

# Understanding delay in treatment for first-episode psychosis

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## ABSTRACT

**Background.** A lengthy delay often occurs between the onset of symptoms of psychotic disorders and initiation of adequate treatment. In this paper we examine the extent to which this represents a delay in individuals contacting health professionals or a delay in receiving treatment once such contact is made.

**Method.** Pathways to care were examined in 110 patients of the Prevention and Early Intervention Program for Psychosis in London, Canada. Data were collected using structured interviews with patients, family members, consultation with clinicians and review of case records.

**Results.** Family physicians and hospital emergency rooms were prominent components of pathways to care. Both delay to contact with a helping professional and delay from such contact to initiation of adequate treatment appear to be about equally important for the sample as a whole, but some individuals appear to be at risk for particularly lengthy delay in the second component. Individuals with younger age of onset, or who had initial contact with professional helpers before the onset of psychosis and were being seen on an ongoing basis at the time of onset of psychosis, had longer delays from first service contact after onset to initiation of adequate treatment. The greater delay to treatment for those being seen at the onset of psychosis does not appear to reflect differences in age, gender, symptoms, drug use or willingness to take medication.

**Conclusions.** Interventions to reduce treatment delay should increase the public's awareness of the symptoms of psychotic illness and the need to seek treatment, but of equal importance is the education of service providers to recognize such illness and the potential benefits of earlier intervention.

## INTRODUCTION

Substantial delays between onset of psychotic illness and initiation of adequate treatment often occur. Reports from a variety of countries provide estimates of time between onset of psychosis and initiation of treatment (duration of untreated psychosis, or DUP) – the means of which vary between 22 weeks to over 150 weeks, and the medians between 4.3 and 26 weeks (Norman

& Malla, 2001; Fuchs & Steinart, 2002). Lengthy treatment delays represent unnecessary prolongation of distress for patients and their families. In addition, there is some evidence that such delays may also compromise the potential for recovery once treatment is initiated (Loebel *et al.* 1992; McGorry *et al.* 1996; Szymanski *et al.* 1996; Norman & Malla, 2001).

Given the immediate and potential longer term implications of treatment delay, it is important to understand better why substantial periods of time often pass between the onset of the disturbing symptoms of psychotic illness and initiation of treatment. By understanding how

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and why substantial delays occur we may be able to design interventions to facilitate better earlier treatment. In this respect, it is likely to be of some importance to distinguish the period between onset of symptoms and having contact with professional help or service provider from the period between the first contact and initiation of adequate treatment (Gater & Goldberg, 1991; Lincoln *et al.* 1998; Fuchs & Steinart, 2002). Lengthy delays in seeking help after onset of psychosis would suggest the importance of implementing programmes to educate the public about the symptoms of psychotic illness and the importance of seeking help quickly. Delays in provision of appropriate treatment after an individual with psychotic illness has contact with a professional helper – likely a social service or health care professional – suggest the importance of endeavours more specifically targeted at service providers which emphasize identification of psychotic symptoms, the nature of appropriate treatment, the importance of prompt treatment and methods of effectively engaging patients in treatment.

Several previous reports have noted the wide variation in pathways to care for mental health problems in general and psychosis in particular (Moodley & Perkins, 1991; Rogler & Cortes, 1993; Lincoln & McGorry, 1995; Lincoln *et al.* 1998). Both clinical experience and more systematic observations indicate that for many individuals psychosis is preceded by other distressing experiences or psychiatric symptoms such as sleep disturbance, anxiety, depression, etc. (Falloon *et al.* 1996; McGlashan, 1996; Yung & McGorry, 1996, 1997). It seems likely, therefore, that a substantial proportion of those who develop psychotic disorders have had previous contact with social service or health professionals and some are likely to be receiving help from such sources at the time that they develop psychosis. We are unaware of any reports which examine the relationship between the stage of illness when help is sought and treatment delay.

In this paper, we report data collected in a Canadian programme that specializes in the treatment of first-episodes of psychosis. The information available allows a relatively detailed description of the components of treatment delay described above as well as an examination

of the relationship of each component to demographic and clinical characteristics of patients and history of service use prior to the onset of psychosis.

