



Rates, determinants and outcomes associated with the use of community treatment orders in young people experiencing first episode psychosis



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ABSTRACT

Background: Community treatment orders (CTOs) are a controversial form of involuntary treatment for individuals affected by mental health disorders and yet little is known about the use of CTOs in first presentations. Therefore, this study aimed to determine the rates, determinants and outcomes associated with the use of CTOs in young people with a first episode of psychosis (FEP).

Methods: This epidemiological cohort study included all individuals aged 15–24 who presented with a FEP to the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne between 01.01.2011 and 31.12.13. **Results:** A total of 544 young people presented with a FEP during the study period and of these, 93 (17.3%) were subject to a CTO during their episode of care. A total of 69.7% of CTOs were commenced after the first three months of treatment and the median duration of CTOs was 168.5 days. Males, a diagnosis of a schizophrenia spectrum disorder and a concurrent substance abuse disorder were associated with the use of CTOs. Additionally, young people with more severe positive psychotic symptoms were more likely to be subject to a CTO. At the time of discharge, only 38.7% of those subject to a CTO were in education or employment compared to 65.4% of those who had not been subject to a CTO.

Conclusions: The majority of CTOs are commenced after at least three months of treatment, however the optimal timing of CTO implementation needs to be determined. The poor functioning of young people on a CTO should be the focus of future interventional studies.

1. Introduction

Involuntary psychiatric treatment of individuals affected by mental health disorders remains a controversial practice in medicine (Lawton-Smith, Dawson, & Burns, 2008; McDonald, O'Reilly, Kelly, & Burns, 2017). While involuntary treatment was traditionally delivered exclusively in psychiatric hospitals, the introduction of community treatment orders (CTOs) has expanded this practice and can mandate that clients comply with treatment while living in the community. The rationale for CTOs is to provide the appropriate care in the least restrictive environment possible and reduce readmission rates, however their use imposes restriction on autonomy beyond the hospital into the community. The use of CTOs varies widely depending on the country and jurisdiction in which they are implemented. CTOs are currently

used in a number of countries, including Australia, New Zealand, England, Wales, Scotland, Canada, Israel, Egypt and 44 states in the United States (Light, Kerridge, Ryan, & Robertson, 2012a,b). The state of Victoria in Australia has one of the highest rates of CTO use in the world, with nearly 100 per 100,000 population subject to a CTO (O'Donoghue et al.), compared to approximately 30 per 100,000 in Tasmania and 49 per 100,000 in Western Australia. While there are relatively low rates of CTO usage in Canada, with 2 per 100,000 in Saskatchewan and 6 per 100,000 in Ontario, in the United States usage ranges from 15 per 100,000 in New York to 25 per 100,000 in Nebraska (Light et al., 2012a,b).

Those who oppose the ongoing use of CTOs argue that current research is inconclusive and therefore insufficient to justify the significant restriction CTOs place on an individual's autonomy. While there have

Abbreviations: CTO, community treatment order; EPPIC, Early Psychosis Prevention and Intervention Centre; FEP, first episode psychosis

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been numerous comparative studies conducted to date, only three RCTs examining their effectiveness have been undertaken. Two of these RCTs were undertaken in the United States jurisdictions of North Carolina and New York in the late 1990s, examining outpatient commitment orders (OPC), a similar form of legal intervention requiring individuals to comply with treatment in the community. Criteria for the implementation of OPCs are similar to that required for CTOs, including severe mental illness and a need for immediate treatment to prevent deterioration. However, in these two US jurisdictions OPCs are initiated by the courts rather than clinicians, in contrast to many other jurisdictions in which CTOs are primarily clinician-initiated. Neither of the RCTs examining OPC use found a significant decrease in the rates of hospitalisation (Steadman et al., 2001; Swartz et al., 1999). Subsequent meta-analyses also found that OPCs in both trials had no significant impact on readmission to hospital, health service use or other outcomes (Kisely & Campbell, 2014). A subsequent RCT conducted in England in 2013 compared CTOs with a less restrictive form of supervised discharge, and also demonstrated no significant difference in either the primary outcome of readmission to hospital or secondary outcomes of social functioning and mental state (Burns et al., 2013). In contrast, those in support of CTOs argue that they are an acceptable consequence of deinstitutionalisation, and can be used to both minimise disengagement from services and improve adherence to treatment (Gao & Calabrese, 2015). Uncontrolled cohort studies have reported a wide range of positive outcomes including increased contact with clinical services, reduced length of hospital stays, improved forensic outcomes and improved access to physical health services (Segal, Hayes, & Rimes, 2018; Swanson & Swartz, 2014).

