



Secondary care for people experiencing homelessness in Scotland: a retrospective cohort study

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To cite: Gordon ACT, Haseeb H, Johnsen S, *et al.* Secondary care for people experiencing homelessness in Scotland: a retrospective cohort study. *BMJ Public Health* 2025;**3**:e001766. doi:10.1136/bmjph-2024-001766

Received 22 July 2024

Accepted 17 January 2025

ABSTRACT

Introduction People experiencing homelessness (PEH) face multimorbidity and poor health outcomes alongside deep exclusion in accessing health and social care. A large proportion of PEH use unscheduled emergency care heavily due to a multitude of barriers to primary care. No existing research in Scotland has explored experiences of PEH in secondary care.

Methods In view of new national guidelines for the care of PEH, we conducted a retrospective study of 230 unscheduled presentations to secondary care, comparing 115 PEH with 115 patients matched by age and sex (July to December 2021). We aimed to profile morbidity, mortality and explore measures of quality of secondary care, particularly the involvement of multidisciplinary teams (MDTs), readmission rates, attendance at follow-up appointments and place of discharge.

Findings Our findings demonstrate that the PEH population were young (mean age 43.9), 79% of whom experience multimorbidity, with a mortality rate of 13% at 1 year (mean age of death 47.3). 86.09% of PEH experienced additional disadvantages including problematic alcohol use or illicit drug use, and over a third experience two. Despite this, few PEH were seen by relevant hospital MDT members during admission. 8% were discharged to permanent accommodation, 14% were discharged to rooflessness (without shelter) and 8.7% chose to terminate their admission. Significantly less PEHs were offered outpatient follow-up (52% compared with 80%) or attended follow-up (47% compared with 87%), and readmission rates within 1 month were double in the PEH cohort.

Conclusions Data clearly demonstrate the need for specialist support for PEH within secondary care during admission and integrated care beyond.

INTRODUCTION

In Scotland, 'homelessness' encompasses rooflessness (without shelter), houselessness (with temporary shelter) and inadequate housing which people could not reasonably be expected to occupy.¹ It represents both a cause and effect of social and health inequality and poverty.^{1,2} In Scotland, at least 8% of the population experience homelessness within their lifetime.³ In 2022/2023,

WHAT IS KNOWN ON THIS TOPIC

⇒ People experiencing homelessness (PEH) experience deep exclusion from healthcare despite high rates of vulnerability and multimorbidity. This leads to significantly worse health outcomes than housed counterparts. New National Institute for Health and Care Excellence (NICE) guidelines outline the need for targeted services delivered by specialist, psychologically and trauma-informed multidisciplinary teams.

WHAT THIS STUDY ADDS

⇒ This is the first study of its kind to examine secondary care use by PEH in Scotland. We demonstrate the impacts of a current lack of integrated specialist wrap-around homeless input available in an NHS trust on admission and health outcomes.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study was conducted as a quality improvement project locally, and we hope that it will form an evidence base to inform changes to policy and practice. Findings demonstrate the impact of a lack of specialist care and highlight the need for the adoption of the NICE guidelines.

there were over 39 000 new household applications to the Scottish Local Authorities for assistance with homelessness, 27% involving children. An increase in applications in 2023 and fewer successfully 'closed' cases have resulted in more households than ever (15 625) in temporary accommodation such as hostels or bed and breakfast hotels.¹

People experiencing homelessness (PEH) face disproportionately worse health outcomes than the general population, including those in the most deprived housed populations and often suffer complex multimorbidity equivalent to those far older than themselves.⁴ This is starkly illustrated by a life expectancy in PEH within the 35–44 age bracket for women and 45–54 for men in Scotland.^{1–3 5 6} In the UK, studies indicate that up to one in three deaths in PEH



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could have been prevented by timely, effective healthcare.⁷ This supports multiple studies demonstrating that PEH experience deep exclusion from healthcare, exacerbated in those with severe and multiple disadvantage (SMD) (a term that refers to a combination of mental health problems, homelessness, substance misuse or involvement with the criminal justice system) or additional social vulnerability factors such as involvement in the asylum or care system.^{5–12}

