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# A nationwide mapping of services for high users of emergency departments in England: observational study

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**Aims and method** Services for people who are high users of emergency departments (EDs) have developed in a piecemeal fashion, including those embedded within liaison mental health services, over the past decade. We conducted a national survey of all 171 National Health Service hospitals in England with an ED to identify high user services, alongside 20 interviews from exemplar services to characterise the interventions offered.

**Results** We had a 100% response rate. Of the 171 hospitals, 76 (44%) had a high user service in the ED without designated staff and 71 (42%) offered services with some designated staff time; 10 (6%) had community services, either separate or with hospital outreach; and 14 (8%) had no service. Interviews revealed great variability among services on most parameters, including staffing levels, entry criteria, case-load and types of intervention.

**Clinical implications** There is a need for clarity on entry criteria, case-load and types of intervention, to improve consistency and effectiveness of these services to guide decision-making.

**Keywords** Frequent attender; high intensity user; emergency department; liaison psychiatry; liaison mental health service.

High use of hospital emergency department (EDs) is a recognised problem. Approximately 2.5% of all ED users account for 10% of total ED attendances.<sup>1</sup> High users have high prevalences of multimorbidity, psychiatric comorbidities and psychosocial problems,<sup>2,3</sup> and failure to recognise and address high users' needs is thought to increase the probability of re-attendance.

A recent mapping review of interventions for high users of EDs identified 58 studies worldwide.<sup>4</sup> Most studies were from the USA (35), with only 3 from the UK. The review authors grouped interventions into the following categories: continuation of care, which included case management, care planning and care coordination; additional services in the ED, which included ED counselling, early assessment and intervention, telepsychiatry and medication review; warning systems to identify patients as high users and to limit services they can receive in the ED, such as opioid prescriptions; and services outside the ED, such as out-patient clinics or community services.

NHS England recently encouraged the development of services for high users of EDs via two separate workstreams.

Liaison mental health services (LMHS) were offered a financial incentive to develop high user services via a national Commissioning for Quality and Innovation (CQUIN) standard (2017–2019),<sup>5</sup> and regions were also encouraged to develop community services for 'high intensity users'.<sup>6</sup> This has resulted in services developing in a somewhat uncoordinated and piecemeal fashion.

The aim of this study was to map and characterise current services for high users of EDs in England.

## Method

We conducted a nationwide survey to determine the presence and location of high user services that supported EDs, followed by in-depth structured interviews with 20 informants from exemplar high user services. This project is part of a wider programme of research funded by the National Institute for Health Research (NIHR) Health and Social Care Delivery Research programme entitled 'Frequent Users of the Emergency Department: improving and standardizing services – a mixed methods study' (FUsED; NIHR132852).

All LMHS in England in National Health Service (NHS) acute hospitals with EDs have been regularly surveyed over the past 11 years to determine progress towards the target of providing adequate LMHS in all acute hospitals with EDs in England by 2023–2024. The surveys have been funded variously by NHS England, Health Education England and the Faculty of Liaison Psychiatry of the Royal College of Psychiatrists. Response rates to previous surveys have been very high because there is a buy-in from liaison teams, the questions are crafted to make them concise and simple for clinicians to complete, and the results are quickly disseminated to the wider liaison network and used to inform policy decisions.

To gain a national picture of high user services in England, we included a subset of questions about high user services in the sixth of these Liaison Psychiatry Surveys of England (LPSE-6). The questions about high user services were as follows.

- (a) Is there a frequent attenders service at your hospital?
- (b) If there is, what date did it start, if you know?
- (c) If there used to be one, what date did it start and what date did it stop, if you know?
- (d) Please include contact details for the service if it is different from your liaison service.
- (e) Please indicate how the high user service is best described.

The survey, including the additional questions about high user services, was sent out in May 2022, with further emails to non-responders in July and September 2022, plus telephone reminders. The survey was sent directly to a key liaison mental health member of staff, usually a consultant psychiatrist or team manager, at each acute hospital in England with an ED. These staff are well placed to know about high user services in their locality, even if they are not directly involved. No data were collected or processed from patient records. Missing data were supplemented by freedom of information requests to the relevant hospitals.

