

Time to treatment of first-episode psychosis: the role of early intervention teams

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Abstract

Background/Aims Psychosis can affect a person's functioning, quality of life and physical health. Early intervention for service users presenting with psychosis has been implemented via early intervention teams, but there are inconsistencies in assessment and treatment. The aim of this study was to examine time to treatment (defined as the commencement of antipsychotic medication) for service users experiencing first-episode psychosis, the impact of this and engagement with teams. The authors explored the effect of patient characteristics (eg gender, deprivation, ethnicity, age) and early intervention teams on time to treatment for psychosis.

Methods A retrospective cohort study was undertaken using routine data of service users accessing three early intervention teams from 2018–19. The care records of 457 service users were examined, including patient characteristics, assessments, time to first contact, treatment and time to discharge. Data were analysed using the Statistical Package for Social Sciences.

Results Use of the Positive and Negative Syndrome Scale assessment tool differed across the three early intervention teams. Engagement with all teams varied by gender. Men were particularly slow to access treatment in one team (118 of 163 service users, 72.4%).

Conclusions Increased emphasis on engaging male patients may improve service delivery. Improved communication between early intervention teams could increase standardisation of assessment and treatment.

Key words: Early intervention; Early intervention teams; Operational research; Schizophrenia; Service evaluation; SORT IT research

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Introduction

Psychotic disorders are a debilitating spectrum of conditions with an incidence of approximately 7.5 per 1000 people (Moreno-Küstner et al, 2018), with schizophrenia affecting an estimated 24 million people worldwide (World Health Organization, 2022). Onset of a psychotic illness typically occurs from 15–30 years (Hafner, 2019), and symptoms include delusions, hallucinations and thought disorder (Owen et al, 2016), which adversely affect functioning and quality of life (Watson et al, 2018). Despite improvements in treatment, psychotic disorders cause significant strain to health services (Charlson et al, 2018). Service users with psychosis are less able to access other health services, causing their mortality rates to be significantly higher than in the general population (Burns et al, 2014). Men experience more negative symptoms of psychosis and reduced social functioning in the prodromal phase (Barajas et al, 2015), and tend to access mental health services less than women (Sagar-Ouriaghli et al, 2019; Kwon et al, 2023).

A global trend toward early intervention has been advocated for more than 20 years, with early intervention teams being implemented in many countries (Liffick et al, 2017). Early intervention teams were introduced to the UK in the late 1990s as part of the National Service Framework (Department of Health, 1999). National guidelines recommend input from early intervention teams for service users who are experiencing first-episode psychosis (National Institute for Health and Care Excellence, 2014). Treatment is offered for a period of up to 3 years for service users aged between 14 and 65 years. The effectiveness of these teams is well recognised (Puntis et al, 2020; Lammas et al, 2022), with early intervention

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in psychosis increasing concordance with treatment and improved quality of life (Kane et al, 2016).

Early intervention teams use the Positive and Negative Syndrome Scale (Kay et al, 1987) to measure the effect of treatment on psychotic symptoms (Leucht et al, 2019). While the scale has benefits, its statistical robustness has been questioned (Obermeier et al, 2011). Evidence suggests that early intervention in psychosis can positively affect outcomes, but there are inconsistencies in the data (Drake et al, 2020).

This study aimed to examine time to treatment (defined as the commencement of antipsychotic medication) for service users experiencing first-episode psychosis in England, and assess the impact of demographic and clinical characteristics of service users on service delivery. This study was conducted in Cheshire and Wirral Partnership NHS Foundation Trust, which provides community and hospital-based mental health and learning disability services in the northwest of England. The Trust has three early intervention teams which serve distinct geographical areas, covering a general population of approximately 1.5 million people (Cheshire and Wirral Partnership NHS Foundation Trust, 2024)

Service users experiencing first-episode psychosis are treated by one of the three early intervention teams, depending on location. These teams provide specialist services for patients presenting with first-episode psychosis. The teams consist of multidisciplinary professionals and can be referred to by primary care services, acute inpatient services and adult community mental health services. The teams offer a range of specialist interventions (assessment, psychiatry and psychology) and provide specialist treatment for health needs, including physical health support (O'Connell et al, 2021). They work closely with other health, mental health and social care services to implement UK-wide agendas. Early intervention teams have lower caseloads compared with traditional adult mental health teams to facilitate more intensive input (Marhsall et al, 2021).

