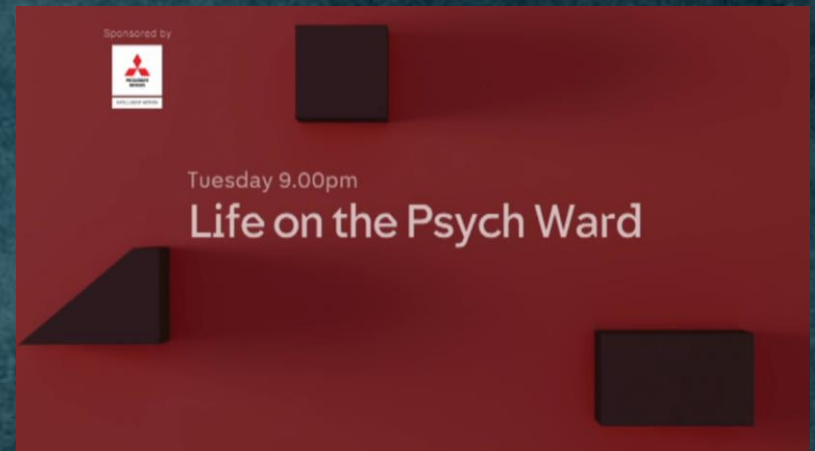


The use of GPS Electronic Monitoring (GPS:EM) in inpatient forensic mental health settings

Dave Hearn

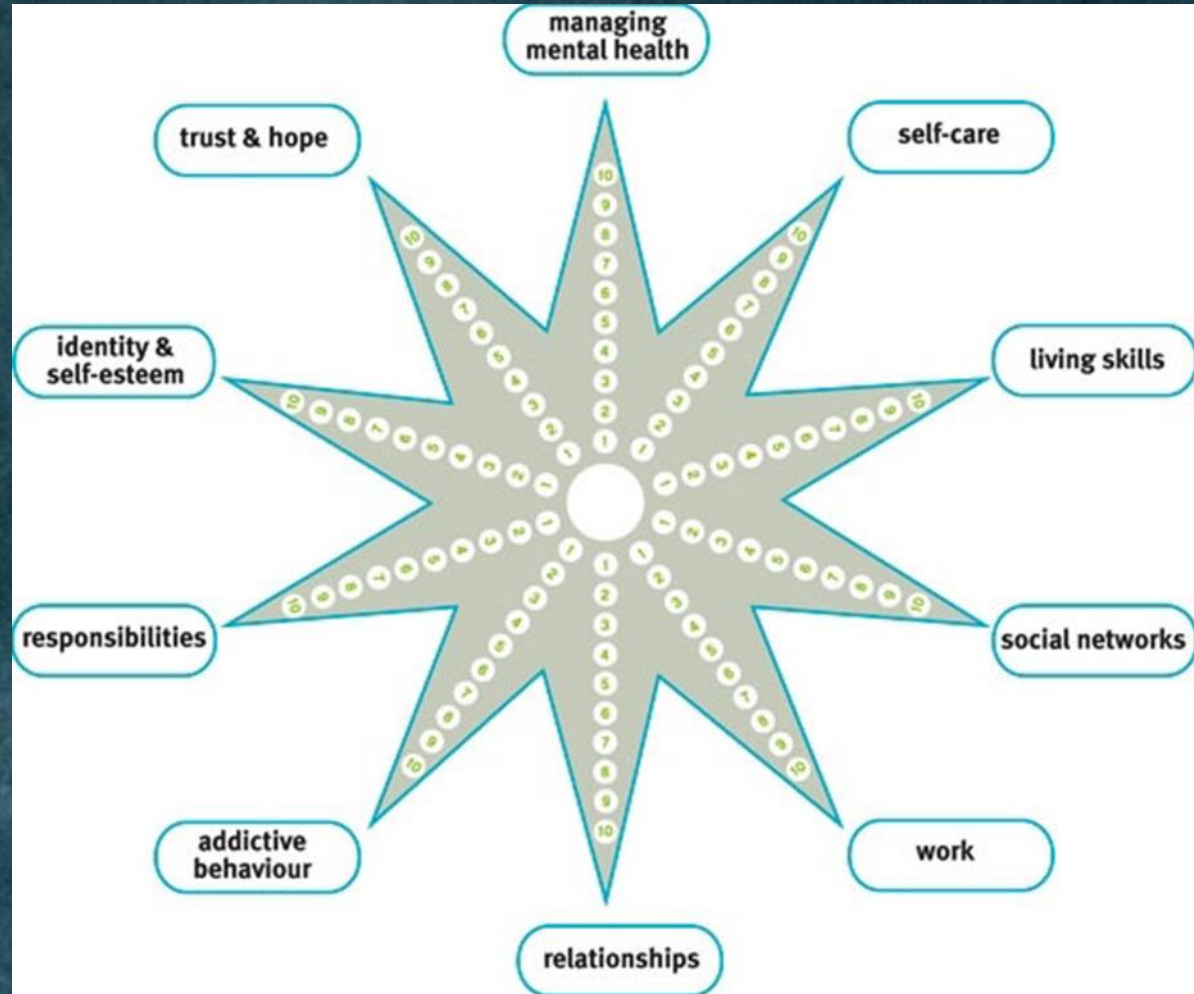
Medium Secure Units

- Medium Secure Units (MSUs) provide mental health care for people who pose a “serious risk of harm” to others
- Part of a range of Forensic Mental Health care facilities including:
 - High secure (“grave and immediate” risk)
 - Low secure (for those not requiring MSU)
 - Open rehab units
- The public have a limited understanding of what we do and how we work
- Length of stay determined by risk assessment and not by tariff



Leave and Recovery

- Within Forensic services our focus is on the recovery of our patients
- This is fundamentally linked with progression of leave
- Leave is an incentive, reward, treatment and a measure of progress all rolled into one
- It is also our job to protect the public



But sometimes things go wrong

- In 2009 there were around 12,285 episodes of leave across our Medium and Low secure Forensic units (a total of 137 beds – 113 MSU, 24 LSU at that time)
- There were a total of 17 leave incidents
- This equates to:
 - 0.1383% of all leaves
 - Or an incident ratio of 1 in 722 leave episodes
- Is this good or bad?
- Are things going wrong because we aren't managing leave effectively with our patients?