Despite complex multimorbidity, PEH particularly underutilise primary care services due to a multitude of barriers and are therefore dependent on unscheduled healthcare in hospital emergency departments (ED) in moments of predictable crises.^{13–15} One study demonstrated that PEH may be up to 40 times less likely to be registered with a general practitioner (GP) than housed populations.^{16 17} Studies from Dublin demonstrated that PEH had a 20-fold increased use of ED and over 10-fold increase in use of costly unscheduled medical inpatient bed space than housed individuals.¹⁴ Finally, studies from the UK demonstrate that utilisation of ED among PEH has increased threefold since 2010/2011, despite a large proportion of admissions among PEH being preventable by timely primary care access.^{18 19} As such, improving the quality, accessibility and connectedness of primary and secondary care for PEH is a priority, including the response to PEH on admission to secondary care following ED attendance.³

There are various care models to improve healthcare for PEH, including specialist GP-led in-reach teams, where specialist community-based GPs also work in hospitals with patients.^{20 21} This has demonstrated tangible changes in culture and improved attendance at planned care, although outcomes are difficult to quantify due to the clinical complexity of PEH and the time taken to build relationships and change behaviours.^{5 21} In this site, the Cyrenian's homelessness charity provides inpatient in-reach assistance with housing, providing a bridge between healthcare and homeless services.^{2 22–24}

The 2022 National Institute for Health and Care Excellence (NICE) guidelines on integrated health and social care for PEH present the economic and moral case for homelessness as a public health issue.²⁵ The guidelines recommend that commissioners plan and fund multi-disciplinary teams (MDTs) for PEH including specialist healthcare professionals (such as drug and alcohol treatment, mental health, primary care, emergency care and palliative care), social workers, housing officers, outreach practitioners, voluntary and charity sector professionals and staff with practical expertise in accessing benefits and entitlements. This MDT does not yet exist locally where this quality improvement project was carried out.

In view of this, we conducted a retrospective cohort study exploring the experiences of PEH in secondary care using key indicators highlighted in the NICE guidelines. This study is the first to describe demographics, surrogate markers of quality of care and outcomes for PEH in secondary care in Scotland.

METHODS

Study design and setting

The study was a retrospective analysis of the electronic patient record (EPR) of 115 consecutive unscheduled admissions to secondary care among PEH, identified by the trust data analytics team using registered addresses. EPRs contain electronic copies of inpatient medical and nursing notes, prescribing information as well as other admission-related and demographic data. Patients were identified as having 'no fixed abode', residing in known temporary accommodation locations or registered with the city's GP practice designed for PEH. This was compared with a randomly selected control cohort of 115 unscheduled presentations in housed individuals, matched by age and sex. All admissions were within the same 6 month period (December 2021 to June 2022).

DATA EXTRACTION

Clinical and demographic outcomes were retrospectively extracted from EPRs including clerking assessments, inpatient clinical notes, discharge summaries and outpatient clinic letters by a clinician within NHS Lothian reading them all. This was entered anonymously into an Excel spreadsheet with each patient assigned a unique code to maintain anonymity. No patient identifiable information, such as date of birth, name, date of admission or identification numbers were included in the extracted data.

MEASURES

Measures included cause of admission and presence of multimorbidity, alongside incidence of four indicators of disadvantage; problematic alcohol use ('dependency' being difficult to establish from EPR in the control population), illicit drug use, involvement in the criminal justice system (current address prison, or documented in EPR as having been imprisoned) and having migrant status (specified in clinical notes). We did not use conventional SMD indicators due to the clinical importance of differentiating between drug use, alcohol use and those using both, and the incidence of migrant status in PEH.

For the PEH cohort, we collected data on index cause and length of admission, delays incurred by housing issues (lack of availability or inappropriate housing) and the extent of MDT involvement in coordinating care as outlined in the NICE guidelines.³

The first admission for each patient occurring within the 6 month study period was identified as their 'index visit', with length of admission, follow-up 120-day and 1 year outcomes measured from the date of admission. Each patient was only included once, regardless of the number of admissions within the study period. For inpatients who died during the admission, their date of death was used to calculate admission length. The presence of a discharge letter was noted, as an indication of attempted communication of admission with primary care clinicians

for ongoing care. Readmission rates within a 120-day window were examined to capture sustained discharges, rapid readmission and reattendance and engagement with outpatient follow-up care. The mortality rate within 1 year of admission was also documented in both cohorts.

