CECAN Webinar: The benefits and challenges of conducting research with impact 'built in': reflections and findings from an evaluation of Electronic Monitoring with the Ministry of Justice

Monday 23rd June 2025, 13:00 – 14:00 BST

Presenter: Ian Brunton-Smith, Professor of Criminology and Research Methods, University of Surrey

Welcome to our **CECAN Webinar.**

All participants are muted. Only the Presenter & CECAN Host can speak. The webinar will start at **13:00 BST.**

Ian will speak for around 40 minutes and will answer questions at the end.

Please submit your questions at any point during the webinar via the Q&A box in the Zoom webinar control panel.

Today's webinar will be recorded and made available on the CECAN website.

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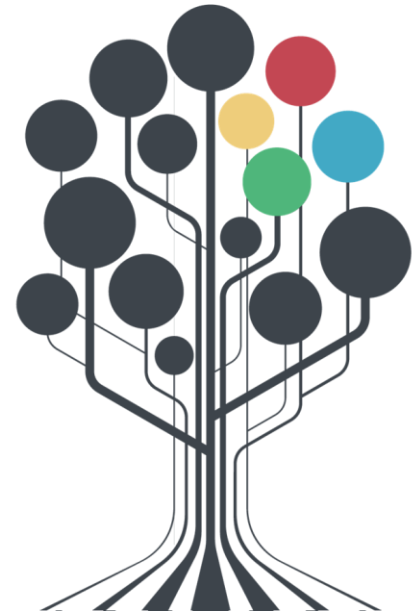

The benefits and challenges of undertaking research with impact ‘built in’: reflections and findings from an evaluation of Electronic Monitoring

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Background to the Evaluation Fellowships

- A collaboration between the Ministry of Justice, the Economic and Social Research Council (ESRC) and the Cabinet Office Evaluation Accelerator Fund (EAF) to explore the feasibility of using **administrative data to evaluate policy and practice interventions in the justice system.**
- Two academic Fellows, **Ian Brunton Smith** (University of Surrey) and **Georgina Mathlin** (Queen Mary's University) appointed in February 2023.
- To use **quasi-experimental methods on linked justice datasets** to establish whether specific policies and practices are effective in delivering intended departmental outcomes of **reducing reoffending, protecting the public and delivering swift access to justice.**
- We were embedded within MoJ Data & Analysis as part of the **Evidence & Partnership Hub** commitment to **maximise the use of academic expertise** to address evidence priorities as set out in the MoJ **Areas of Research Interest.**
- Supported by the **Evaluation Task Force** (number 10) who had direct involvement and made available academic/non-academic support.

Benefits: Building in policy impact from the outset

Began with a **three-month scoping phase** to identify key policies and interventions and **priority evaluation questions** to shape the evaluation programme.

1. Internal call for key interventions/policies that may benefit from being evaluated using administrative data
2. Initial meetings set up to discuss proposed project
3. Initial onboarding with the AP and accessing ADR/MoJ linked datasets as jumping off point for prioritisation phase.
4. Data deep-dives to explore feasibility of proposed projects
5. Follow up meetings and project mapping

Benefits: Project prioritisation - evidence gaps, policy need and data availability

Project	Policy priority?	ARI	Feasibility
The impact of electronic monitoring	Identified as priority intervention (DPM) Lacking clear evidence (HMT/NAO)	Reducing reoffending	Data available (including newly linked service info)
Multiple order requirements and offender desistence	Evidence gap about this current practice	Reducing reoffending - Interventions and programmes	Data available
Early legal advice in police stations	Evidence gap about this current practice	Ensure access to justice. Provide a transparent and efficient court system	No administrative data available.
Interventions for domestic abuse flagged individuals	Government commitment to tackle DA (following DAA, 2021)	Protect public from harm. Reducing reoffending	Data available
Community based services for female offenders	Focus on community services for women supported by women's centre grants funding	Reducing reoffending - Interventions and programmes	No administrative data yet on stream
The impact of release on temporary licence	2019 White Paper on the use of ROTL	Prisons as decent, safe and productive places	Data available