Anti-Absconding Workbook

- Bowers et al (2005) found a 25% reduction in absconding on implementation of a package designed for this purpose
- This package had 6 components:
 - Rule clarity through using a sign in/out book
 - Identification of those at high risk of absconding
 - Targeted nursing for those at high risk
 - Careful breaking of bad news
 - Post incident de-briefing
 - MDT review after 2 absconds

Characteristics of Absconders

Bowers et al (1998)

- | | |
|-------------------------------------|-----------------------------|
| • Younger patients | • Anti-treatment |
| • Male | • Presence of alcohol abuse |
| • Compulsorily detained | • Forensic history |
| • Diagnosis of Schizophrenia | • Disadvantaged groups |
| • Diagnosis of Personality Disorder | • NFA |
| • Unmarried | • Poor work record |
| • History of Absconding | • History of sexual abuse |

Literature Review

A series of papers by Prof Len Bowers et al provide the essential reading on absconding

Socio-Environmental Factors

- The Abscond literature (Bowers et al, 1999) also points to the importance of socio-environmental factors in the decision to abscond such as:
 - Anger (following unwelcome news)
 - Feeling trapped
 - Quality of food
 - Boredom
 - Fear of other patients
 - Worrying about relatives or property
- **The proximal cause of absconding is the decision to abscond**

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Escaped rapist jailed for murder

A convicted rapist who strangled a pensioner while on the run from a secure hospital has been jailed for at least 27 years.

Terrence O'Keefe, who killed David Kemp, 73, was convicted of murder at Norwich Crown Court in June.

Jailing O'Keefe for life, Mr Justice Saunders described the murder in Great Yarmouth as "heartless and brutal".

O'Keefe, 39, killed Mr Kemp after absconding from a secure mental health unit in London.

He had been serving a previous life sentence imposed in 1996 for rape and robbery.

Mr Justice Saunders, sitting at Birmingham Crown Court, told O'Keefe he was satisfied that the murder, which happened in March last year, had been committed for gain.

He said: "It was, on anyone's understanding, a heartless and brutal killing. There can be no doubt that the motivation for this killing was to steal property."



Terrence O'Keefe was a patient at secure unit in London

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- Escaped prisoner guilty of murder
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TOP NORFOLK STORIES

The Tracking Pilot

Following a series of high-profile incidents related to absconding by patients on leave from our medium secure forensic service, one of which had a tragic outcome,¹ we reviewed the possible role of new technologies in increasing safety. We introduced a secure 'tracking' device using Global Positioning System (GPS) technology for electronic monitoring of patients on leave from the service as part of a comprehensive protocol for risk management and recovery.

The device was used for patients in the initial stages of taking leave as part of their clinical pathway towards discharge into the community. It was envisioned that public protection could be enhanced by introducing a facility that would notify clinical staff immediately should any patient violate their leave conditions or if patients were not returning from leave at the agreed time. The device also provided the facility to identify the patient's location if they failed to return from leave or if they absconded from escorting staff. No patient was obliged to wear the device without consent, with the exception of high-risk patients requiring emergency hospital or court transfer. The introduction of this technology nonetheless proved controversial at local and national levels.²

BJPsych

The British Journal of Psychiatry (2014)
205, 83–85. doi: 10.1192/bjp.bp.113.138636

Editorial

Can electronic monitoring (GPS 'tracking') enhance risk management in psychiatry?

John Tully, Dave Hearn and Thomas Fahy



Summary

Electronic monitoring has been used in criminal justice and some health settings for three decades. Technological interventions are becoming more common in psychiatry, but may be a cause for ethical concerns and controversy. We discuss electronic monitoring as an aid to security and public safety in a forensic setting.

Declaration of interest

The authors are all employees of the forensic psychiatry service at South London and Maudsley Foundation Trust, where electronic monitoring has been introduced for monitoring of patients on leave. They confirm that they have not received fees or benefits from the developers of the electronic monitoring devices.

John Tully (pictured) is Academic Clinical Fellow and Specialist Registrar in Forensic Psychiatry at South London and Maudsley Foundation Trust and Institute of Psychiatry, London. Dave Hearn is Security Team Leader for Forensic Mental Health at South London and Maudsley NHS Foundation Trust. Thomas Fahy is Professor of Forensic Mental Health and Clinical Director (Forensic) at Behavioural and Developmental Clinical Academic Group, King's Health Partnership, London. All have an interest in evaluation of treatment interventions for mentally disordered offenders.

Decision to introduce electronic monitoring

Following a series of high-profile incidents related to absconding by patients on leave from our medium secure forensic service, one of which had a tragic outcome,¹ we reviewed the possible role of new technologies in increasing safety. We introduced a secure 'tracking' device using Global Positioning System (GPS) technology for electronic monitoring of patients on leave from the service as part of a comprehensive protocol for risk management and recovery.

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GPS and other technologies used in electronic monitoring

Two location-based technologies have been employed for electronic monitoring since its inception: radio frequency and GPS. The distinctions between these are outlined in Table 1.

The early years of electronic monitoring relied on radio frequency technology. Since 1997, devices using GPS technology have gradually begun to replace radio frequency devices. Although more expensive than conventional radio frequency curfew-based

tags, US criminal justice studies have shown that GPS devices reduce the likelihood of and increase the time until breach, thereby aiding compliance.^{3,4} A 2010 quantitative analysis⁵ determined that GPS-based electronic monitoring had 6% fewer supervision failures than radio frequency-based electronic monitoring.

The GPS project was developed in 1973 by the US Department of Defence and became fully operational in 1994, with initial uses primarily in the development of military technology. Since then, GPS technology has become ubiquitous through use in mobile telephones, laptop computers and Sat Nav devices. A GPS tracking device determines the precise location of a vehicle, person or other asset to which it is attached, and tracks mobile assets.

Some GPS systems store data within the GPS device for future review, known as 'passive' tracking, whereas others send information on a regular basis to a centralised database via a modem within the device, known as 'active' tracking. The 'Buddi' tracker used in our forensic service is an active tracking device. A security version of the device is attached to the patient's ankle with an individually measured lockable strap. The strap incorporates cabling to make the device non-removable and optic fibres to provide anti-tamper alarms. Each patient using the system has their own allocated device. It can be set with geographical parameters – known as 'geo-fences' – enabling the creation of exclusion and inclusion zones, a common sanction in forensic patients. Information from each device is monitored by a security company and breaches in agreed terms and conditions trigger a predetermined alert to relevant parties and a risk management plan.

Where has electronic monitoring been used to date and is it effective?

Criminal justice system

Electronic monitoring has been used for over three decades in criminal justice systems. Initially, agencies adopted 'home curfews' using radio frequency technology as a punishment and to reduce demand on prison places, rather than a means of preventing crime or aiding the rehabilitation of offenders.⁶ These priorities have shifted to reducing recidivism and non-compliance of paroled and other offenders.⁷

Use of electronic monitoring is on the increase, with more than 80 000 'tagging' orders made in the UK in 2010–2011, as both a community penalty and to monitor prisoners released early on home detention curfews.⁸ A recent comprehensive report was

Buddi: The Device...