DATA ANALYSIS

Descriptive statistics were used to characterise the homeless and control populations, with comparisons made between groups using χ^2 and Fisher exact tests where appropriate. Analysis was undertaken using STATA (V.17).

The cause of admission was later categorised and coded using the International Classification of Disease, tenth revision (ICD-10).²⁶ Primary diagnosis only was used for ICD-10 coding, but multimorbidity (defined as the presence of two or more chronic conditions) and incidence of additional disadvantages were captured as additional binary outcomes.

Missing data were present throughout data collection, and therefore patients were not excluded based on missing data. Instead, missing data were presented as a separate category in analysis for clarity and transparency. As such, in some cases, percentages presented may be an under-representation.

Data governance was practised in accordance with the Caldicott principles. Ethical approval was assessed through the NHS Health Research Authority Decision Tool.²⁷ As this was a retrospective analysis of routine service data, no institutional review board (IRB) ethical approval was required. Access to the final database was restricted to the core team of

researchers with specific approvals and only accessible via a secure NHS network.

RESULTS

Demographics

230 patients, 115 age and sex matched individuals in each cohort, aged between 18 and 69 (mean 44 (11.6)) were included. Of these, 73% were male and 27% female (table 1).

Cause of admission

Of the PEH cohort, the most common ICD-10 category of cause of admission was mental and behavioural disorders, followed by injury and poisoning and circulatory system disease (often infected deep venous thrombosis) and gastroenterological disease (largely due to alcohol and drug-related conditions) (table 2).¹⁹

MULTIPLE DISADVANTAGES

In the PEH cohort, 86% experienced at least one disadvantage in addition to homelessness in the form of either illicit drug use (50%), problematic alcohol use (56%), migrant status (9%) or time in prison (3%). This was 65% more than their housed counterparts in the control cohort ($p<0.001$). Approximately one-third experienced two of these additional disadvantages simultaneously, compared with just 4% of the control cohort ($p<0.001$) (table 1).

Of note, 25% of the male control cohort had problematic alcohol use documented in EPR compared with 64% of the male PEH cohort ($p<0.001$). In female

Table 1 Demographic and admission indicators for both cohorts

	Homeless cohort (n=115)	Control cohort (n=115)	Significant difference
Disadvantage indicator present (Y/N)	99 (86%)	27 (23%)	2 samples proportion test, $p<0.00001$
Number of disadvantages*	0: 16 (14%) 1: 63 (55%) 2: 36 (31%)	0: 88 (77%) 1: 22 (19%) 2: 5 (4%)	Fisher's exact, $p=0.000$
Problematic alcohol use	64 (56%)	22 (19%)	2 samples proportion test, $p<0.00001$
Illicit drug use	58 (50%)	7 (6%)	2 samples proportion test, $p<0.00001$
Drug and alcohol	26 (23%)	3 (3%)	2 samples proportion test, $p<0.00001$
Prisoner status	3 (3%)	1 (1%)	2 samples proportion test, $p=0.1565$
Migrant status	10 (9%)	0	2 samples proportion test, $p=0.0006$
Multimorbidity	91 (79%)	21 (18%)	2 samples proportion test, $p<0.00001$
Readmission in 1 month	32 (28%)	15 (13%)	2 samples proportion test, $p=0.0027$
Outpatient follow-up offered	60 (52%)	91 (80%)	Samples proportion test, $p<0.00001$
Outpatient follow-up attended	28 (47.46%)	79 (86.81%)	Samples proportion test, $p<0.00001$
Deceased within 12 months	15 (13.04%)	6 (5.22%)	2 samples proportion test, $p<0.0197$
*Number of disadvantages measured in study—drug, alcohol, migrant status or involvement in the criminal justice system. Homelessness itself is not included in totals.			

