trialed – particularly drained batteries and false alerts, but it advocated for further application of the technology. In 2015, the Correctional Service of Canada started another three-year GPS monitoring pilot programme across all five regions. Up to 300 GPS devices are being placed on high-risk offenders at the discretion of supervising parole officers. The evaluation report will be presented to the Minister of Public Safety in 2018.

England and Wales

In 2015, 13,210 offenders/defendants were reported to be on EM sanctions at any one time in England and Wales (Hucklesby & Holdsworth, 2016). EM is used in all three stages of the criminal justice process – pre-trial as a condition of bail, as a sentence, and as early release from prison. EM can be used as a stand-alone sanction or in conjunction with supervision by probation officers. All of the offenders on EM are subjected to RF technology and therefore a curfew. GPS tracking is used on a small number of high-risk offenders and in voluntary police schemes. In addition, two EM pilots are taking place across England and Wales – alcohol monitoring and bilateral monitoring of domestic violence perpetrators.

Interestingly, there has been an 11 percent reduction in the use of EM sanctions in England and Wales since 2013. This could be because EM is mostly delivered by private sector agencies, which have not enjoyed a cohesive relationship with the probation service, and have been beset by a series of scandals including alleged over-charging by providers (Hucklesby & Holdsworth, 2016).

Comparison of EM application in English-speaking countries

It should be noted that data presented below are not directly comparable so figures need to be used as indicators only. Table 1 presents four English-speaking countries' prison population, number of defendants/offenders on EM sanctions, and the use of EM as a percentage of the prison population. The figures indicate that the USA has by far the highest number of offenders/defendants on EM at any one time, but its use of EM is relatively small-scale compared to its prison population. In fact, when EM use is viewed as a percentage of the prison population it seems that New Zealand (34.6%) and England and Wales (15.2%) use EM considerably more than USA (5.7%) or Australia (2.5%). [This presentation of data has been replicated from a comparative case study of EM in five European jurisdictions, which was funded by The Criminal Justice Programme of the European Union. For more information see Hucklesby et al., 2016].

Large-scale evaluative findings on recidivism

The primary objective of EM sanctions is to deter further offending, and hence enhance public safety. This section of the paper discusses large-scale methodologically sound evaluative studies that have assessed recidivism rates of EM sanctions. During the last decade, these studies have mostly been conducted in the USA and they have mostly assessed sanctions using GPS monitoring.

The first researchers to conduct a large-scale assessment of EM's deterrent effect were Padgett, Bales and Blomberg (2006) from Florida State University, USA. They assessed data from more than 75,000 offenders

who were placed on home detention in Florida from 1998 to 2002, and reported crime suppression effects for those on GPS monitoring and RF monitoring. In particular, lower technical violations, revocation rates and recidivism rates for the duration of being on the sanction were found in comparison with offenders on all other community-based dispositions without EM (Padgett et al., 2006).

Very supportive findings of EM sanctions were confirmed in a follow-up USA National Institute of Justice study by Bales and colleagues (2010) in Florida. They conducted the largest comparative assessment of the operation of EM technology versus ordinary community supervision of over 270,000 offenders. The finding was that being subjected to RF monitoring reduces the likelihood of failure under community supervision by about 30 percent, and that GPS monitoring has a further 6 percent compliance improvement rate when compared with RF monitoring.

In addition, the State Parole Board, New Jersey, GPS monitoring report suggested that the placement of sex offenders onto GPS monitoring contributed to a lower recidivism rate than nationwide data for high-risk sex offenders (New Jersey State Parole Board, 2007). This finding was based on the pilot programme which spanned over three years and consisted of 225 sex offenders of which only one was implicated with new sexual offending. This was compared with USA-wide data that indicated that 5.3 percent of sex offenders are arrested for a new sexual offence following their release from prison. Sex offenders reported that they felt as though their movements were being watched, placing a greater control on their behavior. It should be noted that all offenders on this sanction received individual treatment directly addressing their sexual offending behaviours based upon cognitive-behavioural principles.

Similar findings were drawn from two pieces of literature that best summarised "lessons learned" concerning recidivism and deterrence in the GPS monitoring field; these were Brown, McCabe and Wellford (2007) in their empirical studies sponsored by the USA National Institute of Justice, and Hucklesby's (2009) summary of the presentations at the 2009 Electronic Monitoring Conference in the Netherlands. The lessons include:

- GPS monitoring prevents offenders from committing crime
- offenders subjected to GPS feel "observed" and are therefore more likely to be compliant
- offenders avoid particular locations and victims due to GPS perimeters set by exclusion zones
- offenders are not likely to maintain contacts with former associates due to GPS tracking
- it is, however, unknown whether GPS monitoring has a sustainable impact on offenders' behaviour modification.

Table 1:

The use of EM as percent of prison population

Country	Prison population	Number of offenders/defendants on EM	Use of EM as % of prison population
New Zealand	9,914	4,021	40.5%
England & Wales	85,128	13,210	15.2%
USA	2,200,000	125,000	5.7%

Country	Prison population	Number of offenders/defendants on EM	Use of EM as % of prison population
Australia	39,005	1,000	2.5%

(Pew Charitable Trusts, 2016; ABS, 2016; Lis, personal communication, 2016; New Zealand Department of Corrections, 2016; Ministry of Justice, 2015; Hucklesby & Holdsworth, 2016).

Most recently, Geis and colleagues (2012) compared compliance and recidivism rates in California between High Risk Sex Offenders on GPS monitoring and those on ordinary parole without the EM component. Offenders on GPS monitoring had significantly better outcomes for both. In relation to compliance, violations were nearly three times greater for offenders on traditional parole (with less detection capability) in comparison with those on GPS monitoring. In terms of recidivism, arrests were more than twice as high among offenders on traditional parole in comparison with those on GPS monitoring.

Hence, it is empirically proven that EM sanctions can make a contribution to reducing recidivism, but they must contain rehabilitative and reintegrative initiatives. The stability in the lives of offenders is often enhanced when they are placed on EM, which in turn provides them with the ability to complete rehabilitation programme/s, and hence reduces recidivism (Hucklesby, 2009).

Conclusion

New Zealand's correctional policy of extensive EM application as a strategy to lower the recidivism rate is delivering the desired outcomes. It is in line with international best practice as empirical data has clearly indicated that EM can increase public safety providing it is used alongside rehabilitative initiatives. However, it must be remembered that EM is not a panacea – a small number of offenders/defendants will cut off their EM straps and/or re-offend. The duty of the New Zealand Department of Corrections is to minimise these instances as much as possible. This can be achieved by conducting ongoing rigorous research to ensure that EM sanctions are continuing to deliver effective results. Research findings could establish practical ways to further increase offender compliance and rehabilitation prospects, as well as appropriately manage community expectations.

Footnotes:

[1] Sentencing (Electronic Monitoring of Offenders) Amendment Act 2016:
<http://www.legislation.govt.nz/act/public/2016/0047/8.0/DLM6923518.html>

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