Using the responses from the liaison survey and the findings of Memedovich and colleagues<sup>4</sup> we grouped together services according to the responses, and selected 20 services, representative of the main groups, for more detailed study. The main groups were: continuation of care services (with or without designated staff); additional services in the ED; and services outside the ED (i.e. community services). We remotely interviewed a clinician who could provide detailed information about their hospital's service using a framework for describing healthcare organisations<sup>7</sup> to characterise each service according to: capacity (physical assets); organisational structure; financial mechanisms; patient characteristics (including specific subgroups, e.g. women); care processes; and infrastructure across the urgent and emergency care network. This framework was created for describing important differences in healthcare delivery for all sizes and types of service, particularly involving a system-oriented approach while maintaining a patient-centred focus.

The analysis involved a descriptive summary of responses to the structured part of the questionnaire and a descriptive account of the interview responses. We did not employ qualitative methods to analyse the interview responses, as the interview was very structured and focused on fact-finding.

## Ethics and consent

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2013. All procedures involving human subjects/patients were approved by West Midlands – Solihull Research Ethics Committee (REC reference: 23/WM/0055).

Written or verbal informed consent was obtained from all interviewed individuals. Verbal consent was witnessed and formally recorded. No specific approval was required for this national survey of health professionals. No individual patient data were collected.

## Results

Data from the survey were returned by all (100%) 171 acute hospitals in England with EDs. The main findings concerning liaison mental health services are reported at the NHS Futures platform (<https://future.nhs.uk/>);<sup>8</sup> the findings below are limited to those concerning high user services.

There were 157 hospitals (92%) with some form of service for high users. Of the 171 acute hospitals, 76 (44%) offered continuation of care services but with no designated staff, 71 (42%) offered continuation of care services in the ED with some designated staff time and 12 of these 71 services also offered additional services. Ten (6%) hospitals had community services, either separate or involving outreach from the hospital. Fourteen hospitals had no current high-user service. There were no services we could identify that operated warning systems. A range of terminology was used to describe the various services: high intensity user service; high intensity user care planning meetings; high intensity users group; frequent attenders service; regular attenders and complex care service; high intensity network; frequent engagement response network; multi-agency collaborative groups; and high impact user team. Within the broad groupings described above, there was great diversity in the responses regarding the proportion of staff time allocated to the service, the number and different types of health professionals who might attend meetings organised by the service and the frequency of meetings.

## Interview results

We conducted interviews with people from 19 hospital and community sites (anonymised as services A–T) who could provide greater detail about their local high user service. One hospital had two separate services for high users, so 20 informant interviews were conducted. We aimed to have interviews from: continuation of care services (with and without designated staff); continuation of care services with additional services; and services outside the ED. Two sites offered a continuation of care service with no designated staff (Services D and E); eight offered continuation of care services with designated staff (Services B, C, F, H, K, O, P and T); five offered continuation of care services plus additional services (Services I, J, L, M and N); two offered continuation of care services plus services outside hospital (a community service