Table 2 Table showing cause of admission in PEH

ICD-10 category	Frequency (n=115)	Percentage (%)*
Mental and behavioural disorders	21	18
Diseases of the circulatory system	16	14
Injury, poisoning and certain other consequences of external causes	14	12
External causes of morbidity and mortality	14	12
Diseases of the digestive system	12	10
Diseases of the respiratory system	11	10
Diseases of the skin and subcutaneous tissue	7	6
Diseases of the musculoskeletal system and connective tissue	4	3
Infectious and parasitic diseases	2	2
Diseases of the genitourinary system	2	2
Other†	12	10

*Please note does not add to 100 due to rounding.

†Diseases of the endocrine (n=1), blood (n=1) and neurological systems (n=1), neoplasms (n=1), and symptoms, signs and abnormal clinical findings not elsewhere classified (n=8)

ICD-10, International Classification of Disease, tenth revision; PEH, people experiencing homelessness.

patients, these figures were 3% of the control cohort and 32% of the PEH cohort, respectively ($p=0.003$).

Multimorbidity

A total of 79% of the PEH cohort lived with multimorbidity as defined as having two or more chronic conditions, compared with 18% of the control group.

Documentation during admission

Housing status was noted in the clerking proforma for 60% of PEH, with no significant difference in rate between men and women. Housing status was only noted after admission in patients' medical notes in 69% of cases. Average admission length of the PEH cohort was 4.5 days (IQR 2–14 days).

NICE recommended homeless MDT involvement

Despite 64 homeless patients having documented problematic alcohol use, only 22% were seen by the hospital alcohol liaison team. Of 58 patients with illicit drug use, 64% were seen by the drug liaison team. Of the 21 patients admitted with mental or behavioural disorder as their primary cause of admission, 10% were seen by the mental health team, and of 16 patients presenting with overdose or intoxication, 38% were seen by the drug liaison team.

Of the 41 patients affected by more than two disadvantages in addition to homelessness, 39% saw no members of the homeless MDT, and 32% saw just one team member (figure 1).

Discharge

19% PEH faced delays to discharge reasonably attributed to delays in sourcing adequate housing, but only 8% were discharged to stable accommodation in social housing with their own tenancy. More than half (55%) were discharged to unstable temporary accommodation, such

as hostels, the homes of parents or ex-partners (which they had often previously had to leave) or hotel placements (figure 2).

15% PEH were discharged to rooflessness (ie, rough sleeping), all of whom were affected by one or more additional disadvantages and 41% affected by two. Notably, 29% of those discharged to rooflessness had no discharge letter, 41% were readmitted within 1 month and 12% died within 1 year. Though 75% of the PEH discharged to rooflessness were discharged following admissions less than 3 days long, this also happened to patients discharged on days 6, 9, 17 and 101 after admission.

11% of PEH left hospital against medical advice, in a 'patient-directed discharge' (PDD), all of whom were affected by at least one additional disadvantage. Of these, four had no discharge letter, and three were readmitted within 1 month. There were seven PDDs within the first 48 hours of admission, but also PDDs on days 11, 27 and 44.

Follow-up outcomes

13% of the PEH cohort died within 1 year of admission, compared with 5% of the control cohort, with the average age of death being 47.33 (9.26) in the homeless cohort and 55 (9.57) in the control group. All 15 homeless patients who died experienced multimorbidity and additional disadvantages, compared with two and none of the control patients, respectively.

Finally, 80% control patients were offered follow-up appointments, with 87% patients attending appointments. Conversely, in the PEH cohort, 52% were offered follow-up, which was attended by 47% patients ($p<0.001$). Over twice as many PEHs were readmitted within 1 month (28% compared with 13% ($p=0.013$)), but the proportion of patients readmitted within 3 months was similar, with 16% and 14% patients, respectively.