Methods

Design

This was a retrospective cohort study using secondary data of service users accessing early intervention teams in Cheshire and Wirral Partnership NHS Foundation Trust in the northwest of England in the UK from 2018–19. The authors accessed and analysed service user data in May 2023.

Participants

The study population included all service users aged between 14 and 65 years who accessed one of three early intervention teams in Cheshire and Wirral Partnership NHS Foundation Trust from January 2018 to December 2019. The study examined the time to treatment (defined as the initial use of antipsychotic medication) of service users experiencing first-episode psychosis. A total sample size of 363 service users was included in this retrospective study.

Data collection

Data variables for the study included baseline characteristics, including gender, age, ethnicity and clinical characteristics (three early intervention teams, Index of Multiple Deprivation and the Positive and Negative Syndrome Scale). The Index of Multiple Deprivation is a tool used to compare levels of deprivation for a defined area in England (National Statistics, 2019); it is often a determinant of disease and/or outcomes of treatment. The Positive and Negative Syndrome Scale (Kay et al, 1987) is a rating tool used in cases of schizophrenia to assess symptom severity (Opler et al, 2017). Completion of the Positive and Negative Syndrome Scale was measured in the current study to explore difference in assessment tool usage across the three teams.

Time periods (admission to treatment and treatment to discharge) were derived from records of the appropriate dates. Administration of antipsychotic medication (olanzapine, clozapine, quetiapine, risperidone, amisulpride, aripiprazole) as a form of treatment was recorded. These data were then used to determine time to treatment commencement. Data were extracted from the Trust's electronic case-record system and anonymised. The Indices

of Multiple Deprivation were sourced from service user postcodes using: <https://imd-by-postcode.opendatacommunities.org/imd/2019>

Data analysis

Extracted data were imported to Microsoft Excel, and the Statistical Package for Social Sciences was used for analysis (StatCorp, 2021. Stata Statistical Software: release 17. College Station, Texas; StatCVorp LLC). Frequencies, distributions and measures of central tendency were examined. The relationship between the two time periods (admission to treatment and treatment to discharge) was examined using a paired *t*-test. The data between the three early intervention teams were compared using Chi squared, analysis of variance (ANOVA) and Kruskal-Wallis tests, with significance levels set at 0.05.

Ethical approval

The study analysed retrospective data which were collected routinely as part of standard clinical care. The members of the study team who collected the study data had pre-existing access to this as part of their clinical duties. All data were anonymised and not used for any purpose other than that which they were collected for. As a result, there were no ethical or confidentiality issues requiring NHS research approvals. This study was not defined as research, according to the Health Research Authority algorithm (<http://www.hra-decisiontools.org.uk/research/>) and was reviewed and approved similarly to a service evaluation.

Results

Treatment was classified as the commencement of antipsychotic medication. Service users who began treatment before being accepted to the early intervention team were classified as 'treatment pre acceptance'. Service users who commenced treatment at the time of referral to the early intervention team were classified as 'treatment at acceptance'. 'Treatment post acceptance' indicates that treatment began after a referral was accepted by the early intervention team, demonstrating a delay in accessing antipsychotic treatment.

There were significant differences in the gender and the geographical placement (ie early intervention teams) and time to treatment (**Table 1**). Men treated post acceptance comprised a significantly larger proportion of those accessing early intervention teams than women. Service users in team A were more likely to start medication as treatment before referral (48.9%). In team B, most service users started medication as treatment at the point of referral to an early intervention team (44.6%). The largest proportion of service users who accessed treatment post acceptance was in team C (39.9%) (**Table 1**). The majority of service users accessing the early intervention teams were white British.

Most service users accessing an early intervention team were not assessed using the Positive and Negative Syndrome Scale (**Tables 1 and 2**).

Discussion

According to the results of the present study, some service users ($n=88$; 24%) began antipsychotic medication for first-episode psychosis before being accepted by the early intervention team. However, many service users had delayed treatment after being accepted ($n=163$; 45%).

