


## Short Report

# Service evaluation of an embedded Early Intervention in Psychosis programme

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## Abstract

**Background:** An average of 1300 adults develop First Episode Psychosis (FEP) in Ireland each year. Early Intervention in Psychosis (EIP) is now widely accepted as best practice in the treatment of conditions such as schizophrenia. A local EIP programme was established in the Dublin South Central Mental Health Service in 2012.

**Methods:** This is a cross-sectional study of service users presenting to the Dublin South Central Mental Health Service with FEP from 2016 to 2022 following the introduction of the EIP programme. We compared this to a previously published retrospective study of treatment as usual from 2002 to 2012.

**Results:** Most service users in this study were male, single, unemployed and living with their partner or spouse across both time periods. Cognitive Behavioural Therapy for psychosis was provided to 12% ( $n = 8$ ) of service users pre-EIP as compared to 52% ( $n = 30$ ) post-programme introduction ( $p < 0.001$ ), and 3% ( $n = 2$ ) of service users engaged with behavioural family therapy pre-EIP as opposed to 15% ( $n = 9$ ) after ( $p < 0.01$ ). Rates of composite baseline physical healthcare monitoring improved significantly ( $p < 0.001$ ).

**Conclusion:** Exclusive allocation of multidisciplinary team staff to EIP leads to improved compliance with recommended guidelines, particularly CBT-p, formal family therapy and physical health monitoring.

**Keywords:** Psychotic disorders; Early Intervention; Cognitive Behavioural Therapy; Family Therapy

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## Introduction

An average of 1300 adults develop First Episode Psychosis (FEP) in Ireland each year (HSE 2019). While most recover from this first episode, many individuals experience a relapsing remitting course throughout their lifetimes with lower rates of recovery after each episode (Robinson et al. 1999). Individuals who develop a psychotic disorder have significantly increased mortality rates, both within the first 3 years of diagnosis (Robinson et al. 1999) and in the long term (Laursen et al. 2014; Doyle et al. 2019; Plana-Ripoll et al. 2020). Duration of untreated psychosis is often long and even after detection poor engagement with services is frequently encountered. There is increasing evidence that secondary prevention through EIP results in improved outcomes across a wide range of clinically relevant outcomes, including hospitalisation risk, bed-days, symptoms and global functioning, as compared to treatment as usual (TAU) (McCrone et al. 2010; Chang et al. 2015; Fusar-Poli et al. 2017; Correll et al. 2018; Behany et al. 2020). Though funding and collaboration have been noted as

barriers to these programmes (O'Connell et al. 2021), EIP is now widely accepted as best practice in the treatment of conditions such as schizophrenia (NICE 2015). The HSE National Clinical Programme for Early Intervention in Psychosis (NCP EIP) was implemented in 2019 (HSE 2019). This programme was developed to improve services for people who develop or are identified as being at high risk of psychosis and to align our treatment and management of first-episode psychosis with internationally recognised standards. However, the EIP service structure within Ireland is not yet widely established and its introduction is largely dependent on local resources (Power 2019; Darker et al. 2023).

The Dublin South Central Mental Health service commenced an EIP programme in 2012, separate to the NCP EIP, focused on individuals newly diagnosed with FEP. The service has drawn on the same pillars of care as those recommended internationally (International Early Psychosis Association Writing Group 2005; NICE 2015) including Cognitive Behavioural Therapy for psychosis (CBT-p), Behavioural Family Therapy (BFT), physical health monitoring and Occupational Therapy/Individual Placement Supports. In our baseline study (2002–2012), deficiencies in the monitoring of physical health and provision of psychological interventions were noted in the treatment of service users with FEP (Clarke et al. 2019). Therefore, we aimed to compare TAU for the period 2002–2012 with an embedded EIP

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programme for the years 2016–2022 (with an Enhanced EIP sector that ran from 2012 to 2022).

## Methods

### Setting

The Dublin South Central Mental Health Service is a community-based service divided into four general adult sectors with a 52-bed inpatient unit in Tallaght Hospital. For the purposes of this study, we identified patients who presented with FEP to each of the four general adult sectors from 2016 to 2022 (and the Enhanced EIP sector from 2012 to 2022).