- Small device
- Fits on Ankle
- Lightweight and Discrete
- Uses Active GPS, polling every 30 seconds to give an accurate fix on location
- Also provides anti-tampering alarm
- Can be programmed with Geo-Fences



Boundary Search

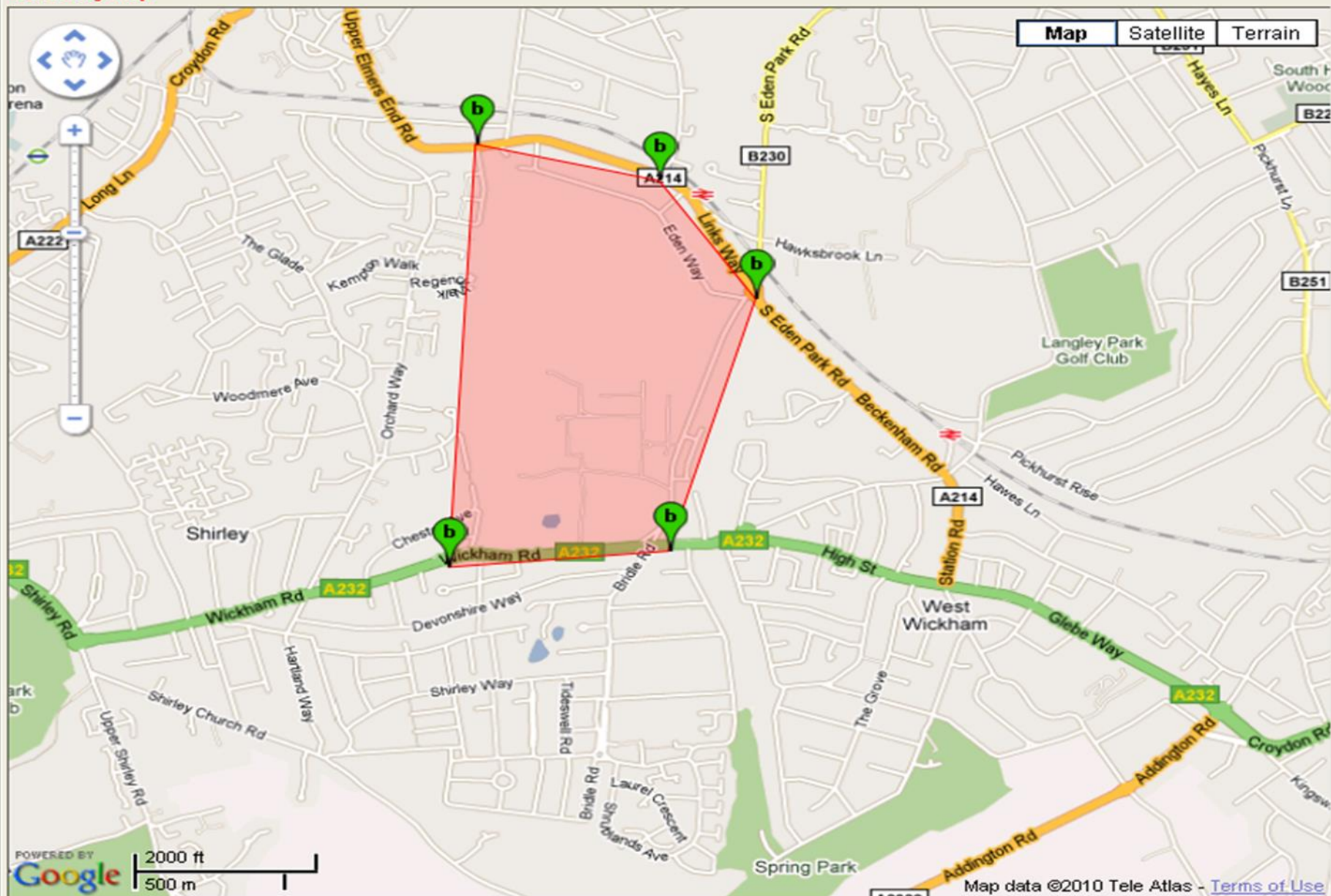
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Boundary Map





Tracking patients on leave from a secure setting

Dave Hearn explains how the use of a global positioning satellite device can help staff reduce absconding and protect members of the public from risk of harm

Correspondence
david.hearn@slam.nhs.uk

Dave Hearn is security team leader at South London and Maudsley NHS Foundation Trust

Date of submission
March 19 2012

Date of acceptance
November 14 2012

Peer review
This article has been subject to double-blind review and has been checked using antiplagiarism software

Author guidelines
www.mentalhealthpractice.co.uk

Abstract

South London and Maudsley NHS Foundation Trust wanted to improve the safety of patients on leave from a medium secure unit while, at the same time, promoting leave and recovery. The trust issued staff with a small non-removable global positioning satellite tracking device for these patients to wear around the ankle. This is the first time that such a tracking device has been used in mental health. Initial findings showed that in the first two years of use the number of leave incidents fell by 75 per cent, and the amount of leave granted to patients could be increased, and protection of the public maintained.

Keywords

Absconding, medium-secure unit

MEDIUM-SECURE UNITS (MSUs) provide care for those people with mental health problems who pose a serious danger to the public (Centre for Mental Health 2011). Standards for MSUs are set nationally (Department of Health (DH) 2007, Royal College of Psychiatrists 2007). Every patient in an MSU will have been detained under the Mental Health Act 1983 and additionally many will have been held under restriction orders: these procedures mean that patients' cases are managed by the Ministry of Justice, whose remit is to make decisions on whether patients can be transferred, discharged or given leave from the MSU.

Leave from the ward for people who are detained is provided for under Section 17 of the Mental Health Act 1983. Leave is important to everyone who has been detained but, in medium security settings, it is even more important. Our teams focus on patients' recovery, and this focus

is pivotal to how permission for leave is granted and progressed.

Leave is seen by the patient as a reward, an incentive, a treatment and a measure of progress: individuals are always working towards getting leave for the first time, or leave outside the hospital grounds or leave without an escort and, eventually, overnight leave to a future residential placement (DH 2010). However, protection of the public is also a principle responsibility in medium security. The general public has a limited awareness of the role of MSUs, how they operate or how they are different from the prison system. Public expectations of MSUs remain high and tolerance for mistakes and incidents is low. Nonetheless, breaches of leave occur.

The DH (2009) produced definitions for different types of absence without leave because terms were often misused. The definitions are summarised as follows:

- **Escape:** a detained patient escapes from a unit/hospital if he or she unlawfully gains liberty by breaching the secure perimeter that is the outside wall, fence, reception or declared boundary.
- **Attempted escape:** a failed or prevented attempt by a patient to breach the secure perimeter that in the nature of the incident demonstrated intent to escape.
- **Abscond:** a patient unlawfully gains liberty during escorted leave of absence outside the perimeter of the originating unit/hospital by getting away from the supervision of staff.
- **Failure to return:** a patient fails to return from authorised unescorted leave.