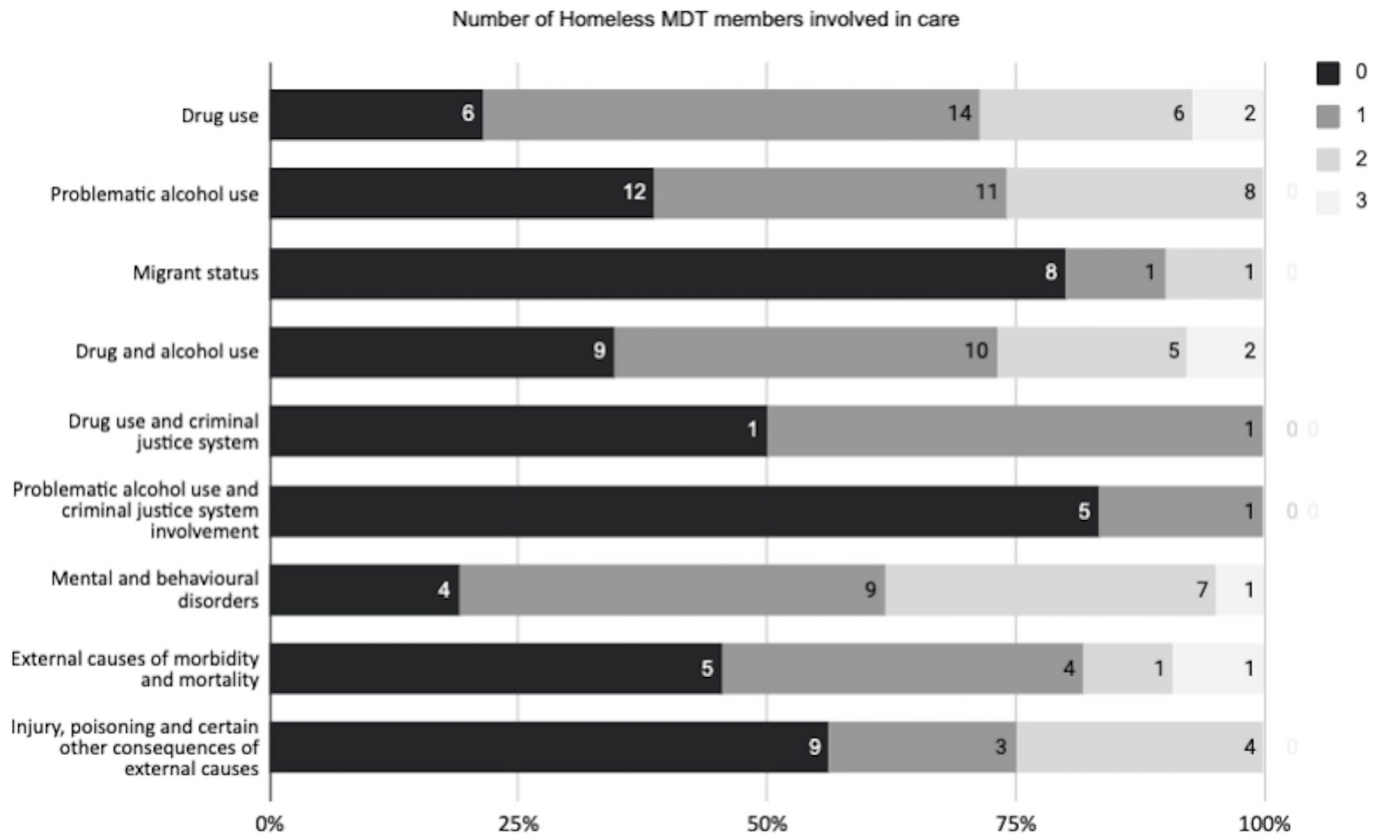


Figure 1 Number of homeless MDT members involved in care. MDT, multidisciplinary teams.