## METHOD

### Subjects

The data being presented are from information collected concerning 110 patients who presented with a first-episode of a psychotic disorder to the Prevention and Early Intervention Program for Psychoses (PEPP) in London, Ontario, Canada. In contrast to many other studies of first-episode psychosis, the sample is not restricted to in-patients. Fifty of the patients had treatment initiated without hospital admission. Criteria for admission to this programme include a diagnosis of having a psychotic disorder (requiring the presence of hallucinations, delusions and/or grossly disorganized thinking and behaviour of at least 1 week duration) for which an adequate trial of antipsychotic treatment has not previously been received. Details of the entire assessment and treatment protocols used by PEPP are available elsewhere (Malla *et al.* 2001, see also website [www.PEPP.ca](http://www.PEPP.ca)).

### Measures

The assessment protocol within PEPP includes completion of a SCID interview at entry and 1 year post-entry, measures of symptoms at entry and regular intervals thereafter using the SAPS and SANS (Andreason, 1982*a, b*); Premorbid Adjustment Scale (Cannon-Spoor *et al.* 1982); cognitive functioning (for a list of measures see Norman *et al.* 2001; Townsend *et al.* 2001); and, of particular relevance to this report, measures related to the course of illness development and pathways to care. The latter information was collected using an instrument that we call the Circumstances of Onset and Relapse Schedule (CORS) which includes some sections adapted from the Interview for the Retrospective Assessment of Onset of Schizophrenia – IRAOS (Häfner *et al.* 1992).

Estimates of all of the indices described below were obtained after very careful review and cross-referencing of available sources of information including interviews with patients, family members or others familiar with the early course of the individual's illness; review of clinical

records; and consultation with clinicians who were involved in care of the patient. In all cases at least two sources and in 70% at least three sources were consulted. In general, there was good agreement between sources concerning the indices which are the focus of this report. Sometimes, particularly with events such as first onset of any psychiatric symptoms or of psychotic symptoms, which may have occurred many years previously, it was necessary to engage in extensive cross-referencing with milestones such as grade in school, employment, birthdays, etc. There were occasions when it appeared possible to reliably identify the month that a change or event occurred, but not the day within the month – under these circumstances, if an estimate of early or late in the month could not be made, the middle of the month would be assigned as the date. In cases where insufficient reliable information was available or there were substantial discrepancies between sources that could not be resolved by the research team, the information was treated as missing – however, this never occurred for more than 2% of cases for a given variable.

The median time between entry into PEPP and completion of the CORS was 56 days. Because this aspect of the data collection was initiated after the establishment of PEPP, there were 13 patients for whom pathways to care data was collected retrospectively when at least a year had passed after entry into treatment. There was no significant relationship between the length of delay in obtaining the pathways to care data and any of the indices reported in this paper.

#### *Measures of relevance to the issues being examined*

##### *Initial onset of psychosis*

This refers to the date when the patient first experienced symptoms of psychosis (hallucinations, delusions and/or grossly disorganized behaviour or thinking) that had duration of at least 1 week.

##### *Onset of current episode of psychosis*

This refers to the onset of the current episode of psychosis. While this date corresponds to date of initial onset for most patients, the onset and course of psychosis can be episodic even without

treatment. An individual was considered to have had a previous episode of psychosis if he or she experienced psychotic symptoms in the past for at least 1 week with a subsequent period of 30 days without symptoms.

As noted elsewhere (Norman & Malla, 2001; Norman *et al.* 2001) delay in treatment or duration of untreated psychosis can be calculated either in terms of time elapsed since initial onset or estimated time (for example, weeks) that the individual was continuously experiencing psychotic symptoms. Past reports have not always been specific as to which is being estimated, and given that the estimates may have different implications for understanding why treatment was delayed (or any ‘toxic’ effects of treatment delay) we will report on both indices.

##### *Onset of any psychiatric symptoms*

This refers to the point at which there was an onset of noticeable psychiatric symptoms, such as marked symptoms of depression or anxiety. The first signs or symptoms that indicate a change from the individual’s previous stable level of functioning were considered in estimating this date rather than problems or concerns associated with a lifelong behaviour pattern or characteristic such as ‘always being socially shy’ or a ‘tendency to be anxious and worried since a young child’. When the first noticeable psychiatric symptoms reflected psychosis, this date would correspond to the initial onset of psychosis as described above. When the first psychiatric symptoms were not psychosis, this date would be earlier than the initial onset of psychosis.

