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Unmet Need for Mental Health Services among People Screened but not Admitted to an Early Psychosis Intervention Program

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Abstract

Information is lacking on people screened for early psychosis intervention (EPI) but not admitted to the program. Using health administrative data, we constructed a retrospective cohort of incident cases of psychosis in the catchment of an EPI program. Use of mental health services was compared between people screened and not admitted with an EPI-admitted group. The non-admitted group had higher rates of subsequent emergency department visits, psychiatric hospitalizations, and involuntary admissions. These patterns are indicative of unmet need, and people screened but not admitted to EPI may benefit from protocols to improve transitions of care with other service providers.

Keywords: early intervention; psychosis; mental health services; health administrative data

1. Introduction

Early psychosis intervention (EPI) programs have been shown to be effective for improving symptomatic and functional recovery and increasing quality of life and patient satisfaction with care (Kane et al, 2016; Norman et al, 2005). These programs provide comprehensive, phase-specific treatment during the early stages of illness to patients who have not previously received treatment for psychosis (McGorry et al, 2007). EPI services typically require clients to meet a defined set of inclusion criteria, which may impose restrictions on age, diagnosis, co-morbidities, length of illness, or prior duration of antipsychotic treatment. Referrals to EPI programs are typically screened for eligibility and are either admitted to the program or referred to a more appropriate service. As previous research identified high rates of mental illness among these non-cases (O'Donoghue et al, 2012), there is reason to believe that this population may have a high need for ongoing mental health care. Despite the increasing availability of EPI programs, there has been a notable lack of research describing the characteristics and ongoing health service needs of people screened for EPI who are not admitted to the program. This information has implications for the development, planning, and efficiency of EPI services.

Here we examine incident cases of non-affective psychotic disorder who were screened for EPI services but not admitted to the program (non-admitted group). We used 17 years of linked health administrative data from a well-established EPI program in Ontario, Canada. Our objective was to compare ongoing patterns of mental health service use between non-admitted and EPI-admitted groups across several health system indicators.

2. Methods

This study used data from the Prevention and Early Intervention for Psychosis Program (PEPP) in London, Ontario, which has provided EPI services to a catchment of approximately 425,000 people since 1997. New cases of non-affective psychotic disorder are eligible for admission if they are between 16 and 50 years of age, have less than 30 days of prior antipsychotic use, do not have a diagnosis of an intellectual or developmental disability, and have no outstanding legal matters (i.e. forensic patients). Further details on the PEPP program have been presented elsewhere (Norman & Manchanda, 2016).

The methodology used in the current study has been described in detail previously (Anderson et al, 2018a 2018b). Using linked health administrative data from the Institute for Clinical Evaluative Sciences (ICES) in Ontario (Supplemental Table 1), we created a retrospective cohort (1997-2013) of incident cases of non-affective psychotic disorder among people aged 16 to 50 years who presented to services in the catchment area of the PEPP program. People were included if they had received a diagnosis of non-affective psychosis, either from an inpatient hospitalization or from two physician or ED visits occurring within a one-year period (Kurdyak et al, 2015).

To identify EPI clients (EPI-admitted group), we performed a deterministic linkage of our retrospective cohort with primary data from the PEPP program using encrypted health insurance numbers (96% linkage rate) of all admitted clients. We also linked the physician registration numbers for all psychiatrists who worked in the EPI program during our case ascertainment window. As these psychiatrists did not provide clinical services outside the EPI context, any person who had contact with an EPI psychiatrist, but had not been admitted to the program, was considered to have been screened for the program but not admitted (non-admitted group).

We extracted information on socio-demographic characteristics, clinical indicators, and service-use indicators at the index diagnosis of psychosis. We constructed outcome indicators of mental health service use in the two-year period following EPI-contact (Supplemental Table 2). To make the groups more comparable for our analysis of outcome measures, we matched the non-admitted and EPI-admitted groups on year of index diagnosis and caliper of the propensity score using a variable ratio of up to 1:4 (Austin 2014). Propensity scores were constructed using logistic regression to model the exposure variable (non-admitted/EPI-admitted) as a function of observed covariates to yield a probability of exposure for each person. A description of the propensity score model can be found in Supplemental Table 2.

We used Cox proportional hazards models with robust variance estimators to compare ongoing patterns of mental health service use. Observations were censored at the end of the follow-up period, death, or termination of OHIP eligibility. All analyses were conducted using SAS version 9.4 (SAS Institute, Cary NC USA). The study protocol was approved by the Health Sciences Research Ethics Board at the University of Western Ontario. The de-identified patient-level data were linked using encrypted identifiers, and were analyzed on site at ICES.

3. Results

Our algorithm identified 4,430 incident cases of non-affective psychosis in the program catchment area (Supplemental Figure 1). Of those, 1,813 had contact with the EPI program over the 17-year period for screening, and 58% (n=1,059) were screened but not admitted to the EPI program. This represents a referral to case ratio of 2.4:1.

Socio-demographic, clinical, and service-use characteristics of the two groups are presented in Supplemental Table 3. Compared to EPI-admitted, people in the non-admitted group were more likely

to have a previous history of alcohol-related disorder (18.5% vs. 6.8%), substance-related disorder (27.4% vs. 14.9%), and more likely to have had a psychiatric hospitalization in the past 6-months (19.5% vs. 5.2%).