**Table 1** Summary of the characteristics of 20 services for high users of hospital emergency departments in England

Hospital identifier (A-T) and service type	Team staffing	Entry criteria: ED attendances	Case-load
D - No designated staff	Part of the LMHS	$\geq 3$ in 2 weeks or $\geq 5$ in 2 months	4-6 cases per MDT, at least 10 cases a month
E - No designated staff	Part of LMHS and ED staff	$\geq 5$ in 1 month	Discuss 5-12 patients in monthly meetings
B - Designated staff	Two nurses (each 15 h/week)	$> 20$ in 12 months	110 active plans; 25 plans in the past 6 months
C - Designated staff	1 WTE nurse	$\geq 5$ in 1 month	No specific case-load
F - Designated staff	2 WTE mental health nurses	$\geq 10$ in 12 months	27 started in the past 6 months; 105 active
H - Designated staff	2 WTE mental health nurses	$\geq 10$ in 12 months or $\geq 5$ in 3 months	10 individuals at the moment
K - Designated staff	WTE nurse	$\geq 12$ in 12 months or $\geq 6$ in 3 months or $\geq 4$ in 1 month	48-50 cases per year, 12-16 cases per meeting
O - Designated staff	Mental health nurse part time	None officially; very high-intensity users	20 with care plans at the moment
P - Designated staff	WTE nurse	10 people with highest number of ED attendances each month	Not asked
T - Designated staff	WTE mental health nurse	$\geq 3$ per month, $\geq 6$ per 3 months, $\geq 12$ per year	10-15 patients with mental health problems per month
I - Designated staff + additional services	WTE mental health nurse, WTE nurse	$\geq 10$ in 12 months	43 active cases (constant flow)
J - Designated staff + additional services	WTE nurse and 1 WTE mental health nurse	$\geq 10$ in 1 month	Case-load of 60
L - Designated staff + additional services	WTE mental health nurse, WTE support worker	$\geq 10$ in 12 months or $\geq 3$ in 1 month	15 cases at one time for 3 months, cohort of 60 patients per year
M - Designated staff + additional services	80% WTE mental health nurse	$\geq 12$ in 12 months, or $\geq 6$ in 6 months or $\geq 4$ in 1 month	16 patients in the past 6 months
N - Designated staff + additional services	2 WTE nurses	$\geq 8$ in 3 months	84 patients seen in the past 10 months
A - ED + services outside ED	11 WTE workers	Top 20% of ED high users	No specific case-load
G - ED + services outside ED	WTE nurse, 3-4 community staff	$\geq 4$ per month, not strict	50 in the past 6 months
Q - Services outside ED	6 WTE case workers	No specific criteria	120 per year; target for each worker: 40 at a time
R - Services outside ED	8 WTE case workers	$\geq 5$ in 3 months	10-20 per 6 months for each worker
S - Services outside ED	5 WTE workers	$\geq 12$ in 12 months or $\geq 5$ in 1 month	120 a year as a team; 10 at a time for each team member

ED, emergency department; LMHS, liaison mental health services; MDT, multidisciplinary team; WTE, whole-time equivalent.

linked to the ED) (Services A and G); and three offered separate services outside hospital (Services Q, R and S).

Table 1 summarises the responses we received, according to: the type of service; funded staff designated to the service; entry criteria for the service; and case-load. The table shows the variation in thresholds for attendance or basic criteria for entry to the service. Only 3 out of the 20 services shared the exact same criteria for defining high use. The most common threshold was 10 or more attendances per year (5 services), followed by 12 or more attendances per year (3 services), but some of these services also employed additional criteria for shorter periods of time (e.g. 8 or more attendances in 3 months). Two teams (Services O and Q) did not use a threshold or definition but based their intervention on

perceived clinical need. Several teams were not overly reliant on their set thresholds and accepted referrals that technically did not meet their criteria but were felt to be suitable for the team.

Table 1 also shows the large variation among services in staffing and funding. Teams with the highest number of staff tended to be community teams with between 5 and 8 staff per service (Services Q, R and S). There were only two ED-based services with similarly high staffing levels (Hospitals A and G) and these hospitals offered community outreach. Hospital teams offering 'continuation of care' interventions usually had smaller teams than community services, often with 1-2 nurses supplemented by sessional support by more senior health professionals. The table does not include

