# Acute day units in non-residential settings for people in mental health crisis: the AD-CARE mixed-methods study

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**Disclaimer:** This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

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# Scientific summary

## AD-CARE mixed-methods study

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## Background

Acute mental health services face various challenges. As well as rising demand and reduced resources, service users often report poor experiences and satisfaction, delays in accessing care, unhelpfully short periods of care and a lack of continuity of care within and between services. Support for people in mental health crisis is provided typically by the NHS via crisis resolution teams, which aim to avoid inpatient admission by providing care at home through daily visits by multidisciplinary team members. However, there is evidence that the implementation of national guidelines for crisis resolution teams is highly variable, meaning that some people do not receive the intensity of support that they need. For others, even daily home visits are insufficient to help them avoid admission, and the lack of therapeutic content and social contact is frequently raised as an issue.

Acute day units provide an additional clinical resource for those in crisis. They offer programmes of individual and group sessions during the day, typically at an NHS site, with service users returning home overnight. As a result, service users are provided with structured days and more staff contact time and continuity than is available via crisis resolution teams, with opportunities for peer support and a wider range of interventions. Although these units have the potential to augment existing acute mental health care, there is a lack of recent research about them, with the most recent meta-analysis of acute day unit research having been conducted in 2011. This concluded that these units were as effective as inpatient care in terms of re-admission rates after discharge, employment, quality of life and treatment satisfaction, but that the quality of evidence overall was low and that more research was needed to establish the cost-effectiveness of such units. However, there has been little qualitative research of the experiences of those using and working in acute day units, and no comparison of the outcomes and experiences of acute day unit service users with those of service users of crisis resolution teams (rather than inpatients).

A number of reports at a national level have highlighted the need for better crisis care in the UK, including the recent Care Quality Commission report about mental health services, the Chief Medical Officer's report in 2013, the Crisis Care Concordat and the final report by the Commission on Acute Adult Psychiatric Care. However, without recent, high-quality evidence available about all parts of the acute mental health system, including acute day units, the capacity to improve the existing system will be limited.

## Objectives

The objectives of this study were to investigate:

- the national provision of acute day units within crisis systems, their organisational characteristics and user throughput
- their effectiveness at caring for people in acute mental health crises in terms of re-admissions at 6 months and user satisfaction and experience
- the views of service users, carers and staff regarding strengths and weaknesses of, and the component interventions provided by, acute day units
- whether or not re-admissions to acute care differed between trusts, comparing those who do with those who do not have access to acute day units.

## Design

This study consisted of a mixed-methods programme of research, including a patient and public involvement group that contributed throughout. The study design, setting, participants and analysis used in each work package are outlined below.

Work package 1 consisted of a mapping and national questionnaire survey of all acute day units in England, which was carried out from August to November 2016. Acute day units were identified from NHS websites, crisis resolution team managers and trust acute care leads. Managers of all acute day units identified were asked to complete an online survey about the characteristics and functioning of their service. We used a cluster analysis to identify different types of acute day unit model, and we presented descriptive statistics about acute day unit characteristics and functioning.

Work package 2.1 consisted of a cohort study of acute day unit users and crisis resolution team users from four NHS trusts. Participants were recruited from March 2017 to March 2019, and completed an online questionnaire about depression and well-being at baseline (while they were using the acute day unit or crisis resolution team) and again 8–12 weeks later, at which time satisfaction with services was also measured. We also collected routinely recorded data from electronic health records at baseline and 6 months later, including on diagnosis, physical health, substance use, previous inpatient admissions, content of care and re-admissions to acute mental health services during the 6-month period. The primary outcome was re-admission, with measurements of satisfaction, well-being and depression as secondary outcomes. We analysed time to re-admission using Cox regression, adjusting for trust, age, sex, diagnosis, employment, Health of the Nation Outcome Scales, well-being and previous inpatient use. Using data from this work package, we also carried out a health economics analysis examining the costs associated with acute day units and acute mental health care in participating trusts.

Work package 2.2 consisted of qualitative interviews conducted by peer researchers with staff and service users of acute day units in the four study sites. The researchers (who had experience of using acute mental health services themselves) recruited participants to talk about their experiences of using or working in an acute day unit. Interviews used semistructured schedules and were audio-recorded and transcribed. Thematic analysis was used to identify themes, with the researchers developing a coding framework that was revised during an iterative process that included discussion with the study patient and public involvement group. NVivo (QSR International, Warrington, UK) software was used.

Work package 3 consisted of a national cohort study using the Mental Health Minimum Data Set, which collects routine administrative data from all NHS mental health trusts in England. We used these routinely collected data to identify people who used the acute care pathway from 2013 to 2015. We aimed to determine the re-admission rate, the predictors of re-admission and whether or not trusts with acute day units differed in re-admission rates from those without acute day units. We carried out a multilevel analysis to account for the clustered nature of the data.

