Electronic Monitoring: Uses, Challenges and Successes

CRIME AND JUSTICE

social research
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The purpose of this paper

This paper reviews the main strengths and weaknesses of electronic monitoring (EM) for offenders based on a review of the findings from a number of international and UK studies. The paper also describes how EM is used in Scotland and in other jurisdictions.

Key Messages

The use of Electronic Monitoring in Scotland and in international jurisdictions:

- In Scotland, Restriction of Liberty Orders (RLOs) and Home Detention Curfews (HDCs) are the two most commonly used forms of electronic monitoring (EM).\(^1\)

- In other jurisdictions, EM is used at different and multiple points along the justice pathway – as an alternative to remand, as an alternative to sentencing, as a form of probation following release from prison and as part of provisions for early release.

- The risk assessment process and eligibility criteria for individuals diverted to EM varies across jurisdictions. Some jurisdictions focus on the risk posed by the individual whereas others assess risk based on opportunities for rehabilitation and reintegration.

- The evidence base on the effectiveness of EM is limited in terms of the comparison and transferability of research from other jurisdictions.

A review of the evidence on EM

EM technologies

- The effectiveness of EM is affected by technical issues and the type of monitoring system.

- There are differences in outcomes between Radio Frequency (RF) and Global Positioning Systems (GPS) EM technologies. Some studies found GPS EM is more likely to reduce reoffending/non-compliance than RF.

Remote Alcohol Monitoring

- Remote Alcohol Monitoring (RAM) differs from other uses of EM because the main aim is to manage or reduce alcohol consumption.

- There is a limited evidence base on the effectiveness of RAM, however a limited number of empirical studies suggest promising results for the use of RAM.

- A pilot conducted in London in 2014 evidenced a 92% compliance rate with RAM for monitored people on community sentences over 12 months and concluded there were a number of positive opinions and experiences of alcohol abstinence monitoring.²

- One of the recommendations of the 2016 Scottish Government Working Group paper was on legislative change, including the introduction of legislation which would enable the use of RAM.³

² Pepper, M. and Dawson, P. (2016) ‘Alcohol Abstinence Monitoring Requirement A process review of the proof of concept pilot’ MOPAC Evidence and Insight Unit, available at: https://www.london.gov.uk/sites/default/files/aamr_final.pdf; non-compliance was based solely on the consumption of alcohol or tampering with monitoring equipment and did not include compliance with the conditions of the community sentence, which were often numerous and complex.

Community supervision and support

- A body of evidence suggests EM is more effective when combined with other supervision and support mechanisms within the community.

- In most jurisdictions EM is understood as a tool in a wider network of community support and supervision of monitored people.

EM and reintegration

- The relationship between EM and reintegration of monitored people is a complex one and is dependent on how reintegration is defined.

- EM can be used to encourage a pro-social lifestyle by incentivising compliance with the conditions of release, encouraging engagement with treatment, counselling, positive recreational activities, facilitating an offender’s return to their family, reinforcing day-and-night rhythms, and discouraging association with criminal associates.

- EM can be be flexibly applied dependent on offence, offender demographic, and the conditions necessary for release, and its flexible use can be used to incentivise reintegration.

- EM can provide opportunities for the construction of positive social capital, in that it allows family responsibilities and relationships to be maintained and increases the likelihood of the monitored person gaining or maintaining employment.

- However, in some cases EM can have a negative impact upon the monitored person’s family, particularly those who reside within the same address.

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The impact of EM on reoffending and reconviction rates

- Caution must be taken when comparing the reconviction rates of those on HDC from those who are released straight from custody, as it likely that individuals who have been granted HDC pose a lower risk of reoffending, so the results may not be directly comparable. However some reconviction studies have controlled for risk to ensure the results are more comparable.

- There are mixed but promising results regarding reoffending, reconviction and failure/breach rates with use of EM.

- Some evidence suggests EM reconviction rates for monitored people are lower, or similar, compared to matched groups who serve their full sentence in custody.

The cost of EM

- The available evidence suggests EM costs less than imprisonment.

- There is a limited evidence base on the cost incurred by the whole system operational costs of EM.

- EM’s cost effectiveness is conditional on a number of factors.

The ethical considerations of EM

- There are number of ethical concerns and considerations associated with the use of EM related to its impact on the individual and use in the wider justice system.

- In some cases, EM can result in feelings of stress, stigma and shame for the monitored person, and can sometimes negatively affect their family or co-habitants.

- EM can allow net widening or penological drift, whereby individuals who would not be sanctioned otherwise are monitored by EM.
EM and domestic abuse

- In cases of domestic abuse, the purpose of EM is different to that in cases of non-domestic crime. Bilateral Electronic Monitoring (BEM) monitors both an perpetrator’s compliance with the conditions of sentence and protects victims of domestic abuse by monitoring the perpetrator’s movements in relation to the victim.

- Research on BEM in cases of domestic abuse suggests it makes the justice system more victim-centric and can improve victims’ feelings of safety, empowerment and provide space to reassess the relationship and their future circumstances.

- Domestic abuse perpetrators’ experience of EM is varied and overall the evidence base relating to the use of EM with domestic perpetrators is limited.
Introduction

Rationale and Methods

This review focuses on issues of particular relevance to Part 1 of the Management of Offenders (MoO) Bill – namely the different ways in which EM could be used along the justice pathway and the strengths and weaknesses of electronic monitoring. The provisions in Part 1 of the MoO Bill are designed to expand and streamline the use of electronic monitoring (EM) in Scotland. The underlying intention of Part 1 of the Bill is to provide one overarching set of principles for the imposition of EM, drawing together the threads of the pre-existing legislation.

This paper builds on a comprehensive review of on EM published in 2015 which highlighted the most relevant and reliable studies on electronic monitoring. New literature was found via database searches conducted by the research officer and Scottish Government Library service between November 2018 and January 2019.

The review was informed by a range of international studies. In terms of the Scottish literature, the review drew on 5 key reviews on EM in Scotland:

- Barry and colleagues’ 2007 ‘Evaluation Of The Use Of Electronic Monitoring As A Condition Of Bail’,
- Graham and McIvor’s 2015 publication on ‘Scottish and International Review of the Uses of Electronic Monitoring’;
- The Scottish Government Working Group’s 2016 report on ‘Electronic Monitoring in Scotland’, and

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5 Graham and McIvor (2015)
8 Scottish Government Working Group (2016)
• Reports published from the 2014 EMEU project, which examines the use of EM across EU member states to reduce prison populations.9

Additional literature on electronic monitoring from other jurisdictions may exist but may have been missed because articles were not written in English and/or because they used different terms for ‘electronic monitoring’.10

Gaps in the evidence base

There is extensive theoretical literature on EM, a review of which is beyond the scope of this paper.11 There are also a number of published systematic reviews which focus on EM but there are fewer empirical studies that employ experimental or quasi-experimental methods that compare the outcomes of EM with other disposals. One of the few was conducted by the Ministry of Justice in 2011 on HDC, which concluded that monitored people released on HDC were no more likely to reoffend than those in a matched sample who were not eligible for release.12

There is also a lack of evidence from the perspective of monitored people and on rural, female, minorities and non-compliant offenders. Caution should be exercised when comparing findings across jurisdictions due to different models, intended outcomes and different uses of EM. Comparisons from the US and other non-EU states are difficult due to the different human rights frameworks governing judicial decision-making. For Remote Alcohol Monitoring and drug monitoring, compliance is measured differently making comparisons very difficult.

A note on the interpretation of the evidence

It should be noted that an assessment of whether EM is effective or not will depend entirely on its particular aims and purpose. An overview of the evidence shows that electronic monitoring has been used to achieve a range of different objectives including to reduce reoffending, reduce the risk of breaching an order, reduce the prison population, or reduce costs (and sometimes a combination of these).

9 The publications resulting from this project can be accessed at: http://emeu.leeds.ac.uk/reports/

10 Searches were conducted using terms which included “electronic monitoring”, “home detention”, “home arrest”, “tagging”, “curfew”.


Therefore, the effectiveness of EM can only be determined based on whether it achieved the particular objectives defined within an individual study. For example, EM introduced to release pressure on the prison population may be considered effective because it reduces prison populations. It may not be effective at reducing reoffending however, because it does not combine the tag with support to address the criminogenic needs associated with reoffending.

The use of electronic monitoring along the justice pathway

The current use of EM in Scotland

EM was introduced in Scotland in 1998 for the purpose of monitoring compliance with RLOs and has been used nationally since 2002.\(^\text{13}\)

There are three types of technologies used in electronic monitoring: Radio Frequency (RF), Global Positioning System (GPS) and Remote Alcohol Monitoring (RAM).

RF monitoring is the only type of EM currently used in Scotland. In Scotland electronic Monitoring (EM) is used as a unilateral\(^\text{14}\) measure, primarily intended to monitor the offender to ensure they adhere to the conditions of order or licence. Offenders may be restricted to a place, from a place, or both to and from places under the conditions of EM.

EM is used most often for a diverse range of offences including theft, assault, sexual offences, fraud, wilful fire-raising and offences under the Criminal Justice and Licensing (Scotland) Act 2010.\(^\text{15}\)


\(^{14}\) The term ‘unilateral’ is used to describe EM that monitors only the offender; bilateral monitoring is used to describe systems whereby the offender and the victim are involved in the EM process.

In Scotland, electronic monitoring can be used for the following order and licence types:

a) Restriction of Liberty Order (RLO);
b) Home Detention Curfew, including cross-border releases (HDC);
c) As a condition of a Parole or a non-Parole License;
d) A Movement Restriction Condition, applied as part of an Intensive Support and Monitoring Service made by a Children’s Panel (MRC);
e) A Restricted Movement Requirement as part of a Community Payback Order (RMR) or breach of a Community Payback Order;
f) A Requirement Restricting Movement as part of a Drug Treatment & Testing Order (DTTO);
g) As a condition of a Sexual Offences Prevention Order (SOPO);
h) As a condition of a Sexual Harm Prevention Order (SHPO);
i) As a condition of Temporary Release licence from Prison (which may include Home Leave).
j) As part of a Supervised Release Order (SRO).\(^1\)

**Restriction of Liberty Orders**

In Scotland, Restriction of Liberty Orders (RLOs) and Home Detention Curfews (HDCs) are the two most commonly used forms of EM.\(^2\)

Restriction of Liberty Orders (RLOs) are imposed for periods of up to one year, and involve restricting an individual to a specified place for up to 12 hours per day and/or from a specified place for up to 24 hours per day.

Criminal proceedings data for the period 2017-18 shows that 2,691 people were sentenced to a RLO. This compares with 13,601 sentenced to a community payback order (CPO). 11,973 people were given a custodial sentence and 287 of those were sentenced to a supervised release order. RLOs have been more widely

\(^1\) Conditions ‘g’ to ‘j’ will be the new uses under the Management of Offenders Bill, and ‘e’ is a change in that Community Payback Order use will be at first disposal, rather than only at breach stage. Some of these will therefore not be possible until the legislation, which at the time of writing was before the Scottish Parliament, is passed and commenced.

\(^2\) G4S (2016)
used over the past decade with the numbers more than doubling from 1,143 in 2008-09 to 2,691 in 2017-18.

In the most recently available year (2015-16) the reconviction rate for RLOs was 33.9% and the average number of reconvictions per offender was 0.58. These figures for reconvictions are much lower than they were a decade ago, with the average number of reconvictions for RLOs decreasing by 46% from 1.07 in 2006-07. In comparison to RLOs, in 2015-16 the reconviction rate for short custodial sentences of under 3 months was 58.5% and for sentences under 1 year it was 51.0%.

Appendix 1 contains the table detailing the reconviction rates.

**Home Detention Curfews (HDC)**

HDCs were introduced in Scotland in 2006. Prisoners serving less than four years imprisonment were eligible to apply for early release on home detention. In 2008 the scheme was expanded to include long term prisoners who were recommended by the Parole Board. The decision to release on HDC and the assessment process for determining eligibility and the recall process are carried out by the Scottish Prison Service.

**Other uses of EM in Scotland**

EM is also used in Scotland by the Children's Hearing System in the form of Movement Restriction Conditions (MRCs) for young people. These orders are used when young people are at severe risk, as an alternative to secure care, and as a measure to assist the transition from secure care into the community.

**The international use of EM**

Internationally, electronic monitoring is used at a number of different points along the adult criminal justice pathway. These points include:
• an alternative to pre-trial custodial remand, for the purposes of surveillance, compliance and risk management;\textsuperscript{18}

• an alternative to short prison sentences;

• part of an early release from prison; and

• other ad hoc purposes, such as prisoners' attendance at hospital.