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Electronic monitoring: background

Originally envisioned as tool to enhance rehabilitation, it was later also positioned as alternative to custodial sentence

- Place liberty restrictions on individuals whilst maintaining family relations
- Avoid costs associated with incarceration

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Radio Frequency tags

- Introduced in UK in 1999 to monitor compliance with curfew orders (also HDC)
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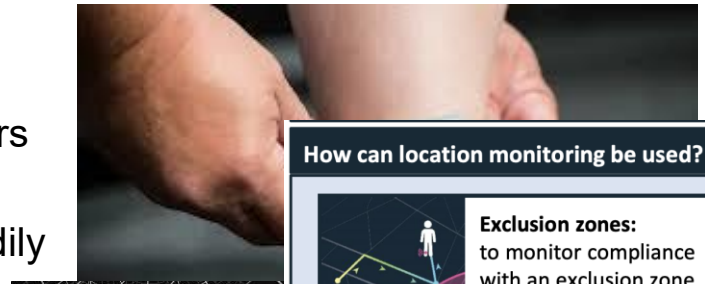
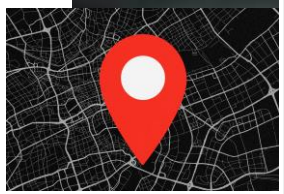
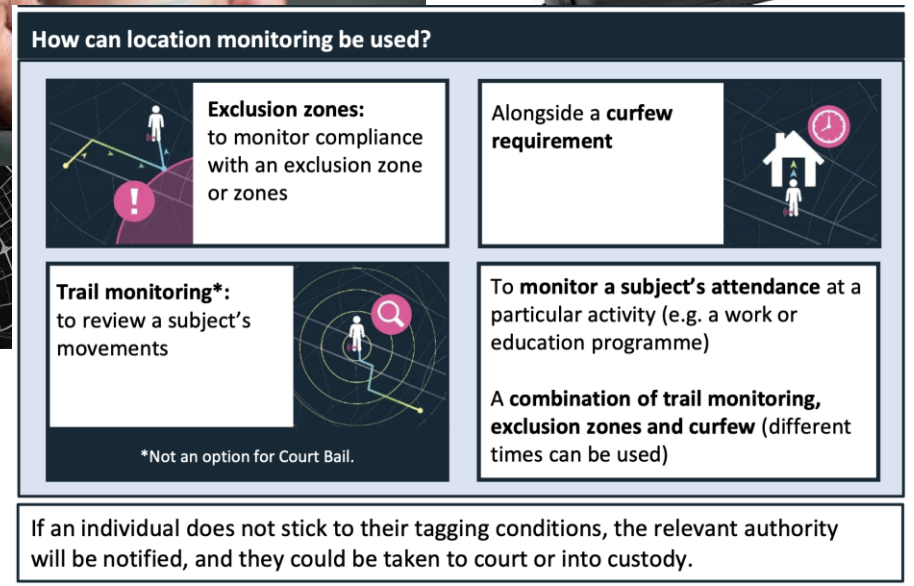
GPS location monitoring

- Introduced in 2018 following successful pilots – targeted at theft and DA
- Approx 10800 monitored in June 2024 (steadily increasing)