The non-admitted and EPI-admitted groups were well balanced on socio-demographic, clinical, and service-use characteristics after matching (Supplemental Table 3). Over the two-year follow-up period after EPI contact, the non-admitted group had nearly twice the rate of primary care use for mental health reasons compared to EPI-admitted group (HR=1.85, 95%CI=1.49-2.13) and were much less likely to have contact with a psychiatrist (HR=0.25, 95%CI=0.22-0.29). People in the non-admitted group had higher rates of ED use for mental health reasons (HR=1.82, 95%CI=1.52-2.17), higher rates of psychiatric hospitalization (HR=1.27, 95%CI=1.06-1.49), and higher rates of involuntary admissions (HR=1.33, 95%CI=1.09-1.61). We found no evidence of differences in rates of self-harm behavior, suicide, or all-cause mortality (Table 1).

4. Discussion

Given the widespread proliferation of EPI programs over the past two decades, there is a notable lack of research describing suspected cases of first-episode psychosis who are screened but not admitted to EPI services. One prior study has described the characteristics of “non-cases” at the time of referral to EPI services, and found that the majority had clear mental health needs (O’Donoghue et al, 2012) – our findings suggest that these people continue to have high rates of ongoing mental health service use, and the higher rates of ED visits and involuntary admissions we observed may be indicative of unmet healthcare needs. Furthermore, our findings illustrate that persons not admitted to EPI were more likely to have a prior alcohol- or substance-use disorder. Although this was not an exclusion criteria for the program, there may be benefits to expanding EPI

capacity to include concurrent disorder management given the high prevalence of alcohol and substance abuse among persons presenting to EPI services (Van Mastrigt et al, 2004). The large proportion of newly-diagnosed cases of non-affective psychosis who did not access the EPI program for screening or referral has been discussed in detail in a previous report (Anderson et al, 2018b).

There are numerous reasons why suspected cases of first-episode psychosis may be ineligible for an EPI program, including a lack of a primary psychotic disorder, subthreshold or attenuated psychotic symptoms, duration of prior antipsychotic use, inability to commit to the program, being outside of the permitted age range, the EPI program is not perceived to align with recovery goals, or having a current outstanding legal matter, which may interfere with participation in the program. Although the administrative data limits our ability to discern the reasons behind non-admission, recent data from the EPI program (2015) suggest that less than 10% of people who were assessed for EPI refused admission. Further research on the reasons behind program non-admission is needed to inform strategies to better support this population going forward.

Currently, there is little understanding of the care pathways following EPI screening. In Ontario, the guidelines for EPI suggest that programs should provide support to facilitate the referral to more appropriate services (Ontario Ministry of Health and Long Term Care, 2011). Procedures and best practices for facilitating this process may differ depending on available services, however, they are currently not well defined, and our findings suggest that current guidelines may be insufficient for ensuring adequate support and follow-up. Integrated Care Pathways (ICP) represent one potential avenue to facilitate supportive follow-up of people who are screened but not admitted to EPI programs because of a lack of eligibility or refusal to participate. Recently developed ICPs for psychosis from the United Kingdom (Rathod et al, 2016) and elsewhere in Ontario (Neaeem et al, 2016) provide a step-by-step plan for the treatment and timeline of patient care for psychosis.

Acknowledging and integrating the needs of people not-admitted to EPI would facilitate timely follow-up and treatment in this population, with the objective of reducing service contacts and improving overall transitions of care.

Our findings also highlight the relevance of recent reforms in youth mental health service delivery, which have been designed as one-stop shops for youth with mental illness (Malla et al, 2016). These diagnostically neutral models of care with minimal eligibility criteria could help reduce some of the unmet need for mental health care among people who are screened but not admitted to EPI services. However, these programs would not provide support for the majority of the non-admitted group, who were over the age of 25.

In addition to the lack of information regarding reasons for non-admission, our results are limited by available data, as we are likely missing information on other characteristics that define people who are screened but not admitted to EPI services – examples include symptom severity and level of functioning. We also lack information on temporal changes in community outreach for the EPI program during the study window, which will have influenced the non-admitted population.

To our knowledge, this is the first study to explore ongoing mental health service use among people who are screened but not admitted to an EPI program – our findings highlight the need for standardized protocols to facilitate transitions of care for this population. We found evidence to suggest that these people have high levels of ongoing mental health service use, and the higher rates of aversive service contacts may be indicative of unmet need. Further research on the reasons behind EPI non-admission is needed to inform the development and implementation of specialized follow-up and treatment plans.

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Table 1: Patterns of ongoing mental health service use of people screened but not admitted to early psychosis intervention (EPI) services, relative to people who were admitted, in the two-year period following EPI contact. The groups were matched based on year of index diagnosis of psychosis and a propensity score which included socio-demographic, clinical, and prior service use characteristics.

Outcome	EPI-Admitted			Non-Admitted				
	%	Time to Event, Days*	Median, IQR	%	Time to Event, Days*	Median, IQR	HR	95% CI**
Contact Primary Care	45.8%	99	33, 298	68.6%	103	34, 252	1.85	1.49, 2.13
Contact Psychiatrist	98.2%	14	5, 28	79.8%	61	18, 154	0.25	0.22, 0.29
Emergency Department Visit	23.2%	300	99, 470	36.9%	151	49, 328	1.82	1.52, 2.17
Hospitalization	31.6%	185	57, 346	38.4%	178	61, 286	1.27	1.06, 1.49
Involuntary Admission	26.0%	217	27, 390	33.0%	157	52, 308	1.33	1.09, 1.61
Self-Harm	<=0.5%	571	571, 571	<=0.5%	652	232, 707	2.77	0.32, 25.00
All-Cause Mortality	<=0.5%	81.5	73, 90	<=0.5%	218	74, 346	1.35	0.26, 7.14

**Among those with event; **Additionally adjusted for inpatient status at index date, specialty of diagnosing physician, and prior psychiatrist contact; N/A = not available due to small cell suppression; EPI = Early Psychosis Intervention; IQR = interquartile range; HR = Hazard Ratio; CI = Confidence Interval*