Despite the controversy surrounding CTOs, consensus remains that involuntary treatment should be used conservatively, and that once implemented its restrictions on autonomy should be as minimal as possible. In order for interventional studies aimed at reducing the use of CTOs to be developed, further information is required on the patterns of use and factors associated with the use of CTOs. To date, the majority of studies on CTOs have been conducted in adult populations with enduring mental health disorders. Few studies have assessed CTO usage in younger people in the early stages of emerging mental health disorders. A study of youth aged 15–29 presenting to a Victorian early psychosis service with first episode psychosis (FEP) found a high rate of CTO use, with 19.2% of the individuals subject to a CTO during an 18-month period, however this study included individuals who attended services in 1998 to 2000 (Morandi et al., 2017). Given the significant impact involuntary treatment can have on an individual's autonomy, the high CTO rate identified in this study reiterates the need for further, more current, information in this population.

Therefore, the aims of this study were to determine:

- i) the rates of community treatment orders in young people with a FEP attending an early intervention for psychosis service
- ii) the mean duration of CTOs and stage of treatment at which they are implemented
- iii) the demographic and clinical characteristics of young people who have been subject to a CTO and
- iv) the symptomatic and functional outcomes of young people with a FEP subject to a CTO

2. Methods

2.1. Setting

The study was conducted at Orygen Youth Health (OYH), a mental health service for young people aged between 15 and 24 years that services a catchment area of over 1 million residents in the western regions of Melbourne. Within OYH, the Early Psychosis Prevention and Intervention Centre (EPPIC) provides care for young people experiencing psychotic disorders and provides treatment to approximately 300

new clients with a first episode of psychosis (FEP) annually.

2.2. Participants

544 clients who presented to EPPIC with a first episode psychosis between 1st January 2011 and 31st December 2013 were included in the study.

2.3. Study design

A retrospective file audit of client medical records was conducted for all participants included in the three-year study period. Medical records were accessed on site at Orygen Youth Health and an audit tool developed specifically for this study was used to identify and extract the required data. For example, the use of a CTO is recorded on specific legal documents and the audit tool contained fields that mirrored the fields on the legal documents. This audit tool has not been validated, as it is specific to the jurisdiction that the study was conducted in. The audit tool is available as a supplementary material.

2.4. Sources of information

Demographic characteristics were determined on the basis of registration documentation completed at the time of clients' commencement with the OYH service. These included age, sex, marital status, living status, housing status, employment status and country of birth. Diagnoses were made by the treating consultant psychiatrist according to the DSM-IV criteria. Family history of psychosis in first or second degree relatives was reported from case notes according to clients' recollection or that of their family members.

2.5. CTO usage

The current criteria for commencing a CTO in Victoria are that:

- i) the person has mental illness,
- ii) as a result of this illness, the person needs immediate treatment to prevent serious deterioration in mental or physical health or serious harm to themselves or another person
- iii) the immediate treatment will be provided to the person if they are subject to a CTO and
- iv) there is no less restrictive means available to ensure the person is immediately treated.

On meeting these criteria, legal documentation is completed at the commencement of a CTO and copies filed in the client's medical record. This documentation was used to determine the use of any CTOs during the study period. For each client, the dates of CTO implementation and cessation, total number of CTOs and the health service which commenced the CTO were recorded.