EM, as an alternative to custodial remand (pre-sentencing), is used in the US, Australia,\textsuperscript{19} Argentina, a number of EU countries (including Belgium, Ireland, the Netherlands, England and Wales), and was previously piloted in Scotland.\textsuperscript{20} In Spain, Portugal and the USA, electronically monitored restraining orders are used pre-trial in cases of domestic violence. In Ireland, pre-trial EM was used as condition of bail in burglary offences.\textsuperscript{21} In the Netherlands, EM is used for young offenders in place of remand.\textsuperscript{22} A pilot project in 2005 evaluated EM as a condition of pre-trial bail in Scotland,\textsuperscript{23} and found EM was used in less than 5\% of eligible cases.\textsuperscript{24}

EM as an alternative to a custodial sentence (primary sentencing) is used in some European jurisdictions in place of short prison sentences. In the Netherlands, EM is used in place of prison sentences of 6 months or less.\textsuperscript{25} In Germany, Home Detention is used as an alternative to imprisonment for the failure to pay a fine (as

\begin{itemize}
  \item \textsuperscript{21} Moss, B. (2018) ‘Electronic monitoring and monitoring probation: The case of Ireland’ European Journal of Probation, Vol. 10(2) 120– 135, p. 125
  \item \textsuperscript{23} Barry et al (2007)
  \item \textsuperscript{24} Barry et al. (2007); Graham and McIvor (2015) p. 22
  \item \textsuperscript{25} Graham and McIvor (2015) p. 22
\end{itemize}
well as for early release from prison). In South Australia, HDC is used in some instances where an individual has their custodial sentence fully suspended and they complete the entire term on home detention.

**EM is used as a form of probation (post imprisonment)** following a completed prison sentence. It is used across Europe in a number of jurisdictions, including England and Wales, Belgium, Germany, the Netherlands, Denmark, and Norway. In Germany, probationary EM is used only exceptionally, in very low numbers and for serious violent offenders at high risk of reoffending.

EM as part of provisions for early release/probation (post imprisonment) is used in a number of jurisdictions including Sweden, Belgium, Australia, New Zealand and the US. In New Zealand, people serving prison sentences of over 2 years for crimes that do not involve serious violence can apply for HDC up to three months earlier than their earliest parole date as a form of parole. In Sweden, EM for early release is used for prison sentences of 6 months or longer and is generally reserved for people convicted of crime who are deemed low risk. In Belgium, for prison sentences of 3 years or more and based on other specific eligibility criteria, EM is used for prisoners who are 6 months from their conditional release date. In South Australia, prisoners (except those convicted of serious crimes of violence, sexual crime or terrorism) who have completed at least half of their custodial sentence are eligible for release on HDC.

EM is also used for other ad hoc purposes. In Ireland, for example, EM was initially introduced in 2010 for prisoners to attend hospital. EM is also used in Spain for this purpose and for mothers with newborn babies. EM was introduced in Argentina for old or terminally ill prisoners to be released and spend their remaining time with family. In the Netherlands, EM is used as a condition of a conditional

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27 Cale and Burton (2018) p.38
32 Cale and Burton (2018) p.38
33 Moss (2018) p.125
detention under a hospital order; and with the conditional ending of this order.\textsuperscript{36} Changes to the legislation in Canada in 2013 mean EM can be used to monitor high-risk prisoners on day pass or work release.\textsuperscript{37} In some US and Canadian state schools electronic tags are used to monitor children with high truancy records.\textsuperscript{38}

**Risk Assessment and Eligibility**

**Risk Assessment and eligibility in Scotland**

There are a number of risk assessment processes involved in assessing a person’s suitability for EM.

RLO assessments are conducted by Criminal Justice Social Work and involve gathering information on the individual’s home circumstances, employment status, and family responsibilities and circumstances.\textsuperscript{39}

Assessment of risk and eligibility for HDC in Scotland is the responsibility of the SPS, drawing on community assessment by criminal justice social work and acting within a legislative framework that sets out a number of statutory exclusions. Research by Armstrong and colleagues (2011) indicated that the majority of prisoners released on HDC were serving sentences of between six months and two years; their offending profile tended to be less serious than that of the Scottish prison population as a whole and proportionately more use was made of HDC with women than with men.\textsuperscript{40}

The granting of release on HDC has been declining since August 2018 and then reduced substantially since the end of October 2018. This decline followed a review by Her Majesty’s Inspectorate of Prisons for Scotland and Her Majesty’s Inspectorate of Constabulary in Scotland. According to SPS reported ‘stock’

\textsuperscript{36} Boone \textit{et al.} (2017)
Risk assessment and eligibility in other jurisdictions

In other jurisdictions, the type of person eligible for release on EM varies. In some jurisdictions EM has been piloted in response to a specific issue, such as the recent GPS monitoring pilot for knife crime in London or to tackle joyriding in Manitoba, Canada.\(^\text{41}\) In the US, EM is used widely for the monitoring of sex offenders, some high risk and some on lifelong monitoring orders.\(^\text{42}\) In Germany, GPS EM is only used to monitor small numbers of high risk offenders convicted of violent or sexual crime following their complete prison sentence of at least one year, and lifelong GPS monitoring is an available option for people convicted of child sexual abuse.\(^\text{43}\) By contrast, in Norway and South Australia, EM – specifically HDC – is not available for the most serious/violent offences such as homicide, sexual, or terrorist offences.\(^\text{44}\) Offenders assessed as ‘low-risk’, who would not be eligible for a custodial sanction for their offence, are excluded in some jurisdictions to avoid potential net-widening effects.\(^\text{45}\)

Eligibility and risk assessments for EM in other jurisdictions varies considerably, and much depends on the purpose for which EM is intended. Scotland relies on a system of structured professional judgement to assess an individual’s risk, and much of the assessment is based on an individual’s conduct while in custody. Elsewhere, some jurisdictions use actuarial prediction, a model based on an empirically developed risk assessment tool that categorises individuals based on their membership of certain subgroups that are positively associated with risk. This section offers a number of examples to illustrate the variety of different processes related to risk assessment and eligibility.

\(^{41}\) Willoughby and Nellis (2016)


\(^{44}\) Cale and Burton (2018) p. 36, 38; Graham and McIvor (2015) p. 60

\(^{45}\) Cale and Burton (2018) p. 36.
A recent evaluation pilot of GPS EM by the Ministry of Justice found that stakeholders were keen to expand the eligibility criteria for GPS EM. The pilot allowed individuals from two regional police force areas to be considered for GPS EM if they were over 18, had a fixed abode, and where EM could be used to monitor:

- court imposed bail,
- a community sentence,
- HDC,
- a licence variation or
- as a monitoring addition for re-release from prison after recall,
- or for the release of Imprisonment for Public Protection (IPP) prisoners who would otherwise not be considered for release.  

This evaluation noted: “HDC boards were able to impose a GPS tag for prisoners eligible for HDC and where it was felt that risks could be managed more effectively by a GPS tag than a Radio Frequency (RF) tag”. Monitoring field staff were interviewed and communicated that they would support the extension of GPS monitoring for community sentences that would be otherwise unmonitored, young people who would otherwise be in secure accommodation, and for people who were of no fixed abode, as this particular condition was prohibitively restrictive in some cases.

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47 ibid, p. 9
48 Ministry of Justice (2019) p. 16
Spain

There is a growing literature on the utility of considering ‘strength factors’ in combination with assessing risk. These are factors associated with resilience, a reduced likelihood of reoffending, and a higher likelihood of pro-social lifestyle, such as effective family support or stable home circumstances.\(^{49}\) These factors are specific to each person and so type of risk assessment depends upon an individual analysis of each case.

In Spain, the eligibility assessment for release on EM was amended in 2006. The amendment meant individuals were not excluded from consideration of EM on the type of crime, nor on the point on the justice pathway the conditions were imposed. Instead, EM eligibility was based on three criteria:

1. Being assessed as eligible following the various evaluation processes related to an individual’s treatment programme;
2. The presence of factors in an individual’s life that “favour social and work integration”; and
3. “Existence of good prospects for rehabilitation of the offender.”\(^{50}\)

The purpose of the amendment was to emphasise (re)integration as an objective of EM, meaning if an individual has the opportunity to integrate via work and social life, they will be released on EM.\(^{51}\)

The Colorado Actuarial Risk Assessment Score (CARAS)

CARAS is a statistical risk assessment prediction tool used in Colorado to assess an individual’s suitability for parole. Colorado use a series of empirically-developed risk assessment tools along the justice pathway. Prior to trial, the Colorado Pretrial Assessment Tool (CPAT) is used for the purposes of assessing pre-trial release to identify an individual’s risk of reoffending and non-attendance at court.\(^{52}\) The CPAT tool is based on 12 indicators of risk, including items such as whether their


\(^{50}\) Otero, 2009, p. 136

\(^{51}\) ibid.

residence is owned or rented, age at first offence and whether the individual owns a phone.\textsuperscript{53}

CARAS is described as a tool similar to systems that predict a candidate’s insurance differential, based on their characteristics and which group characteristics are most closely associated with risk.\textsuperscript{54} Rather than assessing each prisoner on an individual basis, CARAS assesses a prisoner based on their membership of certain subgroups. Their risk of recidivism is calculated based on a combined analysis of their subgroup memberships and thus individual behaviour is not included in the assessment.\textsuperscript{55}

The tool is based on a points system accumulated across nine categories of risk:

- Number of convictions;
- Number of code of penal discipline violations;
- Age;
- Number of Level of Supervision Inventory items (an additional risk assessment tool, which included consideration of the level of family support);
- Whether the individual was arrested under the age of 16;
- Assessed custody level (e.g. open prison, medium or close custody);
- Prior parole and whether they have been recalled to prison during a parole period;
- Number of times imprisoned;
- Level of substance abuse need (based on an additional risk assessment tool).\textsuperscript{56}

\textsuperscript{53} ibid.
\textsuperscript{54} CARAS parole guidelines (2008) available at https://cdpsdocs.state.co.us/ors/docs/Risks/CARAS_BriefDescription_V5.pdf
\textsuperscript{55} ibid.
\textsuperscript{56} Ibid.
The risk assessment tool was also split across crime types. The tool produces a score between 1 and 79 that indicates a person’s risk level, the higher the score the higher the risk. Research by the Colorado Division of Criminal Justice studied 611 women and 4769 men to identify the indicators associated with success. Five categories of risk were identified ranging from 'lowest' to 'very high', and individuals' membership of subgroups was correlated with success across the categories.

Argentina

In Argentina, EM is used to monitor individuals on pre-trial bail. Risk assessment is conducted by the presiding judge in court, based on information provided to them by the prosecution and the defendant’s criminal history. If the defendant poses a flight risk or there is a concern they will interfere with witnesses, they will not be granted bail and will be imprisoned until trial. Judges have the opportunity to release some of this cohort on EM following a three-tier assessment process. First, a technical assessment is made on the availability of a phone line and the suitability of the home address for EM; second, an socio-environmental assessment is conducted to assess the suitability of the individual’s family circumstances. Pending these assessments, defendants will be imprisoned and are thereafter released on EM when a device becomes available.

Domestic abuse risk assessment

There are slightly different risk assessment procedures for perpetrators of domestic abuse subject to EM. Lethality assessments are used to identify the level of risk a domestic perpetrator poses to their victim. Research on the use of EM in cases of domestic abuse in the USA outlined the process of risk assessing domestic perpetrators released on EM. The process for referral to the EM programme in two US jurisdictions excluded consideration of those perpetrators deemed to pose a risk of lethal harm to their victim.

57 Di Tella and Schargrodsky (2013) pp. 37-8
58 ibid, p. 39; there is often a waiting list for equipment in Argentina and defendants must remain in prison until a tag is available.
59 These are comparable to the DASH RIC tool used in the UK.
61 ibid., this was based on a lethality assessment similar to those used in the UK.
Strengths and Weaknesses of EM: A review of the evidence

EM technologies

Few studies highlighted technical problems with the equipment. However, where there are technical issues, this impacts on effectiveness and the type of monitoring can also affect outcomes.

While there were a number of case studies identified in which there were no reported issues with EM technologies, technical issues such as lack of signal/coverage, false alarms, and false or missed readings were observed in a number of empirical studies. Research from Germany found that on average, there were false alarms every three days for each offender on EM. Research from Spain highlights the failures of GPS monitoring in underground metro systems. Other research found that false alerts could be triggered due to the complex technology of EM devices and systems, and their exposure to “a variety of harsh environmental conditions on a daily basis”. It should be noted, however, that a number of the empirical studies identified were conducted several years ago, and EM technologies have progressed significantly in recent years.