##### *Reason for seeking help*

Both patients and families were asked when they recognized the need to seek help and the reasons that motivated them to seek help. *Post hoc* examination of the reasons described suggested that all of them could be classified into a number of major categories: symptoms of psychosis; feelings of sadness or depression; stress and anxiety; confused cognitive processes; anger and irritability; social withdrawal; deterioration in self-care (grooming, hygiene); sleep disturbance; and exhaustion and fatigue.

##### *Services consulted*

Great efforts were made to identify all formal services, organizations or professional services

providers consulted with reference to any mental health/psychiatric problems experienced by the patient. Given that individuals with psychotic disorders often have prodromal symptoms and/or psychiatric co-morbidity, such service contacts could have occurred before or after the onset of psychosis. For purposes of analysis, these services were classified into the following categories: family physician, hospital emergency room, non-emergency hospital services, psychiatrist, psychologist, community social worker or counsellor, student health or counselling services, paediatrician, community crisis services or the initial contact being with PEPP. The estimated date of such services was also recorded.

#### *Initiation of treatment*

It is generally accepted that antipsychotic medication is typically the cornerstone of effective treatment of psychotic disorders (Kane & McGlashen, 1995; Gaebel & Marder, 1996). This is not to deny the importance of appropriate psychosocial interventions (e.g. Bellack & Mueser, 1993; Liberman, 1994; Malla & Norman, 1999; Lehtinen *et al.* 2000; Norman *et al.* 2002), but because of the apparently pivotal role of medication in bringing about relief from the most disturbing symptoms of psychosis, this was adopted as the benchmark for initiation of adequate treatment. Just as the onset of psychosis can be episodic, so too the course of initiating antipsychotic treatment can be discontinuous. For this reason we separately estimated the date of first receiving any antipsychotic medication and the date of receiving adequate medication. Following the precedent of Larsen *et al.* (1996) we defined adequate treatment as receiving antipsychotic medication that would lead, in most cases to a clinically sufficient response in 'non-chronic, non-treatment-resistant people' (e.g. equivalent of 3 mg, haldoperidol for 4 weeks). Such a definition is consistent with other studies utilizing the concept of adequate treatment in defining treatment delay (Norman & Malla, 2001). As one of the criteria for admission to PEPP is that the patient has not been treated adequately in the past, the date of initiation of adequate treatment was always at the time of or subsequent to admission to the programme; but initial prescription of antipsychotic could well have occurred before entering PEPP.

#### *Date of admission to PEPP*

Given that in the region being served, PEPP is the only specialized programme for treatment of first-episode psychosis, date of admission to PEPP was also used as a milestone in pathways to care for patients in this study.

The above variables are relevant to characterizing pathways to care. In trying to understand such pathways better we focused on when, why and from whom help was sought for psychiatric problems. In our analysis we examined the relative importance of delay between symptom onset and first contact with a helping professional *versus* time between such contact and initiation of adequate treatment. In addition, we also assessed the implications of whether patients had contact with a professional care provider before or after the onset of psychosis. Contacts before the onset of psychosis can occur either because the individual is having difficulties related to psychiatric problems that are in a sense prodromal to the onset of psychosis or reflect co-morbidity, which may or may not be related to the psychotic disorder.

#### *Other indices*

Information was also collected regarding several demographic characteristics and aspects of clinical characteristics. These included gender, age, education level and the education level and highest level of occupation of each of the patient's parents, they were used to calculate a five-point socio-economic status (SES) index based on the Hollingshead two factor index of social position (Hollingshead, 1965). Information regarding family history of psychiatric illness was collected from patient, other family members and case notes.

Inter-rater reliability for each of the above indices was established based on independent assessments of 12 individuals by two raters. Two raters independently reviewed all available recorded information from patients, family members, case notes and clinicians. The intraclass correlation coefficient for all indices was  $\geq 0.80$ .