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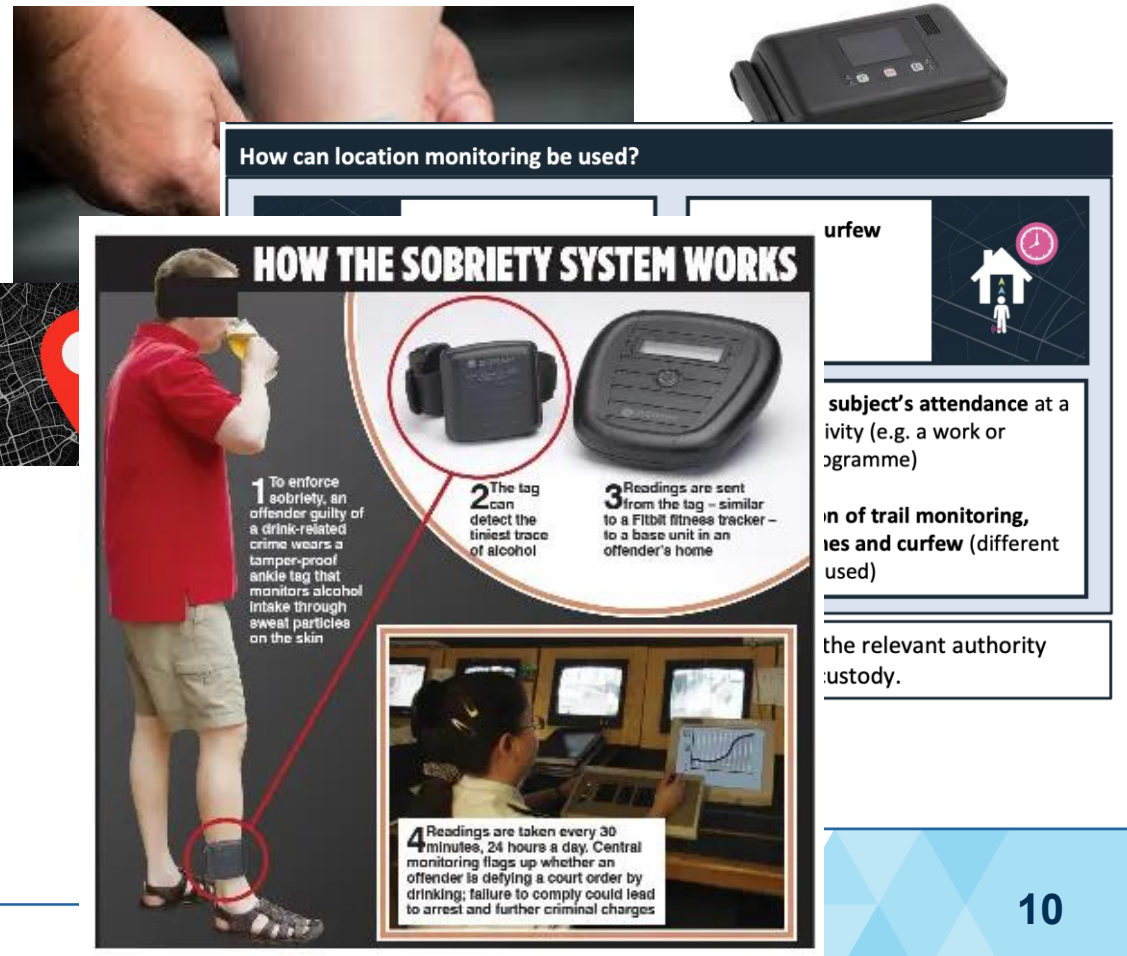
Alcohol monitoring

- Introduced in 2021 to enhance compliance with AAMR
- Approx 3200 monitored in June 2024 (up 38% since 2023)



Electronic monitoring: benefits and harms

Supposed benefits include

- Habit breaking tool to change offending
- Reducing offenders links with people and places associated with offending
- Enabling offenders to remain more closely integrated with family members

Potential problems include

- Restricting offenders' abilities to secure and maintain employment
- Raising tensions with co-habitants
- Stigma on individual and family

Evidence of effectiveness

Despite widespread use of EM across various jurisdictions, evidence on effectiveness remains thin

Belur et al (2020) meta-analysis identifies just 18 studies of sufficient quality to (imperfectly) attribute cause to EM (from 373 in scope) and only 2 RCT for ‘true’ effect

Picture of effectiveness is modest at best – “when the proportion effect size studies [n=14] are considered as a whole, electronic monitoring is found to have no statistically distinguishable effect on recidivism rates” (p.7); the 5 studies including time to reoffence suggest modest increase in time to reoffending for those with EM

Similar picture when other meta-analyses (e.g. Gendreau. Goggin, Cullen and Andrews, 2000; Renzema and Mayo-Wilson, 2005) are considered

However, Renzema (2003; 2010) argues that more ‘nuanced’ assessments of EM effectiveness warranted

Electronic monitoring effectiveness: Research questions

RQ1: Effectiveness of curfew order with RF EM as a community penalty

a) effectiveness at reducing offending (**whilst wearing**, during disposal, after completion).

b) effectiveness at reducing breaches and ensuring 'compliance' with other sentence-based requirements.