A number of monitored people interviewed for research in England reported false breaches, whereby the monitoring company had contacted them to investigate a breach when they had been within their address and complying with their conditions. One respondent reported that his motivation to comply was negatively affected by the faults in the equipment, stating:

63 Haverkamp and Woessner (2016) p. 130;
64 Otero (2009) p. 142, footnote 13
66 Hucklesby (2009) p. 263
“(it) Makes you think that you can go out for a few minutes and blame the equipment...If (the monitoring company) ever asked me why (I was) late, I blamed the equipment”.\(^{67}\)

There was also evidence from Germany of bureaucratic/administrative challenges and issues of inter-agency working;\(^{68}\) evidence from England and Wales that suggested the quality of the contractor’s installation and maintenance of equipment impacted on effectiveness;\(^{69}\) and evidence from Scotland and the USA on a lack of awareness about how the technology works.\(^{70}\) A 2019 evaluation of GPS EM by the Ministry of Justice outlined the challenges of inter-agency working related to communicating the specifics of geographical “away from” conditions and issues resulting from mismatched software between agencies.\(^{71}\)

**There are differences in outcomes between Radio Frequency (RF) and Global Positioning Systems (GPS)**

Some studies from the USA found that GPS EM is more likely to reduce reoffending and non-compliance than RF monitoring.\(^{72}\) Research in Florida found that “those monitored with GPS had a 6% lower failure rate than those on radio-frequency monitoring”.\(^{73}\) However a 2017 systematic review by Belur and colleagues found no statistically significant differences in effectiveness between RF and GPS systems.\(^{74}\)

\(^{67}\) *ibid.*

\(^{68}\) Dünkel et al. (2017) p.40


\(^{71}\) Ministry of Justice (2019) p. 28


\(^{73}\) Bales *et al.* (2010)

GPS monitoring could be used to develop the evidence base on offending

GPS technology has the capacity to record various types and quantities of information. One researcher has suggested that, over time, the data gathered by the monitoring system could be used to identify patterns of behaviour that pre-empt offending.\textsuperscript{75}

As EM technology has advanced, the amount of biometric and movement data recorded by monitoring systems has increased. The research suggests that information recorded by the monitoring system could be used to plan interventions and improve effectiveness.\textsuperscript{76} The author uses the example of monitors that detect sleep patterns, based on measurements of Rapid Eye Movement (REM), and the potential for probation officers to use this information to time an intervention based on the monitored person sleeping poorly (an indicator of stress), to check in and provide support.\textsuperscript{77}

Remote Alcohol Monitoring (RAM)

Remote Alcohol Monitoring (RAM) – also known as Transdermal Alcohol Monitoring (TAM or TRAM) or Secure Continuous Remote Alcohol Monitoring (SCRAM) – operates in a similar manner to RF electronic monitoring systems. The technology, in very simple terms, involves the monitored people wearing a bracelet around their ankle that takes routine samples of blood-alcohol levels by measuring the ethanol level of their perspiration. Breathalyser technologies are also used in some instances. The technology has the ability to record whether there are low, medium or high levels of alcohol in a person’s system and thus record their compliance with the conditions of their specific programme. The bracelet tends to be slightly bigger than other EM devices and fit is important to ensure accurate readings and comfort.\textsuperscript{78} RAM systems have been widely available since around 2003.

Alcohol monitoring differs from other uses of EM because the main aim is to manage or reduce alcohol consumption. In some cases this relates to the criminal

\textsuperscript{76} \textit{ibid.}, p. 7
\textsuperscript{77} \textit{ibid.}
justice system however some studies of RAM focus on the use of alcohol from a health perspective rather than in relation to offending behaviour. Studies on RAM in a criminal justice context tend to focus on cohorts of monitored people who have been convicted of drink driving offences, whose offence involved alcohol, and/or who are experiencing alcohol dependence. Comparison between the use of RAM and the general use of EM is therefore problematic.

A limited number of empirical studies suggest promising results for the use of RAM. Research conducted between 2006 and 2008 in North Carolina compared a matched sample of 114 monitored people subject to RAM with a group of 261 unmonitored people.\(^79\) The study found reoffending rates for any crime were almost 3\% less for the monitored group, despite them having a more extensive offending history.\(^80\) Considering individuals with at least two prior recorded offences, the difference in rates of reoffending was more significant (15.7\% of the monitored group reoffended compared to 28.6\% of unmonitored individuals).\(^81\)

In 2014 the Mayor of London Office for Policing and Crime (MOPAC) conducted a process evaluation on the use of the Alcohol Abstinence Monitoring Requirement (AAMR).\(^82\) The research assessed the use of AAMR in four areas of London, and used survey data and qualitative interviews of stakeholders, staff and monitored people. The evaluation found that the majority of alcohol monitoring requirements were given as part of a community sentence for an average length of 75 days. The pilot evidenced a 92\% compliance rate with RAM for monitored people on community sentences over 12 months.\(^83\) The operational use of AAMR was well understood by practitioners and users, and there was a well-established infrastructure and good levels of inter-agency working, which contributed to the success of the pilot. The option of AAMR was described as “filling a gap in sentencing for alcohol related offences committed by nondependent offenders.”\(^84\) The authors acknowledge the limits of the research, but conclude that in general there were a number of positive opinions on and experiences of AAMR.\(^85\)

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\(^80\) It was established that judges were more likely to give RAM sentences to more serious offenders, thus the groups were not matched equally on offending history (ibid, p. 104)

\(^81\) ibid.

\(^82\) Pepper and Dawson (2016)

\(^83\) Pepper and Dawson (2016); non-compliance was based solely on the consumption of alcohol or tampering with monitoring equipment and did not include compliance with the conditions of the community sentence, which were often numerous and complex.

\(^84\) ibid. p. 25

\(^85\) ibid.
Qualitative research from Michigan in 2002 concluded positive reactions from the sample of five practitioners and 19 monitored people in terms of the system’s deterrent value and the freedom it allowed in terms of employment and family life.\textsuperscript{86} A study was conducted in Alaska in 2005 which evidenced a 56% compliance rate with the conditions of the RAM order.\textsuperscript{87} This study also noted that despite inclement weather conditions, there were no recorded RAM technology failures.\textsuperscript{88}

Qualitative research from Scotland explored the attitude of 12 offenders serving their sentence in HMP Barlinnie towards RAM.\textsuperscript{89} This cohort were individuals whose current offence involved alcohol and had issues with alcohol misuse more generally. Attitudes towards RAM were generally positive although most of the group recognised that monitoring alone would not change their addictive behaviours and considered it as a mechanism aimed at improving compliance.\textsuperscript{90} It was also recognised that the RAM tag could not address other factors related to their offending, such as mental health, criminal associates, socioeconomic status, etc.\textsuperscript{91} A number of the group expressed support for RAM as part of an early release scheme, whereby individuals could volunteer to be monitored in exchange for an earlier release date. This type of scheme is supported by literature on incentivising reduced alcohol consumption.\textsuperscript{92}

One of the recommendations of the 2016 Scottish Government Working Group paper was on legislative change, including the introduction of legislation which would enable the use of RAM.\textsuperscript{93} To date, there have been very few pilots testing the effectiveness of RAM on monitored people released from prison.\textsuperscript{94}

\textsuperscript{86} Bock (2003)
\textsuperscript{88} \textit{Ibid.}
\textsuperscript{90} \textit{Ibid}, p. 869
\textsuperscript{91} \textit{Ibid.}
\textsuperscript{93} Scottish Government Working Group (2016) p. 7
\textsuperscript{94} Goodall \textit{et al.} (2016) p.866
Community supervision and support

In most jurisdictions EM is understood as a tool in a wider network of community support and supervision of monitored people.

Scotland is described within the literature as an “outlier” in terms of using EM as a standalone measure.\(^95\) In other jurisdictions, including the majority of European jurisdictions, EM is used as part of a wider package of support and supervision of offenders within the community.\(^96\) Argentina was one of the only identified jurisdictions that uses EM as an entirely standalone measure.\(^97\) The legislation in Germany does not allow for EM to be used as a standalone measure and is combined with a programme intended to provide a daily structure to the monitored person.\(^98\) In Sweden standalone EM is avoided and is intensively supervised.\(^99\) The Scottish Government Working Group advised that effective EM use is more likely if used alongside other measures, advising that “where longer term desistance is the ultimate goal, EM should be set within a wider package of support provided by statutory bodies”.\(^100\)

In terms of addressing specific offending, EM has been used in other jurisdictions as part of a wider response to an identified social problem. In Northumbria, for example, GPS monitoring was introduced as part of the Multi-Agency Tasking and Coordinating (MATAC) programme for domestic offenders; in London, alcohol monitoring was described as “another tool in the box’ of community sentences”;\(^101\) and in Manitoba, EM was added as an enhancement to the Winnipeg auto theft suppression strategy.\(^102\) Probation officers in this programme believed EM was “most successful when paired with adequate support”.\(^103\) Correspondingly, some of the monitored young people in this programme expressed that the support of the probation officers was essential to their compliance.\(^104\)

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96 ibid.
97 Di Tella and Schargrodsky (2013) p. 32
98 Dünkel et al. (2017) p. 41
99 Graham and McIvor (2015) p.69
100 Scottish Government Working Group (2016) p.8
101 Pepper and Dawson (2016) p. 4
102 Personal communication with Programme Director Deborah Alderson, 11/02/19; Willoughby and Nellis (2016) p. 69
103 Willoughby and Nellis (2016) p. 73
104 ibid. p. 76
DeMichele emphasised that electronic monitoring should be considered as a tool within a wider network of supports and interventions, using an illustrative case study:

“forms of electronic monitoring are only tools that officers can use. So, asking questions such as “does electronic monitoring work?” are illogical. This would be similar to asking whether computers, cars, or other tools that officers use work. These tools are all dependent on humans and only work as well as the infrastructures supporting them and the people operating them... A prime example involves a California case in which Phillip Garrido and his wife kidnapped and held a young girl captive for nearly 18 years. During part of this time, Mr. Garrido was on parole supervision with GPS tracking, but it went undetected that he had a kidnapped girl (and the two young children he fathered with her) in tents in the backyard. His GPS revealed that he was exactly where he was supposed to be—at his home and in his backyard. Parole officers failed to conduct regular in-depth searches of the home or even walk through to the backyard.”

EM and Reintegration

The relationship between EM and the reintegration of monitored people is complex and is dependent on how reintegration is defined.

In a Scottish Government review of the use of HDC and open prison, Armstrong and colleagues identified the definition of reintegration as an area for development, noting “the meaning of this should be clearly established to allow for monitoring of effectiveness” and “(i)t cannot be concluded that HDC...cannot serve integration aims of the penal system, but it does suggest that the meaning of ‘reintegration’ and consequently the services and procedures needed for HDC to support this require some attention and explicit specification”. In relation to compliance with the conditions of EM, some literature notes that successful completion of an EM sentence “is not the same as (re)integration – that is, becoming a fully functioning and participating citizen”. Graham and McIvor suggest that the “supports and interventions” that address criminogenic needs (i.e. HDC as a means of confining

106 Armstrong et al. (2011) p.6
107 ibid, p. 98
offenders to their house during the evening/night when they are most likely to engage in antisocial behaviour) may be in conflict with measures which support reintegration, such as opportunities for employment, creation of social networks, and development of positive recreational activities.\textsuperscript{109} Research from Belgium\textsuperscript{110} and Scotland\textsuperscript{111} further suggests that where cost effectiveness and reduction of prison populations are the primary objectives, rehabilitation and management of offenders can be side-lined or ignored.

As well as punitive objectives, EM can have the objective of reintegrating offenders in society.

EM used for the purposes of decarceration in itself may be considered as a form of reintegration based on the logic that being in the community allows offenders to reintegrate better than if they are imprisoned.\textsuperscript{112} In some literature, HDC is understood as a mechanism to “ease the transition of prisoners from custody to the community”.\textsuperscript{113} In terms of social capital, the maintenance of social ties is recognised as an important factor for reintegration of offenders.\textsuperscript{114} Research from Germany found that offenders favoured home detention on EM (as a mechanism for early release) because it allowed them to be with their families sooner and practitioners observed a reintegrative effect of early release on EM, due to offenders being imprisoned for shorter periods and back with their families.\textsuperscript{115}

\textsuperscript{109} Graham and McIvor (2015) p. 57
\textsuperscript{110} Beyens and Roosen (2017) p. 24
\textsuperscript{111} Armstrong et al. (2011)
\textsuperscript{115} Haverkamp and Woessner (2016) p. 130
The conditions of release can be used as a means of encouraging reintegration.

Within the literature EM is identified as a means of enforcing a prosocial lifestyle. In the Netherlands, the number of hours a monitored person may be “off curfew” varies between 2 and 17 hours per day depending on probation assessment. This contrasts with Belgium, for example, where EM is sometimes used as a direct alternative to custody in that monitored people are confined to their house for 24 hours a day. A systematic review on EM identified a number of conditions attached to GPS EM in Denmark, Norway, the US, and Australia that encouraged reintegration. Aside from requirements related to compliance with movement restrictions, monitored people can also be required to engage in employment, community work, treatment or counselling, maintain a diary of their daily routines, attend or host weekly visits with probation officers, and “avoid contact with criminally inclined associates”. In Denmark and Norway, being engaged in employment or education is treated as a minimum requirement for offenders to be considered for release on EM.

EM can provide opportunities for the construction of positive social capital

EM allows individuals to remain in the community, which means family and employment responsibilities are less disrupted than if they were imprisoned. Imprisonment can have the effect of damaging attachments to employment and positive social networks in the community, while remaining in the community allows these connections to be continued and developed. Williams and Weatherburn highlight that “imprisonment may increase reoffending through other channels”, namely the creation of relationship networks with criminal peers. Remaining in the community decreases the opportunity for anti-social capital to be built through networks of relationships with other offenders in prison.

117 Boone et al. (2017)
118 Beyens and Roosen (2017)
121 Graham and McIvor (2015) p. 58
124 Ibid. p. 7
125 Ibid.
Research from Scotland\textsuperscript{126} and interviews with monitored people on HDC from New Zealand\textsuperscript{127} and Belgium\textsuperscript{128} show that, although the psychological effects of tagging were challenging for offenders and their families, it was still preferred to the separation imposed by imprisonment. Respondents in Belgium expressed that the associates they mixed with while on EM were not equivalent to the associates they engaged with in prison, and this was of benefit.\textsuperscript{129} This result was mirrored in a 2001 study from New Zealand, in which for offenders sentenced to EM “the distress of ‘being inside’ motivated them to make good use of their opportunity to stay at home and stay ‘out of trouble’”.\textsuperscript{130} For younger offenders, EM was perceived as an acceptable reason to avoid association with criminal associates, i.e. individuals stated they could not engage in certain high-risk or criminal activities “because of the tag”.\textsuperscript{131} Young people interviewed in research from Winnipeg recalled that many of their friends believed the tag meant the police were nearby and aware of the wearer's activities, thus they did not want to associate with the monitored person during this period.\textsuperscript{132}

The conditions of EM can affect family responsibilities and relationships.