## RESULTS

### **Patient characteristics**

Table 1 presents some characteristics of the patients. Eighty per cent of patients are male

Table 1. *Characteristics of the sample (N = 110): values are percentages unless stated otherwise*

	%
Age (mean, median) (range)	(26.2, 23.4) (16 to 51)
Gender	
Male	80
Female	20
Highest level of education	
Less than high school	44.5
Completed high school	17.3
Attended university or college	25.5
Graduated university or college	12.7
Employment status	
Paid employment (full or part-time)	39.1
No paid employment	60.9
Living circumstances	
Living with family of origin	46.8
Living with spouse/partner	15.6
Living with others	15.6
Living on own	20.2
Other	1.8
Marital status	
Never married	81.8
Married or common law	11.8
Divorced/separated	6.3
Diagnosis	
Schizophrenia	49.2
Substance induced psychosis	15.5
Schizo-affective psychosis	12.7
Schizophreniform disorder	5.5
Major depression with psychotic features	4.5
Bipolar disorder with psychotic features	3.6
Delusional disorder	3.6
Brief psychotic disorder	2.7
Psychosis NOS	2.7

and, as might be expected in a first-episode sample, the average age is in the mid-20s. It is not unusual to have over two-thirds males in a sample of first-episode patients (e.g. Larsen *et al.* 1996; Browne *et al.* 2000) and approximately 75% of patients entering PEPP are male. Although the sample for this study does have a somewhat over-representation of males; as will be noted later, gender was not significantly related to the indices of delay that we are examining. Almost half the sample has not completed high school and just under 40% have paid employment, but these figures should be interpreted in light of the fact that approximately 25% are aged  $\leq 19$ , which is the typical age for completing high school in Ontario. Over two-thirds of the patients had a diagnosis at entry into the programme within the schizophrenia spectrum (schizophrenia, schizo-affective or

schizophreniform disorder). Of those patients for whom a 1-year follow-up diagnosis was available, 80% had a diagnosis within the schizophrenia spectrum of disorders. Our experience has been that after 1 year of additional observation a substantial proportion of those given an initial diagnosis of substance-induced psychosis or psychosis (not otherwise specified) are re-diagnosed as having schizophrenia or schizo-affective psychosis (Malla *et al.* 2002).

### Patterns of help-seeking

Seventy of the 110 patients in our sample did not have contact with a professional helper until after the onset of psychosis, whereas 40 had received a consultation before the presence of clear symptoms of psychosis. Of this latter group, 11 were seeing a therapist/counsellor on an ongoing basis when frank psychosis emerged and 29 were not.

For those patients who sought professional assistance before the onset of psychosis, the most common reasons for seeking help were related to feelings of sadness or depression (20%), anxiety or stress (20%) and cognitive disruptions such as memory or concentration problems, feelings of confusion and/or 'weird' distracting thoughts (15%) with lesser proportions being concerned with other problems such as fatigue, sleep problems, not wanting to be around others, anger or irritability and deterioration in self-care. Reports of family members who saw a need for professional consultation for their relative before the onset of psychosis tended to place more emphasis on change in behaviour (such as irritability, disruptiveness or withdrawal (28%)) and less on the more subjective symptoms of sadness or depression (10%) or problems with thought processes (<3%).

As one might well expect, explicit mention of hallucinations and/or delusional thinking were the most common reasons reported by those who sought help after the onset of psychosis (27% of both patients and families). Even after psychosis was present, dysphoric mood and anxiety were still reported as a primary reason for seeking help by 10% of both patients and families. It is also important to note that at least 35% of the patients did not see a need for help even after psychosis was present. In these latter

Table 2. *First contacts with helping professional*

	First contact	
	Before psychosis ( <i>N</i> =40) %	After psychosis ( <i>N</i> =70) %
Family physician or paediatrician	40	38.6
Hospital services/emergency room	10	42.9
Psychiatrist	20	5.7
Community or school counsellor, psychologist, social worker	30	12.9

cases contact was typically initiated at the suggestion of a family member.