Patient safety incidents

Following the Darzi report (DH 2008), the National Patient Safety Agency's (NPSA) Never Events

Reduction in Leave Incidents

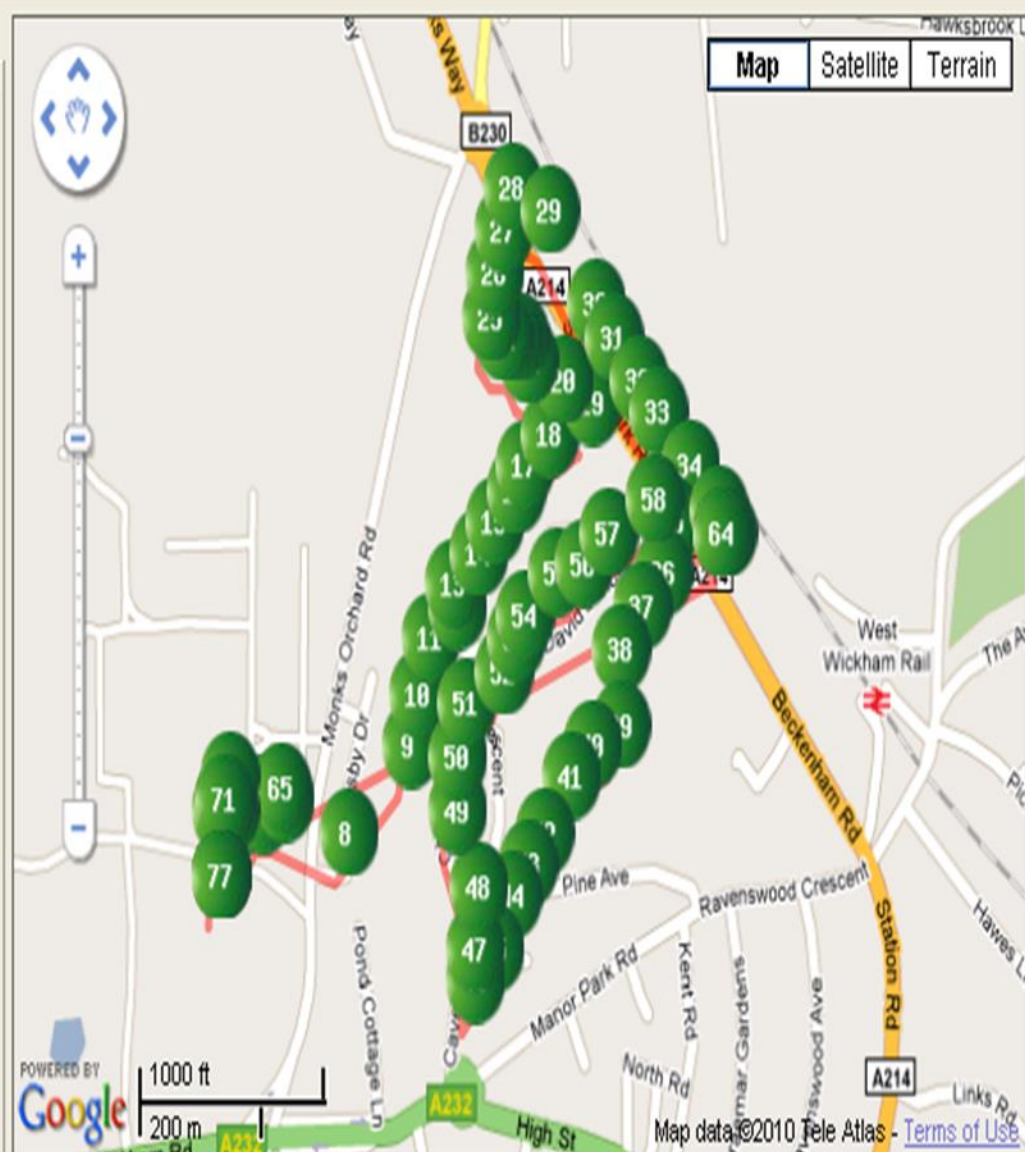
	Abscond	Failure to return	Total
Leave incidents April 2009 to April 2010 (Pre-Tracking)	11 (52%)	10 (48%)	21
Leave incidents April 2010 to April 2011 (Year 1 Post-Tracking)	3 (19%)	13 (81%)	16
Leave incidents April 2011 to April 2012 (Year 2 Post-Tracking)	0	5	5

Historical Tracking for ubin:21960078

Start date: 26 Sep 2010 time: 15 hrs 00 mins
 End date: 26 Sep 2010 time: 16 hrs 50 mins
 Select interval: all points search