**Table 2** Summary of the characteristics of patients using emergency department high user services in England

Service identifier (A-T) and service type	Patients
D - No designated staff	Two groups: (a) younger females, probable personality disorder, self-harm, very challenging; (b) middle-aged men with chronic alcohol problems
E - No designated staff	Working age, more females. Low social functioning, on benefits, unemployed, self-harm, suicidal ideation, MUS, pain, COPD, FND
B - Designated staff	About 65% male. Two age groups: people in their 20s with significant social problems and people in their 40 to 60s with chronic alcohol use and related brain injury
C - Designated staff	Mainly young women with mental health problems, housing problems and drug and alcohol misuse; 'end of the line'
F - Designated staff	People with social problems, homelessness, mental health problems, intellectual disabilities, drug/alcohol misuse and MUS
H - Designated staff	90% female. Complex post-traumatic stress disorder
K - Designated staff	Mental health problems, including anxiety, depression, personality disorders, self-harm, substance misuse
O - Designated staff	Diverse group. Social problems, alcohol and mental health problems. A small group more elderly patients with falls and multiple comorbidities; high mortality in this group
P - Designated staff	Working age. Very complex, very high-risk patients, substance misuse, mental health and physical problems
T - Designated staff	Even split between mental health and alcohol and substance misuse, self-harm, emotion dysregulation, health anxiety and chronic pain
I - Designated staff + additional services	Alcohol and drug-related issues, debilitating physical health problems; mental health problems
J - Designated staff + additional services	75% of the case-load have mental health problems: personality disorders and complex trauma, substance misuse, poor social circumstances. About 20% have intellectual disabilities
L - Designated staff + additional services	49% female; 60% with severe social deprivation. Young and older adults. Mainly mental health problems (but not only). Complex comorbidities
M - Designated staff + additional services	Female, under 25 years. Also, older adults, 60+ years. Housing problems, on benefits, mental health problems, alcohol and drugs misuse
N - Designated staff + additional services	50% female, mental health problems, homelessness, poverty
A - ED + services outside ED	No specific case-load but focus on elderly, frail, 20% of whom have mental health problems. Respiratory disorders, COPD, anxiety management, dementia
G - ED + services outside ED	Mental health problems, emotionally unstable personality disorder and self-harm; health anxiety; unexplained pain; chronic medical conditions
Q - Services outside ED	Data not regularly collected. Probably more used by middle-young to middle-aged people. Diagnoses not used
R - Services outside ED	Very vulnerable people, social deprivation, alcohol and drugs misuse, personality disorders, multiple physical problems and elderly patients who might be not known to social services yet
S - Services outside ED	60% male, mostly between ages 40 and 50 years. Social deprivation

MUS, medically unexplained symptoms; COPD, chronic obstructive pulmonary disease; FND, functional neurological disorder.

details of the sessional support, but it usually involved support from a consultant liaison psychiatrist and or ED consultant. Liaison teams or other mental health teams played some kind of supporting role in most of the services.

Case-loads varied greatly between teams. Hospitals A and C had no specific case-loads. In the services outside hospital (i.e. community teams) case-loads varied between 10 and 40 per worker. The hospital-based services were difficult to compare as case-load was defined in different ways.

Funding for the teams varied, with some teams employed by local integrated care boards (ICBs), some jointly between the acute trust and mental health trust, and some by the acute trust alone. Several services had been started by clinicians who had recognised that there was a need and had

organically grown the service. Some of the liaison high user services had been funded through financial incentives set up by NHS England and most of the community teams had been funded via a separate NHS England initiative that encouraged local ICBs to themselves fund and set up services.

Table 2 summarises the characteristics of patients referred to the various high user services. One service (Service A) focused on the frail elderly, of whom 20% had mental health-related problems. The other services largely saw a younger age group of people with combinations of mental health and social problems. Mental health problems commonly included self-harm, alcohol and substance misuse and personality disorders. Patients were frequently referred to as having complex issues or complex trauma. The proportions of

**Table 3** Examples of the different types of intervention delivered by emergency department high user services in England