### Intervention

An EIP model was implemented, with 2-year follow-up from time of first engagement with services. The delivery of EIP interventions (CBT-p, BFT and physical health monitoring) was shared among all MDT members in the sector. Prior to the introduction of the EIP programme, neither CBT-p nor family therapy was formalised. A formal approach with training and supervision in both CBT-p and BFT have been central to the EIP programme. BFT is based on the Meriden Family Programme. Consequent to resourcing issues, Ballyfermot was the only sector within the service that had a dedicated EIP Team made up of a Clinical Nurse Specialist (with CBT and BFT training) and 0.5 Working Time Equivalent (WTE) of a Senior Occupational Therapist for the entire duration of the study. We will refer to this as the 'Enhanced EIP sector'. This sector took a similar approach to the coordinated care provided through key working, which is central to the NCP EIP (HSE 2019).

### Data collection

We collected data for each service user extending 2 years from their date of first engagement with the service, in keeping with the baseline study. Two inclusion criteria were applied when choosing service users for the study:

1. Service users must be under 40 years of age at the time of first presentation.
2. Service users must be diagnosed with FEP by the Dublin South Central service.

Data collection included demographic factors (age at first presentation to the service, sex, relationship status, living arrangements, employment status and level of education at time of first presentation), illness factors (duration of untreated psychosis, age at first prodrome, history of substance or alcohol misuse and diagnosis), psychological intervention (rates of CBT-p and BFT), baseline physical health monitoring (weight, metabolic bloods, ECG and prolactin), pharmacological intervention (antipsychotic prescribing and dosage; see supplementary figure) and hospital usage (rates of admission and ED attendance).

### Data analysis

We compared the results of the data collected pre- (2002–2012) and post-EIP programme introduction (2016–2022), particularly focusing on adherence to recommended guidelines and clinical outcomes. We performed a sub-analysis of the Enhanced EIP sector data collected from 2012 to 2022. We employed descriptive statistics, chi-squared testing, t-testing and ANOVA as appropriate

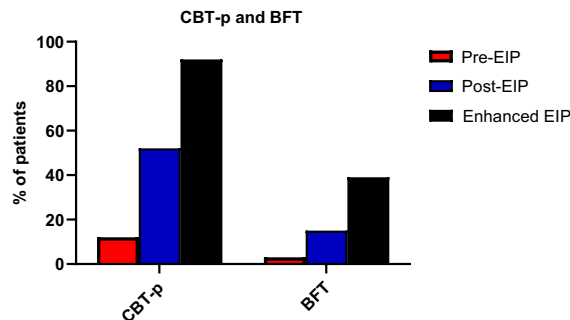


Figure 1. Specialist psychological interventions (CBT-p and BFT).

using GraphPad Prism version 9.5.1 and IBM SPSS Statistics version 28.0 (IBM Corporation, NY, USA).

## Results

### Socio-demographic factors

Sixty-six cases were identified in the baseline study. Fifty-eight were identified as having been referred to the EIP programme following its introduction to the Dublin South Central catchment area which has a population of over 250,000 people. At the 2-year end point, 14% ( $n = 8$ ) had left the programme. The Enhanced EIP sector included 23 participants. The mean age of participants in the baseline cohort was 31 years of age as compared to 26 years of age post-programme introduction (see Appendix 1: Patient socio-demographics). There were no significant differences for gender, relationship status, living arrangements or employment. There was a significant difference for further education with 12% having attended further education in the cohort from 2002 to 2012 as compared to 26% of the cohort during the programme evaluation (see Appendix 1: Patient socio-demographics).

### Illness factors

There was a significant difference in age at the time of first decline pre- and post-programme introduction (29 years *v.* 24 years; see Appendix 2: Illness factors). There was no difference in duration of untreated psychosis in the cohorts pre- or post-EIP programme introduction, nor was there a difference in diagnostic categories or rates of substance use.

