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.
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


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

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

Literature Review

A series of papers by Prof Len Bowers et al provide the essential reading on absconding
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
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, 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.1

**Decision to introduce electronic monitoring**

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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 technology.

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, more conventional radio frequency ‘cartridge-based’ tags.

**Declaration of interest**

This paper is an exploration of the forensic psychiatry service at South London and Maudsley Foundation Trust, where electronic monitoring has been introduced to monitoring of patients on leave. We are grateful to the patients who have not expressed fear or anxiety in disclosure of the development of the electronic monitoring devices.

**Can electronic monitoring (GPS ‘tracking’) enhance risk management in psychiatry?**

John Tully, Dave Hearn and Thomas Falty

Summary

Electronic monitoring has been used in criminal justice and some health settings for three decades. Technological innovations 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.

Declarations 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 to monitoring of patients on leave. They confirm that they have not received fees or benefits from the developers of the electronic monitoring devices.

**The Tracking Pilot**

**Is electronic monitoring (GPS ‘tracking’) reduce the likelihood of and increase the time until breach, thereby aiding compliance?** A 2010 quantitative analysis determined that GPS-based electronic monitoring had 4% lower supervision failures than radio frequency-based electronic monitoring.

The GPS project was developed in 1997 by the JS Department of Defence and was subsequently used in 1999, with initial use primarily in the development of military technology. Since then, GPS technology has become ubiquitous through use in mobile telephones, laptop computers and car SatNav devices. A GPS tracking device determines the precise location of a vehicle, house 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 ‘private’ tracking, whereas other systems store information on a regular basis in a centralised database via a modem within the device, known as ‘active’ tracking. The ‘covert’ 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 inadmissible array. The array incorporates circuitry to make the device non-removable and optical filters to prevent antennae should. Each patient using the system has their own dedicated device. It can be set with geographical parameters – known as ‘geo-bounds’ – namely the creation of exclusion and inclusion zones, a common condition in forensic patients. Information from such devices is monitored by a security company and breaches in agreed times and conditions trigger a pre-determined 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 as a means of preventing crime or aiding the rehabilitation of offenders. These priorities have shifted to reducing reoffending and non-compliance of parole and community orders.

Use of electronic monitoring is on the increase, with more than 1.6 million adults under a community order in the US in 2017. Law enforcement is a community penalty and to monitor prisoners released early on home detention curfews. 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
Tracking patients on leave from a secure setting

Dave Heam 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.

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:

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

Patient safety incidents

Following the Dariel report (DH 2009), the National Patient Safety Agency’s (NPSA) Never Events
Reduction in Leave Incidents

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<td>10  (48%)</td>
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Ending the Cycle of Absconding

Get Leave → Abscond → Lose leave → Work to get leave → ?Absconding as a self-harming behaviour?
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

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Satellites used to track mentally-ill violent criminals

By Danny Shaw
Home affairs correspondent, BBC News

25 August 2010 | UK

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

John Tully*, Alexis E. Cullenb, Dave Hearn and Thomas Fahya

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

Total episodes of leave (January/June)

- 2010: 5,000
- 2011: 6,000

Increase: 20%

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

- 2010: 50
- 2011: 60

Increase: 17%

Source: SLaM
Reversal in proportion of escorted to unescorted 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
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)

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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.
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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.
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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

ABSENCE OF A CAPABLE GUARDIAN

MOTIVATED OFFENDER

CRIME

SUITABLE VICTIM

www.lemoncenter.com
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…