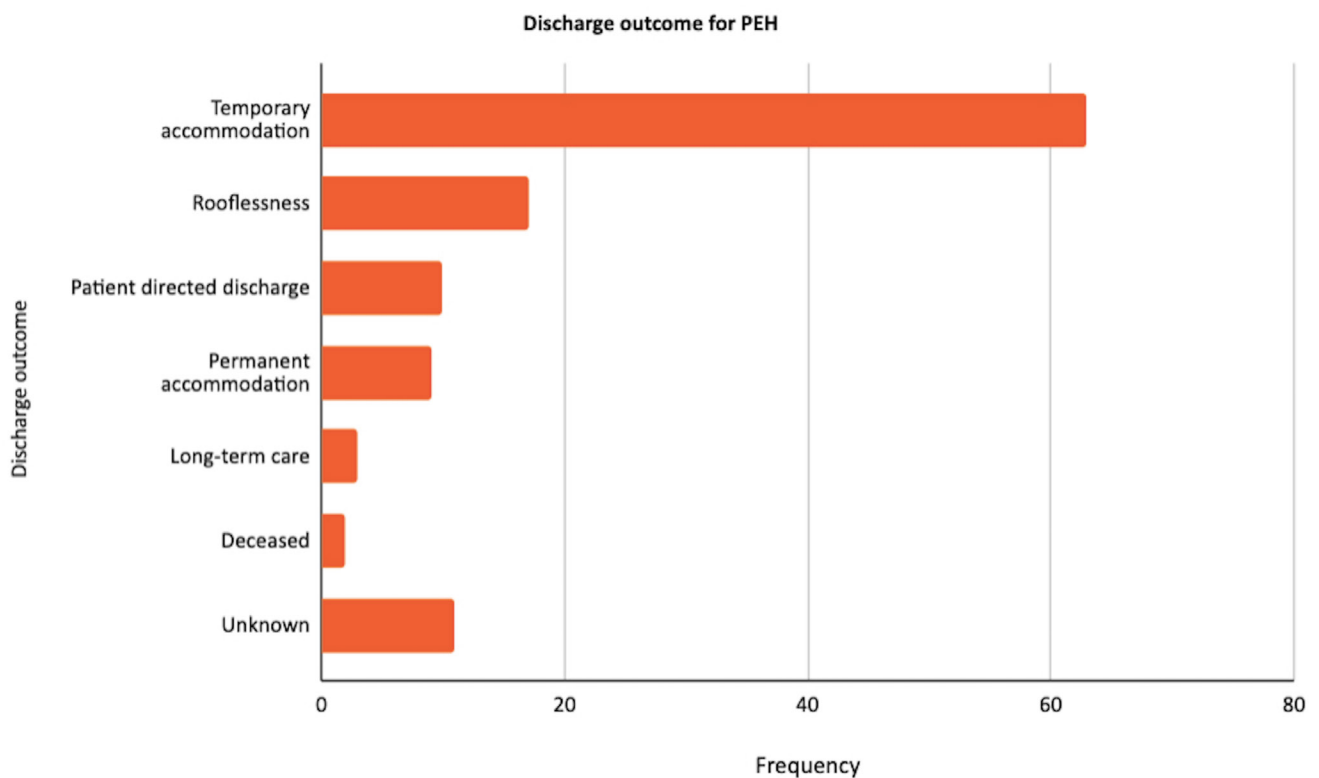


Figure 2 Discharge outcome for PEH. PEH, people experiencing homelessness.

DISCUSSION

Summary of results and comparison to existing literature

Results are consistent with studies from England demonstrating that PEH accessing secondary care are a young, multimorbid, predominantly male group experiencing multiple coexisting disadvantages. They are largely admitted with conditions appropriate for acute hospital treatment.^{5 8 12} Primary causes of presentation were almost all directly related to additional disadvantages faced (eg, illicit drug use or problematic alcohol use). These findings are comparable with previous ED-based studies, though authors discuss the challenge of coding 'primary cause of admission' in multimorbid patients which may produce artificial variation between studies.^{5 8 12} For example, many 'circulatory disorders' in our study stemmed from infections or complications of intravenous drug use; gastrointestinal disorders were frequently secondary to chronic alcohol or drug use (oesophageal varices, pancreatitis or hepatitis).

