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To cite this article: J Westhead, S Gibbon, L McCarthy, R Hatcher & M Clarke (2023) Long-term outcomes after discharge from medium secure care: still a cause for concern?, *The Journal of Forensic Psychiatry & Psychology*, 34:2, 166-178, DOI: [10.1080/14789949.2023.2190535](https://doi.org/10.1080/14789949.2023.2190535)

To link to this article: <https://doi.org/10.1080/14789949.2023.2190535>



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Published online: 23 Mar 2023.



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## Long-term outcomes after discharge from medium secure care: still a cause for concern?

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### ABSTRACT

People admitted to medium secure psychiatric care are recognised to still be at risk of experiencing adverse outcomes upon discharge. However, little is known about the outcomes of patients admitted more recently to medium secure care or the long-term outcomes of people many years after discharge. The aim of this study was to assess the mortality, conviction and readmission outcomes of a cohort of first admissions discharged from an English medium secure psychiatric unit between July 1983 and June 2013. Data on background characteristics were obtained from medical records. Outcome data were obtained from multiple sources for 843 patients discharged prior to the census date of 30 June 2013. The risk of death from both natural and unnatural causes was much higher than that of the general population. Of those patients that were discharged, 369 patients (43.8%) were convicted of an offence during the follow-up period, two-thirds of which were convicted within the first 5 years following discharge. Five hundred and ten patients (61.6%) were readmitted to psychiatric care. Patients discharged from medium secure care are at long-term risk of experiencing premature death, conviction and readmission to secure and non-secure psychiatric care.

**ARTICLE HISTORY** Received 12 May 2022; Accepted 9 March 2023

**KEYWORDS** Forensic mental health; mortality; conviction; readmission; outcomes

### Introduction

In England, inpatient secure mental health services are delivered in hospitals stratified into three levels of security – high, medium and low and receive referrals from the criminal justice system and other mental health hospitals (both secure and non-secure). Those admitted to secure hospitals are identified as having mental health problems and present a risk of harm to the

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public (NHS England, 2018). An admission to the appropriate level of security is determined following a clinical assessment to ascertain the seriousness and gravity of that risk (NHS England, 2018).

Medium secure mental health services are high-cost, low volume services (Walker & Craissati, 2012) and cost approximately £175,000 per year per patient (Völlm & Clarke, 2018). The anticipated length of stay for a patient in a medium secure hospital is 2 years. However, research has highlighted that the length of stay can be much longer (Earnshaw et al., 2019) Despite long lengths of stay and resource allocation, in comparison to non-secure mental health services, those admitted to secure hospitals for treatment of mental illness or personality disorder are acknowledged to have adverse outcomes in respect to their risk of readmission to hospital, conviction and premature mortality.

Early research seemingly focused on conviction rates following discharge, with readmission and premature mortality subsequently being identified as outcomes of interest. These outcomes are suggested as being important for examining the clinical effectiveness (Blattner & Dolan, 2009) of secure services, whose core objectives are to treat mental disorder and 'reduce the risk of harm to self and others' (NHS England, 2018). Therefore, examining outcomes on discharge is vital for maintaining public safety and ensuring services provide the appropriate treatment and care.

A recent systematic review and meta-analysis by Fazel et al. of outcomes after discharge in this population (Fazel et al., 2016) identified high levels of variability in readmission rates among discharged patients (crude readmission rates range from 2926 to 16,641 per 100,000 patient years), with higher rates of readmission associated with a diagnosis of mental illness rather than personality disorder (Fazel et al., 2016). The review also identified heterogeneity in the reconviction rates of patients discharged from secure care (crude reconviction rates range 0 to 24,244 per 100,000 patient years) but nonetheless found evidence of reduced levels of reconviction among patients compared with age-matched prisoners for both overall and violent reconviction (Fazel et al., 2016). Arguably the finding of most concern for both patients and clinicians is that the review identified a very high level of mortality in patients (crude rate of death 789 to 2828 per 100,000 patient years), especially when examined with comparative prisoner populations (e.g. 850 per 100,000) (Zlodre & Fazel, 2012). Premature death due to suicide has previously been identified as a significant risk for this group (Fazel et al., 2016); however, early mortality due to physical illnesses (especially cardiovascular disease and some cancers) has also been acknowledged to be a particular issue for patients cared for in secure hospitals (Public Health England, 2017). In the UK, the impact of factors such as unhealthy lifestyles (e.g. smoking, poor diet, substance abuse), medication effects, poor motivation/opportunities to exercise have been acknowledged to contribute to