2.6. Symptom measurement

The severity of psychotic symptoms was assessed and rated at baseline, and at three monthly intervals thereafter. The short form Scale for the Assessment of Positive Symptoms (SAPS) was used to rate positive symptoms and it is a clinician/researcher-rated scales of positive symptoms of psychosis. The short form SAPS is divided into four symptom domains (delusions, hallucinations, thought disorder and bizarre behaviour) and the presence of symptoms are rated on a scale from absent (0) to severe (5) (Lawton-Smith et al., 2008). The short form SAPS has shown good internal consistency ($\alpha = 0.78$; (Alonso, Ciudad, Casado, & Gilaberte, 2008)). Routinely, case managers and psychiatrists conducted and documented mental state examinations in the clinical notes. These were used as the basis from which to assess and rate psychotic symptoms using the SAPS criteria. Five assessors

extracted this data and inter-rater agreement was performed. The level of agreement on all of the individual positive psychotic symptoms items ranged from 80 to 100% and there was no discrepancy of greater than one unit difference between raters on any of these assessments.

2.7. Remission and relapse

Remission was defined as positive psychotic symptoms of severity less than or equal to two on the short form SAPS for a period of at least twelve weeks. Relapse was defined as the return of positive symptoms of severity greater than a rating of two on the short form SAPS for a period of at least one week.

2.8. Functional outcomes

The Health of the Nation Outcome Scale (HoNOS) was used to determine functional outcomes. This questionnaire was completed at baseline and discharge for all participants. Functional information pertaining to education and employment were also drawn from the clinical notes.

2.9. Statistical analysis

Descriptive statistics in the form of frequency counts and percentages were undertaken for each of the demographic and clinical characteristics. Pearson's chi-squared test was then used to determine if there were significant associations between these characteristics and CTO usage and odds ratios were calculated. All statistical analysis was performed using IBM SPSS Version 22.

2.10. Ethical approval

This study was approved by the Melbourne Health Human Research Ethics Committee.

3. Results

3.1. Cohort demographics & clinical characteristics

A total of 544 young people presented with a first episode of psychosis during the study period, the majority of whom were male (59.6%, $N = 324$) and the mean age was 19.5 years ($SD \pm 2.9$). Within the cohort, 66.4% ($N = 361$) lived with their parents, 38.8% ($N = 211$) were unemployed and 41.2% ($N = 224$) were students. A total of 38.2% ($N = 208$) had a diagnosis of either schizophreniform disorder or schizophrenia and 18.8% ($N = 102$) had a diagnosis of bipolar affective disorder. Within the cohort, 58.5% ($N = 318$) had a concurrent substance abuse disorder, of which cannabis abuse was the commonest (51.7%, $N = 281$). A total of 20.6% ($N = 112$) of participants had at least one first degree relative with a history of psychosis. A full description of the demographic and clinical characteristics of the cohort is presented in [Table 1](#).

3.2. Community treatment orders

There were complete data in regard to the use of CTOs for 97.4% ($N = 530$) of the cohort. During the study period, 93 (17.5%) young people were subject to a CTO and the median duration of an initial CTO was 168.5 days (I.Q.R 59.3 – 364). The majority of CTOs (94.6%) were commenced by the early intervention for psychosis service and of these, the median time to commencement was 202.5 days (IQR 64.75–455.75) after entering the service. A total of 69.3% ($N = 61$) were commenced after the first three months of the episode of care. A description of the timing and duration of CTOs is presented in [Table 2](#).