#	lat,lon	Report Time	GPS
1	51.3799,-0.0301	26/09/2010 15:14:44	<input checked="" type="checkbox"/>
2	51.3798,-0.0298	26/09/2010 15:15:14	<input checked="" type="checkbox"/>
3	51.3798,-0.0293	26/09/2010 15:15:46	<input checked="" type="checkbox"/>
4	51.3799,-0.0292	26/09/2010 15:16:16	<input checked="" type="checkbox"/>
5	51.3799,-0.0292	26/09/2010 15:16:48	<input checked="" type="checkbox"/>
6	51.3799,-0.0293	26/09/2010 15:17:20	<input checked="" type="checkbox"/>
7	51.3799,-0.0288	26/09/2010 15:17:50	<input checked="" type="checkbox"/>
8	51.3796,-0.0273	26/09/2010 15:18:28	<input checked="" type="checkbox"/>
9	51.3804,-0.0258	26/09/2010 15:19:14	<input checked="" type="checkbox"/>
10	51.3809,-0.0256	26/09/2010 15:19:46	<input checked="" type="checkbox"/>
11	51.3814,-0.0253	26/09/2010 15:20:16	<input checked="" type="checkbox"/>
12	51.3817,-0.0247	26/09/2010 15:20:48	<input checked="" type="checkbox"/>
13	51.3819,-0.0248	26/09/2010 15:21:20	<input checked="" type="checkbox"/>
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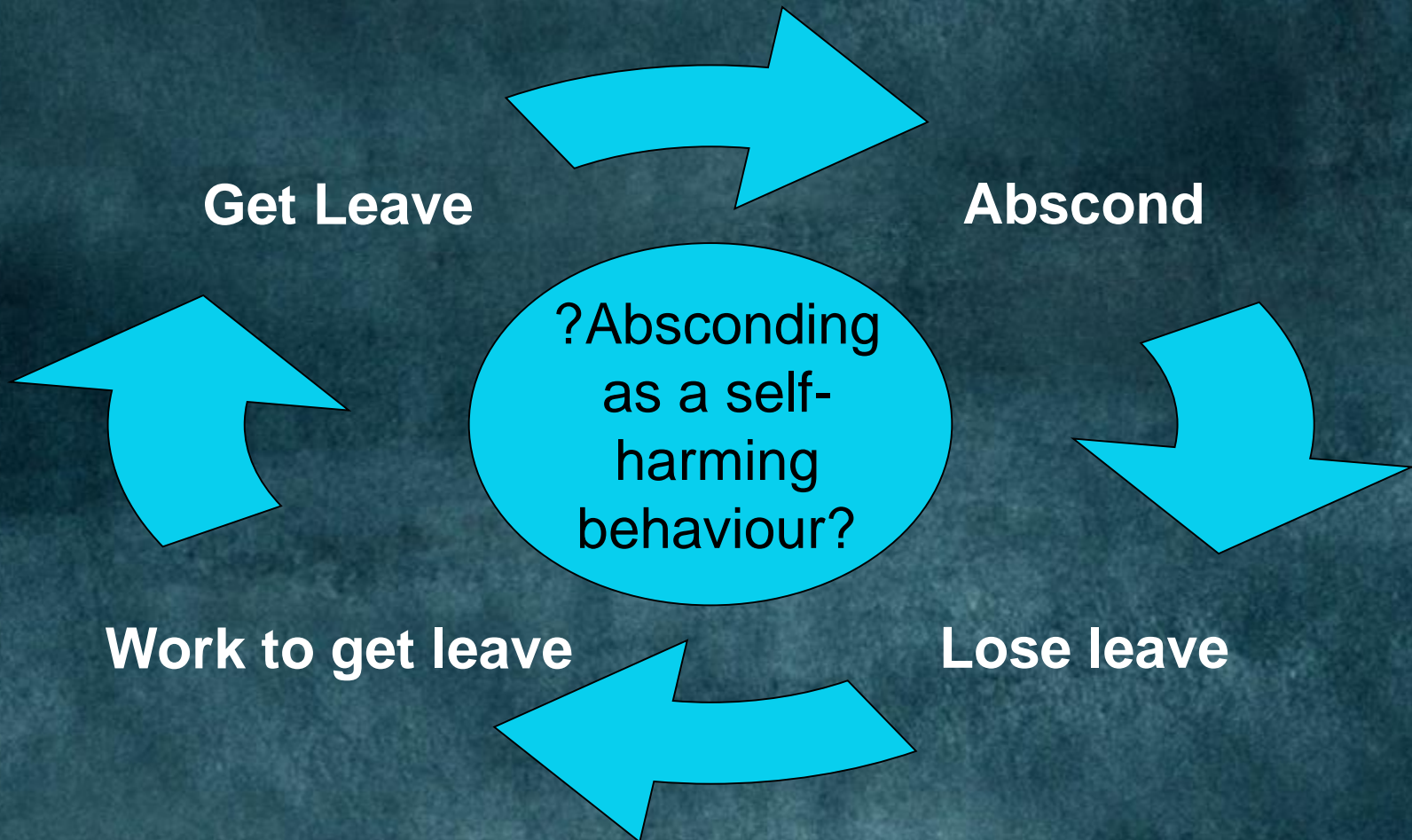
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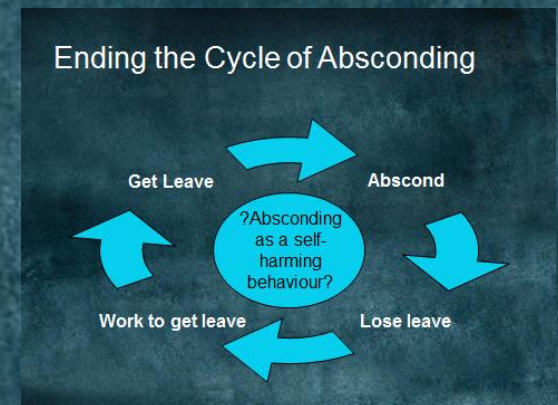
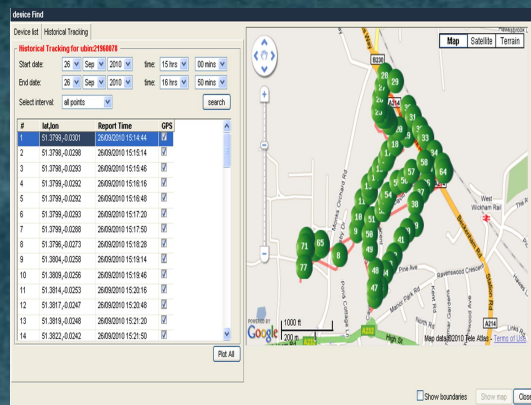
Ending the Cycle of Absconding



Some Risk Reduction Findings...

- No incidents in the High Risk group
- Reduced the number of incidents overall
- Reduced the number of absconds in proportion to failure to return
- Quicker retrieval of AWOL patients
- Good results with repeat absconders

	Abscond	Failure to return	Total
Leave incidents April 2009 to April 2010 (Pre-Tracking)	11 (52%)	10 (48%)	21
Leave incidents April 2010 to April 2011 (Year 1 Post-Tracking)	3 (19%)	13 (81%)	16
Leave incidents April 2011 to April 2012 (Year 2 Post-Tracking)	0	5	5



UK



Satellites used to track mentally-ill violent criminals

By Danny Shaw

Home affairs correspondent, BBC News

🕒 25 August 2010 | UK



Downloaded by [King's College London], [John Tully] at 01:39 29 December 2015

The device can monitor patients' movements and speed

Service evaluation of electronic monitoring (GPS tracking) in a medium secure forensic psychiatry setting

John Tully^a, Alexis E. Cullen^b, Dave Hearn^c and Thomas Fahy^a

^aDepartment of Forensic and Neurodevelopmental Sciences, Institute of Psychiatry, Psychology and Neuroscience, Kings College London, UK; ^bHealth Services and Population Research, Institute of Psychiatry, Psychology and Neuroscience, London, UK; ^cSouth London and Maudsley Foundation Trust, London, UK

ABSTRACT

In 2010, following a series of high-profile absconding incidents, electronic monitoring (EM) using Global Positioning System technology for patients on leave was trialled as part of a comprehensive protocol for risk management and recovery. We conducted a preliminary evaluation of effect on leave and leave violation. The total number of leave episodes and leave violations over a four-month period prior to the introduction of EM was compared with the totals in two corresponding follow-up periods in the two years after the introduction. Total episodes of leave increased by almost 60%. There was a significant association between year and type of leave episode, with leave episodes after the introduction of EM more likely to be unescorted. Episodes of leave violation reduced in each of the two follow-up periods after introduction of EM. These findings suggest potential benefits for speed of patient recovery, reduced length of stay, reduced costs and public safety.