physical health problems including obesity. Providers of secure care have been challenged by commissioners of services to encourage the adoption of healthy lifestyles through schemes such as CQUIN (NHS England, 2019) (Commissioning for Quality and Innovation). A previous study (ALACRITY) (Davies et al., 2007) whose data was included in the Fazel systemic review, looked at the outcome data from a 20-year admission cohort of patients discharged from an English medium secure unit prior to 2003. Since this study, secure service provision has changed, notably that there has been a reduction in the number of beds available in high secure hospitals (Walker & Craissati, 2012) with some suggesting that as a consequence more high-risk patients are being admitted to medium secure care. On reporting an increase in the number of high-risk patients being admitted during the ALACRITY study, Gibbon et al. (Gibbon et al., 2013) also found a higher reconviction rate over time, indicating that perhaps over time those admitted continue to experience poorer outcomes.

In this paper, we report on an extension of the ALACRITY study with an additional 10 years of follow-up and admissions (NHS England, 2018). We present additional data on readmission, conviction and mortality outcomes for a 30-year admission cohort of patients discharged from secure psychiatric care and assess whether the outcomes for this group of vulnerable patients are still 'a cause for concern'.

## Methods

### Sample

The study sample comprised all first admissions to one English medium secure unit from its opening in July 1983 up to 30 June 2013. The characteristics of the 595 first admissions to the unit during the first 20 years have already been reported<sup>1</sup> (NHS England, 2018). This study extended the original study by 10 years – adding a further 314 first admissions to the original study and reporting on a total of 909 first admissions over the 30 years to the census date of 30 June 2013. A first admission for the purpose of this study is defined as being admitted for the first time to this specific medium secure unit, irrespective of any prior inpatient admission to another medium secure unit. The follow-up period is the length of time between a patient being discharged from that medium secure unit following their first admission and the census date or date of death.

### Data sources

Admission characteristics were obtained from medical records at the unit. Outcome data were obtained from clinical records, NHS Digital for Office for

National Statistics (ONS) and Hospital Episode Statistics (HES) data, the Police National Computer (for convictions) and newspaper reports held within the LexisNexis database. Conviction data for the additional follow-up period were extracted from the Police National Computer (PNC) by the Ministry of Justice (MoJ) and provided to the study team. The data provided by the MoJ included, the type of conviction, conviction date and offence date. Additional data sources, permissions and methods for the original study are outlined elsewhere (Clarke, 2007; Davies et al., 2007).

### ***Ethical considerations and permissions***

Ethical approval for the extension was granted from the Health Research Authority Research Ethics Committee. The study received support from the Confidentiality Advisory Group (CAG) under Section 251 of the NHS Act 2006 (formerly Section 60 of the Health and Social Care Act 2001). Section 251 support meant that the project did not require consent from patients. National Offender Management Service (NOMS) approval was received to facilitate the process of obtaining Police National Computer conviction data from the MoJ. The project was also approved by the NHS Trust's Research and Evidence Department.

### ***Outcome measures***

We report on the sample's mortality, conviction and readmission to secure and open hospitals. Data received from outcome sources was collated on a data collection proforma and entered into the study database.

*Mortality* – The ONS provided the date of death and the International Classification for Diseases Version 10 (ICD 10, World Health Organisation WHO, 1992) code for cause of death. Standardised Mortality Ratios (SMRs) were calculated to compare the mortality of the sample to that of the general population. SMRs were calculated from admission rather than discharge to enable the inclusion of the few individuals who died in hospital during their admission.

*Convictions after discharge* – Offence dates were checked to ensure only offences committed after discharge for which patients received a conviction were included. 'Serious' offences are those for which the maximum sentence is life imprisonment and include arson with intent, murder, attempted murder, rape and robbery.