RQ2: Effectiveness of curfew order with RF EM as an enhancement to a suspended sentence

a) effectiveness at reducing offending (**whilst wearing**, during disposal, after completion).

b) effectiveness at reducing breaches of SS requirements during sentence

RQ3: Effectiveness of curfew order with RF EM as an alternative to custody

a) effectiveness at reducing (proven) returns to court (whilst wearing, during disposal, after completion).

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Benefits: Making use of linked administrative data

EM Service records
ID
Tag installation/ removal

Curfew and any other requirements within 7 days

Magistrates/ crown data
ID
Offending history (by offence type)
Prior prison

Total offences where offence date < current offence date

Probation records
ID
Offence type/ date
Demographics
Additional offences
Requirement details and compliance
Disposal timing, features etc
Warning letters

HMPPS

PNC

Subsequent offence date > current disposal start/end

Magistrates data
ID
Proven returns to the CJS

OASys
ID
Offender risk

Assessment prior to current offence

How can we estimate effectiveness using administrative data?

The best way to identify causal effect involves the random assignment of interventions to offenders (i.e., an experimental design such as an RCT).

Random assignment guarantees that there are no unobserved determinants of receiving intervention that are also predictive of reoffending (“ignorability”).

Enables simple comparison of mean reoffending/compliance rates that is unbiased.

$$ATE = E[Y(1)] - E[Y(0)]$$

BUT – using historic administrative data we cannot be confident that treatment assignment is random and thus unbiased.

We therefore have to approximate a random assignment statistically (i.e., quasi-experimental design)

Quasi-experimental design

Key goal is to satisfy the assumption of *ignorability*

Conditional on (whatever) modelling/data manipulation, no unobserved characteristics that are predictive both of EM assignment and reoffending/compliance

Enables unbiased estimate of causal effect of EM **if** assumptions are correct

Of course - no way to be sure that ignorabilty is satisfied – they are always unobserved confounders!

So we must be cautious, careful and transparent about limits of inference

Propensity Score Matching; Coarsened Exact Matching; Causal Machine Learning

All quasi-experimental approaches are approximations of ‘classic’ experimental design

PSM – similar offenders in treatment/control; model dependent; incorrect matches possible; clear population inference

CEM – same offenders in treatment/control, less model dependent, misses ‘close’ matches, unclear population inference