3.3. Demographic and clinical characteristics associated with CTO use

Males were more likely than females to be subject to a CTO (20.9% vs. 11.4%, $OR = 1.83$, $p = 0.004$) ([Table 1](#)). The individuals who were subject to a CTO were less likely to be in employment or education at the time of presentation compared to those who were not subject to a CTO (38.7% vs 65.4%, $OR = 0.33$, 95% C.I. 0.21–0.53, $p < 0.001$). Young people with a diagnosis of schizophrenia were more likely to be subject to a CTO compared to young people affected by other psychotic disorders (22.6% vs 11.1%, $\chi^2 = 32.531$, $df = 9$, $p < 0.001$), as were those with a concurrent substance abuse disorder (22.6% vs. 9.5%, $\chi^2 = 15.80$, $df = 1$, $p < 0.001$). Individuals who were subject to a CTO had more severe positive psychotic symptoms at baseline compared to those who were not subject to a CTO (8.6 vs 7.0, $t = 3.42$, $df = 530$, $p = 0.001$), specifically, they had more severe delusions ($t = 3.08$, $p = .002$), bizarre behaviour ($t = 3.04$, $p = 0.002$) and thought disorder ($t = 2.70$, $p = 0.007$) but not more severe hallucinations ($t = 0.65$, $p = 0.52$).

3.4. Symptomatic and functional outcomes

In the total cohort for whom there was complete data available (93.8%), a total of 96.1% ($N = 490$) achieved remission of positive psychotic symptoms at one point (defined as a score of ≤ 2 on each domain of psychotic symptoms for a period of at least 12 weeks). There was no difference in the proportion of people who achieved remission of symptoms whether they were subject to a CTO or not ($\chi^2 = 0.77$, $df = 1$, $p = 0.38$). At the time of entry to service, 47.3% of young people who were subjected to a CTO had moderate or severe difficulties in regards to their occupational functioning compared to 46.3% of those were not subject to a CTO ($\chi^2 = 0.02$, $df = 1$, $p = 0.88$). However, at the time of discharge, 46.7% of those subjected to a CTO had moderate or severe difficulties in regard to their functioning compared to 29.4% of those who were not subject to a CTO ($\chi^2 = 6.89$, $df = 1$, $p = 0.009$). At the time of discharge, 61.3% of those subject to a CTO were not in education or employment compared to 34.6% who were not subject to a CTO ($OR = 3.0$, 95% C.I. 1.9–4.7, $p < 0.001$).

4. Discussion

4.1. Summary of findings

This study found that slightly more than one in six young people presenting with a first episode of psychosis are subject to a community treatment order at some time during their treatment. It was found that males and those with a diagnosis of schizophrenia and a concurrent substance abuse disorder were more likely to be subject to a CTO. The majority of CTOs were commenced at least three months after young people had presented to the services and the mean duration of CTOs was approximately 5 months. Young people who were subject to a CTO were more likely to have more severe positive psychotic symptoms at the time of presentation. Finally, young people who had been subject to a CTO were more likely to have continued poor functioning and not be currently employed or undertaking further education.

4.2. Comparison to previous literature

While there are few studies examining similar populations of young people presenting with FEP, the high frequency of CTO usage found in this study is consistent with existing literature. A similar retrospective file audit of 660 young people with a FEP within the same service between 1998 and 2000 found that 19.2% of clients were subject to a CTO ([Morandi et al., 2017](#)). Similarly, that study also found that males and those with a history of substance use disorder were more likely to be subject to a CTO. It is also important to consider the wider environment in which this study takes place, as Victoria has one of the highest rates

Table 1
Demographic and clinical characteristics of the cohort and association with CTO usage.