### Psychological interventions

There was an improvement in the provision of CBT-p ( $X^2(1) = 22.8$ ,  $p < 0.001$ ) and BFT ( $X^2(1) = 5.9$ ,  $p < 0.05$ ) post-EIP programme introduction. The Enhanced EIP sector performed better in the provision of both therapies ( $X^2(2) = 21.7$ ,  $p < 0.001$ ) (see Fig. 1).

### Baseline physical health monitoring

This improved significantly across all measures following introduction of EIP ( $X^2(5) = 33.5$ ,  $p < 0.0001$ ), namely fasting glucose ( $X^2(1) = 11.4$ ,  $p < 0.001$ ), HbA1c ( $X^2(1) = 33.3$ ,  $p < 0.001$ ), cholesterol ( $X^2(1) = 25$ ,  $p < 0.001$ ), ECGs ( $X^2(1) = 18.3$ ,  $p < 0.001$ ) and prolactin measurements ( $X^2(1) = 23.9$ ,  $p < 0.001$ ). See Figure 2 for further detail.

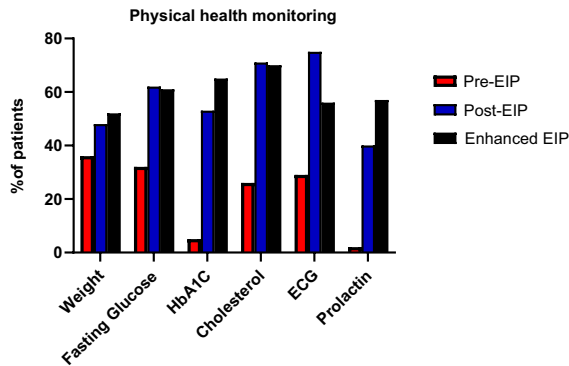


Figure 2. Baseline physical health monitoring.

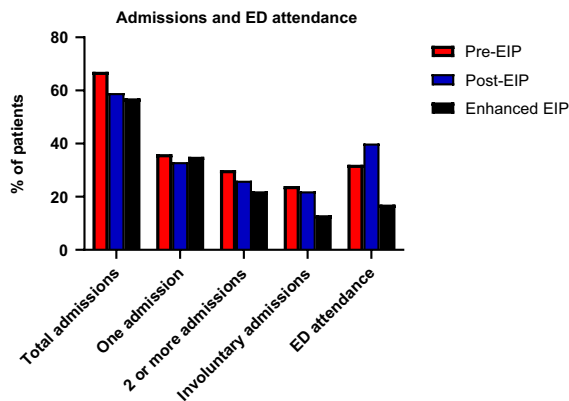


Figure 3. Admission and ED attendance rates pre- and post-introduction of the EIP programme.

### Admissions and ED attendance

There was a non-significant reduction in the number of patients requiring admission from 67% ( $n = 44$ ) pre-intervention to 59% ( $n = 34$ ) post-intervention ( $X^2[1] = 0.86, p = 0.35$ ). The Enhanced EIP sector had a lower rate of ED attendance (17% [ $n = 4$ ]) as compared to 32% ( $n = 21$ ) pre-EIP and 40% ( $n = 23$ ) post-EIP across all sectors ( $X^2[1] = 3.67, p = 0.055$ ). See Figure 3.

### Discussion

Significantly more service users received CBT-p following introduction of the EIP programme. This was particularly evident in the Enhanced EIP sector where there was a dedicated trained FEP nurse who provided CBT-p. Higher levels of family therapy were also provided following the introduction of the EIP programme and specifically in the Enhanced EIP sector. Furthermore, these interventions were provided in a formalised manner with supervision by an experienced clinician. Clinically significant weight gain occurs in 23% to 61% of patients prescribed antipsychotic medication for 10–16 weeks, with rates increasing to 58% to 100% after 1–2 years of treatment (Curtis et al. 2011a), and one study demonstrated that over a third of those with FEP had metabolic abnormalities (Curtis et al. 2011a). Previous studies have shown tangible improvements in physical healthcare monitoring with educational interventions (Mouko & Sullivan 2017; Kelly et al. 2022). In our study rates of baseline, physical healthcare monitoring improved following the introduction of the

EIP programme. Here, we found a non-significant reduction from 67% to 59% in those requiring either single or multiple admissions post-EIP programme introduction. This is in comparison to admission rates reported elsewhere which range widely from 16% to 60% (Craig et al. 2004; Ricciardi et al. 2008; Murphy & Brewer 2011; Ruggeri et al. 2015; Kane et al. 2016; Correll et al. 2018; O'Donoghue et al. 2022).