Table 2 shows the type of professional or service initially consulted as a function of whether that consultation occurred before or after onset of psychosis. In order to meet the requirements for a chi-square analysis we combined professional services into four categories: family physicians or paediatricians; hospital-based services, most commonly emergency rooms; psychiatrists; or school, university or community-based counsellors, psychologists or social workers. Contrasting the figures for those whose first contact occurred before *versus* after the onset of psychosis yields a significant  $\chi^2$  ( $\chi^2 = 17.58$ , *df* = 3,  $P < 0.0001$ ). Hospital services, especially emergency rooms, are more likely to feature in the initial contact for those presenting after the onset of psychosis than for those presenting earlier. Non-medical community counselling or mental health professionals such as psychologists, social workers and counsellors, also appear somewhat more likely to be used by those who initiate seeking help before the onset of psychotic symptoms. A chi-square analysis contrasting the use of these non-medical services *versus* medical (including psychiatrists) as a function of whether treatment was initiated before or after psychosis was significant ( $\chi^2 = 4.84$ , *df* = 1,  $P < 0.05$ ).

Is there a significant difference in the nature of the first treatment contact after the onset of psychosis for those who did not have any contacts previously *versus* those who did? We examined the pattern of first service contact after onset of psychosis for the 40 patients who had initial contacts before psychosis. The percentage seeing a family physician or paediatrician was

25%, 37.5% went to an emergency room or other hospital service, 20% saw a psychiatrist and 17.5% the community or school counsellor, social worker or psychologist. Comparing these figures with those of the second column in Table 2 indicates that these patterns are not significantly different ( $\chi^2 = 6.71$ , *df* = 3, NS). This suggests that once symptoms of psychosis occurred, both groups showed a similar pattern of help seeking.

By far the most common types of service contacts at some point in pathways to care were visits to hospital emergency rooms (which featured in 68% of patients' pathways); family physicians (55%) and psychiatrists (44%). The most frequent service contact just before admission to PEPP and treatment with anti-psychotic medication was a hospital emergency room (49.1%), a psychiatrist in private practice or a non-emergency hospital service (26.4%); or a family physician (14.5%). Ten per cent of other penultimate service contacts were with other professionals such as school counsellors, clergy, social workers, etc.

#### Length of treatment delay

All indices of treatment delay tend to be quite positively skewed and so we will estimate averages using both medians and means. Of the 110 patients included in the sample, 104 had experienced no untreated episodes of psychosis prior to the presenting episode. Four had one previous untreated episode of psychosis and two had experienced two such episodes.

The mean delay between onset of the current episode of psychosis and initiation of adequate treatment was 61.1 weeks (s.d. = 100.8) with a median of 21.1 weeks. The average delays from first onset of psychosis (any episode) to initiation of adequate treatment was somewhat longer with a mean of 69.9 weeks (s.d. = 106.4) and median of 27.7 weeks. These estimates are certainly well within the range of comparable parameters reported elsewhere (Haas & Sweeny, 1992; Larsen *et al.* 1996; Robinson *et al.* 1999; Browne *et al.* 2000; Norman & Malla, 2001).

As noted earlier, we are particularly interested in the relative lengths of the components of delay in treatment that relate to time between onset of psychosis and first contact with a professional helper and between that first service contact and the initiation of appropriate

Table 3. Components of treatment delay (weeks)

Index		No contact prior to psychosis (N=70)	In treatment at onset of psychosis (N=11)	Sought help before but not in treatment at time of onset (N=29)
Total delay between onset of presenting episode of psychosis and initiation of adequate anti-psychotic therapy	Mean	56.2	101.9	57.6
	Median	19.7	28.1	19
Delay between onset of presenting episode and post-onset contact with professional helper*	Mean	31.5	3.2	16.9
	Median	7.3	0.3	3.6
Delay between first post-onset treatment contact and initiation of adequate anti-psychotic therapy*	Mean	24.7	98.7	40.7
	Median	2.6	23.0	4.3

\*  $P < 0.01$  for differences between groups using Kruskal–Wallis test.

treatment. Rather different conclusions might be drawn about the contribution of these two components depending on whether means or medians are contrasted. With respect to the delay from initial onset of psychotic symptoms, the mean length of time from onset to first service provider contact was 25.1 weeks (s.d. = 58.5) and from that first contact to initiation of adequate treatment the mean was 44.6 (s.d. = 88.5). This suggests that delay in initiation of adequate treatment after contact is a substantially larger contributor to the total delay period. On the other hand, when we examine medians for the two components they are identical (5.1 weeks). Similarly, when looking at delay in treatment from the onset of the current episode (the only episode for 95% of the sample) the mean number of weeks from onset to first service contact (24.7, s.d. = 58.3) is less than for delay between first contact and initiation of adequate medication (36.4 weeks, s.d. = 79.7), but the medians are very similar (4.6 and 4.4 respectively). These findings suggest that a relatively few individuals may be experiencing extremely long delays between initiation of service contact and establishment of a potentially effective regimen of antipsychotic medication.