ARTICLE HISTORY Received 2 May 2015; Accepted 6 November 2015

KEYWORDS Leave violation; medium security; absconding; tracking devices; technological interventions

Introduction

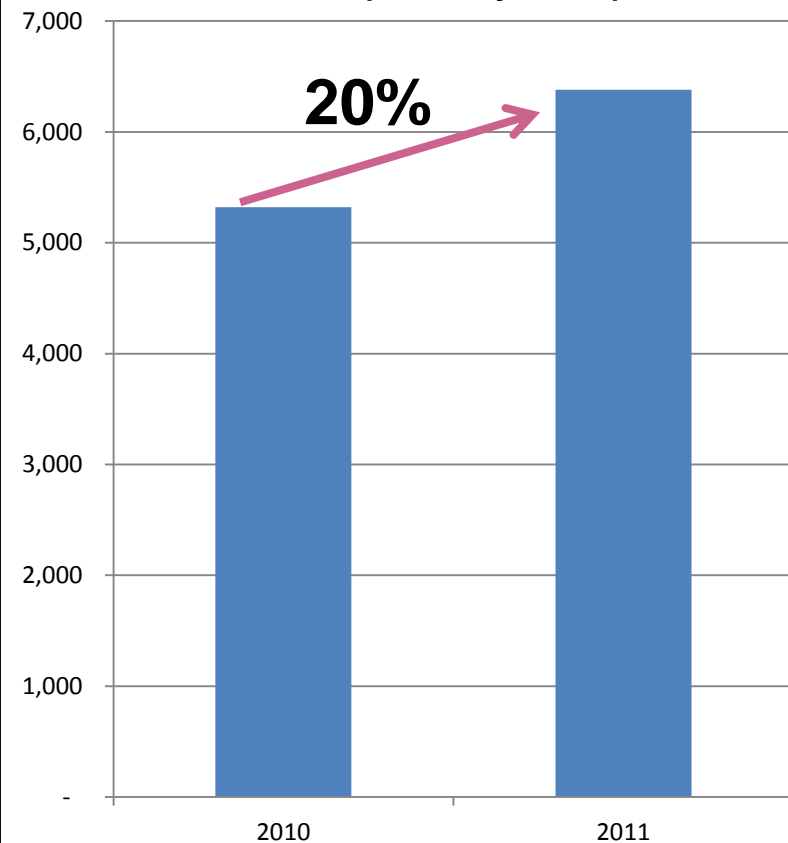
Forensic psychiatry services in the UK treat individuals with mental illness who have committed violent offences or are thought to be at high risk of doing so. Inpatient services for these patients are provided through a network of high, medium and low secure units. The largest segment of these services are the

CONTACT John Tully ✉ john.tully@kcl.ac.uk

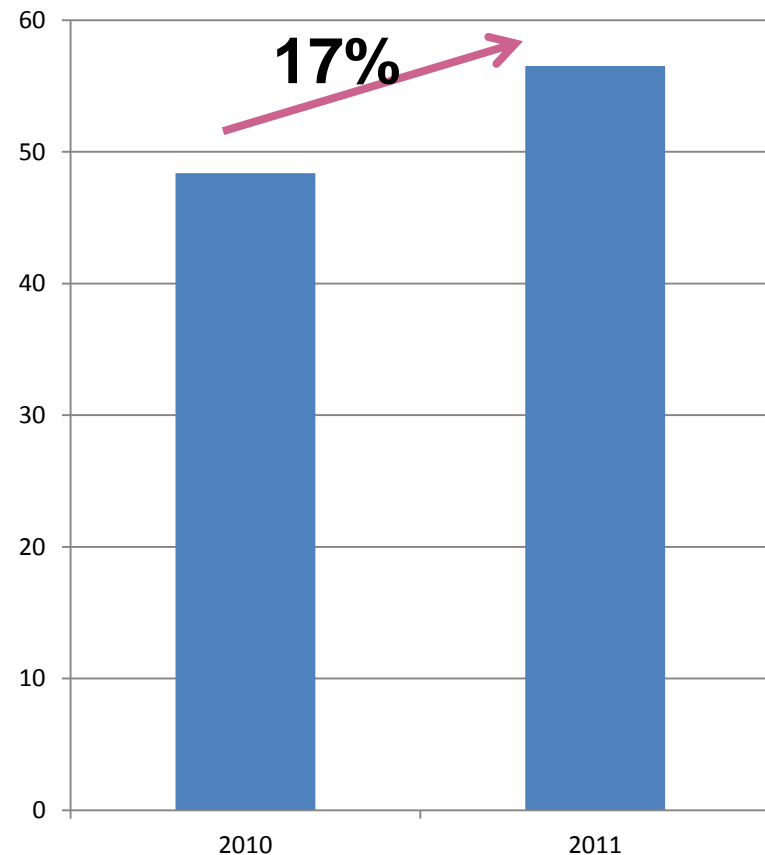
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Total leave and episodes of leave per occupied bed have risen 2010/2011...

Total episodes of leave
(January/June)



Total episodes of leave per occupied bed
(January/June)



Reversal in proportion of escorted to unescorted leave...