Compared with English homeless populations, Scotland-based populations may experience more disadvantages relating to drugs and alcohol. English studies report only approximately 25%–40% of presentations in PEH relating to or associated with drugs or alcohol, and just 0.4% involving both drugs and alcohol,^{5 11} which are considerably lower proportions than we have found. This may reflect higher alcohol utilisation in Scottish populations generally, as 25% of the male control housed cohorts also reported problematic alcohol consumption.²⁸

86% of PEH experienced one additional disadvantage, and over a third of PEH experienced two additional disadvantages; the latter amounting to 63% more than housed counterparts. Although we did not document trimorbidity due to inconsistency in documentation regarding mental health in patient notes (particularly in those presenting in emergency settings), we did note that almost one in five primary presentations were related to mental health. This is consistent with Scottish government data indicating that approximately 1/3 of people who have ever experienced homelessness experience mental health morbidity and suggests trimorbidity in Scotland may exceed the 7.1% recorded in England.^{5 29 30}

Multimorbidity rates were 79% in PEH, including all the PEH who died within 1 year of admission (compared with 18% of the control cohort who died). This is reflective of a systematic review in which standardised mortality rates in inclusion health groups (prisoners, PEH and sex workers) were 10 times that of the general population; highest for causes of death such as overdoses, suicide or violence but also more than double that for treatable conditions accounting for most deaths.³¹

In this study, the mortality rate at 1 year for PEH was 13% (average age of death 47.3 years), compared with 5% (average age of death 55 years) in the housed cohort. Of note, a similar retrospective study of 1009 PEH utilising secondary care in England reported 5% mortality with an average age of 52.⁷

Discharge location was not documented for 22% PEH, compared with 37% in a comparable English study, demonstrating an awareness of the relevance of this in onward care planning.⁷ However, almost one-fifth of discharges among PEH were delayed due to lack of housing, with half of these involving discharges to temporary accommodation or ongoing rooflessness. This is of particular concern, given evidence attesting to the harms caused by street homelessness and temporary accommodation within and beyond Scotland.^{1 32 33}

Rates of PDD, indicative of failures of the healthcare system to cater to the needs of patients, were lower than some English cohorts and predominantly occurred early in admissions.^{8 34} Systematic reviews have demonstrated that PEH experience challenges during admissions arising due to the rigidity of hospital-based care, within which clinician and PEH priorities are misaligned, compounding and reinforcing stigma and frustration among physicians around the perceived futility of trying to assist PEH.³⁴ Addressing the provision of psychologically informed care within hospital settings thus remains a priority.

To the best of our knowledge, this is the only study to explore both follow-on outpatient care for PEH and MDT input. Findings could be indicative of systematic discrimination against PEH as only 53% of PEH were offered outpatient follow-up compared with 80% in the control group. Furthermore, complexity as an inpatient was not associated with increased support from relevant specialist teams, with particularly low documented engagement with mental health and alcohol liaison teams, despite evident clinical need. It is possible that this is contributed to by practitioners' conscious or subconscious awareness of low attendance of PEH at outpatient appointments (47%). However, lack of effective specialist follow-up may contribute to readmission rates, which for PEH are double that of the control population. Further efforts to increase accessibility of outpatient care for vulnerable patients should thus also be a priority for service design.

Implications for future research and practice

Overall, data from England demonstrate that PEH represent 41% of individuals presenting >12 times to ED presentations per year,¹² and rates of presentations to ED in both the general population and PEH have increased dramatically in the last 20 years.¹¹ Improving secondary care experiences for PEH is a pressing and growing issue.

The NICE guidelines emphasise the need for wrap-around care, but current inpatient practice demonstrates we are not yet achieving this aim.³ PEH remain an excluded, multimorbid group with complex biopsychosocial care needs. Recent mortality data confirm that current efforts to redress exclusion may not be sufficient to improve outcomes. Frailty teams within acute and inpatient departments of NHS trusts ensure targeted appropriate and timely care for elderly frail patients in recognition of their reduced physical and mental resilience.^{35 36} We contend that multimorbidity, high

incidence of disadvantage and complexity arising from relational trauma among PEH highlight an imperative to develop a purpose-designed MDT team akin to that for frail populations.^{2 37}

Further research should focus on strategies to improve access to specialist outpatient care for PEH, and qualitatively attempt to further understand experiences of PEH in secondary care to optimise interventions, ideally working collaboratively with experts by experience. Finally, although there is key research exploring doctor–patient relationships and interactions, further exploration of techniques to improve the relationship between PEH and all healthcare practitioners, enabling more widely available psychological support, and trauma-informed practice as routine should be undertaken.^{36 38 39}

Strengths and limitations

A strength of this study is its broad scope, capturing data from admission through to outcomes inclusive of outpatient follow-up at 12 months. This was dependent on the identification of PEH early in admission.