	N/%	CTO used	CTO not used	χ^2	p
Sex					
Male	325 (59.7%)	68 (73.1%)	257 (57%)	8.35	0.004
Female	219 (40.3%)	25 (26.9%)	194 (43%)		
Living arrangements					
Parents	361 (66.4%)	63 (67.7%)	298 (66.1%)	11.25	0.02
Friends	65 (11.9%)	8 (8.6%)	57 (12.6%)		
Other	53 (9.7%)	15 (16.1%)	38 (8.4%)		
Partner	36 (6.6%)	1 (1.1%)	35 (7.8%)		
Alone	29 (5.3%)	6 (6.5%)	23 (5.1%)		
Employment status					
Student	224 (41.2%)	25 (27%)	199 (44.1%)	24.44	0.001
Unemployed	211 (38.8%)	57 (61.3%)	154 (34.1%)		
Employed	103 (18.9%)	11 (11.8%)	92 (20.4%)		
Home duties	4 (0.7%)	0 (0%)	4 (0.9%)		
Disability pension	2 (0.4%)	0 (0%)	2 (0.4%)		
Place of birth					
Born in Australia	367 (67.4%)	65 (69.9%)	342 (75.8%)	1.44	0.24
First generation migrant	137 (25.1%)	28 (30.1%)	109 (24.2%)		
Employment at presentation					
Student	224 (41.2%)	25 (26.9%)	199 (44.1)	23.07	< 0.001
Employed	107 (19.6%)	11 (11.8%)	96 (21.2)		
Unemployed/Disability pension	213 (39.2%)	57 (61.3%)	156 (34.6)		
Diagnosis					
Schizophreniform disorder	137 (25.2%)	25 (26.8%)	112 (24.8%)	32.53	< 0.001
Bipolar affective disorder	102 (18.8%)	19 (20.4%)	83 (18.4%)		
Schizophrenia	71 (13.1%)	21 (22.6%)	50 (11.1%)		
Psychosis NOS	69 (12.7%)	3 (3.2%)	66 (14.6%)		
Drug-induced psychosis	55 (10%)	12 (12.9%)	43 (9.5%)		
Depression with psychosis	52 (9.6%)	1 (1.1%)	51 (11.3%)		
Schizoaffective disorder	24 (4.4%)	8 (8.6%)	16 (3.5%)		
Brief psychotic disorder	16 (2.9%)	3 (3.2%)	13 (2.9%)		
Unspecified FEP	13 (2.4%)	0 (0%)	13 (2.9%)		
Delusional disorder	5 (0.01%)	1 (1.1%)	4 (0.9%)		
Concurrent substance abuse disorder					
Present	318 (58.5%)	72 (77.4%)	246 (54.5%)	16.797	< 0.001
Absent	223 (41%)	21 (22.6%)	202 (44.8%)		
Unknown	3 (0.6%)	0 (0%)	3 (0.7%)		
Present in 1st degree relative	112 (20.6%)	18 (19.4%)	94 (20.8%)	0.104	0.747
Present in 2nd degree relative	107 (19.7)	14 (15.1%)	93 (20.6%)	1.512	0.219

Table 2
Community treatment order usage.

	N	%
Total number of CTOs used		
CTOs used	93	17.1
CTO not used	437	80.3
Missing data	14	2.6
Number of CTOs client was subject to		
One	82	88.2
Two	6	6.5
Three	3	3.2
Four	1	1.1
Five	1	1.1
Stage of CTO implementation		
CTO started at early intervention service	88	94
CTO started prior to service entry	3	3.2
CTO started at the time of referral	2	2.2
Duration of CTOs	Days	SD
Mean	238.43	215.9
Median	Days	I.Q.R
	168.5	59.3, 364

of CTOs usage in the world (Light et al., 2012a,b; O'Donoghue et al., 2016). While the reasons for this high rate of CTO use remain unclear, there are several factors which may be contributing to their usage in

this population. Considering the young age of the cohort, the potentially damaging effect lengthy inpatient stays can have on both social and educational development may have made clinicians more likely to implement a CTO. In addition, disengagement from services has been found to be prevalent among clients with early psychosis (Doyle et al., 2014), and as this can lead to poorer outcomes, it is possible CTOs may have been used with the rationale of improving contact with clinical services.