Service identifier (A-T) and service type	Intervention (as described by the interviewees)
D - No designated staff	'Two case management meetings, one from LMHS and other from ED. High users' forum to discuss patients fortnightly in house and then also a monthly high users' forum with the acute trust. The patient is involved in the development of their care management plan with crisis team, social work team, safeguarding team, often addiction services, secondary care team, and ED. It's possible that the work enables patients to access an intervention more quickly and our [psychological] formulation is useful in pushing back against a "stigma narrative".'
C - Designated staff	'Proactive, inclusive, personalised, supportive intervention to address peoples' needs. Provide more therapeutic conversations as opposed to just risk assessment. Meetings to discuss 3- and 12-month data, biweekly with LMHS, drugs and alcohol team, voluntary sector, learning [intellectual] disabilities. MDT meetings to formulate care management plans and invite more services if needed. Also, a high users' monthly meeting in the MH trust that looks at the Liaison Psychiatry data, crisis hub and MH 24 h support line. The patient is involved in the development of care management plan, they have a copy. Consultant provides medical view. Care management plan uploaded in MH and acute system and reviewed regularly.'
I - Designated staff + additional services	'Multi agency meetings every two weeks (ambulance, social care, ED consultants, ED matron, GPs, MH team). Discuss 2 to 3 patients in one hour meeting, because of complexity. Offer home visits and in-reach to acute wards. Short-term psychological treatment interventions ("protected caseload to not burn out"), longer term psychosocial work, case management and care plans, when appropriate (specific set format direct to ED 'dos and don'ts', risks) also shared with GPs and ambulance if relevant). Can be co-produced with the patient.'
G - ED + services outside ED	'Joint plans with specialist contacts in each hospital speciality. Psychosocial assessments to identify risks and discuss with patients. We also have a community intervention run by third sector organisation (3-4 employees). They offer 12-week interventions and provide help with social needs, e.g. housing, debts, social issues.'
Q - Services outside ED	'NHS England model. Team worker-non clinician, no particular background, need to be empathic, think outside the box, problem solver. First understand their story from their perspective, apart from the record or referral. Personal goals more broadly, what do they want us to help them with? Time to build a relationship to a point where we can begin to start to make goals and develop boundaries. Conscious that we are there to support them, but we don't want to develop a dependency upon us to solve all of their problems. So, we are very careful to make sure that they play an active part in the process. If it works and everything goes well, that's their success, but if there are problems, that's on us and we'll do what we can to sort that out. If you can do something that makes a difference to them early on, then they are at usually encouraged to continue to work with you. Time to listen. Doctors and nurses don't have that time. We do not follow a blueprint or a template or a flow chart, much less defined and rigid.'
S - Services outside ED	'Started as a social prescribing service then very quickly realised that we actually need a more intensive approach. Community based support. Consultant Liaison Psychiatrist provides supervision. Promote wellbeing. Workers have no particular specialism. Work one to one with people. Home visits. Develop a therapeutic relationship. Work out why they may be going to ED? Everything is led by the person. Focus is on their wellbeing rather than attendances. Flexible, person-centred approach. No limit of time. Monthly meetings which are attended by ED staff, ambulance and high user service.'

LMHS, liaison mental health services; ED, emergency department; MH, mental health; MDT, multidisciplinary team; GP, general practitioner.

males to females differed between services: Hospital B reported that 65% of their high users were male, whereas Hospital H reported that 90% of their high users were female. The three community services, Services Q, R and S, did not use diagnoses but described their patient group as vulnerable and with high levels of social deprivation.

Table 3 gives examples of the kinds of service offered by teams, although no two services were similar on most parameters. The table shows examples of different types of service, including those providing continuation of care and those located outside the hospital. Most teams described a personalised approach to care even if they had very few staff or no designated staff at all. For example, the team at Service C described a proactive, inclusive, personalised and supportive intervention to address people's needs. The team at service D, which had no designated staff, described 'pushing back against a "stigma narrative"'. The community teams at Hospitals Q and S described person-centred approaches,

working with individuals, building trust and focusing on their well-being. The Service Q operated the NHS England model, which has a particular non-clinical ethos.<sup>6</sup> The site at Service S also offered a person-centred (non-clinical) approach but was supported by a consultant liaison psychiatrist.