*Readmissions* – Data was extracted from HES provided by NHS Digital and included the date of admission to hospital, admission location, admission and discharge source and the length of the admission for a patient's first readmission following discharge. In this study, we defined readmission as an admission to a secure or non-secure psychiatric service from prison, the

community or a lower level of secure care and report details on a patients first readmission only. When calculating time from discharge to readmission, patients discharged to high secure care following their first admission were excluded from the analysis to avoid skewing time to readmission.

### **Procedure**

Admission and outcome data were extracted from data sources using a data collection proforma. When collecting admission data for the contemporary cohort of patients, Notts HC Applied Information Department provided a list of first admissions to the unit between July 2003 and June 2013. Electronic and paper records were accessed at the unit to gather information on variables such as offending history, diagnosis, childhood adversity, education, substance use, service contact and details regarding discharge. This information could be found in documents such as social work reports, admission assessments and records from the criminal justice system. Once data was collated on the paper proforma it was entered into an electronic database for analysis. Multiple data sources were used and corroborated to minimise missing data.

### **Analysis**

Data were entered into the Statistical Package for the Social Sciences, version 19 for Windows (SPSS, 2021) to calculate frequencies and descriptive statistics. Inferential statistics were used to identify any significant differences between men and women. Standardised Mortality Ratios (SMRs) were calculated for the entire cohort for the full follow-up period (July 1983 – 30 June 2013) using R Studio (2021). SMRs are a measure of the risk of death in a sample compared to the risk of death in the general population. SMRs were calculated by dividing the number of observed deaths by the number of expected deaths in the general population and multiplying them by 100. The risk of death when compared to the general population is raised if the lower Confidence Interval (CI) is above 100. The risk of death is reduced when the upper CI is less than 100 (Harris & Barraclough, 1998).

### **Results**

Service provision at the unit was developed and increased during the study period. Two wards were developed for women including one as a pilot Women's Enhanced Medium Secure Service. There were five wards for men – two for men with a primary diagnosis of personality disorder and three for men with a primary diagnosis of mental illness. The number of beds

increased from 56 at the end of the original study to 102 by the census date of 30 June 2013.

### Demographics

Of the 909 first admissions, there were 771 (84.8%) men and 138 (15.2%) women. The majority of patients were from a White or White British background ( $n = 702$ , 77.2%). The most common diagnosis was schizophrenia ( $n = 472$ , 51.9%), followed by personality disorder ( $n = 175$ , 19.3%). Thirty-three patients (3.6%) had no history of offending or an index offence prior to admission. Over three-quarters of patients had a history of convictions prior to their index offence ( $n = 726$ , 79.9%), of which over half had received a conviction for an acquisitive offence ( $n = 554$ , 60.9%). Two-thirds of patients ( $n = 602$ , 66%) previously had an inpatient stay in a secure or non-secure hospital prior to admission to this unit. Four people had died during their admission, 843 people had been discharged and 62 people had yet to be discharged at the census date. Hence, the outcome cohort comprised 843 people. However, the mortality outcomes include all 909 admissions (so as to include deaths that occurred during admission). The mean length of follow-up for those discharged was 13.3 years ( $SD = 8.3$ , Range = 0–29.6).

### Admission source and discharge location

The majority of patients were admitted to the unit from prison ( $n = 639$ , 70.3%) (See Table 1). The mean length of stay was 436 days ( $SD = 530$ , Range = 2–4038). The median length of stay was 210 days (IQR = 503). Of the 843 discharges, 194 (23.0%) were discharged to a non-secure psychiatric hospital, 94 (11.2%) to a low secure hospital, 31 (3.7%) to a different medium secure hospital and 60 (7.1%) to a high secure hospital (see Table 1). The mean age on discharge was 31.7 years ( $SD = 9.4$ , Range = 17.5–64.3).

**Table 1.** Admission source and discharge location.

| Admissions ( $n = 909$ ) |      |                 | Discharges ( $n = 843$ ) |      |
|--------------------------|------|-----------------|--------------------------|------|
| n                        | %    | Source location | n                        | %    |
| 639                      | 70.3 | Prison/Court    | 262                      | 31.0 |
| 78                       | 8.6  | High secure     | 60                       | 7.1  |
| 57                       | 6.3  | Medium secure   | 31                       | 3.7  |
| 26                       | 2.9  | Low secure      | 94                       | 11.2 |
| 96                       | 10.6 | Non-secure*     | 194                      | 23.0 |
| 13                       | 1.3  | Community/Other | 202                      | 24.0 |

Note. \*Includes Psychiatric Intensive Care Unit (PICU).