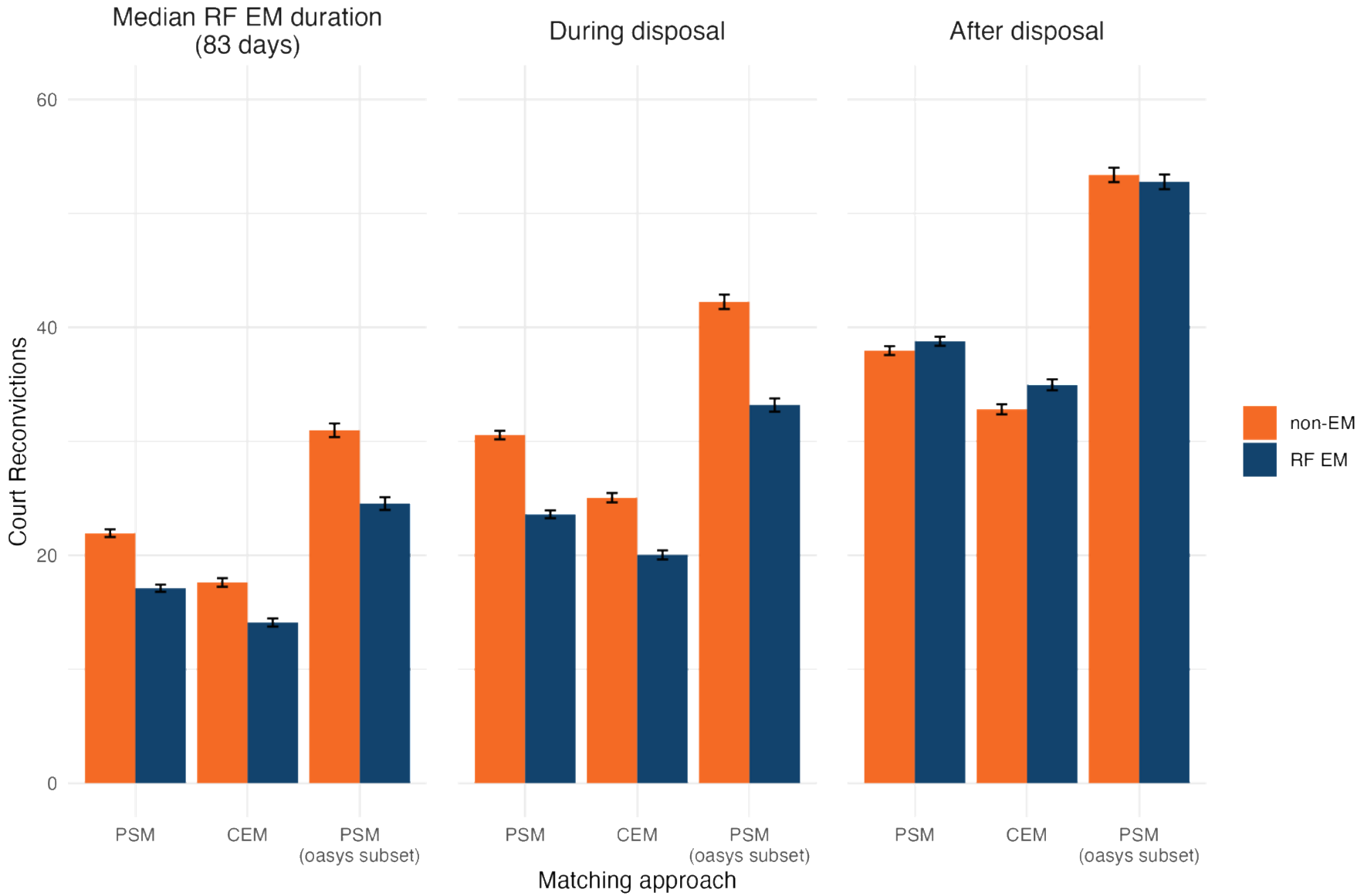
CML – similar offenders in treatment/control , ML to ‘find’ correct model form, heterogeneous treatment effects; data intensive; sensitive to hyperparameters

To mitigate limitations of single approach, assess robustness across multiple approaches

Results

	non-RF EM	RF EM	Total
Community order	319,862	52,115 (14%)	371,977
Suspended sentence order	165,526	25,858 (13.5%)	191,384