Hospital-based services tended to offer 'continuation of care' interventions, which could include multidisciplinary team meetings, care planning, and case management with or without additional interventions such as counselling, individual talking treatments or outreach work, including home visits. Services outside hospital were community based and offered more social interventions working one to one with patients to offer support and help with housing, debt and improving social networks. The term case management was disliked by some of the community teams, as they considered it too medical and preferred, for example, 'personalised, psychosocial, practical and emotional intervention with service coordination'.

## Discussion

We conducted the largest and most comprehensive mapping survey of high user services in England that support hospital EDs. We supplemented the survey with 20 interviews from representative services. The most striking finding from this mapping project was the heterogeneity of services. We found wide-ranging differences in virtually all aspects of service delivery, including: the name of services, composition of staff, definitions of high use, case-load, types of intervention, location and funding.

One of the main reasons for the heterogeneity in service delivery that we encountered is the lack of an evidence base in this field. There is no agreed definition of high use of the ED, or even of the term used to describe it, and most studies have defined high use either by a certain number of visits within a set period of time or by a top percentile cut-off (e.g. top 10 or 15% of attendances).<sup>9</sup> Five or more attendances per year at an ED has been established in England as an indicator of high use.<sup>10,11</sup> However, it is unclear whether this threshold should be used by clinical teams in high user services, as it would identify relatively high numbers of people. Teams tended to use a higher threshold of 10 or 12 attendances in the previous year and/or tried to identify people attending in bursts by using smaller time thresholds, such as a certain number of attendances in 1–3 months. No team had an upper age limit, yet it was clear, with exception of Hospital A, that they were set up to manage mental and social difficulties rather than the multiple health problems of elderly people, who can also be frequent users of EDs.

Recent systematic reviews have examined the effectiveness of interventions to decrease ED visits by adult high users.<sup>12–15</sup> There is evidence for reductions in attendance from studies with uncontrolled designs, but very weak evidence from the small number of randomised controlled trials that have been conducted. Several uncontrolled UK evaluations of frequent user interventions have suggested that they generate large cost savings to the NHS and that services should be expanded.<sup>16–18</sup> However, these uncontrolled evaluations result in large overestimates of service impact, most likely because of regression to the mean or the natural course of patients' or systems' difficulties.

The community teams had greater consistency in approach, with two following a specific model championed by NHS England, but the evidence of effectiveness for this model is based on local uncontrolled studies.<sup>16,17</sup> Recent claims that these community teams can result in a reduction in ED attendance of between 38 and 84%<sup>19</sup> fail to acknowledge that 60% of all high users stop qualifying as high users within a 12-month period without any intervention at all.<sup>20</sup>

## Strengths and limitation

Strengths of the mapping project include its nationwide scope and its 100% response rate. This was achieved by adding questions about high user services to an established national liaison psychiatry survey which is delivered by a respected team and has ongoing support from liaison psychiatry teams in England. Because we were limited in the number of questions we could add to the usual liaison survey, we supplemented the survey with 20 in-depth interviews

with representative services to characterise services in more detail.

A limitation of the study is its cross-sectional design, which provides a snapshot of services as they were delivered in 2022, when several of the surveyed teams were in a process of change. Some had been depleted during the COVID-19 pandemic and were planning to reform, and others were under threat of closure because their funding stream had come to an end. So, the clinical picture is evolving.

## Implications

The great heterogeneity and instability in services for high users of the ED is likely to continue until there is robust evidence to support services in their decision-making regarding criteria and thresholds for interventions and types of intervention.

## About the authors

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## Data availability

Data from the survey used in this study are available on reasonable request from W.L. via the corresponding author, S.S.

## Author contributions

W.L., C.B., S.M. and E.G. conceived of the research. W.L. and K.W. conducted the survey. S.S. conducted the interviews. S.S. and E.G. conducted the analysis. E.G. and S.S. wrote the first draft of the manuscript. C.M.v.d.F.-C., G.P., S.A. and S.d.-I.-H. contributed to all drafts of the manuscript. W.L., C.B., S.M. E.G., K.W., S.S., C.M.v.d.F.-C., G.P., S.A. and S.d.-I.-H. have read and approved the final manuscript.

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## Declaration of interest

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