We chose to use an age-and-sex-matched patient sample to examine the high multimorbidity and adverse health outcomes in this population. We did not use a socioeconomically matched control sample due to the fluid nature of homelessness in multiply excluded populations.^{2 9} We sought to present the multifaceted issues surrounding this population, rather than presenting results focused on merely the presence or absence of physical housing.

Findings remain significantly limited by the inconsistency in quality and availability of documented input from all members of MDT teams in EPR, our sole data collection tool. Similarly, we were limited in our ability to identify PEH by addresses or documentation in the EPR, presenting a high probability that we missed many PEH, particularly women.² Scottish government figures indicate that 45% of the population experiencing homelessness are female, but only 27% of our study population were. This could be due to the fact that women in Scotland are settled more quickly than men, and so spend less time experiencing homelessness, or a failure to identify these women in secondary care.⁴⁰ Irrespective of this, low rates of MDT documentation and challenges in identifying PEH in the EPR remain an important finding, representing the lack of knowledge sharing and collaboration, which would facilitate cohesive, wrap-around care.

Finally, it is likely that our findings under-represent the vulnerability and exclusion of PEH, as we were unable to gather accurate data on the incidence of learning disabilities, physical disabilities or mental illness due to inconsistencies in recording this in the EPR. The incidence of all three is high in PEH and forms further barriers to accessing and engaging with healthcare.⁴⁰ Rates of alcohol or drug use in our study exceeded Scottish government data which estimate that just 14% of PEH experience drug or alcohol dependence.⁴⁰ It is possible that the study population had an increased incidence of drug or alcohol use due to the inherent increase in risk

to health presented by either the use of drugs or alcohol use. Alternatively, government statistics, dependent on administrative data from processing housing applications, may be under-representative as PEH may not disclose such sensitive information which they may worry would impact their application during this process.⁴¹

CONCLUSION

Our findings underscore the complex healthcare needs of PEH in Scotland, with patterns of multimorbidity, substance use and mental health challenges mirroring but also exceeding those documented in English studies. The low rates of specialist follow-up and substantial delays in discharge due to housing instability highlight persistent systemic barriers that impact healthcare access and outcomes for PEH. The significant mortality disparity between PEH and housed populations, alongside elevated readmission rates, reflects a critical need for targeted, multidisciplinary approaches within secondary care, tailored to the biopsychosocial vulnerabilities of PEH.

Future research should investigate interventions to bridge outpatient care gaps, improve practitioner PEH interactions and integrate trauma-informed, psychological support across hospital settings. Addressing these issues is essential to moving closer to the wrap-around, inclusive care advocated in NICE guidelines and necessary to reduce the stark health inequities faced by PEH in Scotland and beyond.

Contributors AG: study design, data collection, analysis and interpretation drafting and finalising of manuscript. HH: data collection, and interpretation, drafting and finalising manuscript. SJ: conceptualisation of study, data interpretation and revising and finalising manuscript. CM: conceptualisation of study, study design, data interpretation, drafting and finalising manuscript. All authors agreed to be accountable for all aspects of the study in ensuring questions related to accuracy or integrity of any part of the work was appropriately investigated and resolved. AG is the guarantor. She accepts full responsibility for the finished work and/or the conduct of the study, had access to the data and controlled the decision to publish.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. All data relevant to the study are included in the article or uploaded as supplementary information. Data are routine National Health Service (NHS) clinical data collected and stored within the NHS. As such, it cannot be shared beyond what is published in this manuscript in line with Caldicott principles and NHS policy.

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