It might be hypothesized that those who initiate contact with professional helpers before the onset of psychosis will have shorter treatment delays once psychosis occurs. Such patients would presumably be more likely to have recognized the presence of mental health problems and to have negotiated aspects of the pathways to psychiatric care. Furthermore, as noted earlier, some of these patients are actually seeing

a clinician on an ongoing basis when the psychosis has its onset. Such a combination of circumstances would suggest that they might more promptly receive adequate treatment once psychosis occurs.

In Table 3, we present the mean and median lengths of delay in getting treatment for the presenting episode of psychosis for three groups: the 70 individuals who did not have contact with professional helpers before the onset of psychosis; those 29 people who had contact prior to the onset of psychosis but were not seeing a professional on an ongoing basis at the estimated time of onset of psychosis and those 11 who were seeing such a professional on an ongoing basis at the time of the onset of psychosis. It is important to note that the estimates in Table 3 are related only to the time after psychotic symptoms began and estimates of delay are not, therefore, structurally confounded with whether help was initially sought before the onset of psychosis. Formal tests of the significance of difference between groups were carried out using the non-parametric Kruskal–Wallis test.

When we examine the total delay between the onset of the presenting episode and initiation of adequate therapy there is no evidence that having been seen by a health or social service professional prior to the onset of psychosis results in a more prompt initiation of adequate treatment once psychosis occurs ( $\chi^2 = 1.89$ ,  $df = 2$ , NS). Table 3 also provides information relevant to the two components of time between onset of presenting episode and first post-onset contact with service provider and time

between such post-onset contact and initiation of adequate antipsychotic therapy. As one would expect, those who are seeing a professional on an ongoing basis have to wait much less time for their first contact after onset of psychosis than those who have not been seen before with those who have been seen by a professional before but not on an ongoing basis having an intermediate level of delay ( $\chi^2=11.48$ ,  $df=2$ ,  $P<0.01$ ). We do, however, find it very noteworthy that the second component of delay – from professional contact to adequate treatment with antipsychotic is substantially longer for the two groups of patients who had been seen by a professional helper before the onset of psychosis and that this is especially the case for those who are being seen at the time of the onset of psychosis ( $\chi^2=11.57$ ,  $df=2$ ,  $P<0.01$ ). Table 3 shows that the mean delay between first post-onset treatment contact and initiation of adequate anti-psychotic medication for those being seen on an ongoing basis at the time of onset of psychosis is approximately four times that of those who only sought treatment after psychosis occurred and the median of the former is almost nine times that of the latter group. Those who had been seen before, but not at the time of onset of psychosis, had an intermediate length of delay. Such findings are consistent with our postulate that prior contact around mental health issues would facilitate access to professional help providers once psychosis occurred, but counter to the postulate that such contact would result in shorter delays to adequate treatment.

We also examined the following issues: (1) who were the professionals being seen by those who were receiving services at the time of onset of psychosis; (2) whether individuals in the three groups outlined in Table 3 differ in other aspects of their presentation; and (3) whether the differences reflect delay in initiating antipsychotic therapy *versus* successful engagement in adequate treatment.

Of the 11 individuals who were being seen by a professional at the time of onset of psychosis, four were being seen by a psychiatrist, three by a family physician, three by a counsellor or social worker and one by a psychologist.

Individuals who were being seen at the time of onset of psychosis; those who had sought help before onset of psychosis, but were not being

seen at the onset and those who did not seek help until after onset were contrasted on gender, age of onset of psychosis, history of drug or alcohol abuse, judged significance of alcohol or drug abuse as a contributor to onset, pre-morbid adjustment and level of symptoms at time of admission to PEPP. Symptoms at entry to PEPP were indexed by the global scales of the SAPS and SANS. There were no significant differences between groups on any of the foregoing variables.