It is acknowledged in the literature that men often do not engage with mental health services as frequently as women (Sagar-Ouriaghli et al, 2019; Kwon et al, 2023). This may be a result of masculine stereotypes or traditional gender roles, where the stigma of a mental health diagnosis in men can be a barrier to accessing help. In the current study, there was a greater proportion of men (72.4%) compared to women (27.6%) who began antipsychotic medication only after acceptance by early intervention teams. There are several possible explanations for this, including a lack of insight into personal mental health or resistance to follow the input from the early intervention team. Another common factor could be the use of illicit substances (Manrique-Garcia et al, 2016).

Table 1. Characteristics of service users accepted by an early intervention service for first-episode psychosis

Service user characteristics		Treatment pre acceptance (n=88)	Treatment at acceptance (n=112)	Treatment post acceptance (n=163)	P value
Team, n (%)	A	43 (48.9)	27 (24.1)	50 (30.7)	P<0.001*
	B	29 (33.0)	50 (44.6)	48 (29.4)	
	C	16 (18.2)	35 (31.3)	65 (39.9)	
Index of Multiple Deprivation, n (%)	1–2	33 (37.5)	35 (31.25)	52 (31.9)	P=0.09 [†]
	3–4	11 (12.5)	16 (14.3)	46 (28.2)	
	5–6	6 (6.8)	15 (13.0)	19 (11.7)	
	7–8	24 (27.3)	24 (21.4)	21 (12.9)	
	9–10	11 (12.5)	15 (13.3)	23 (14.1)	
	Unavailable	3 (3.4)	7 (6.3)	2 (1.2)	
Ethnicity, n (%)	White British	63 (71.7)	74 (66.1)	113 (69.4)	P=0.85*
	Other	5 (5.6)	4 (3.5)	10 (6.1)	
	Unavailable	20 (22.7)	34 (30.4)	40 (24.5)	
Gender, n (%)	Female	36 (40.9)	49 (43.8)	45 (27.6)	P=0.01*
	Male	52 (59.1)	63 (56.3)	118 (72.4)	
Age at referral	Median years (range)	35.82 (15, 62)	33.21 (15, 60)	32.92 (15, 62)	P=0.20 [†]
Referral to treatment time	Median days (range)	145 (-68 [§] , 552)	134 (1, 216)	128 (-26 [§] , 219)	P=0.75 [‡]
Treatment to discharge time	Median days (range)	94 (3, 290)	133 (1, 216)	139 (2, 221)	P=0.52 [‡]
Positive and Negative Syndrome Scale, n (%)	No	73 (83.0)	99 (88.4)	135 (82.8)	P=0.46 [†]
	Yes	11 (12.5)	10 (8.9)	23 (14.1)	
	Unavailable	4 (4.5)	3 (2.7)	5 (3.1)	

*Chi-squared [†]Analysis of variance (ANOVA) [‡]Kruskal-Wallis test

[§]A negative number of days indicates treatment commenced before referral. Note that referral is not equivalent to acceptance by an early intervention service.

Table 2. Differences in management of first-episode psychosis across three early intervention teams

Management		Team A (n=138), n (%)	Team B (n=151), n (%)	Team C (n=167), n (%)	Chi square	Degrees of freedom	P-value
Time to treatment	Pre referral	43 (31.2%)	29 (19.2%)	16 (9.6%)	15.81	2	0.000369
	Post referral	77 (55.8%)	98 (64.9%)	100 (59.9%)			
Antipsychotic medication	Given	120 (87.0%)	127 (84.1%)	116 (69.5%)	17.06	2	0.000197
	Not given	18 (13.0%)	24 (15.9%)	51 (30.5%)			
Positive and Negative Syndrome Scale, n (%)	Completed	3 (2.2%)	46 (30.5%)	2 (1.2%)	80.91	2	<0.00001
	Not completed	135 (97.8%)	109 (72.2%)	165 (98.8%)			

A large proportion of service users received treatment before acceptance to an early intervention team. This suggests that they may have been admitted to a mental health hospital before being accepted by an early intervention team, without specialist early intervention input or community mental health service input. These delays in admission to an early intervention team may have occurred as a result of capacity issues within each early intervention team, as well as differences between the clinical and operational pressures on the three teams. For example, team C had fewer issues and less input (use of medication) from service users before acceptance, but had a greater number of users who received treatment post acceptance. It is also possible that a referral was made to an early intervention team at the start of an inpatient hospital admission, but the service user was not immediately accepted by the team. The hospital inpatient teams commonly begin antipsychotic medication as a form of treatment while they are assessing and observing the course of the psychotic episode; for example, to see if the effect of illicit substances subsides or if antipsychotic medication makes a positive improvement by reducing symptoms (assessed using tools such as the Positive and Negative Syndrome Scale). The length of time to treatment in both pre and post acceptance to an early intervention team were similar.