Research on offender experience from New Zealand\textsuperscript{133} and Belgium\textsuperscript{134} suggests that parenting roles can be maintained as monitored people are not separated from their children, and other family relationships can be improved by spending more time together. Research from Australia\textsuperscript{135} also supports this finding, suggesting both family and community ties can be maintained via EM. Research on recidivism, that examined data of 457 individuals sentenced to EM in France, concluded that EM was most effective for those who were parents.\textsuperscript{136} The authors conclude this can be explained because “EM is mostly effective for offenders who know what is at stake should they reoffend (most probably incarceration) and do not view EM as a

\textsuperscript{126} Scottish Government Working Group (2016)
\textsuperscript{127} Gibbs and King (2003) p.205
\textsuperscript{129} ibid p.278
\textsuperscript{130} Gibbs and King (2003) p.203
\textsuperscript{132} Willoughby and Nellis (2016) p. 75-6
\textsuperscript{133} Gibbs and King (2003)
\textsuperscript{134} Vanhaelemeesch and Vander Beker (2012)
lenient, non-deterrent sanction but as a second chance”. Research from Germany concluded that many prisoners applied for post-imprisonment early-release EM so that they could be with their families sooner. Interview research with 78 monitored people from England drew similar conclusions. While the main motivating factor for compliance was the knowledge of their surveillance and that the punishment for failure was imprisonment, respondents also reported that their motivations to comply were directly linked to wishing to remain with their family and maintain employment. This research also concluded that monitored people who were housed outside of their community and/or away from their family, or who lived alone, were less likely to comply than those who remained within their established networks.

Some research provided qualitative examples of how EM restricted offenders from fulfilling family responsibilities. The practicalities of childcare was cited as a factor that increased the likelihood of breaches in research with people on monitored HDC from England and New Zealand. In interview, a monitored person in New Zealand recalled that she had witnessed her daughter fall and injure herself outside of her address within curfew hours. She had remained within the address, contacted the monitoring company and they had allowed her to tend to her daughter without recording the breach, however the incident had caused her great distress. Recalling his experience of being tagged, Kilgore discusses his experience when his 96 year old mother called him around 2am to alert him that she believed she was having a heart attack. Rather than attend straight away, Kilgore contacted the monitoring company and was advised that to temporarily amend the restrictions, his parole officer would have to assess the situation. As the incident occurred out-of-hours, the parole officer did not contact him until the following day and he was unable to attend hospital with his mother.

Some research found that EM can negatively impact upon a monitored person’s family, particularly those who reside with the person on EM. The 2017 G4S statistical bulletin included feedback from a monitored person, who stated “my

137 Ibid.
138 Haverkamp and Woessner (2016) p. 129
139 Hucklesby (2009) p. 256-7
140 ibid. p. 261-2
141 ibid. p. 264
142 ibid. p. 265
143 Gibbs and King (2003) p. 204
144 ibid.
145 Kilgore (2012) p. 68
146 Ibid.
147 Bales et al. (2010); Gibbs and King (2003); Scottish Government Working Group (2016)
partner felt like she was also on a tag”.

Amongst co-residents of monitored people, the Scottish Government Working Group found evidence of anxiety, guilt and stress related to the perception they were responsible for ensuring the monitored person’s compliance with EM conditions and inclusion in social events. In response to this concern, the Working Group recommended additional information and support be made available for the families and co-habitants of electronically monitored people. Some of the literature describes a monitored person’s familial support as fundamental to their compliance with the conditions of EM. The interim guidance on RLO risk assessment also recognises that:

"(t)he most important element is the need to investigate what the likely impact of an RLO would be on the household where the person is to be restricted to. It is very important that those living with the person understand what an RLO involves and that they are prepared to co-operate and support the person if an Order is made."

It should be noted that a monitored person’s release to an address on HDC relies on the continued consent of the householder responsible for the property. If consent is withdrawn and no suitable alternative is identified, the individual will be returned to prison. This was identified as a challenge in some of the literature. To prevent householders withdrawing consent, Probation officers in Gwent, Wales revised their process of liaising with the family of monitored people to provide more information and improve engagement.

The flexible use of EM can be used to incentivise reintegration.

EM can be flexibly applied dependent on offence, offender demographic, and the conditions necessary for release. McIvor and Graham’s (2016) Scottish review recommended using EM as an incentive for reintegration, and suggested it is currently under-utilised with standardised curfews most common. In the Netherlands, the number of hours an offender may be “off curfew” varies between 2

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149 Scottish Government Working Group (2016) p. 57
150 Scottish Government Working Group (2016) p. 57
151 Hucklesby (2009) p. 265
152 Scottish Government (2016) p.20
154 Gibbs and King (2003); Graham and McIvor (2015); Gur et al. (2016) p.37; International Association of Chiefs of Police (IACP) cf. Gies 2016: 102-3; Payne, DeMichele and Button (2008);
and 17 hours per day depending on their daytime activities. Probation officers can amend orders to allow monitored people to leave the house for more hours per day if it is for employment, training or education; or, if individuals are compliant over time, curfews can be amended to allow for more hours away from the address as an incentive. A study of monitored people’s experience on HDC in New Zealand recorded that a single mother had expressed how important it was for her to accompany her children to school. This had been negotiated with the parole board and her curfew amended accordingly. Applied in this way, EM ‘may foster reintegration back into society.’ There is further supportive evidence of the benefits of flexible EM use from the Netherlands and reviews of international evidence. In Scotland, the majority of curfew restrictions are imposed for the standard period of 7pm to 7am, although guidelines allow for this to be adapted to suit the individual as necessary.

**EM can provide structure for the monitored person**

An offender may be provided structure in terms of their days being more strictly timetabled, the increased responsibilities associated with wearing a tag, maintaining regular sleeping patterns, and reduced opportunity to associate with criminal friends. Research also suggests that monitored people have an increased sense of motivation to comply while on tag. Auto-ethnographic research (i.e. the researcher wears a tag) from Australia and England evidenced that wearing the EM device on one’s body served as a physical reminder to comply with the conditions of its use. Further, it forced the wearer to make plans for their day ahead (such as which routes to travel and the advance scheduling of

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155 Boone et al. (2017)
156 Gibbs and King (2003) p.204
158 Boone et al. (2017)
159 Graham and McIvor (2015), although note that the authors caveat this suggestion with “More research on this is needed.”
160 Barry et al. (2007) p. iii
163 Martinovic and Schluter (2012) pp.423-4
164 Martinovic and Schluter (2012) interviewed two UK Home Office investigators who had spent periods wearing an electronic tag for the purposes of research.
appointments) in order to comply with conditions. The three researchers separately concluded that, although being subject to an EM tag was psychologically and physically burdensome, the punitive impact of wearing a device lessened over time.\textsuperscript{165} Monitored people in the alcohol monitoring pilot conducted in London also had concerns about the ‘wearability’ of the tag, in terms of comfort and its bulky size.\textsuperscript{166} Monitored people interviewed in research from Belgium noted that the conditions of the tag forced them to be far more aware of time.\textsuperscript{167}

**EM can increase the likelihood of a monitored person gaining or maintaining employment.**

Research from Denmark\textsuperscript{168} examined the impact of EM compared to imprisonment on social welfare dependence (which is described in the paper as synonymous with unemployment). The study found that monitored people decreased their social welfare dependence by an extra 15 to 30 days within the first year after release, though this trend only applied for those under 25, there was no effect on older offenders. Studies from Sweden\textsuperscript{169} and the Netherlands\textsuperscript{170} also found EM enabled monitored people to maintain employment, mainly due to remaining in the community but also because EM conditions could be amended to accommodate their hours of employment. In terms of EM’s effectiveness, research from France evidenced recidivism reduced by 9\% for EM offenders whose sentence conditions obliged them to engage in employment.\textsuperscript{171}

**EM can decrease probation officers’ face-to-face contact with people serving community sentences**

Qualitative interviews with probation officers in Winnipeg, Canada suggested that GPS EM worked to reduce the amount of time spent in direct contact with a monitored person.\textsuperscript{172} Prior to the use of GPS EM, officers tended to have daily contact with their clients, either face-to-face or by phone. Following the introduction of EM, some probation officers felt that, rather than make contact with an individual,

\textsuperscript{165} Ibid.
\textsuperscript{166} Pepper and Dawson (2016) p. 26
\textsuperscript{169} Wennerberg (2009)
\textsuperscript{170} Boone et al. (2017)
\textsuperscript{171} Henneguelle et al. (2016) p. 649
\textsuperscript{172} Willoughby and Nellis (2016) p. 72
staff were checking the person’s whereabouts using the GPS mapping system. Some of the staff felt that the level of human contact required by the supervision programme was sufficient and GPS EM was an unnecessary and ineffective addition.

Dependent on home circumstances, EM may not contribute to reintegration as intended.

Some of the literature highlights that a monitored person’s home circumstances and community network may affect their reintegration. If an individual's conditions of release confine them to a place, it might mean they cannot avoid criminal associates attending their address, and the likelihood of breaching could be increased. In research from England, qualitative interviews with monitored people suggested that some breaches of curfew resulted from monitored people being targeted with threats and harassment while on curfew in their home. Some of those interviewed described how they felt like “sitting ducks” because their exact whereabouts were known. This resulted in a number of them choosing not to answer the door during curfew hours, which is when many monitoring checks are conducted and their failure to appear would result in a recorded breach. James Kilgore is an academic who spent 6 and a half years in prison in the US and wrote about his experience on electronic monitoring. On being released, Kilgore stated “(i)f you want people to avoid getting re-involved in criminal activity, you have to give them the opportunity to change their life, not keep them chained to their living room.” Kilgore suggested that for some offenders a move away from the community is beneficial.

EM can have a negative impact on securing and/or maintaining employment.

By contrast to research that suggested release on EM allowed monitored people to secure or maintain their employment, some of the literature suggested EM can damage employment opportunities. The stigma of wearing a tag – particularly as it
is negatively portrayed in the media – is perceived by some to reduce their ability to secure or maintain employment while tagged.\textsuperscript{180} Anecdotal evidence of monitored people losing their job after informing their employer of their EM conditions\textsuperscript{181} or finding it difficult to work because of the tag\textsuperscript{182} are provided in the literature.

The impact of EM on reoffending

When considering research on reoffending, there may be differences between people released on EM and those released following a prison sentence.

It should be noted that research design is of particular importance in assessing the effectiveness of EM. In some studies on reoffending, people sentenced to EM are compared with a matched sample in prison. There are a number of important differences between offenders released on EM and those released following a prison sentence. First, while both groups may have an equal opportunity to reoffend, there is a higher level of deterrence for those monitored by EM, first because detection is considered more likely while monitored and second because reoffending is a breach of EM conditions which is likely to result in revocation and imprisonment.\textsuperscript{183} In addition, a process of risk assessment is used by the judiciary, prison and probation authorities to evaluate the risk of reoffending posed by an offender and in most cases it is only lower risk offenders who are released into the community.\textsuperscript{184} On this difference, Di Tella and Schargrodsky contend that “low post release recidivism of a group of offenders treated with electronic monitoring could simply reflect the success of the legal system at the selection stage.”\textsuperscript{185} Other factors such as the individual's level of remorse will also influence the decision for them to be released on EM.\textsuperscript{186} Taken together, a lower risk of reoffending and higher level of remorse may mean in practice that monitored people are, in general,
already at a lower risk of reoffending, particularly when compared to those released from prison who were not deemed eligible for EM. Comparisons between groups of monitored and unmonitored people on community sentences can be difficult for similar reasons.

There are mixed but promising results regarding reoffending, reconviction and failure/breach rates.

A literature review found that there are a number of studies which evidence reduced reoffending on EM, a number that have produced inconclusive findings, and a number that concluded that EM has no significant impact on reoffending.

Ministry of Justice research from 2011 concluded that monitored people released on HDC were no more likely to reoffend than those in a matched sample who were not eligible for release. In a review on RAM this finding is reinforced by the authors who write “(e)lectronic monitoring is as effective as incarceration, and less expensive.”

A separate meta-analysis of 17 studies, which examined quantitative data on reoffending, also concluded that “EM of offenders does not have a statistically significant effect on reducing re-offending”. This research did highlight, however, that three of the studies examined evidenced reductions in reoffending when compared to the alternative of imprisonment. Research from New South Wales, Australia found that, conditional on reoffending, there was very little difference in the likelihood of committing serious crime for monitored people compared to those who served their sentence in prison.