Delay in instituting an adequate treatment regimen with antipsychotics could be a result of delay in attempting to initiate such treatment or poor adherence on the part of the patient. If the former was the primary factor we would expect the three groups to differ in length of time between first treatment contact after onset of psychosis and initiation of any treatment with antipsychotic medication. If adherence is important we would expect to find a longer delay between any initial prescription of antipsychotic medication and the achievement of adequate treatment. Those who were being seen on a regular basis at the time of onset of psychosis had a mean delay to first administration of an antipsychotic of 98.5 weeks and a median of 23 weeks. This was significantly longer than for those who had sought help before onset of psychosis, but were not being seen at time of onset (mean = 30.4, median = 4.14) or those who did not seek professional help until after onset (mean = 18.6, median = 1.4). A Kruskal–Wallis test revealed the difference between the three groups to be significant ( $\chi^2=14.0$ ,  $P=0.001$ ). There was no significant difference between the three groups in the delay between initial administration of an antipsychotic and achieving a likely adequate dosage of such medication; neither was there a significant difference between the three groups in ratings made by service providers during the first few months of treatment in PEPP on the Wisconsin Quality of Life Scale (Becker *et al.* 1993) item concerning patient adherence to their antipsychotic medication regimen.

### Other predictors of delay

Several additional variables were examined as potential predictors of delay. These included gender, age of onset of psychosis, SES of



parents, and whether there was a family history of psychotic illness. Relationships were examined using non-parametric tests (Spearman's rho or Mann-Whitney, as appropriate). With the exception of age of onset, none of these variables showed a significant relation to indices in Table 3 (relevant correlations varied between  $-0.08$  and  $0.09$ , all  $P$  values  $>0.30$ ). Given the large proportion of males in the sample, it is of particular interest that there was not a significant gender difference in the delay indices.

There was a modest correlation indicating that younger patients had longer overall delays to treatment ( $\rho = -0.21$ ,  $P < 0.05$ ). When examined with reference to the two components – delay to contact with service provider and delay from time of such contact to adequate anti-psychotic treatment, only the latter was significant ( $\rho = 0.25$ ,  $P = 0.01$ ), suggesting that younger patients do not have greater delay in making contact for help, but in the initiation of treatment. As noted earlier, the above results regarding patterns of help seeking and delay (those being seen at time of onset having longer delays) is not explained by differences in age of onset.

## DISCUSSION

The overall length of delay between onset of psychosis and initiation of adequate treatment in the patients in this study is very comparable to the average reported in a recent review of relevant literature (Norman & Malla, 2001). A median period of about 6 months (mean of  $>1$  year) elapsed between the initial onset of psychotic symptoms and initiation of adequate treatment with about 12% of individuals having delays of  $\geq 3$  years. As Lincoln & McGorry (1995) have noted such findings run counter to early models of pathways to care which assumed that individuals with psychotic illness would quickly gain access to appropriate psychiatric care (Goldberg & Huxley, 1980, 1992). Such delays are of concern not only because they can represent prolonged, unnecessary periods of acute suffering for the ill individuals and their families, but also because the nature of the treatment received in the first few years in particular may have an influence on long-term outcome (Birchwood & McMillan, 1993; Birchwood, 2000).

It is not surprising that use of medical services – especially family physicians, psychiatrists and hospital based emergency services are prominent features in our patients' pathways to care, especially once psychosis had occurred. The finding that family physicians were a first point of contact for almost 40% of patients once psychosis had occurred and were involved at some point for 55% of patients is consistent with other findings concerning their importance in help seeking for first-episode psychosis (Lincoln & McGorry, 1995; Larsen *et al.* 1998). Lincoln *et al.* (1998) report remarkably similar findings for first-episode patients in Melbourne, Australia – 36% of initial helper contacts beginning with general practitioners and 50% of patients contacting them at some point in seeking care after onset of psychiatric illness. Our data certainly suggest the importance of targeting family physicians/general practitioners and emergency room staff in any efforts to reduce treatment delay for patients presenting with initial onset of psychotic disorders.