Effectiveness of curfew order with RF EM as a **community penalty**



Effectiveness over time

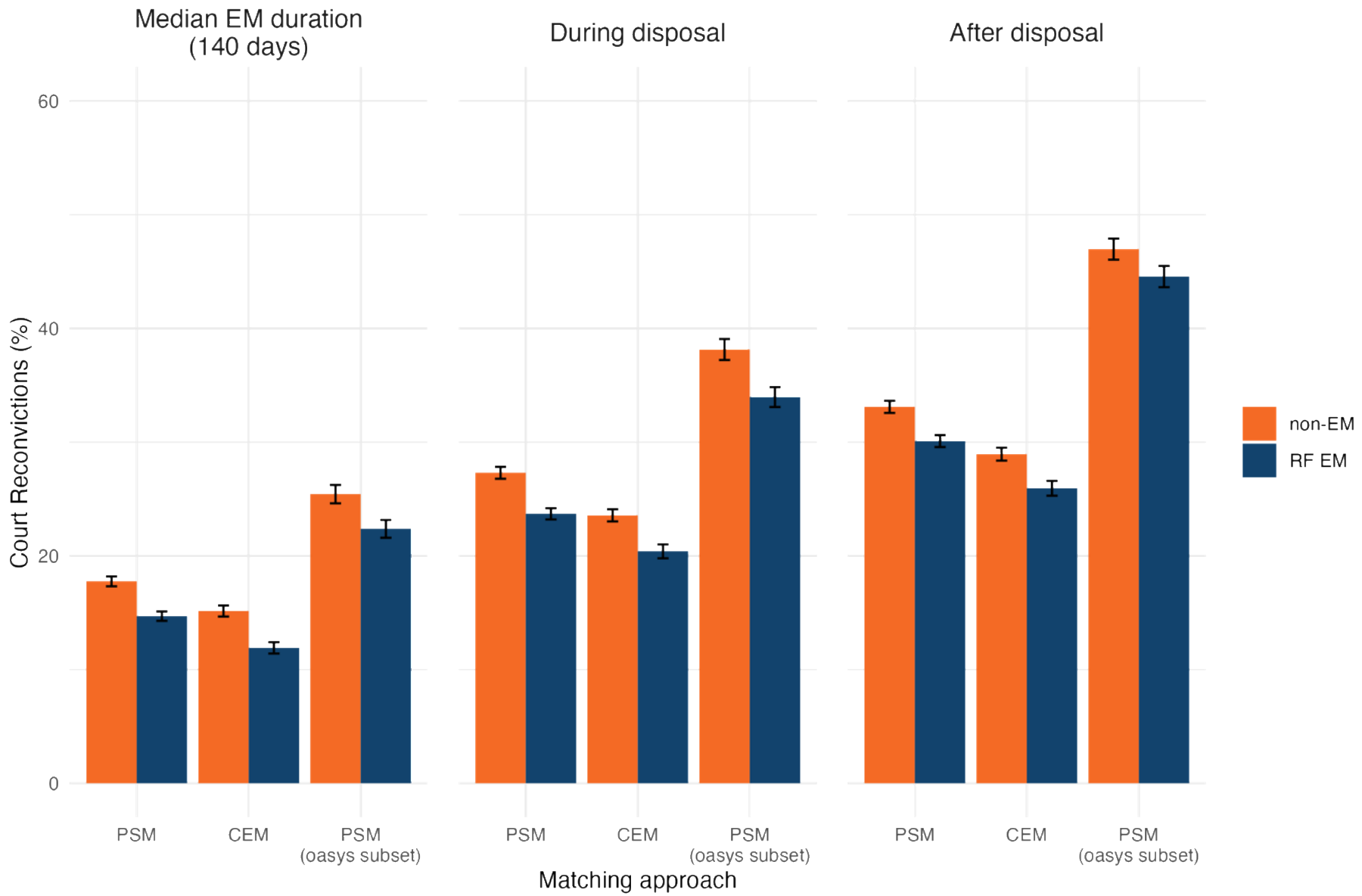
	Non-EM	RF EM	Difference	Risk ratio	N
Reconviction for offences committed within median EM duration (83 days)					
2014	21%	18%	-3%	0.86	17,882
2015	20%	16%	-3%	0.84	19,017
2016	24%	18%	-7%	0.73	23,290
2017	23%	17%	-6%	0.75	22,018
2018	22%	17%	-5%	0.79	21,555
Reconviction for offences committed during current disposal					
2014	30%	25%	-5%	0.82	17,872
2015	27%	22%	-5%	0.81	19,004
2016	33%	23%	-10%	0.71	23,278
2017	31%	23%	-8%	0.74	22,007
2018	32%	25%	-7%	0.76	21,543
Reconviction for offences committed in 12 months after current disposal					
2014	38%	39%	1%	1.03	17,882
2015	36%	38%	2%	1.05	19,017
2016	40%	40%	0%	1.00	23,290
2017	38%	39%	1%	1.02	22,018
2018	37%	38%	1%	1.03	21,555