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187 Di Tella and Schargrodsky (2013) p. 30
188 Pepper and Dawson (2016) p. 14 note that “direct ‘like-for-like’ comparisons between compliance rates of different orders should be treated with caution due to varying offence types, offender characteristics, processes of dealing with breach, and lengths of orders.”
190 Ministry of Justice (2011) p. 1
191 Flango and Cheesman (2008) p. 103
192 Belur et al. (2017)
193 Williams and Weatherburn (2019) p. 23
In Australia, Argentina, the US and elsewhere in Europe research has evidenced that EM reduces reoffending. Research of 16,475 cases from Sydney, Australia compared individuals released on EM with those released after prison over 24 months. The research found monitored people serving their sentence on EM were associated with a 25% reduction in reoffending compared to the prison sample. In Sweden, research compared 260 electronically monitored people as part of an early release with a control group who served the full term of their prison sentence. Over three years, reoffending rates amongst the early release cohort were significantly lower than in the comparison group. In Spain, research in 2001 followed 53 individuals released from prison on EM (compared with a random sample of 307 individuals sentenced at the same time who remained imprisoned and 251 others released without EM). The reoffending rate of the EM group was 0%, compared to 9% of those on community sentences and just under 38% of the imprisoned group.

A study of 2,827 offenders in France, of whom 457 were sentenced to EM as an alternative to custody, found a 9–11% reduction in reoffending after 5 years compared to a matched comparison group who were imprisoned. This research suggested that EM reduced the probability of being imprisoned after 5 years by 18%, compared to a matched prison population. In this group, reoffending was least likely among electronically monitored people “who received control visits at home from correctional officers, were obliged to work while under EM, and had already experienced prison before”.

Evidence from the US and Denmark shows that EM can reduce breach/failure rates. Bales et al. (2010) conducted the largest comparative analysis of 270,000 monitored people on RF EM in Florida and concluded that, compared to unmonitored individuals on community supervision, RF EM reduced failure rates by approximately 30%. Breach rates decreased by a further 6% in cases where GPS EM was used. The same research (comparing 5034 electronically monitored people to data on 266,991 individuals not placed on EM) found that, over a period of 6 years, monitored people were 31% less likely to breach the conditions of their sentence than comparable groups not on electronic supervision. In terms of

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194 ibid.
195 Ibid, p. 17
198 Henneguelle et al. (2016)
199 ibid. p. 649
200 ibid.
201 Bales et al. (2010)
202 ibid.
breach rates, research from England and Wales that examined 217 files of individuals sentenced to EM found that only two had no breaches recorded and over half had over 50 breaches recorded on file.\textsuperscript{203} Most of the breaches were minor violations, the majority relating to time violations (i.e. being away from the curfew address within curfew hours) and the majority were not recorded as formal breaches.\textsuperscript{204}

Research from Indiana, USA, studied 293 monitored people released on EM home detention, comparing those who successfully completed the programme and those who did not, i.e. who breached conditions, were re-arrested and/or imprisoned.\textsuperscript{205} 112 people successfully completed the programme and in contrast to other studies it was concluded that those who completed the programme were more likely to reoffend than those who did not complete.\textsuperscript{206} The authors note the limitations of research design, including that reducing reoffending was only one aim of the programme, and successes were concluded in other evaluation outcomes.\textsuperscript{207}

Much of the research focuses on GPS (rather than RF) and emphasises that EM must be monitored and supported in the community for a reduction in reoffending.\textsuperscript{208} There are also differences in outcomes for different demographics of monitored people. Research from New South Wales, Australia associated reduced rates of reoffending with individuals aged under 30 and for those who had not been imprisoned before.\textsuperscript{209} This research evidenced that the benefit of EM, in terms of reducing reoffending, persisted for 8 years for younger offenders compared to a matched sample serving their sentence in prison.\textsuperscript{210} It is important to note that the system in New South Wales provides monitored people with “tailored rehabilitation programmes along with intense supervision” and this may further explain improved outcomes.\textsuperscript{211}

\textsuperscript{203} Hucklesby (2009) p. 12
\textsuperscript{204} Ibid.
\textsuperscript{205} Avdija and Lee (2014)
\textsuperscript{206} ibid pp. 11-12
\textsuperscript{207} ibid, p. 12
\textsuperscript{209} Williams and Weatherburn (2019)
\textsuperscript{210} Williams and Weatherburn (2019) p. 25
\textsuperscript{211} Ibid.
GPS EM can increase the compliance and reduce reoffending rates of sex offenders.

In an empirical study of 270,000 people with convictions in Florida, Bales et al. (2010) found that sex offenders were the most compliant cohort on EM. Data from New Jersey on 225 sex offenders monitored over 3 years found that those on GPS EM were significantly less likely to commit sexual offences than the US average on sex offenders released from prison (0.04% reoffended compared to the national average of 5.3%). In a study of 516 sex offenders in California, Gies and colleagues evidenced similar empirical findings, concluding that, compared to a matched group on non-monitored parole, those on GPS EM had significantly higher rates of compliance and lower rates of reoffending. In this sample, breaches were almost three times as likely for those on traditional parole compared to those on EM.

Evidence suggests community supervision can reduce reoffending of offenders managed by EM.

Research on the use of EM for sex offenders from New Jersey found reduced reoffending of electronically monitored people, and this was in part explained by the ‘containment approach’ adopted by the federal authorities, which involved “intensive parole supervision, offender-specific treatment and polygraph examinations” which resulted in offenders perceiving that their movements were constantly observed and thus encouraged compliance.

Research from France offered similar conclusions - compared to individuals serving prison sentences, EM reduced reoffending, and was further reduced for those who were visited at least once by supervising staff during their curfew hours. In terms of reoffending, EM was also found to be more effective for individuals who were supervised for longer (above the median period of 2 months). The authors suggest that the “difference in outcomes suggests that control visits act as a strong deterrent” and highlight that this correlates with qualitative research conducted with offenders in England. The research from England examined information from case files on 217 individuals sentenced to standalone curfew orders and interviews

212 New Jersey State Parole Board (2007)
213 Gies et al. (2012)
214 Ibid.
215 New Jersey State Parole Board (2007)
216 Henneguelle et al. (2016) p. 649;
217 Ibid.
with 78 of those monitored.\textsuperscript{219} The study evidenced a positive correlation with compliance for monitored people who had a good relationship with monitoring agency staff or probation officers.\textsuperscript{220}

\textbf{If a monitored person commits a crime, GPS EM can improve the process of evidence-gathering.}

GPS EM has the capacity to monitor an individual’s whereabouts at all times. As technology has developed, it is possible to overlay data on the monitored person’s movements with data on crime loci and incidents, to identify correlations or to eliminate an individual from a criminal investigation.\textsuperscript{221} Additionally, in the event of a crime, a monitored person’s location data can be used to identify other potential sources of evidence such as CCTV and eye witnesses.\textsuperscript{222}

\textbf{The effectiveness of EM is undermined if there are delays in responses to breaches.}

Some research has found that delays in responses to failures, due to technological issues or slow responses by monitoring agencies, can negatively impact upon EM’s deterrent effect for monitored people.\textsuperscript{223}

\begin{flushleft}
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\textsuperscript{219} Hucklesby (2009) p. 256-7
\textsuperscript{220} ibid, p. 262
\textsuperscript{221} Hunkeler, (2015) p. 6
\textsuperscript{222} Ibid.
\end{flushleft}
The cost of EM

Based on research, the cost of HDC is less than imprisonment.224

Scottish Government research conducted in 2009/10 found the weekly cost of imprisonment was £610 compared to £126 per week for a person managed on HDC.225 In 2013, the average cost per EM order per day in Scotland was estimated at £10.17 (approximately £3712 per year). The average cost per prisoner place for a year was £37,059.226 Taking into account the costs of HDC/release assessment and preparation, there is still a cost saving, particularly over longer periods: the cost of assessment/preparation was estimated at £602 per prisoner, and the weekly cost of imprisonment was £610. This equates to a saving of £1234 over a 4 week period and £10,914 over a period of 24 weeks HDC.227

On cost, Professor Mike Nellis suggests that a presumption towards release on EM is defensible particularly if the saving is used to support monitored people in the community.228 In a separate publication, Nellis notes that once monitoring centres and practices are established, the cost of upscaling HDC (in terms of thousands monitored increased to tens of thousands) is relatively low.229

There is evidence from other jurisdictions that supports the cost benefit of EM.

Research from England in 2016 found that, over 90 days, the cost of monitoring a prisoner in custody was £6500 compared to £1300 for an individual released on HDC over the same period.230 Research from Spain calculates that the cost of one

225 Armstrong et al. (2011) p. 5
226 Graham and McIvor (2015) p. 37
227 Armstrong et al. (2011) p. 93
228 Nellis (2015) p. 15
229 Nellis (2016) p. 224
230 National Audit Office (2016)
meal in Spanish prisons costs more than an electronic monitoring bracelet does per day. Based on average length of sentence and number of court appearances, research from New South Wales, Australia estimated the average cost saving per person diverted to EM instead of being imprisoned was $25,200. Controlling for the cost of staff time (though not overtime), equipment and administrative overheads, empirical research by the US National Institute of Justice in 2007 found that the median cost of managing an individual using GPS was $5475 and the median cost of incarceration was $30,000. In California between 2008-9 EM was estimated to cost $36.00 per day per parolee, while imprisonment was estimated at $129.00 per day. In Florida EM is used as a condition of bond for a person’s release from prison and in 2010, the use of EM freed 19,680 man/days from Seminole county jail, saving the state in excess of $1.7 million per annum.

An additional cost saving was identified in the Seminole County study, related to accused person’s appearance at court. The research found less than 1% of offenders failed to appear at court, concluding that “(t)hey know that they are being watched 24/7, and that they will be found very quickly if they do not keep scheduled court appearances”.

EM’s cost effectiveness is conditional on a number of factors

The available literature highlights that some of the cost savings are conditional on the presence of a number of factors. It is suggested, for example, that GPS EM is more costly than RF. One researcher highlights that, in the case of GPS monitoring, the more data that is collected, the larger the resources required to sort and analyse the data set.

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231 “the electronic wristlet costs €4.20 per inmate per day, compared to the €52.51 that it costs the State for each inmate each day…Dinner alone in the penitentiary centre of the inmate is more expensive.” Otero (2009) p. 138; On this, The BBC recently published an article reporting that the daily cost of the recently introduced GPS tags was £9 per day (BBC 16th February 2019 ‘Electronic GPS tags to track thousands of criminals in England and Wales)


233 Brown et al. (2017)

234 State of California Legislative Analyst’s Office (2007) ‘Analysis of the 2007–08 Budget Bill (Judicial and Criminal Justice)’ Sacramento, Available at: http://www.lao.ca.gov/analysis_2007/crim_justice/cj_05_anl07.aspx; It is important to note that in the USA, a number of federal authorities charge the offender for their use of EM and thus comparison to the Scottish context can be difficult.


236 Ibid, p. 18

237 Belur et al. (2017) p.41

Research from Scotland found that surveillance and immediate response obligations can keep costs up. A separate Scottish Government research publication concluded that costs are only reduced if “the sentences they replaced were relatively long”. The same study found that EM pre-trial bail is more expensive than custodial remand in Scotland. Further evidence from California on sex offenders evidenced increased cost of EM monitoring (in comparison to other forms of community monitoring). The literature highlights that staff time and resources should also be considered. A parole agent with a GPS caseload can take a considerable amount of time, with estimates of 40% of an officer’s workday being taken up with a standard caseload of 25 parolees.

There is a limited evidence base on the cost incurred by the whole system operational cost of EM.

The literature notes that assessing the whole system cost of EM is difficult because there are a number of different criminal justice agencies involved in a monitored person’s management, all with separate budgets and patterns of collaborative working.

Additional costs, associated with investigating failures, lost connections, or false alerts of GPS technologies and staff overtime for EM, and construction of new prison property for those incarcerated, are not considered in the available research. Research from Spain, for example, found that for a BEM project aimed at monitoring perpetrators of domestic abuse, each system unit – for the offender and victim - costs €600. It should also be noted that in some states of the US, monitored people are obliged to pay the daily cost of their monitoring equipment, which would be covered by the state in other jurisdictions, and this therefore impacts on cost calculations.

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240 Barry et al. (2007) p.2
241 Barry et al. (2007)
245 Martinovic (2016) p. 93
246 Otero (2009) p. 143
The 2019 Ministry of Justice evaluation of GPS monitoring highlighted the need to establish a robust infrastructure to support the introduction of GPS EM, and this required time and resources.\textsuperscript{247} Respondents in the evaluation also highlighted the perceived additional costs in terms of court time and administration.\textsuperscript{248} In particular, the time required for decision-making processes associated with GPS EM were prohibitive for courts setting bail conditions. One respondent reported:

“The courts are saying, ‘We want to deal with this today, I'm not giving you another 15 minutes to sort a map out.’ They'll just say, 'It doesn't matter, we'll go for a restraining order instead.’”\textsuperscript{249}

In terms of cost effectiveness for Scotland, little is documented regarding the cost of EM breaches. To fully evaluate cost savings, further data on the rates and costs of breaches would be required.