4.3. Clinical implications

4.3.1. If CTOs are indicated, at what stage should they be used?

The median time to commencement of CTOs in this study was between 6 and 7 months, with only 30% being commenced within the first three months. While this indicates that in the majority of cases time is given to allow for adequate engagement with treatment before enforcing it through a CTO, it also raises questions as to the most appropriate time for the use of CTOs, if they are to be used. While subjecting a young person to a CTO earlier in their treatment may represent a more risk-averse strategy, it also places severe restrictions on patient autonomy and impairs their ability to make decisions regarding their own treatment. Conversely, delaying commencement of a CTO to avoid such restrictions may result in the prolongation of ill health and lead to poorer outcomes. However, it also needs to be considered that randomized trials have demonstrated CTOs to be ineffective and the design

employed in this study permits no conclusions to be made in regards to the effectiveness of CTOs. Therefore, there may be no appropriate stage or timing in which to use them. Similar questions arise when considering the duration of CTOs and the most appropriate time at which to terminate them. If an individual is adhering to treatment and their symptoms are improving while under a CTO, it could be argued that continuing the CTO is indicated in order to sustain a positive effect. However, it could also be argued that CTOs should be terminated as soon as possible in the interest of minimizing involuntary treatment and its associated restriction of autonomy. These are important considerations for future studies aimed at reducing CTO use.

4.3.2. Can the use of CTO be reduced or minimized?

The identification of potentially modifiable factors associated with CTO use is also critical to developing more appropriate frameworks for their implementation. This study found that males with concurrent substance abuse were more likely to be subject to a CTO. While the relationship between these factors is not necessarily causative, these findings allow us to identify those individuals presenting with a first episode of psychosis who are at higher risk of being placed on a CTO. It is plausible that providing intensive interventions to these individuals early in the course of their presentation could lead to a reduced need for CTOs subsequently in their episode of care. Currently no studies have been conducted examining this possibility and represents a direction for future investigation.

4.3.3. CTOs – strong association with poor functional recovery

Systematic reviews on the effectiveness of community treatment orders have found that they offer no advantage in terms of service user, social functioning or quality of life (Kisely & Campbell, 2014; Maughan, Molodynski, Rugkasa, & Burns, 2014). However, what is clear from the results of this study, is that individuals who have been subjected to a CTO have poor functioning by the time of discharge from the early intervention for psychosis service, yet this difference was also present from the time of presentation. The design of this study does not allow any conclusions to be drawn regarding the role of CTOs in this association, however it can be concluded that individuals being considered for CTOs or subject to CTOs are at much greater risk of not achieving a good functional recovery. A number of interventions have been developed, such as Individual-Placement support, that have an evidence base supporting their role in improving educational and employment outcomes in young people affected by psychotic disorders (Killackey & Allott, 2013; Killackey, Jackson, & McGorry, 2008). Therefore, such services should be made available to all young people affected by a psychotic disorder who are subject to a CTO, as this represents a very high risk group for poor functional outcomes.

4.4. Strengths and Limitations

A strength of this study is that there was a large, representative, epidemiological cohort of all young people who presented with a first episode of psychosis within a defined time period and catchment area. Furthermore, we had complete data for a large proportion of individuals. However, the results of this study need to be considered within the limitations. First, information regarding diagnoses and other clinical characteristics was based on clinical assessment, as opposed to using structured instruments. In addition, as a retrospective study, utilizing the SAPS criteria was done by assessing clinician notes (written by either a psychiatric registrar or consultant) rather than directly collecting the data. Information relating to substance abuse in the clinical notes was obtained either directly from the young person or a family member and was not confirmed with laboratory testing.

As previously stated, Victoria has one of the highest rates of CTO use in the world. The explanation for this is not fully understood and likely to be multifactorial, which may also represent a source of bias potentially limiting the overall generalisability of the study. Finally, while

this includes a first episode of psychosis cohort, it is from a youth mental health service and therefore the findings of this study are not generalisable to those with an onset of greater than the age of 24.

5. Conclusions

A significant proportion of young people with a first episode of psychosis are subjected to CTOs, despite the limited evidence of their effectiveness. The majority of young people were not commenced on a CTO until at least three months after service entry however the optimal timing in the use of CTOs needs to be determined. Furthermore, the poor functional outcomes of this specific group needs to be addressed in further clinical studies.

Declarations of interest

None.

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