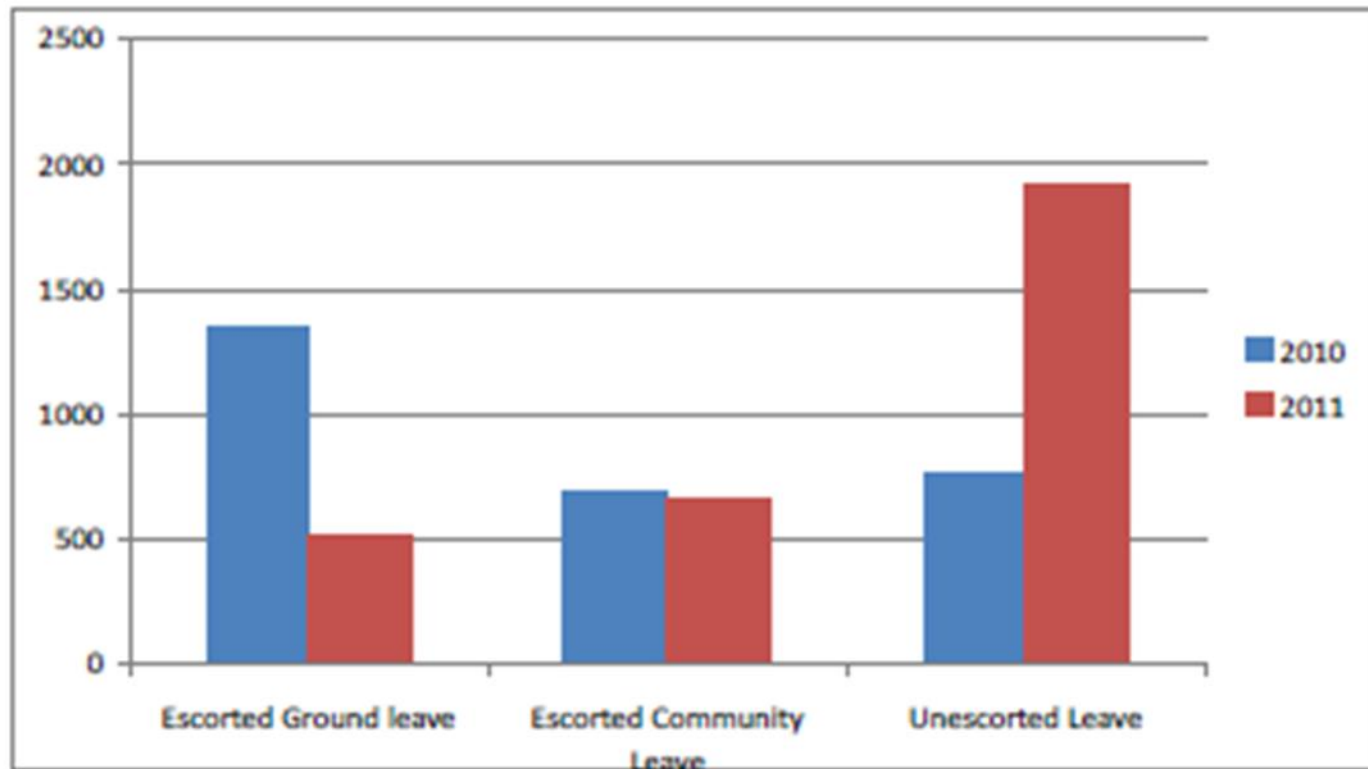


Figure 3. Episodes of Leave

Recovery Benefits of Tracking

- Significant increase in the number of leave episodes
- Patients are accessing more leave, with increased levels of liberty, quicker and more safely with the Buddi
- Potential to safely reduce length of stay in the long term

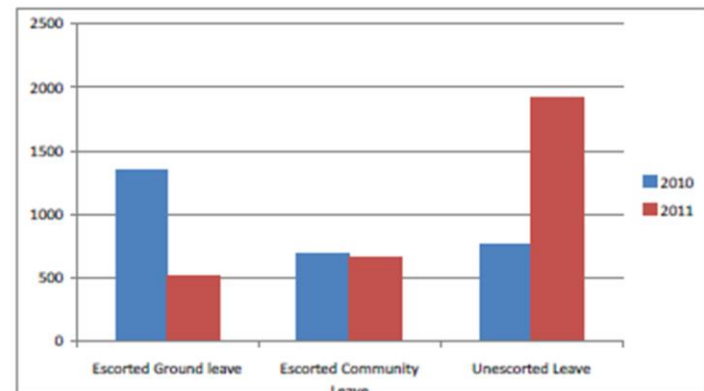
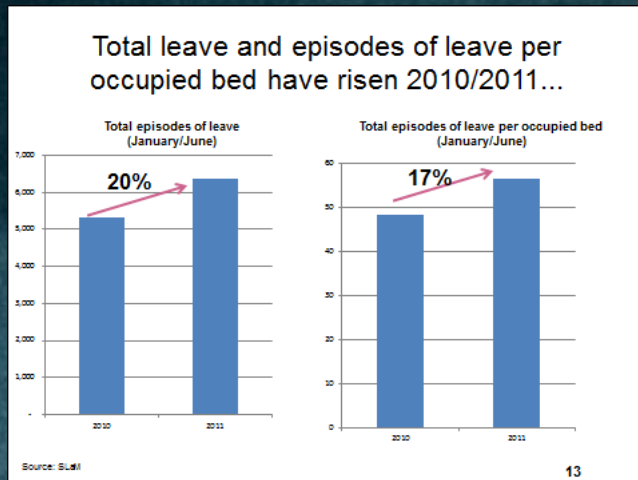


Figure 3. Episodes of Leave

Costs...

A cost comparison study of using Global Positioning System Technology (Electronic Monitoring) in a medium secure forensic psychiatric service. Murphy, Potter, Tully, Hearn, Fahy & McCrone (in press)

Our study showed no significant difference between costs per leave episode before and after introduction of EM. The cost per leave episode decreased following introduction of EM, though this was not statistically significant. In light of the considerable costs of implementing the EM system, this is an encouraging finding. EM was introduced for a number of reasons. As well as public protection concerns addressed above, serious consideration was given to the importance of moving patients as quickly as possible through the medium secure recovery pathway, without compromising on public or patient safety. In our other work, we have shown a significant increase in escorted leave and a significant reduction in episodes of leave violation following the introduction of EM (unpublished data). This cost comparison study suggests that such important benefits, critical to patient progress and reduced length of stay, have arisen without any extra cost per episode of leave.