The ethical considerations of EM

Up-tariffing and net-widening are a risk

EM can allow net widening or penological drift, whereby offenders who would not be sanctioned otherwise are monitored by EM. Evidence from international reviews\textsuperscript{250} and from research conducted in specific locations, such as Scotland\textsuperscript{251}, Belgium\textsuperscript{252}, Germany\textsuperscript{253}, and the USA\textsuperscript{254} highlighted this issue, particularly when EM is used as an alternative to pre-trial remand.\textsuperscript{255} Net-widening may also result in an increase in breach rates due to more stringently monitored conditions.\textsuperscript{256}

\textsuperscript{247} Ministry of Justice (2019) p. 1
\textsuperscript{248} Ministry of Justice (2019) p. 26; this may only be a perceived cost: there has not yet been a longitudinal study to evaluate whether the use of GPS EM might reduce court time on a long-term basis.
\textsuperscript{249} Ibid.
\textsuperscript{250} Gibbs and King (2003); Belur \textit{et al.} (2017)
\textsuperscript{251} Smith (2001)
\textsuperscript{252} Beyens and Roosen (2017)
\textsuperscript{253} Dünkel \textit{et al.} (2017) p. 40
\textsuperscript{255} Dünkel \textit{et al.} (2017) p. 41
\textsuperscript{256} Belur \textit{et al.} (2017) p. 9
In research from Winnipeg, probation officers found that GPS EM meant practitioners had no discretion with regard to non-compliance and minor violations, even in instances where there was no intent to commit crime (such as being late for curfew), must be recorded as an offence. Some of the young people in the Winnipeg programme cut their tag off and were charged with theft (of the monitoring device and phone) and mischief, despite otherwise complying with the conditions of their release. Correspondingly, some of the young people felt that the tag was setting them up for failure due to the rigid conditions and lack of leeway regarding non-compliance. One respondent also reported that he perceived his probation officer was more “harsh” when he was electronically monitored and felt that the message of the programme was “one mess up equals gone”.

In addition, literature on the monitoring of sex offenders highlights that for some monitored sex offenders, the conditions imposed by EM may be disproportionate because a subset of this group are very unlikely to offend again.

**EM can cause stigma, distress and shame for the monitored person**

There are a number of debates within the theoretical literature comparing the use of EM as surveillance with its use for confinement and how this impacts upon an individual’s psychological wellbeing. The literature on EM highlights that GPS monitoring systems in particular can infringe upon an individual’s privacy.

The physical act and visibility of wearing an electronic tag may have distressing effects on a monitored person. This can relate to a monitored person’s need to disclose to friends and family why they cannot leave the house; perceiving that friends and family know their every move; and the embarrassment associated with

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257 Willoughby and Nellis (2016) p. 74
258 Ibid.
259 Ibid, p. 76-7
260 Ibid, p. 77
261 Michael K., McNamee A., and Michael M. (2006) ‘The emerging ethics of humancentric GPS tracking and monitoring’, University of Wollongong — Research Online, Australia, p. 7; The Reconviction rates in Scotland for the 2015-2016 offender cohort shows that the percentage of sex offenders reconvicted in one year for any crime was lower than that of any other crime group, and this has held constant over a number of years.
263 Martinovic and Schluter (2012) p. 415
wearing a physical and visible tag or carry a monitoring box on their person at all times.\textsuperscript{265} Qualitative research of monitored people in Pennsylvania and Winnipeg found that some monitored people experiences shame and embarrassment and this was exacerbated by having to explain why they were wearing the tag to friends and family.\textsuperscript{266} Kilgore, the American academic who had served time in prison and on EM, highlighted that the inflexible application of EM meant accidental breaches, due to a late bus or flat tyre during one’s commute, meant the reality of living with a tag could be very stressful.\textsuperscript{267} Other research respondents – particularly females – reported they felt they had to be mindful of what clothes they wore to ensure the tag was hidden.\textsuperscript{268}

Other monitored people highlighted the strain EM caused on their relationship with their family. Monitored people reported that the sharing of domestic responsibilities was sometimes curbed by EM and caused conflict.\textsuperscript{269} Tensions within intimate partnerships have also been reported across a number of studies.\textsuperscript{270} Respondents in research from Belgium discussed how EM could make them feel powerless as they were unable to participate in family life as normal.\textsuperscript{271} One respondent recalled how their children took advantage of the curfew, staying out late with their friends knowing that their parents could not venture out the house.\textsuperscript{272}

Survey data of monitored people found that almost a third would prefer one month in jail compared to 6 months on EM and the authors attributed this finding to the shame and embarrassment associated with wearing a tag.\textsuperscript{273} Overall however,
research which focuses on offender experience concludes that offenders still prefer to serve a sentence of EM than to be imprisoned.\textsuperscript{274}

**EM is not always appropriate for people with additional vulnerabilities.**

EM is not considered appropriate for offenders with mental health issues or severe substance addictions\textsuperscript{275}. The recent Ministry of Justice GPS pilot excluded those who were assessed to have “serious identified mental health or learning disabilities” from consideration from GPS EM.\textsuperscript{276} Evidence from Norway evidenced higher reoffending rates for offenders of drug-related crimes.\textsuperscript{277} In the Netherlands “EM is less likely to be imposed where people have serious substance addictions, serious mental illness and/or strongly impaired intellectual capabilities”.\textsuperscript{278} Ministry of Justice research also identified challenges of monitoring people with “mental health conditions, learning disabilities and chaotic lifestyle” who may have been incorrectly assessed as eligible\textsuperscript{279} for EM.

**EM can negatively impact minority groups.**

Some of the available literature, particularly from the USA, highlights the disproportionate use of EM on minority ethnic populations.\textsuperscript{280} Kilgore discusses the net widening surveillance of certain groups, namely black and Hispanic communities and school truants in the US, and Buchanan contends that GPS EM can heighten offenders’ senses of powerlessness.\textsuperscript{281}

\begin{footnotesize}

\textsuperscript{275} Boone \textit{et al.} (2017) p.56  
\textsuperscript{276} Ministry of Justice (2019) p. 16  
\textsuperscript{278} Boone \textit{et al.} (2016) executive summary section  
\textsuperscript{279} Ministry of Justice (2019) p. 27  
\textsuperscript{281} Buchanan (2008); Kilgore (2012)
\end{footnotesize}
EM can negatively impact people living in poverty

In the US, many offenders are obligated to pay the cost of their monitoring equipment and this necessarily excludes those from lower socioeconomic groups from being released on EM.\textsuperscript{282} In interview, a monitored person in Belgium recalled that they lived alone and had very few resources, no television, at times no food and had very few prospects of employment.\textsuperscript{283} As a result, the monitored person intentionally relinquished their release on EM to return to prison.\textsuperscript{284} In the Winnipeg auto theft suppression strategy, the young people were issued with mobile phones as part of the GPS monitoring programme. If the phone was lost or the police were unable to locate it, the young person was charged with theft and required to repay the cost of the device. One of the probation officers interviewed in research emphasised that this would be a debilitative cost for many of those involved in the programme because of their socioeconomic status.\textsuperscript{285}

Offenders on EM bail can be disadvantaged

According to the 2007 Scottish EM bail pilot – offenders on EM bail were given longer custodial sentences (121 days versus 93 days for the comparison group) and longer bail periods\textsuperscript{286}. It should be noted that backdating of custodial sentences was not possible when this pilot was set up, and this also affects cost.\textsuperscript{287}

EM is not fully standardised

The Scottish reviews by Graham and McIvor found differences in how EM orders and breach thresholds are managed and imposed.\textsuperscript{288} There were also differences in how breaches were monitored and reported. It was identified that some “special sheriffs” agree specific arrangements with G4S for breach proceedings as part of a problem-solving court approach.\textsuperscript{289}

Evidence from Argentina and New Zealand highlighted the different propensities of

\textsuperscript{282} Conway, no date, cf. Kilgore (2012) pp. 70-1
\textsuperscript{283} Vanhaelemeesch et al. (2014) p. 277
\textsuperscript{284} ibid.
\textsuperscript{285} Willoughby and Nellis (2016) p. 74
\textsuperscript{286} Barry et al. (2007) p. 4
\textsuperscript{287} Barry et al. (2007) p. 5
\textsuperscript{288} Graham et al. (2007) p. 29
\textsuperscript{289} McIvor and Graham (2016) p. 1
judges to utilise EM as a sentencing option.\textsuperscript{290} Efforts were made in these studies to control for the differences in judicial decision-making, which were significant.\textsuperscript{291}

Negative incidents related to EM can be scandalised by the media and there is poor public understanding of its use.

Evidence from Scotland, Germany, the USA and a systematic review suggests that there is a poor public understanding of EM and there is the potential for negative incidents to be disproportionately criticised and/or scandalised by the media, with a lack of positive reports of EM.\textsuperscript{292}

Nellis has documented the negative and sometimes sensationalist media response to EM in a number of his publications.\textsuperscript{293} In general the British press has reacted negatively to the use of EM for individuals serving community sentences.\textsuperscript{294} In Winnipeg, the GPS EM pilot for young offenders convicted of theft of motor vehicles received attention from the press, which was mainly negative and which politicised the use of EM and blurred the distinction between GPS and EM in its reporting.\textsuperscript{295}

**EM and domestic abuse**

The final section examines the use of electronic monitoring in relation to domestic abuse perpetrators. In cases of domestic abuse, the purpose of EM is different to that in cases of non-domestic crime. Bilateral Electronic Monitoring (BEM) monitors

\textsuperscript{290} Di Tella and Schargrodsky (2013) p. 31; Williams and Weatherburn (2019) p. 2 respectively.

\textsuperscript{291} Di Tella and Schargrodsky (2013); Williams and Weatherburn (2019)

\textsuperscript{292} Barry et al. (2007) p. 5; Dünkel et al. (2017) p. 41; Graham and Mclvor (2015); Levenson J., Brannon Y., Fortney T., and Baker, J. (2007) ‘Public Perceptions about Sex Offenders and Community Protection Policies’ Analyses of Social Issues and Public Policy 7:1 pp.137-161; Martinovic and Schlutter (2012) p. 415 describe the “moral panic” within the media after it was announced serious sex offenders were to be released and demands were made for this group to be more robustly monitored.


\textsuperscript{295} Willoughby and Nellis (2016) p. 71
both an offender’s compliance with the conditions of sentence and protects victims of domestic abuse by monitoring the offender’s movements in relation to the victim.

In relation to domestic abuse, the primary purposes of using EM are:

- To reinforce and ensure compliance with protective orders\(^{296}\)
- To record evidence of breaches of no contact orders\(^{297}\)
- To enhance supervision of offenders;\(^{298}\) and
- To improve victim safety.\(^{299}\)

EM can be used for those with a domestic abuse conviction in Scotland provided they are not excluded from consideration due to their offending history or following risk assessment, however Bilateral EM is not part of the current service in Scotland.\(^{300}\)

**Unilateral and Bilateral Electronic Monitoring (BEM)**

Radio Frequency (RF) monitoring is the only type of EM currently used in Scotland. The RF system is used for the monitoring of people convicted of a domestic crime or offence in Scotland, and the same system is used in other jurisdictions for this purpose.\(^{301}\) A 2013 Scottish Government Report further concluded that, both technically and legally, bilateral EM would be possible in Scotland with the combined use of GPS monitoring devices alongside the existing RF system.

\(^{296}\) Ibarra and Erez (2005)

\(^{297}\) Gur et al. (2016) p. 42

\(^{298}\) ibid.


\(^{300}\) Offenders are deemed ineligible for EM, regardless of offence, if they are convicted of violent and/or sexual offences or are deemed at high risk of reoffending following a process of risk assessment conducted by the SPS.

In the majority of cases in Scotland EM is used as a unilateral measure, primarily focussing on the monitored person’s compliance with the conditions of their sentence. Offenders may be restricted to a place, from a place, or both to and from places under the conditions of EM.

Bilateral Electronic Monitoring (BEM), which is currently used in the USA, Spain and Portugal, is generally used to enforce protective orders and establish ‘exclusion zones’ around the victim’s home. If an offender enters the exclusion zone, the EM system can give advance warning of the breach to the victim and monitoring authorities.

BEM combines the use of RF and GPS technologies. As in cases of unilateral EM, the offender wears a tamper-proof transmitter, usually around their ankle. Bilateral approaches involve a receiver being placed within both the offender and the victim’s home. The receiver in the offender’s home detects and confirms the presence of the offender within the address during the permitted curfew hours. The receiver in the victim’s house detects the presence of the offender’s transmitter when it is within a defined geographical radius of the house (radii distances cited in studies from the US varied from 500 feet to 2 miles).

The victim may also be provided with a pager device, which allows the monitoring centre to alert them of the offender’s proximity, and a field-monitoring device that alerts them to the offender’s proximity to the house when they are away from the area. Victims can also be given monitoring devices, to carry on their person, or to be tagged in the same way as an offender via a transmitter round their ankle. GPS EM is then used to track the victim’s movements and can report breaches by the offender in real time.

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302 The term ‘unilateral’ is used to describe EM that monitors only the offender; bilateral monitoring is used to describe systems whereby the offender and the victim are involved in the EM process.


304 Graham and McIvor (2015) p. 10

305 Erez et al. (2004)

306 Graham and McIvor (2015) p. 81

307 Ibid.
Victim experience

Considering evidence on the experience of victims is particularly salient when evaluating the monitoring of domestic perpetrators. Domestic abuse, by its nature, is a hidden crime. 88% of incidents of domestic abuse take place in the home and in many cases it is difficult to establish sufficient corroborative evidence. Quantitative evidence on reoffending and reconviction may not provide an accurate picture of the reality of offending and is likely to underestimate the prevalence of domestic abuse. It is unclear what lessons can be learned from considering quantitative outcomes on reconviction rates for perpetrators on EM and other qualitative evaluation outcomes should also be considered.

