Aftercare, Emergency Department Visits, and Readmission in Adolescents

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Objective: U.S. and Canadian data demonstrate decreasing inpatient days, increasing nonurgent emergency department (ED) visits, and short supply of child psychiatrists. Our study aims to determine whether aftercare reduces ED visits and/or readmission in adolescents with first psychiatric hospitalization. **Method:** We conducted a population-based cohort analysis using linked health administrative databases with accrual from April 1, 2002, to March 1, 2004. The study cohort included all 15- to 19-year-old adolescents with first psychiatric admission. Adolescents with and without aftercare in the month post-discharge were matched on their propensity to receive aftercare. Our primary outcome was time to first psychiatric ED visit or readmission. Secondary outcomes were time to first psychiatric ED visit and readmission, separately. **Results:** We identified 4,472 adolescents with first-time psychiatric admission. Of these, 57% had aftercare in the month post-discharge. Propensity-score–based matching, which accounted for each individual's propensity for aftercare, produced a cohort of 3,004 adolescents. In matched analyses, relative to those with no aftercare in the month post-discharge, those with aftercare had increased likelihood of combined outcome (hazard ratio [HR] = 1.22, 95% confidence interval [CI] = 1.05–1.42), and readmission (HR = 1.38, 95% CI = 1.14–1.66), but not ED visits (HR = 1.14, 95% CI = 0.95–1.37). **Conclusions:** Our results are provocative: we found that aftercare in the month post-discharge increased the likelihood of readmission but not ED visit. Over and above confounding by severity and Canadian/U.S. systems differences, our results may indicate a relative lack of psychiatric services for youth. Our results point to the need for improved data capture of pediatric mental health service use. J. Am. Acad. Child Adolesc. Psychiatry, 2012;51(3):283–293. **Key Words:** mental health services, aftercare, continuity of care, emergency psychiatry, readmission

Across North America, there have been calls to make the mental health of young people a priority.[1,2] One in five children in community samples has clinically significant psychiatric symptoms.[1,3] Childhood psychiatric disorders have negative, compounding effects on multiple domains of child development[4] and are associated with school failure, unplanned pregnancy, crime, and adult psychiatric disorders.[1] Psychiatric illness at all stages of life is associated with increased medical illness, greater medical health services use, and increased mortality.[5-7] However, less than one-fourth of children with clinical psychiatric disorders receive specialized psychiatric care.[1,8] Pediatric mental health care, including supply, distribution, accessibility, and outcomes of services, is an area of intense clinical, fiscal, and policy interest.

There has been a shift from hospitalization to outpatient mental health care delivery, driven by fiscal restraint and ethical desire to treat children in the least restrictive setting.[9,10] U.S. data support that whereas the number of hospital discharges for youth remained stable between 1990 and 2000,[9] the median length of stay (LOS) decreased from 12.2 to 4.5 days,[9-11] even as hospital case-mix reflected increasing proportions of seriously ill youth with psychotic, depressive, and bipolar disorders.[9] Both shorter LOS[12-15] and diagnoses of psychotic and affective disorders[16-18] have been associated with increased likelihood of readmission. Rates of psychiatric readmission for children and adolescents

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from U.S. data continue to range from 33% to 38% in the year post-discharge.[13,16,19]

It is presumed that decreased inpatient care is offset by increased outpatient services; yet, both U.S. and Canadian practice environments have been reported as having an inadequate supply of child psychiatrists for provision of estimated need for specialized outpatient care.[20,21] Reported rates of psychiatric aftercare for U.S. children and adolescents vary widely, depending on type of aftercare and setting. Aftercare rates as high as 73% have been reported for the month post-discharge.[22] One-year aftercare rates range from 42% to 90%.[23-25] Longer LOS[26] and prior inpatient or outpatient mental health service[22,27] have been associated with increased receipt of aftercare.

In the context of decreasing LOS, the association between shorter LOS and increased readmission, and the association between longer LOS and increased receipt of aftercare, it may not be surprising that the emergency department (ED) is increasingly called upon to provide mental health services.[28-30] Approximately 2% to 5% of all U.S. ED visits for youth are related to psychiatric symptoms.[30,31] Psychiatry-related ED visits are increasing because of presentation of nonurgent diagnoses, often secondary to referral by school or mental health provider or to lack of available outpatient appointment.[28] Impacts of increased prevalence of mental disorder,[32,33] increased help-seeking,[34] or models of mental health service provision[35] on this phenomenon have not been investigated.

Clinical acumen supports that outpatient psychiatric care post-discharge promotes and sustains recovery by improving medication compliance, addressing psychological factors contributing to illness, increasing psychosocial support, and providing rapid response to illness exacerbations; yet, current research to support this is minimal.[36] Clinical and policy efforts in the United States and Canada have invested heavily in outpatient continuity and continuum of care with the aim of reducing expensive, intrusive inpatient treatments, and enhancing overall quality of mental health care provided to youth. Even so, it remains the case that there are no studies evaluating the impact of aftercare on ED use in youth with psychiatric disorders, and the empiric data on the impact of aftercare on readmission are sparse. Available studies are few, have small sample sizes, and vary considerably in design, methodology, data sources, and definition of readmission. Of five available U.S. studies, one found that fewer post-discharge service hours led to increased rate of readmission (univariate analysis)[12]; three studies had nonsignificant results[13,18,37]; and one study found a statistically significant two- to threefold increase in likelihood of readmission associated with aftercare in the 30 days post-discharge (multivariate analysis).[19]

The very limited available Canadian research appears at least not to contradict U.S. findings. Psychiatric disorders have surpassed physical injuries as the main reason for the hospitalization of Canadian youth.[38] Canadian adolescents admitted to psychiatric inpatient units have severe symptoms.[39] Canadian readmission and aftercare rates appear comparable to reported U.S. rates.[39] In Canada, use of the ED for pediatric mental health emergencies has increased.[40] Canadian youth admitted for psychosis and receiving clinical treatment post-discharge were 2.7 times more likely to be readmitted.[39]

Pediatric outpatient psychiatric care, ED visits, and readmission are clearly a complex, interconnected system that is only partially elucidated. Clinical and policy efforts require a more populated and nuanced evidence base. Our current study evaluated the impact of psychiatric aftercare on both readmission and ED visits for adolescents after first psychiatric hospitalization.

METHOD

Design

We established a retrospective cohort by linking multiple health administrative databases over 2 years using encrypted identifiers to track individuals over time.

Setting

Ontario, Canada, is a province of 12,160,282 persons, 6.85% of whom are between the ages of 15 and 19 years.[41] Health care in Canada is a publicly funded, open-referral system. Although cost may not be an impediment to access to service, there are supply and access factors that influence whether a patient will seek and/or obtain health services.[42,43]

Mental health services for Ontario youth occur in a variety of settings and along a spectrum of intensities. Psychiatrists, general practitioners (GPs), family physicians (FPs), pediatricians, nurses and nurse practitioners (NPs), social workers, counselors, psychotherapists, psychologists, teachers, and other professionals