Ethics approvals were gained for all parts of the study from London Bloomsbury Research Ethics Committee (reference 16/LO/2160). In addition, enhanced ethics approvals were gained for work package 3 from the Confidentiality Advisory Group (reference 17/CAG/0101).

## Patient and public involvement

Mental health service user involvement in this study was planned from the application stage onwards, with a core team of patient and public involvement advisors providing a range of expertise and experience. Changes were made to ways of working in the project based on feedback from the patient and public involvement group (e.g. visiting acute day units involved in the study, and inviting all patient and public involvement members to the regular study group meetings). Valuable feedback was provided by the

patient and public involvement group on study documents (e.g. qualitative interview schedules), on research findings (e.g. draft papers and coding frameworks) and in meetings (perspectives on the direction of research and questions to think about). A core member of the study research staff was a full-time peer researcher, who led on the qualitative work, supported by an additionally recruited sessional peer researcher. The team used their experiential expertise to assist with data collection, analysis and write-up. All members of the patient and public involvement recorded reflections throughout the study, and a selection of these are included in this report.

## Results

### *Work package 1*

The mapping exercise identified 27 NHS acute day units in 17 trusts (out of the 58 mental health NHS trusts in existence at the time) and 17 voluntary sector/joint NHS and voluntary sector services (all of which were within the catchment area of one the 17 trusts containing NHS acute day units). NHS acute day units are typically available from 10 a.m. to 4 p.m. on weekdays, with a wide range of interventions, a multidisciplinary team including clinicians, and average attendance of 5 weeks. Joint/voluntary services tend to consist of supportive staff working in a non-clinical capacity, who provide brief, one-off support in immediate crises, often in the evening/early morning. NHS acute day units have fewer service user/carer involvement roles than do joint/voluntary services. These survey data allowed us to estimate that around 180 people are treated in each NHS acute day unit per year, which would equate to approximately 4860 people per year in England across 27 units. During the study period, five NHS acute day units closed, and two pilot NHS acute day units opened but subsequently closed after 1 year.

### *Work package 2.1*

In total, 744 participants were included in the analysis (acute day unit, $n = 431$; crisis resolution team, $n = 312$) from four sites. Acute day unit participants had a mean age of 42 years (standard deviation 14.01 years), whereas the mean age of crisis resolution team participants was 39 years (standard deviation 12.12 years). Forty-nine per cent of acute day unit participants were female (crisis resolution team, 55%), and the majority were white (acute day unit, 85%; crisis resolution team, 82%). Only 29% of acute day unit participants were employed (crisis resolution team, 43%). Thirty-three per cent of acute day unit participants were diagnosed with serious mental illness (crisis resolution team, 28%). Fifty-eight per cent of acute day unit participants had previously been admitted to an inpatient ward (crisis resolution team 37%).

In the primary analysis, 21% of acute day unit participants ($n = 92$) were re-admitted to acute mental health services over 6 months, compared with 23% of crisis resolution team participants ($n = 73$). The rate of admission was 54.87 for acute day unit participants and 55.33 for crisis resolution team participants per 100 person-years. This difference was not statistically significant in a fully adjusted model (hazard ratio 0.78, 95% confidence interval 0.54 to 1.14; $p = 0.20$), adjusted for age, sex, employment, Health of the Nation Outcome Scales, well-being and previous inpatient use. However, when an interaction between team (acute day unit or crisis resolution team) and trust was examined, there were highly heterogeneous results, with evidence of higher and lower risk of re-admission in acute day unit participants, depending on the trust.

In the secondary analysis, data collected 8–12 weeks post baseline showed that Client Satisfaction Questionnaire satisfaction scores were higher (indicating more satisfaction) among acute day unit participants (26.66, standard deviation 5.04) than among crisis resolution team participants (24.37, standard deviation 6.57), with a linear regression demonstrating that this difference was statistically significant (coefficient 2.27, 95% confidence interval 1.24 to 3.30; $p < 0.001$). Acute day unit participants also had higher Short Warwick–Edinburgh Mental Well-being Scale scores (indicating better well-being) (acute day unit 20.51, standard deviation 4.96; crisis resolution team 19.02, standard deviation 5.03; coefficient 1.38, 95% confidence interval 0.58 to 2.17; $p = 0.001$) and lower Center for Epidemiologic Studies Depression Scale scores (indicating less depressed) (acute day unit: 14.4, standard deviation 6.0;

crisis resolution team: 16.6, standard deviation 5.7; coefficient −1.7, 95% confidence interval 1.2 to 3.2; $p < 0.001$) than crisis resolution team participants. Baseline scores of the measures used were controlled for, in addition to relevant sociodemographic covariates.