Evidence suggests the use of EM is victim-centric and improves victim engagement with the justice system. In addition, evidence of breaches are more easily evidenced by EM technologies and victims may feel more supported to report. These factors may result in an increase of reoffending and reconviction in cases of EM for perpetrators of domestic abuse. In terms of measuring the efficacy of EM in domestic abuse cases, analysis of reoffending and reconviction statistics may not provide a clear picture of the reality of offending. It is therefore important to consider the experience of victims, as this provides additional evidence on EM and its impact.

There is some consistent and robust evidence on the impact of EM on victims. Several publications found that victims and EM practitioners were positive about EM. Evidence from the US suggests that one of the main strengths of EM in cases of domestic abuse is that it is victim-centric, improves the victim’s perceptions of safety and allows them to feel better-informed and better-engaged with the justice system. The following section summarises the key findings of this body of evidence.

Research on BEM in cases of domestic abuse suggests its use can improve victim safety, empowerment and provide space to reassess the relationship and their future circumstances

Evidence from research interviews in the USA found that victims felt BEM granted them the space required to safety plan, reassess their relationship and their options

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for the future.\textsuperscript{309} In a number of US states, EM is used as a mechanism to enforce protection orders. Exclusion zones are established to mirror the zones within the protective order. A national survey of practitioners from the USA provided that 75% of criminal justice professionals working with EM methods felt that victims were empowered by EM systems\textsuperscript{310} and victims interviewed in Erez and colleagues' (2012) comprehensive USA study also reported improved feelings of empowerment.

Victims interviewed in Erez et al.'s research also showed that, prior to the use of EM, the perpetrator was able to continue his abuse of them more or less undetected and with impunity.\textsuperscript{311} Once the perpetrator was subject to EM, victims reported feelings of increased safety and freedom and a reduction in levels of harassment and stalking.

There are also anecdotal examples that suggest BEM can improve victim safety. In Florida, an exclusion zone was established around a victim's home address. The perpetrator in this case approached the address, allegedly to retrieve his belongings. The victim was alerted of his approach by the monitoring system in advance and had time to lock the doors and windows and turn off all lights and the television. The perpetrator tried to force entry to the house via several windows and the front door, and was then arrested by police who were also alerted to the breach.\textsuperscript{312} While this incident was a recognised breach, without the EM system the perpetrator would likely have gained entry to the property and perpetrated further abuse on the victim.\textsuperscript{313}

**EM can improve victims' engagement with the justice system**

A 2007 study by Erez and Ibarra\textsuperscript{314} interviewed 30 victims and 22 justice professionals who worked with victims in two Midwest jurisdictions of the USA. The article offers useful insights into the perspective of the victim, with a number of excerpts from victim interviews included as primary sources of data. The article concludes that the use of EM in domestic abuse cases is victim-centric: it can restore victims' faith in the justice system; make victims more visible within the

\textsuperscript{309} Erez et al. (2004) p. 6; Erez et al., (2012)
\textsuperscript{310} Gur et al. (2016) p. 46
\textsuperscript{311} Erez et al. (2012) p. 95
\textsuperscript{312} Bacigalupi, J. (2012) 'Seminole County Florida fights domestic violence with EMPACT' *Journal of Perpetrator Monitoring*, 24: 1, p. 18
\textsuperscript{313} ibid.
\textsuperscript{314} Erez and Ibarra (2007)
judicial decision-making process; improve their engagement with justice professionals; and allow them respite from fear and harassment.

Other research notes that, at court, domestic abuse cases have higher levels of dismissals than other crime types due to the unique dynamics of domestic abuse and associated pressures on the victim. Empirical research from the USA evidenced increased levels of victim attendance at court and a decreased likelihood of dismissal for cases that were continued over longer periods of time (as compared to cases where the perpetrator was released on bail without EM).

Research from the US found victims in domestic abuse cases are often not provided information regarding a perpetrator’s sentence, imprisonment and date of release, and/or the conditions of their bail. BEM had the effect of making women more ‘visible’ by including the victim’s perspective in judicial decision-making, and providing victims with more information on the perpetrator’s sentence.

**Guidance and education on EM’s capacity and limitations was lacking in some cases**

Gur and colleagues reported that, of the 616 EM practitioners surveyed: “fewer than 20% require victims to sign a form acknowledging the capabilities and limitations of the GPS program, one in eight (roughly 12%) provide victims with any training, and one in nine (roughly 11%) require “victim participation” for the defendant to be placed in the GPS monitoring program.”

**BEM has a victim-centric emphasis**

Research interviews of 30 victims and 42 criminal justice/victim support professionals across two years in two courts in the USA found that BEM had the potential to mitigate victims’ feelings of fear. BEM mitigated victims’ fear of the perpetrator contacting them directly or through other means such as letters,


316 Ibarra and Erez (2005)

317 Erez and Ibarra (2007) p. 112

318 *ibid.*

319 Gur et al. (2016) pp. 45-6
telephone calls or breaking and entering their home. A victim interviewed in one publication provided that:

“I always felt like he was just gonna come out of nowhere and cut my throat or shoot me. Before he was put on (BEM), I went down to 96 pounds from my pancreas and my ulcers. I couldn’t eat from nerves worrying if he was going to break into my home, (or) wherever he’s going to show up. He would stalk me, he would drive down (to) my home, he would show up in places—if I would go out he would show”.321

The knowledge that a perpetrator’s movements were being tracked in real time increased victims’ perception of safety.

However, some victims did not feel EM of the perpetrator reduced their risk.

Some victims interviewed in Erez et al.’s (2012) US study felt that pre-trial use of EM for the perpetrator would mean he was “even more crazy and [likely to] retaliate”.322 A number of victims believed the perpetrator would have the capacity to somehow deceive the technology and be able to continue the abuse. Some victims interviewed in research by Erez and colleagues were unsure of the extent of their protection and thus ‘tested’ the equipment by activating alerts to authorities to assess the speed and quality of police response.323

One case included in qualitative research from Spain found that repeated alerts by the monitoring system could cause distress to victims.324 An exclusion zone was set for 500 metres around the victim’s home address but the perpetrator required to go within 400 metres of the address to attend his work. The repeated alerts of the system caused the victim such distress that she withdrew from the programme. The judge in this case was able to modify the exclusion zone to resolve the issue.325

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320 Ibarra and Erez (2007) p. 106
321 ibid.
322 Erez et al. (2012) p. 101
323 Erez et al. (2004)
324 Otero (2009) p. 144
325 ibid.
Perpetrator experience

There is also a limited body of qualitative evidence examining perpetrator and practitioner experience of EM in cases of domestic abuse.

The way in which a monitoring system is operationalised and its objective aims influence how perpetrators and practitioners experience EM.

Erez and colleagues noted that “an agency’s overarching philosophy of supervision and sense of mission, rather than the technology employed, set the tone and direction that casework takes, shaping how officers practice surveillance”.

Research from the US found that the way in which monitoring systems are managed can have a significant effect on perpetrator experience. The 2014 study conducted interviews with 50 criminal justice practitioners across three separate jurisdictions over three years. The approaches to monitoring varied between a collaborative, transparent approach based on treatment and rehabilitation, to another area where EM was intended to control risk based on surveillance and enforcement. In the former, practitioners wanted to “create a relationship of trust” with the clients and support them to make positive life choices. In the latter, perpetrators were not provided information regarding the capabilities of the GPS EM system, an intentional strategy designed to “keep defendants in the dark” and “weed out” those who were non-compliant.

Perpetrator experience of EM can be both positive and negative.

One practitioner interviewed in the above study perceived that – because perpetrators are obliged to pay for their monitoring equipment in the US – compliance was higher. The cost of a unit varied between $10 and $16 per day and the practitioner felt that due to the daily cost, perpetrators tended to pay more attention to their conditions.

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326 Erez et al. (2014) p. 440
327 Ibarra, et al. (2014)
328 Ibid, p. 433
329 Ibid, p. 428
330 Ibid, p. 439
331 Ibid.
Being subject to a home detention curfew (HDC) and no contact order with the victim means many perpetrators are forced to reside with their parents. Research from the US interviewed 27 convicted perpetrators of domestic abuse, and found that residing with parents was emasculating and infantilising for them and it was difficult to maintain a 'normal' social life.  

A report by Erez and colleagues (2012) identified some benefits for perpetrators of domestic abuse subject to EM, as “providing added structure to their lives, and enabling them to envision futures for themselves without the victim”. Some research highlighted that GPS EM is a fairer system because it protects perpetrators from false allegations by the victim and allows the perpetrator to avoid accidental contact with the victim through early warning systems.

Practitioner perception

Three police respondents, interviewed for the 2007 Scottish Government review on EM as a condition of bail, expressed frustration regarding whether EM would necessarily increase compliance of perpetrators who already routinely breached bail, especially in relation to domestic abuse. A majority of (judicial, SCTS, COPFS, bail officers, advocacy service and EM staff) respondents also stated they did not believe EM as a condition of bail would prevent perpetrators intimidating witnesses.

By contrast, the recent Ministry of Justice evaluation on GPS EM found there was support amongst stakeholders for the use of GPS to monitor domestic perpetrators. It was noted, however, that responses to breaches would need to be very efficient to ensure victim safety, as the tag did not prevent breaches only monitored them.

332 Ibarra and Erez (2005) p. 271
333 Erez et al. (2012) p. iii
335 Ortano (2009) p. 142
336 Barry et al. (2007) p. 67
338 ibid.
The evidence base on EM and Domestic Abuse

Compliance and reconviction are the focus of studies on EM and domestic abuse.

Discussions on compliance and reconviction are the focus of a small number of empirical studies on EM and perpetrators of domestic abuse. As noted, the results of quantitative research of this type must be evaluated with some caution, as reduced reconviction may not necessarily be a measure of the effectiveness of EM.

As there are only a few studies on compliance and reoffending in relation to EM in domestic abuse cases, the following section offers a brief review and highlights the key findings of each of these publications.


Key finding: Domestic abuse perpetrators were less likely to breach if they were monitored using GPS rather than RF technology, and less likely to reoffend during the period of monitoring.

A study by Erez et al. (2012) is the most comprehensive study on the use of EM in domestic abuse cases. Using a quasi-experimental design, it examines the use of pre-trial EM in three jurisdictions in the USA, examining data on 2052 perpetrators of domestic abuse over two years, 1000 perpetrators over 6 years and 604 over one year; a web survey of 616 practitioners; and 210 qualitative interviews with victims, perpetrators and criminal justice/social services practitioners.

Erez et al’s (2012) research found that perpetrators subject to GPS monitoring violated the conditions of their EM less than those perpetrators on RF EM. Practitioners also reported that less than 7% of perpetrators breached the conditions of pre-trial EM by entering exclusion zones.

Whist there was a lack of consistency in re-arrest rates across different localities, overall there was a higher rate of re-arrest in the long-term compared with the

\[339\] Rates varied from 7.7% in the South to 59.3% in the MidWest in the one year follow up period.
period of monitoring for both RF and GPS perpetrators, suggesting that perpetrators are less likely to commit crime during the period of monitoring. In terms of preventing failures (i.e. breaches of EM conditions), GPS EM was found to be more effective than RF.\(^{340}\)

The likelihood of reconviction was higher for perpetrators who were subject to GPS monitoring, however the authors suggest this may be due to increased reporting by victims, as they are better engaged in the criminal justice process via GPS EM methods.\(^{341}\) Qualitative evidence provided that victims whose abuser was on RF EM also felt an increased willingness to report (as compared with prior instances of abuse when the perpetrator was unmonitored) due to being supported by the technology.\(^{342}\)

**Specialization and the Use of GPS for Domestic Violence by Pretrial Programs: Findings from a National Survey of U.S. Practitioners, Gur et al. (2016)**

**Key Finding:** The majority of practitioners in the study were positive about the use of EM in domestic abuse cases and felt it can restore victims’ faith in the justice system.

A report by Gur and colleagues\(^{343}\) further analysed part of the data set from Erez et al’s (2012) study. They looked at the survey responses of 616 EM practitioners which provides further insights into practitioners’ understandings and motivations for use of EM in domestic abuse cases. The majority of EM practitioners were positive about EM use in domestic cases, stating that it improved their ability to sufficiently monitor perpetrators and hold them accountable, and the majority believed EM effectively deterred perpetrators from initiating ‘in-person’ contact with their victim.

**An Evaluation of the Use of Electronic Monitoring as a Condition of Bail in Scotland, Barry et al. 2007**

**Key finding:** The use of EM as a condition of pre-trial bail is under-used in Scotland.

A 2007 Scottish Executive report\(^{344}\) on the use of EM as a condition of bail evaluated the effectiveness of EM as a condition of bail for 63 accused people

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\(^{340}\) See Erez et al. (2012), p. 70

\(^{341}\) *ibid.*, p. ii

\(^{342}\) *ibid.* p. 212, footnote 14

\(^{343}\) Gur et al. (2016)

\(^{344}\) Barry et al. (2007) p. 40
across three Scottish courts. Of the 63, only 6 perpetrators of domestic abuse were included in the sample, therefore it is difficult to draw any meaningful conclusions. The report noted that very few “restricted from” conditions were used in EM bail, rather perpetrators tended to be “restricted to” an address. Of note, two of these perpetrators breached their conditions by entering an exclusion zone, one was arrested but neither were convicted of the breach.\footnote{ibid. pp. 45-6} Data is not recorded by offence type and thus very few conclusions can be drawn regarding perpetrators of domestic abuse.