[1] Results estimated using PSM

	RF EM compared to non-EM			Placebo (RF EM) compared to non-EM		
	Difference	95% CI lower	95% CI upper	Difference	95% CI lower	95% CI upper
Reconviction for offences committed within median EM duration (83 days)						
CML (ATT)	-3%	-4.0%	-1.8%	0.1%	-0.8%	0.9%
CML (ATE)	-3%	-4.1%	-1.9%	0.1%	-0.8%	0.9%
Index offence						
Criminal damage	-3.7%	-9.5%	2.1%	4.0%	0.7%	7.2%
Drug offence	-0.6%	-2.0%	0.8%	-0.4%	-2.5%	1.6%
Fraud	-0.5%	-2.5%	1.4%	-0.9%	-2.2%	0.4%
Miscellaneous	-0.7%	-3.0%	1.5%	2.3%	0.1%	4.6%
Weapons	2.9%	-8.9%	14.7%	6.9%	-0.9%	14.7%
Public order	**-3.5%**	**-4.3%**	**-2.7%**	-0.9%	-2.3%	0.6%
Robbery	**-12.0%**	**-22.5%**	**-1.5%**	15.5%	-8.5%	39.6%
Sex offence	-0.1%	-3.0%	2.7%	-0.1%	-2.8%	2.6%
Summary (non-motoring)	**-3.3%**	**-4.1%**	**-2.5%**	-0.1%	-0.8%	0.6%
Summary (motoring)	**-1.2%**	**-2.1%**	**-0.3%**	0.3%	-0.3%	0.9%
Theft	**-5.0%**	**-6.1%**	**-4.0%**	-0.5%	-1.1%	0.1%
Violence	**-3.2%**	**-3.9%**	**-2.4%**	0.3%	-0.2%	0.8%
Other (breach)	5.7%	-2.9%	14.2%	0.5%	-3.6%	4.5%
Other (child offence)	9.8%	-6.3%	25.9%	1.0%	-7.4%	9.4%

	Non-EM	RF EM	Difference	2.5	97.5
Breaches					
PSM	16.0%	6.7%	-9.3%	-9.7%	-8.9%
PSM (+ oasys)	23.7%	11.0%	-12.8%	-13.5%	-12.1%
CEM	12.3%	5.0%	-7.3%	-7.8%	-6.9%
CML (ATT)			-5.4%	-6.4%	-4.5%
CML (ATE)			-5.2%	-6.0%	-4.3%
Requirement completion rate					
PSM	0.54	0.65	0.12	0.11	0.12
PSM (+ oasys)	0.42	0.58	0.15	0.14	0.16
CEM	0.60	0.71	0.10	0.09	0.11
CML (ATT)			0.06	0.05	0.08
CML (ATE)			0.06	0.05	0.08
Number of warning letters received					
PSM	1.31	0.91	-0.41	-0.45	-0.37
PSM (+ oasys)	1.42	0.99	-0.43	-0.50	-0.37
CEM	1.24	0.76	-0.49	-0.53	-0.44
CML (ATT)			-0.34	-0.40	-0.28
CML (ATE)			-0.34	-0.40	-0.28