Attempts to reduce delay in treatment of first-episode psychosis are likely to be more effective when we understand where delays occur in pathways to care (Lincoln & McGorry, 1995; Larsen *et al.* 1998; Lincoln *et al.* 1998; Fuchs & Steinart, 2002). Most approaches to reducing treatment delay for initial onset of psychosis focus on education of the general public about the signs of psychotic illness and the need for treatment (Scholten *et al.* 2004) and/or making sure that health care professionals are alert to the possible presence of such illness in those who consult them and, if present, the need for delivery of prompt, appropriate treatment (McGorry *et al.* 1996; Malla & Norman, 1999; Jorgensen *et al.* 2000; Johannessen *et al.* 2001). The likely importance of interventions directed at potential sufferers in comparison to members of helping professions is at least partially a function of the prominence of delays from onset of illness to first service contact as opposed to delays from service contact to implementation of adequate treatment. The data reported in this paper represents the most systematic attempt, yet reported, to examine the relative contribution of these two components of treatment delay. It is also noteworthy because it is based upon the largest sample of patients yet studied in relation to pathways to care for first-episode psychosis

patients and was not restricted to or dominated by those who accessed care through admission to in-patient units (compare, Cole *et al.* 1995; Larsen *et al.* 1998; Lincoln *et al.* 1998; Fuchs & Steinart, 2002).

The apparent importance of the two components of treatment delay varies depending on whether one examines means or medians. For the total sample, the median length of time from onset to first treatment contact and from first contact to initiation of adequate treatment were very similar. This suggests that both interventions aimed at helping the general public to recognize possible signs of psychosis and seek help and educate helping professions to recognize psychotic illness and facilitate prompt treatment are equally important.

When delay medians are examined, however, it appears that the delay from first contact with a professional helper to initiation of adequate treatment can be particularly long for some patients. Further analysis showed that this second component of treatment delay was likely to be particularly long for patients who were initially seen by service providers before the onset of psychosis and were actually being seen on an ongoing basis when onset occurred. The prolonged delay in accessing treatment for this group does not appear to be related to these patients being unusual in terms of age, gender, level of drug or alcohol abuse, symptoms. Furthermore, the results suggest that the greater delay for those being seen at onset of psychosis was more a reflection in delay of prescribing antipsychotic medication than in patients' willingness to take such medication.

Why would patients who are being seen at the time of onset of psychosis by professionals such as psychiatrists, family doctors and mental health counsellors appear to be at a disadvantage for prompt initiation of treatment once psychotic symptoms occur? One might expect such professionals to be able to recognize psychosis and the importance of appropriate treatment. Perhaps because the patients initially sought help for other psychiatric problems, practitioners are less likely to identify the presence of psychotic symptoms and/or less likely to interpret such symptoms as signs of a psychotic disorder requiring treatment. It is possible that having seen a patient for other complaints (stress, anxiety or mood) results in a set wherein

symptoms of psychosis are either not as readily attended to or are attributed to causes other than psychotic illness and treatment other than antipsychotics are continued. Another possibility is that patients already in treatment are less likely to consider any new symptoms significant or worthy of being reported. Such possibilities are consistent with Larsen *et al.*'s (1998) that a marked or more acute onset of psychotic symptoms is more likely to attract attention and treatment than the same symptoms when they occur in the context of more prolonged mental health or adjustment difficulties.

The findings that those with a younger age of onset have a somewhat longer delay in receiving antipsychotic medication once seen by a professional is also noteworthy. It is understandable that there would be some hesitancy to prescribe such medication to younger patients. To the extent that evidence accumulates for a relationship between delay in initiation of treatment and outcome, such hesitancy may have to be reassessed.

## Conclusion

It appears that both delay to seeking help and delay from contact with a helping professional to receiving adequate treatment are important contributors to the often reported lengthy delay in receiving treatment for psychosis. Our findings suggest that while education of the public to recognize and seek help for symptoms of psychosis is important, one cannot assume that once contact with family physicians, mental health professionals and emergency room staff occurs, an expedited pathway to treatment of psychotic disorders will follow. While our findings require replication in other settings, they certainly suggest that those who are receiving professional consultation at the time of onset of psychosis may be at particular risk of treatment delay.

Further research is required to assess the extent to which similar patterns are found elsewhere with respect to components of treatment delay and to evaluate the effectiveness of various forms of interventions to expedite help seeking and provision of treatment once contact with professional helpers has been made.

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