The health economics analysis found little difference between the acute day unit and crisis resolution team groups in terms of resource use and cost in the primary fully adjusted joint analysis. This means that those who used acute day units at baseline did not subsequently cost any more per patient in terms of acute mental health care used during the 6-month follow-up period than those who used crisis resolution teams at baseline.

### *Work package 2.2*

Thirty-six people were interviewed (12 acute day unit staff, 21 service users and three carers). There was an overwhelming consensus that acute day units were highly valued. Service users found the high amount of contact time and staff continuity, peer support from other service users, a feeling of safety, and structure provided by acute day units particularly beneficial. Staff also valued providing continuity, building strong therapeutic relationships and providing a variety of flexible, personalised support, from one-to-one to group sessions. Two overarching themes were identified, 'day-to-day functioning of ADUs' and 'the wider context', in comparing acute day units with other provisions in the crisis care pathway. In relation to the day-to-day functioning theme, participants talked about the importance of ADUs providing structure and purpose to the day, how helpful the practical, psycho-educational and creative groups were, the benefits of access to one-to-one support from staff and from peers, the importance of a safe, therapeutic environment, and suggested improvements to acute day units. Regarding the wider context, participants talked about the role of acute day units in the acute care pathway, including the referral and discharge processes, reducing admission, and integration with other services, as well as comparing acute day units with other treatment options, such as crisis resolution teams, wards and crisis houses.

### *Work package 3*

Of the 231,998 individuals in the study population, 21.4% were re-admitted to the acute care pathway within 6 months, with women, single people, people of mixed or black ethnicity, those living in more deprived areas and those in the severe psychosis care cluster more likely to be re-admitted. The median time to re-admission was 34 days. Very little of the variation was explained at the level of the trust (2%), with 98% explained at the individual level, and no differences in risk of re-admission were observed between trusts with and trusts without an acute day unit (adjusted odds ratio 0.96, 95% confidence interval 0.80 to 1.15). Shorter index admissions also increased the risk of subsequent re-admission (adjusted odds ratio 1.35, 95% confidence interval 1.32 to 1.39, for a 3-day stay compared with a stay of more than 31 days).

## Limitations

In work package 1, we were reliant on trusts accurately reporting the existence of acute day units in order to map them, and, once identified, acute day units accurately reporting their activities in the survey; therefore, some of the requested information may be missing or might have been incorrectly reported. In work package 2.1, the cohort study limitations include possible recruitment bias, whereas part of the health economics analysis relied on clinical Health of the Nation Outcome Scales ratings and a lack of previous acute day unit costings. Work package 2.2 had similar limitations regarding recruitment bias, meaning that the positive views provided may have been influenced by sample selection, and few carers were identified. The Mental Health Minimum Data Set used in work package 3 did not contain a variable identifying acute day units, so we relied on work package 1 to define trusts that had access to acute day units. The Mental Health Minimum Data Set has a large number of missing data for some covariates, such as diagnosis.

## Conclusions

The provision of acute day units in England is highly variable, with many parts of the country having no access to an acute day unit and small numbers of service users benefiting from them. Service users and staff of acute day units value the units very highly in terms of continuity, interventions and therapeutic relationships. People using acute day units had better outcomes for satisfaction, well-being and depression than those using crisis resolution teams, after baseline differences were adjusted for. However, evidence on the risk of acute re-admission after using an acute day unit was heterogeneous, and only a small cost saving was associated with the provision of acute day units.

Nationally, rates of re-admission to acute care were concerning, with almost half of re-admissions occurring within 1 month following discharge. Variation in re-admissions was explained by individual- rather than trust-level characteristics, including access to acute day units.

Overall, our evidence suggests that acute day units are associated with increased satisfaction and well-being, are valued by users and staff, and provide increased access to interventions. They do not increase costs or lead to increased admissions. These units are likely to add value to the acute care pathway for service users, but they are currently available in fewer than one-third of trusts, and several of them closed during our study period.

## Future work

It would be helpful to investigate why acute day units, despite being overwhelmingly popular with staff and service users, remain an underutilised model in the acute care pathway. Work to produce a model of best practice, along with service implementation guidelines, would provide a valuable resource for commissioners and service managers looking to increase choice for people in mental health crisis in their areas. Research about the place of acute day units in the complex mental health landscape would be beneficial, including how NHS services work with voluntary sector provision in this area. Further analyses exploring the predictors of outcomes within our cohort will be carried out, as will analyses of data on loneliness and social connections. High rates of re-admission following discharge from acute care are of concern and warrant attention nationally.

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