Effectiveness of curfew order with RF EM as a **suspended sentence order**



Effectiveness over time

	Non-EM	RF EM	Difference	Risk ratio	N
Reconviction for offences committed within median EM duration (140 days)					
2014	18%	15%	-3%	0.85	8,200
2015	17%	14%	-3%	0.80	9,582
2016	18%	15%	-3%	0.81	12,976
2017	18%	15%	-3%	0.84	11,902
2018	17%	14%	-3%	0.81	9,008
Reconviction for offences committed in 12 months after current disposal					
2014	25%	22%	-3%	0.88	8,195
2015	27%	24%	-3%	0.88	9,572
2016	29%	24%	-5%	0.83	12,972
2017	28%	24%	-4%	0.85	11,896
2018	27%	23%	-4%	0.85	9,003
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Violence	**-2.2%**	**-2.8%**	**-1.6%**	-0.5%	-1.1%	0.0%
Other (breach)	-13.4%	-37.1%	10.2%	-0.3%	-12.2%	11.6%
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CML (ATT)			-7%	-9%	-6%
CML (ATE)			-7%	-9%	-6%
Any probation requirement revoked					
PSM	42%	23%	-18%	-19%	-18%
PSM (+ oasys)	57%	34%	-23%	-24%	-22%
CEM	37%	19%	-18%	-19%	-17%
CML (ATT)			-15%	-17%	-13%
CML (ATE)			-15%	-17%	-13%

Summary

- Correctly distinguishing between monitoring period and one year reoffending reveals an effect that is (largely) localized to the time being monitored
- But RF EM also seems to enhance compliance with other community-based sanctions
- Effectiveness of newer GPS enabled EM to be examined in follow up study

Benefits (and challenges): Embedded research as a route to impact

Routinely collected (linked) administrative records represents important data infrastructure for policy relevant, high-impact research

- Limitations to data quality and ‘patchy’ data documentation a hurdle to rapid rollout and requires ‘sensitivity’ approach

Embedded nature of Evaluation Fellowships had benefits for understanding policy needs/evidence gaps and direct access to data/policy infrastructure a HUGE plus

- But must be offset against substantial data/analytic platform onboarding (even in the presence of excellent training/development resources)
- And ways of working/communication chains that are at odds with academic ‘flexibility’

Benefits (and challenges): Embedded research as a route to impact

Analytic and policy teams provided generous engagement with research, a refreshing willingness to be 'experimental' (e.g. Machine Learning for effect heterogeneity), and pathway to publication

- But process is long – 3 reports worked through the system - internal review *3, 3 external reviewers (including one 'killer' review), response and further internal review, grade 6 review, response and grade 6 sign off, minister, published!)
- And sometimes hard to move beyond 'accepted practice'

GSR means research evidence has immediate visibility in places required to maximise impact [prisons/justice minister]

- But pre-publication dissemination of results not available
- And academic publication route less straightforward and time consuming

Benefits: Other unanticipated methodological impacts from experimental approach

A new (rapidly deployable) measure of reoffending is being trialled for widespread interna implementation

Supplementing PNC by searching through magistrates records for subsequent offences and 'linking' them to current record

Performance generally similar to PNC (ignores cautions and some summary offences) and more nuanced control over offence dates/follow up window

Table A.1. Comparison of court reconvictions with proven reoffending, April 2016-March 2017[1]

	Community order		Suspended sentence	
	Without RF EM	With RF EM	Without RF EM	With RF EM
12 month court reconvictions	49%	44%	35%	31%
12 month sentence breach (resulting in new conviction)	25%	13%	28%	23%
12 month (PNC) reoffending	51%	40%	40%	32%
Sample size	9,932	10,169	5,743	5,944

[1] Conviction must have been within 18 months of disposal start date

Benefits: Publications

Brunton-Smith, I. (2025) ***Assessing the effectiveness of Radio Frequency Electronic Monitoring for Community and Suspended Sentence Orders: Court reconvictions during and after a community sentence, breaches and warnings. Ministry of Justice Analytical Series.***

Brunton-Smith, I. (2025) ***Assessing the effectiveness of Radio Frequency Electronic Monitoring for Community and Suspended Sentence Orders: Technical report. Ministry of Justice Analytical Series.***

Brunton-Smith, I. (2025) ***Assessing the effectiveness of Radio Frequency Electronic Monitoring for Community and Suspended Sentence Orders: PNC-based proven reoffending analysis. Ministry of Justice Analytical Series.***