The demographics of service users remained largely unchanged between the two study periods. The mean age in the pre-EIP cohort was higher due to the upper age limit stipulated by the EIP programme. A higher percentage proceeded to further education in this study as compared to 2002–2012, which may reflect the changing landscape of education over time and the younger demographic in the EIP programme. We do not have further information regarding nature or duration of further education. There was no difference in duration of untreated psychosis between cohorts pre- or post- programme introduction, though wide variability in duration may be noted in Appendix 2 and this has implications for treatment outcomes (Addington et al. 2004; Singh 2007). There were no major differences in diagnosis, rates of alcohol or substance misuse in the cohort post-EIP programme introduction. A fifth of service users admitted to excessive alcohol intake and approximately half used illicit substances across both time periods. This is important as comorbid alcohol and substance misuse has implications for overall outcomes as well as diagnostic stability (Whitty et al. 2005).

There are a number of limitations to this study. Similar to findings in an evaluation of the NCP EIP (Darker et al. 2023), staffing was a major barrier to implementation. This was followed by training, resources and points of transition between services. Extra nursing posts were allocated in each sector, but staff migration and recruitment issues resulted in staffing inconsistencies. For this population, 11.5 MDT staff members are indicated and the 'Dublin South, Kildare, West Wicklow Early Intervention Psychosis Proposal 3 Year Phased Approach 2023–2026' has been submitted to this effect (HSE, 2022). Formal pathways for training in psychological therapies and more regular training in the use of formal assessment tools were recommended by staff members. Supervision was cited as a positive aspect of the programme with senior staff willingly acting in a cross-disciplinary manner. While baseline metabolic monitoring did improve significantly over the course of the programme, resource constraints limited ease of monitoring and intervention and we have not recorded the rate of follow-up monitoring. The size of our cohort does not match with the expected incidence rate of psychosis as cited in previous large-scale studies (McGrath et al. 2008; Cheng et al. 2011) as we have only represented those who were referred to the EIP service and who were between 18 and 40 years of age. Patients presenting to Child and Adolescent Mental Health Services, forensic services, old age services and patients under the care of the Learning Disability Services were not included in the study. Lastly, we did not explore whether these interventions resulted in lower rates of symptom severity or functional improvement and would recommend future use of the PANSS (Positive and Negative Syndrome Scale) (Kay et al. 1987; Cesková et al. 2007; Petruzzelli et al. 2018; Pelizza et al. 2021) and MIRECC (Mental Illness Research, Education, and Clinical Centre) version of the Global Assessment of Functioning scale (Niv et al. 2007; Mascayano et al. 2020), in keeping with the NCP EIP. Employment and quality-of-life outcomes have been explored in previous EIP studies (Rinaldi et al. 2010; Ajnakina et al. 2021), and this is of particular relevance to the lifestyle redesign interventions provided by occupational

therapy. However, the primary aim of this study was to assess the feasibility of delivering enhanced interventions within a community mental health service. The implementation of these interventions is in keeping with international recommendations and constitutes good clinical practice. Furthermore, sustained engagement in services in the initial years of FEP has been cited as an important outcome in and of itself as per the IRIS guidelines (IRIS 2012).

## Conclusions

This study compares standard of care pre- and post-introduction of an embedded EIP programme in the Dublin South Central Mental Health Service. Deficiencies in the monitoring of physical health and the provision of specialised psychological interventions were evident in the baseline study. Following the introduction of the EIP programme, there was a significant improvement in the provision of CBT-p, family therapy and baseline physical health monitoring. This demonstrates that it is possible to create an embedded EIP programme within general adult services, though similar to experiences elsewhere, this is not without its challenges.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/ipm.2023.54>.

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**Competing interests.** None.

**Ethical standards.** The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. Ethical approval for this study was obtained from the Tallaght and St James' Hospital research ethics committee.

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