**Table 2.** Standardised mortality ratios for the 909 admissions.

|                               | Deaths   |          | SMR  | 95% CI      |
|-------------------------------|----------|----------|------|-------------|
|                               | Observed | Expected |      |             |
| Total ( <i>n</i> = 909)       | 135      | 24       | 561  | (470–664)   |
| Gender                        |          |          |      |             |
| Men ( <i>n</i> = 771)         | 110      | 25       | 435  | (357–524)   |
| Women ( <i>n</i> = 138)       | 25       | 3        | 861  | (557–1270)  |
| Cause of death                |          |          |      |             |
| Natural                       | 83       | 21       | 404  | (322–501)   |
| Unnatural (including suicide) | 52       | 4        | 1458 | (1088–1913) |
| Suicide & Open                | 36       | 2        | 2243 | (1571–3105) |

Note: SMR = Standardised mortality ratio; CI = confidence interval.

### **Mortality**

The crude risk of death was 14.9% overall (14.3% for men and 18.1% for women). There were 83 deaths (61.5%) from natural causes, 36 deaths (26.7%) from suicide (including open verdicts) and 16 deaths (11.9%) from other unnatural causes. The mean time between discharge and death was 11.3 years (SD = 7.4, Range 0–26.6). The mean age at death for natural causes and unnatural causes was 52.3 years (SD = 11.4) and 42.1 years (SD = 11.3), respectively.

The risk of death for the whole cohort was significantly higher (5.6 times greater) than would have been expected in the general population (Table 2). Women in the cohort had a higher risk of death (8.6 times) than men (4.4 times). The overall risk of death from suicide (including open verdicts) was 22.4 times higher than in the general population.

### **Conviction following discharge**

Of the 843 patients discharged from Arnold Lodge, 369 (43.8%) were convicted of an offence during the follow-up period – 329 (45.3%) men and 40 (34.2%) women. Only offences committed after discharge for which patients received a conviction were included. These 369 patients were convicted for a total of 6203 offences, all of which occurred following discharge. The mean number of convictions for those that received a conviction following discharge was 14 (SD = 30, Range 1–236). The median number of convictions was 6 (IQR = 17). Of these convictions, 191 (3.1%) were for a ‘serious offence’. The most common offence for which patients received a conviction was for Assault or Aggravated Bodily Harm (*n* = 159, 43.1%). Only a small number of patients were convicted for a sexual offence (*n* = 28, 7.6%) or arson following discharge (*n* = 32, 8.7%).

Ninety-five patients (11.3%) were convicted within 1 year of discharge from the unit. Over two-thirds of those convicted received their first



**Table 3.** First readmission location of the cohort.

| Service        | Total readmissions <i>n</i> = 510(%) |
|----------------|--------------------------------------|
| Non-secure     | 316 (62.0)                           |
| Low secure     | 71 (14.0)                            |
| Medium secure* | 229 (44.9)                           |
| High secure    | 123 (24.1)                           |

Note: \*Includes readmission to the same unit.

conviction within 5 years of being discharged ( $n = 256$ , 74.8%). The mean time from discharge to patients receiving their first conviction was 3.6 years (SD = 3.9, Range 0–21 years).

### Readmission

The rate of readmission to any form of psychiatric care following discharge was available for 828 of the 843 patients (98.2%) discharged from Arnold Lodge. Of those for which data were available, 510 (61.6%) were readmitted to psychiatric care following discharge; 426 (58.4%) men and 84 (71.2%) women (Table 3). Women ( $n = 28$ , 24.1%) were significantly more likely than men ( $n = 95$ , 13.3%) to be admitted to high secure care during the follow-up period ( $\chi^2(1, N = 84) = 9.19, p < .001$ ). Over a fifth of patients ( $n = 110$ , 21.6%) were readmitted to psychiatric care five or more times during the follow-up period.