Scottish and International Review of the Uses of Electronic Monitoring, Graham and Mclvor, 2015

**Key finding:** the evidence base on the use of EM in Scotland is limited.

Graham and Mclvor dedicate a section of their report to reviewing the evidence on EM and domestic abuse. Their review is based on a systematic review of existing literature rather than new empirical evidence on DA and EM. The review takes account of the studies identified above and notes that there is limited available research in this field. The authors highlight that in other jurisdictions EM is integrated with other community supervisions.\footnote{Graham and Mclvor (2015) pp. 43-4}

The only identified instance of a BEM pilot scheme for perpetrators of domestic abuse in the UK is a trial between 2014 and 2017 by Northumbria Police.\footnote{Vera Baird Police and Crime Commissioner Northumbria (2015) http://www.northumbria-pcc.gov.uk/gps-proximity-device-launch; there has recently been a new pilot implemented in London for violent offenders but due to the small time elapsed there is no evaluation of this pilot.}

This pilot was part of a wider Home Office-funded MATAC process implemented in Northumbria between 2014 and 2017. The original intention of the pilot was to use GPS EM to monitor bail conditions, Domestic Violence Protection orders (DVPOs) and prison release conditions. Use of EM for these purposes required authorisation from the Ministry of Justice and this was not granted\footnote{Personal communication with Programme Director Deborah Alderson, 11/02/19}. The scheme was therefore conducted on a voluntary basis and the cohort of users was self-selecting.
Victims were given a handheld GPS device and perpetrators were subject to a GPS tag to monitor their movements and any contact. Fixed exclusion zones were defined around the victims’ houses and places of work, and mobile exclusion zones set up around the victim to prevent unwanted contact outside of the static zones.

Programme director of the pilot, Superintendent Deborah Alderson, provided that where the devices were deployed, they “worked effectively and gave the victim peace of mind and feelings of safety”. Superintendent Alderson identified that there were several technical issues related to loss of coverage but believed that new technologies would be able to address the issue. On EM technology, she stated “I have found that technology changes so quickly, if I were to consider use of these again in the future I would consider lease of the units rather than purchase, so that units are kept up to date as part of the contract as technology advances.” She also highlighted hidden costs relating to training police to respond to breaches and the costs incurred by the monitoring company.

To further explore the use of community sentences in Scotland, statisticians at the Scottish Government have analysed the reconviction rates of perpetrators of domestic abuse by sentence type.

For the period 2017/18, 2691 people were sentenced to RLOs, 332 (12%) of which had a domestic abuse marker.

One year reconviction rates for domestic and non-domestic abuse crimes and offences for the 2015/16 offender cohort were examined. The cohort includes those that were either released from a custodial sentence, or given a non-custodial sentence, in a Scottish court in 2015-16. The earliest occurrence of either a release from a custodial sentence or being given a non-custodial in the financial year is counted as the index conviction of an offender. Subsequent convictions in a year period after the index conviction are counted as reconviction. See Annex A in Reconviction Rates in Scotland: 2015-16 Offender Cohort for further detail on the methodology for counting reconvictions.

The cohort of 44,036 perpetrators was separated into those who had an index crime with a domestic abuse marker and those that did not, and reconviction rates were calculated both for both groups. These results were split by disposal type.

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349 ibid.
350 ibid.
351 Criminal proceedings statistics 2017/18
including RLOs and custodial sentences. Appendix 1 contains the table detailing the reconviction rates.

**In Scotland, there is a lower reconviction rate for domestic crimes/offences for perpetrators sentenced to RLOs than to short prison sentences.**

The analysis found that 19% of perpetrators who were imprisoned for under one year were reconvicted for another domestic abuse offence within a year. This compares with perpetrators sentenced to RLOs, 10% of whom were reconvicted for another domestic abuse offence within a year.

However, it is important to note that the differences in reconviction rates may be explained in part by the type of perpetrator most likely to be sentenced to imprisonment, as perpetrators at high risk of reoffending are less likely to be sentenced to RLOs in the first place.

**The evidence base on EM and domestic abuse is limited**

This review did not identify any studies which compared outcomes for perpetrators of domestic abuse on EM with outcomes for a matched sample who serve their entire sentence either in prison or on a community sentence with no EM intervention. Without a matched comparison group it is very difficult, if not impossible, to draw robust conclusions regarding the effectiveness of EM with perpetrators of domestic abuse compared with other sentences.

Following an extended review, a 2015 report by the SCCJR concluded that, in relation to BEM and perpetrators of domestic abuse, “(t)he empirical evidence and criminological literature on GPS-based bilateral EM is limited and relatively new, and it is too early to make strong claims about its impact”. This was echoed in the 2015 report by Lockhart-Mirams and colleagues who recommended that the UK government implement a mandatory pilot scheme for perpetrators of domestic abuse as a means of developing the evidence.352

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Conclusions

The range of uses of EM

This paper has outlined the possible uses of electronic monitoring systems at different points of the justice pathway. EM is used as a tool in justice systems across a wide number of international jurisdictions. There is evidence to support the use of EM at different points along the justice pathway, including to monitor compliance with pre-trial bail conditions, to support early release from prison and as a condition of probation. There are different types of monitoring systems, including Radio Frequency (RF), Global Positioning Systems (GPS) and Remote Alcohol Monitoring (RAM) systems. In general, it is difficult to draw generalisations across the types of monitoring technologies, particularly RAM because it is intended to monitor compliance in a different way.

The evidence evaluating the effectiveness and use of EM is limited but promising

There is a significant literature on the theory of EM, a number of reliable empirical studies and various systematic reviews on the use of EM.

Of the available evidence there are some promising results. Research from France, for example, concluded a 9-11% reduction in reoffending and an Australian study evidenced a 25% reduction in reoffending for monitored people. A large study from Florida found that, in terms of breach rates, over a period of 6 years monitored people were 31% less likely to breach the conditions of their sentence than comparable groups not on electronic supervision. Ministry of Justice research from 2011 concluded that monitored people released on HDC were no more likely to reoffend than those in a matched sample who were not eligible for release. This has led some researchers to conclude that EM and imprisonment are equally effective, but that EM has a number of additional benefits, both for the individual and for the state.

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353 Henneguelle et al. (2016)
354 Williams and Weatherburn (2019) p. 23
355 Bales et al. (2010)
356 Ministry of Justice (2011) p.1
357 Flango and Cheesman (2007) p. 103, for example, state “(e)lectronic monitoring is as effective as incarceration, and less expensive”. 
Despite the range of this literature, the evidence base on EM remains limited because research design and empirical outcomes are highly varied. Research design in some of the studies does not allow for robust conclusions to be drawn. Some empirical studies use self-selecting groups and a number of studies have very small sample sizes. A large number of studies consider GPS monitoring systems, and there are identified differences between RF and GPS EM outcomes. As a result of inconsistent research design, it is difficult to draw reliable conclusions regarding cause and effect.

An evaluation of the effectiveness of EM depends on the intended aims and purpose of monitoring. From the available evidence it is concluded that EM has been used to achieve a range of different objectives across jurisdictions. The effectiveness of EM can therefore only be judged on whether and how it achieved the particular objectives defined within an individual study. Reliable comparison between studies is not possible in the majority of cases.

Literature on the use of EM for other offence types suggests there can be better outcomes if EM is used as part of a wider intervention of supports and supervision.

In terms of reoffending and reintegration outcomes, an evaluation of the available evidence suggests that EM is best considered as one tool to be used in conjunction with a wider package of community supervision and support for people serving their sentence in the community.

EM can be used to support reintegration

One of the objectives of EM can be to support reintegration and encourage a pro-social life. Assessing the relationship between EM and reintegration depends upon how reintegration is defined.

The literature identified that EM can be used to encourage the construction of positive social capital. EM can allow family responsibilities and relationships to be maintained and increases the likelihood of the monitored person gaining or maintaining employment. In addition EM may discourage association with criminal peers. The conditions of EM can also be applied flexibly to incentivise compliance and pro-social behaviour.
EM outcomes tend to focus on reconviction rates and this does not necessarily provide reliable evidence on the effectiveness of EM

Evidence on electronic monitoring has tended to focus on reoffending rates and while quasi-experimental conditions have been established in some studies, comparisons between monitored people serving their sentence in the community and a matched groups in prison are problematic in terms of producing reliable conclusions. As noted in the section on risk assessment, the HDC assessment process purposefully targets low risk offenders. Thus, any comparisons made between groups monitored on HDC with those retained in prison are not reliable, as it would be expected that reconviction rates would be lower for a lower risk group.

More reliable and robust research methods would involve examining the cohort of people released on HDC and analysing the proportions of those who breached, who were recalled and the reasons why. The available literature notes that research on the experience of monitored people is also lacking and further research in this area would be beneficial to evaluate effectiveness.

The available evidence suggests that the cost of EM is lower than imprisonment

The majority of the available literature concludes that EM costs less than imprisonment. There were no studies that considered the whole system cost of implementing EM – in terms of costs associated with monitoring centres, breaches, technology failures and community support. A number of studies identified that cost effectiveness was conditional on certain factors. GPS EM was assessed to be more cost effective than RF monitoring systems.

There are a number of ethical considerations related to EM

There is some evidence – specifically from qualitative studies that examine the experience of monitored people – that highlight the stigma, stress and embarrassment associated with wearing a tag. In addition a number of the theoretical studies and systematic reviews discuss the risk of penological drift associated with EM.

Some literature highlights the negative impact on a monitored person’s family and on a monitored person’s employment prospects. There are also a limited number of
studies that conclude EM may not be appropriate for all groups, specifically people with additional vulnerabilities and minority groups, and that EM may further disadvantage monitored people of a lower socioeconomic status.

In cases of domestic abuse, the purpose of EM is different to that in cases of non-domestic crime.

The use of Electronic Monitoring in cases of domestic abuse is a specialised area of research and is far more limited than the evidence base on the use of EM for other crime types. In cases of domestic abuse, the purpose of EM is different to that in cases of non-domestic crime. Bilateral Electronic Monitoring (BEM) monitors both an perpetrator’s compliance with the conditions of sentence and protects victims of domestic abuse by monitoring the perpetrator's movements in relation to the victim.

In evaluating the use of EM in cases of domestic abuse qualitative evidence on victim experience should be considered

While the evidence base on the use of EM for perpetrators of domestic abuse is limited, there are a number of reliable qualitative studies that suggest BEM can be used to make the criminal justice system more victim-centric, improve victim engagement and perceptions of safety. When considering criminal justice measures for domestic abuse, the hidden nature of domestic abuse must be taken into account. Even if there is a reliable body of evidence detailing reconviction rates for perpetrators on EM, it is unclear what lessons could be learned from this. Increased reconviction rates may indicate increased reporting by victims and an improved engagement with the justice system, while a decrease in rates may indicate the effectiveness of EM in terms of reintegration and rehabilitation. In the absence of such data, the lived experience of victims, practitioners and perpetrators – on which there is a some available evidence – should be considered.
Appendix A: Reconviction rates for domestic and non-domestic crimes or offences
### Reconviction rates for domestic abuse and non-domestic abuse crimes and offences: 2015-16 cohort

<table>
<thead>
<tr>
<th>Index disposal</th>
<th>Number of offenders</th>
<th>Percentage reconvicted for any crime or offence</th>
<th>Percentage reconvicted for a domestic abuse crime or offence(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-DA index</td>
<td>DA index(^1)</td>
<td>All index</td>
</tr>
<tr>
<td>RLO</td>
<td>887</td>
<td>106</td>
<td>993</td>
</tr>
<tr>
<td>CPO</td>
<td>8,549</td>
<td>2,252</td>
<td>10,801</td>
</tr>
<tr>
<td>Under 3 month custodial</td>
<td>1,161</td>
<td>163</td>
<td>1,324</td>
</tr>
<tr>
<td>Under 1 year custodial</td>
<td>3,926</td>
<td>597</td>
<td>4,523</td>
</tr>
<tr>
<td>All</td>
<td>35,636</td>
<td>8,400</td>
<td>44,036</td>
</tr>
</tbody>
</table>

1. Domestic abuse crimes and offences are those marked with a domestic abuse aggravator.

### Average number of reconvictions per offender for domestic abuse and non-domestic abuse crimes and offences: 201516 cohort

<table>
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<th>Index disposal</th>
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1. Domestic abuse crimes and offences are those marked with a domestic abuse aggravator.
How to access background or source data

The data collected for this social research publication:
☐ are available in more detail through Scottish Neighbourhood Statistics
☐ are available via an alternative route <specify or delete this text>
☐ may be made available on request, subject to consideration of legal and ethical factors. Please contact <email address> for further information.
☒ cannot be made available by Scottish Government for further analysis as Scottish Government is not the data controller.