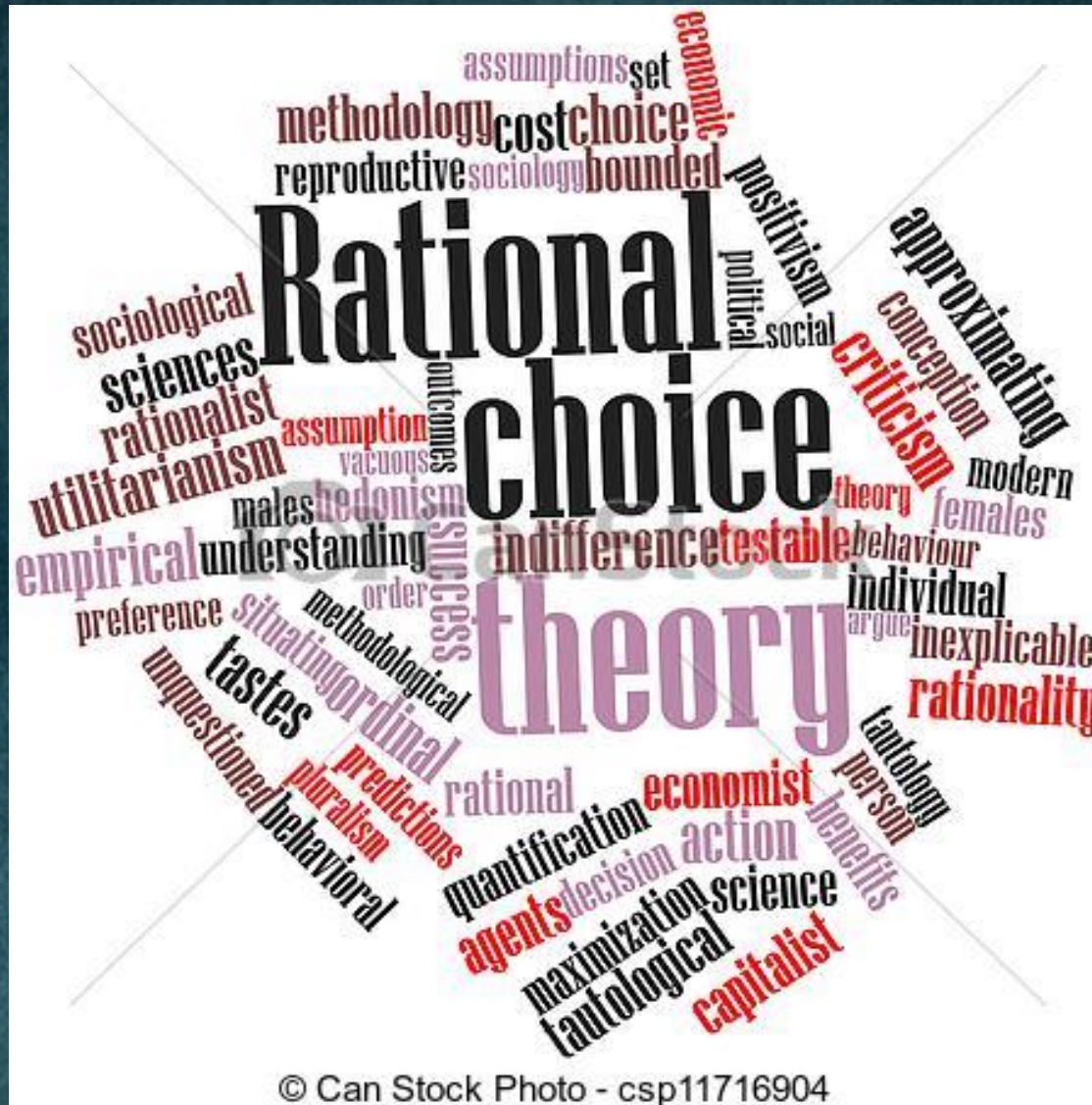
Conclusions

The results showed no significant difference between costs per leave episode before and after introduction of EM. The finding of EM being cost neutral is highly encouraging. Of note, the costs of leave violations were not included in the figures, suggesting the benefits could be more substantial than stated, which has wider implications on emergency resources and cost to the public purse. The results represent provisional findings only and we recommend that a further economic evaluation is carried out under rigorous trial conditions.

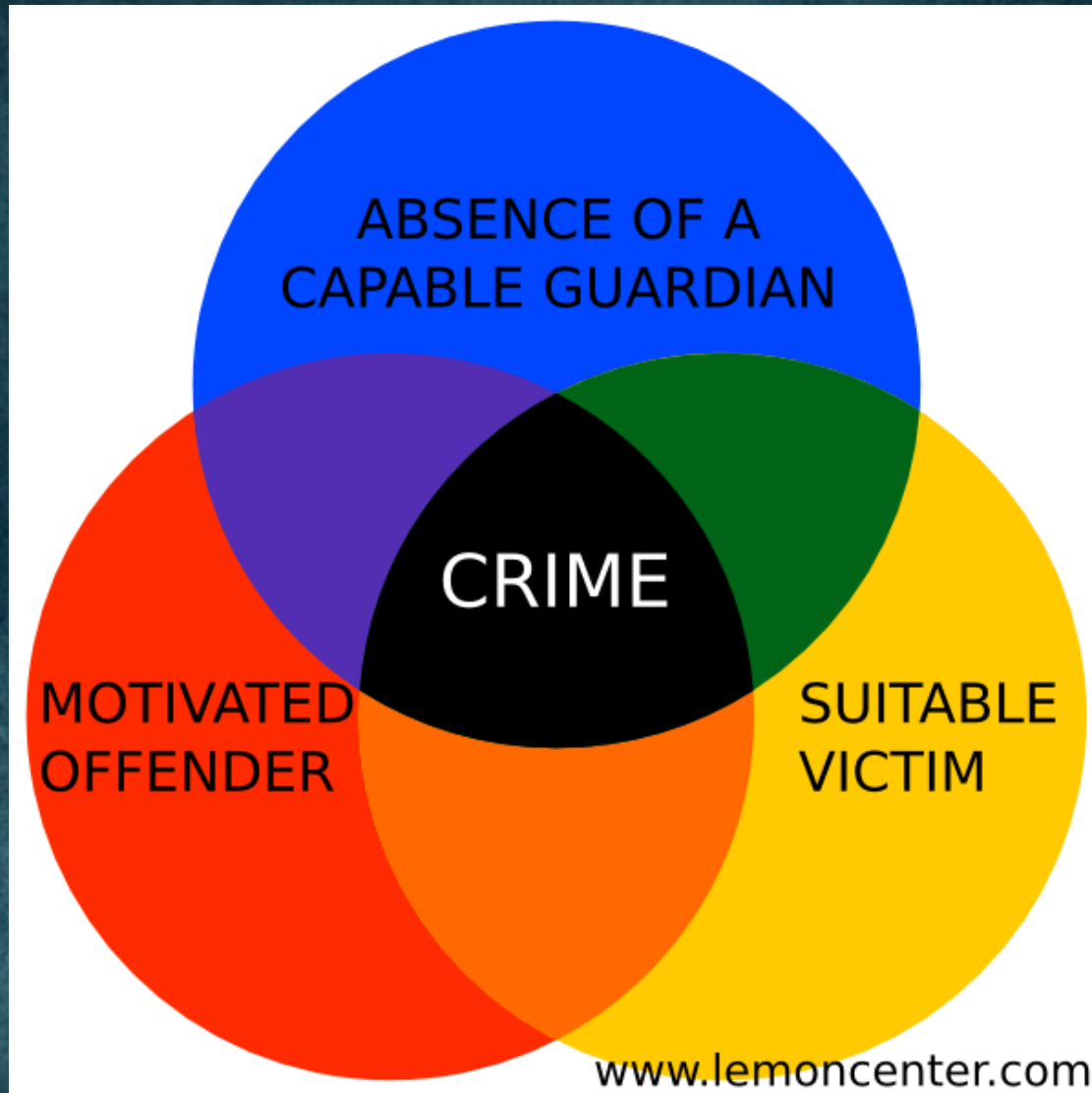
GPS/EM: Why does it work?

- Absconding is largely caused by the made-in-the-moment decision to abscond
- This is highly influenced by socio-environmental factors
- These decisions that have long reaching implications on length of stay, liberty etc
- The Buddi makes the patient (vulnerable to making impulsive decisions) think twice
- Use of the Buddi then protects the patient against impulsivity until such time as leave becomes important enough to act as a protective factor – then the Buddi can be withdrawn

Rational Choice Theory



Routine Activity Theory



Conclusions...

- Clearly there are gaps in our research, particularly around Patient Experience/Views
- However, our research has found that the use of GPS tracking in Forensic Mental Health settings:
 - Improves Safety
 - Improves access to leave
 - Is Cost Neutral





Any Questions?

Thank you for listening...