The most common discharge location for the cohort was prison ( $n = 262$ , 31.0%). Of those that were discharged to prison, over half ( $n = 138$ , 52.7%) were readmitted at some point prior to the census date. Of those that were discharged to a non-secure hospital ( $n = 194$ , 23.0%) following admission to the unit, 108 (78.3%) were readmitted to a non-secure hospital for their first readmission. Of those that were discharged directly to the community ( $n = 182$ ), over two-thirds ( $n = 124$ , 68.1%) were readmitted during the follow-up period of which three-quarters ( $n = 93$ , 75.0%) were first readmitted to a non-secure psychiatric hospital. Over a quarter of patients discharged directly to the community experienced readmission within the first year following discharge ( $n = 160$ , 31.8%).

The mean time from discharge to readmission was 3.4 years (SD = 4.3, Range 0–22.6).

### Discussion

The aim of this study was to assess the readmission, conviction and mortality outcomes of a complete cohort of patients discharged from a medium secure psychiatric unit over an extended period of 30 years. This presents some of the longest follow-up of a cohort discharged from a medium secure care and provides further insight into the outcomes of those admitted more recently to one medium secure hospital.

## ***Mortality***

Findings indicated that the risk of death for the cohort was significantly higher than the risk in the general population. Women were at higher risk than men, and the risk of suicide for the cohort was 22.4 times greater than that of the general population. However, the risk of suicide was lower than that found in the original 20-year follow-up study (Davies et al., 2007). The risk of premature death is still of concern and continues to be higher than rates reported in comparable populations (Zlodre & Fazel, 2012).

The most common cause of death was from natural causes, specifically cardiovascular illness. The average age of death from natural causes was 52.3 years. This finding supports the need to address physical health concerns that lead to premature death amongst patients receiving care from secure hospitals, this is similar to the findings reported by Public Health England (Public Health England, 2017). In recent years, there has been a drive across the secure hospital estate to promote and encourage healthy lifestyles amongst patients, as guided by CQUIN targets (NHS England, 2019).

## ***Conviction after discharge***

Conviction findings indicated that patients remain at risk of being convicted following discharge. Of those discharged, over two-fifths were convicted during the follow-up period. However, the conviction rate for 'serious offences' was 3.1% ( $n = 191$ ). Of those patients that received a conviction during the follow-up period, just under three-quarters received that conviction within 5 years following discharge. This demonstrates that patients remain at risk of being convicted for several years after leaving secure care. Ninety-five patients (11.3%) were reconvicted within 1 year of discharge. Figures reported by the Ministry of Justice (Ministry of Justice, 2019) indicate that the reoffending rate for prisoners 1 year after release is 28.7%. However, it should be noted that recent MoJ figures include police cautions which the findings from this cohort do not. This is therefore a limitation of the study as the true rate of offending following discharge from the unit may be underestimated.

## ***Readmission***

The rate of readmission to any form of psychiatric care following discharge for the cohort indicated that many patients experienced subsequent inpatient stays during the follow-up period. Over two-thirds of patients who were discharged directly to the community were readmitted, the majority of whom to a non-secure psychiatric hospital. Of those that were readmitted, just under a third experienced readmission within their first year of discharge.

Over one-fifth of patients were readmitted to psychiatric care five or more times during the follow-up period. This demonstrates the ongoing need for psychiatric input and support following discharge, immediately and thereafter. Provision of mental health care and social support should reflect this ongoing need and seek to implement pathways for patients that mitigate the risk of readmission, such as the stepdown provision provided by low secure care prior to discharge into the community.

### ***Service provision and changes over time***

It should also be considered to what extent changes in service provision can be used to interpret the findings. As noted, during the study period there was a reduction in the number of high secure beds, which was followed by an increase in the number of low secure beds. Low secure services operate as the final step down in the level of security provided by secure hospitals and therefore being discharged to a low secure hospital would be indicative of a reduction in an individual's level of risk.