In line with the literature, the authors expected assessment tools to be widely adopted across the locality teams (Shafer and Dazzi, 2019). However, the use of the Positive and Negative Syndrome Scale was inconsistent, with large variations in its use across the three teams. Inconsistencies within services have been highlighted as a concern in the NHS Long Term Plan (NHS England, 2019). In this study, team B showed a higher use of the tool than other teams, while both teams A and C demonstrated very low usage. While other assessment tools, such as the Health of National Outcomes Scale, are also used by early intervention teams, this was not investigated as part of the current study. Using the same tool would enable standardisation of assessment and care across early intervention teams in mental health services.

In team C, the use of antipsychotic medication as a treatment was significantly lower than in other localities before and at acceptance (18.2% and 31.3%, respectively). Another explanation could be that the team provided alternative forms of treatment, such as psychological therapies, alternative medication types or environmental changes, which were not explored in the present study. Early intervention teams are made up of various clinicians with different clinical skills, and the teams may have prioritised psychological treatments as a preference to medication. This could also be attributed to issues related to resources, such as staffing and access to psychological therapies (not as readily available in all early intervention teams).

Several clinical implications of the study were identified. The allocation of resources based on location and gender may be significant. This is an issue that can potentially affect care delivery and service user outcomes. Communication and network meetings between the three early intervention teams across the localities could address inconsistencies and ensure standardisation of assessment and treatment. Sharing good practice between the early intervention teams and inpatient units could identify areas for improvements within the service. Focusing on the variance between men and women with regard to treatment could help to improve patient outcomes. It would be beneficial for similar research to be conducted in mental health early intervention teams across the UK, to enable more country-wide analysis of assessments, treatments and patient outcomes in psychosis.

Limitations

There were inconsistencies in the way that different treatments were recorded on the electronic patient records. Thus, the study focused specifically on commencement of antipsychotic medication (which was simple to extract from the clinical records) rather than other available treatment options, which were more likely to be recorded in free text and less amenable to extraction.

This study also demonstrated multiple strengths. A large study population was available, with diversity across rural and urban populations over the three locality teams. Data were thoroughly analysed to ensure they were complete. The study is relevant to mental health

early intervention teams, as it used routinely collected data and addressed frontline practice issues that directly affect service delivery and development.

Conclusions

This study established that gender and early intervention teams influenced time to treatment (commencement of antipsychotic medication) in patients with first-episode psychosis. Men did not engage as well as women with the service, demonstrated by a delay in accessing treatment. The impact of ethnicity within this service user group was limited, as was the effect of the Index of Multiple Deprivation. Additional research into alternative treatments and other early intervention teams may be beneficial in improving health outcomes among service users with psychosis.

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Conflicts of interest

The authors declare no conflicts of interest.

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Data sharing

Data are available from the corresponding authors on reasonable request.

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Key points

- Early engagement with men with psychosis is essential to enabling timely access to treatment
- Outcomes among patients with psychosis vary according to location and gender
- Dialogues between early intervention teams and psychosis services are needed to ensure assessment tools are used consistently

Reflective questions

- How could engagement with male service users with psychosis be improved?
- What are the barriers to using assessment tools?
- How can best practice in providing care for patients with psychosis be identified and shared?
- What would you do if you found deficiencies in your service?

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Author contributions

The research proposal was conceptualised, reviewed, edited and finalised by MH, AS, RM, EW and RN. Data curation was undertaken by MH; data analysis and interpretation was undertaken by MH, AS, RM, EW and RN. The original draft or the paper was written by MH, AS, RM, EW and RN. Project administration and supervision was conducted by AS.

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