The original ALACRITy study noted an increase in the number of higher risk patients being admitted, which was linked to poorer outcomes. However, the introduction of low secure provision has necessitated that those who would have previously resided in a medium secure hospital no longer warrant that level of security as dictated by their level of risk. Therefore, findings regarding ongoing adverse outcomes could be indicative of the changing profile of patients admitted to this unit. Further investigation is required to examine the changing characteristics of patients admitted to secure hospitals to ensure that services still meet the needs of the population and achieve their objectives of maintaining public safety. Further research should also seek to examine the outcomes of those discharged from low secure care to ascertain whether as by design, low secure hospitals are discharging patients that present with the lowest level of risk.

Over time, the development of more appropriate provision has also occurred in prison, with a particular focus on support for those who present a risk to themselves. However, our findings indicate that a high proportion of patients are admitted from and discharged to prison. Of those that are discharged to prison, over half were readmitted to hospital following discharge, highlighting the ongoing need for secure hospitals to provide care and support to those in contact with the criminal justice system.

In future papers, we hope to provide further data and comparison of subgroups (such as women, those with primary diagnosis of personality disorder, younger patients, those with shorter lengths of stay and particular types of offending history) and to examine if adverse outcomes have changed over the three decades of the study period.

## **Strengths**

This study represents outcomes of a complete cohort of first admissions to a medium secure unit across a 30-year period. To our knowledge, this is the largest and longest follow-up of a complete cohort of patients admitted to a single medium secure service. Obtaining Section 251 support allowed for patient data to be collected without consent, minimising attrition rates. It also represents the longest length of follow-up of any forensic psychiatric population in England and Wales and presents readmission and mortality outcomes in conjunction with conviction after discharge.

## **Limitations**

In addition to services for men with mental illness, the unit in this study provides specialist services for men with a primary diagnosis of personality disorder and an enhanced women's medium secure service (WEMSS) (Edge et al., 2017) both of which are atypical of an NHS medium secure hospital. Therefore, this may reduce the generalisability of the findings to other medium secure services. However, it could be argued that this breadth of service provision adds to the generalisability of study findings and will allow comparison between different patient groups.

Further, data on patient treatment during admission was not collected for the cohort. This was due to the complexities associated with capturing variations in intervention provision and data on patient engagement over such a long study period. For example, treatment data would have been less readily available and documented for patients admitted to the unit during its early years of operation.

Although the cohort under investigation in this study was first admissions to this particular unit, some patients may have been admitted to a another medium secure service prior to being admitted to this site.

Another potential limitation of this study is that some patients may have had a very short follow-up duration due to being admitted towards the end of the study period. The study did not implement a standardised length of follow-up for all patients due to the aim to investigate longer term adverse outcomes following discharge, some of which occur beyond 5 years following discharge.

## **Conclusion**

This study has demonstrated that patients remain at long-term risk of experiencing adverse outcomes following discharge from medium secure care with high numbers of patients receiving further convictions or experiencing readmission to psychiatric care. The risk of death from natural and unnatural causes is also higher than that of the general population, and the physical

health outcomes of patients is of great concern. Knowledge regarding the outcomes of patients on discharge is vital for the provision of care and services, both across the healthcare sector and the criminal justice system. It is also essential to recognise that the outcomes of patients are not solely a consequence of being admitted to this single unit, but demonstrate the complex trajectory of a disadvantaged and vulnerable group.

## Note

1. Serious offences include those categorised according the previous Home Office definition of a 'grave' offence.

## Acknowledgements

The team would like to acknowledge the staff and patients at the unit and the service user representative for encouraging the team to consider a patient perspective. Acknowledgement is also given to Dr Steffan Davies, Professor Connor Duggan and Professor Clive Hollin for their involvement in the previous study upon which the present study extends. The team would also like to thank Lisa Robinson at the Ministry of Justice and Ms Marie Williams at Nottinghamshire Healthcare NHS Foundation Trust (Notts HC) for their roles in supporting the study.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

A three-year PhD studentship funded the current study, provided by the University of Leicester (UoL) and the Institute of Mental Health at the University of Nottingham. Additional funding for data from NHS Digital (i.e. Hospital Episode Statistics (HES) and Office for National Statistics (ONS)) was provided by the UoL and Notts HC. Notts HC sponsored the project.

## Data availability statement

The data that support the findings of this study are not publicly available for confidentiality reasons but may be available on request, subject to conditions and the agreement of the study team.

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