

The Frequency of Emergency Department and Crisis Services Visits for Patients with Borderline Personality Disorder with Differing Models of Care

Ramamohan Veluri¹, Stacey Roles^{2,*}

¹Associate Professor of Psychiatry, Northern Ontario School of Medicine (NOSM) University, Ontario, Canada

²Roles & Associates Psychotherapy Services Inc, & CBT Training Centre of the North Sudbury, Assistant Professor, Northern Ontario School of Medicine (NOSM) University, Ontario, Canada

*Correspondence should be addressed to Stacey Roles, stacey@rolespsychotherapy.com

Received date: June 03, 2025, **Accepted date:** July 04, 2025

Citation: Veluri R, Roles S. The Frequency of Emergency Department and Crisis Services Visits for Patients with Borderline Personality Disorder with Differing Models of Care. J Ment Health Disord. 2025;5(1):93–97.

Copyright: © 2025 Veluri R, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Frequent users of the emergency department (ED) are a small percentage of ED patients but account for a large percentage of visits. Given the cost to the health care system, it is important to explore strategies to prevent unnecessary visits. A prospective chart review of frequent users diagnosed with psychiatric illness in Emergency and Crisis services at one hospital was conducted. Detailed analysis was also completed on the subgroup of these patients diagnosed with borderline personality disorder (BPD) and/or self-harming behaviors to determine the impact of two models of psychiatric care on subsequent crisis or ED visits in the year after the index visit. The majority of patients presenting for mental health issues did so once. The mean number of subsequent presentations to the ED was 5.00, demonstrating that a small number of patients presented often. Patients with BPD and/or self-harming behaviors in a model of care that offered increased access to other services were less likely to have return visits. Patients with psychiatric issues often present at the ED and Crisis. Accessibility to supportive community care services can reduce the number of ED and Crisis visits.

Keywords: Urgent care, Borderline personality disorder, Accessibility, Emergency department

Introduction

Canadian hospitals spend close to \$2 billion on emergency department (ED) care. In Ontario, estimates by the Canadian Institute for Health Information (CIHI) indicate that the average amount spent on each visit is \$148 [1]. More recent CIHI data also suggest that the annual number of ED visits in Canada will increase from 15 million per year in 2013 to over 21 million in 2043 (or an increase by 40%) [2]. Given the rising number of ED visits and the corresponding cost to the health care system, it is important to explore strategies for avoidable or preventable visits to the ED, coupled with directing resources that ensure access to appropriate quality care. One study demonstrated that approximately 35% of all ED visits were related to minor physical injuries with normal physiology and of this patient population, an estimated 44% had a psychiatric diagnosis [3]. Frequent users of the ED tended to make up a small percentage of ED patients but accounted for a large

percent of visits, 3% and 18%, respectively according to one study [4]. Predictors of frequent ED use include limited social support, homelessness, cocaine positive-toxicology screen, documented personality disorder/traits, self-reported alcohol and substance use, and psychotic illness/antipsychotic medication use [4–7]. In particular, studies show that patients with borderline personality disorder (BPD) commonly present to urgent care. For example, the results of a four-year study in a tertiary hospital in Spain demonstrated that BPD was the diagnosis in 9% of the visits. The authors concluded that the vast majority of these visits could have been avoided or prevented if the patients had been able to access appropriate care in the community [8]. The reasons for psychiatric patients' use of the ED and crisis services vary, however, many do so because they are unable to access care in the community [9]. In addition, urgent care centers most often do not have the appropriate resources to care for patients with complex mental health concerns, such as those with BPD [9].

BPD is a complex and multidimensional disorder. Patients present with a wide range of comorbidities with traits of affective instability and impulsivity, including self-harming behaviors. Although overall prognosis is good, many people with BPD will require lengthy treatment [10]. Psychotherapy treatment for BPD helps to stabilize patients so access to therapy should be a priority [10]. It is common for patients to stop treatment prematurely, usually when they have noticed some improvement. If symptoms then worsen due to the abrupt discontinuation of treatment, previously accessed resources may no longer be in place, leaving the ED and Crisis as the most available options.

It is well documented that the model of care for patients with complex psychiatric presentations impacts their use of ED. In one study, a transitional psychiatric clinic bridged patients after an ED visit and showed increased attendance at aftercare along with lengthened time without ED presentation [11]. A full-service partnership program in one community at the California Institute for Mental Health has the philosophy of doing “whatever it takes” to help individuals to recover and achieve wellness. This program is patient-centered with services focused on individual patient needs with an outcome of reducing the use of urgent care [12].

In another example, a model of shared care between psychiatrists and family doctors in northern Ontario, Canada significantly reduced wait times for patients with psychiatric disorders [13]. Other studies examining the care of patients with BPD demonstrated that the availability of a variety of treatment options tailored to the acuity and level of complexity of their presentations had the best outcomes [10]. These studies showed that directing resources that addresses the mental and physical health needs of this population of patients in a timely manner in the community helped to reduce the burden of mental illness and thereby the number of crisis events and visits to the ED.

In Sudbury, Ontario there are two unique models of psychiatric care; the first a traditional care model where patients with BPD or self-harming behaviors who present to the ED, or crisis, are referred to see one of many psychiatrists with practices in the city, or to their own psychiatrist if they are already receiving care. The patients are given a follow up appointment with the psychiatrist when available. In the second model, an office manager who knows the patients well, assists in triaging needs and appointment times with their psychiatrist. In this second model of care there are also transdiagnostic psychotherapy groups facilitated by the psychiatrist to provide timely psychotherapy and psychopharmacology treatment and adjustments, assist with work-life stressors, and facilitate admission to hospital if necessary. This model depicts availability of psychiatrist and crisis intervention strategies in the moment as needed.

Study

The aims of this study were to first identify the characteristics of frequent crisis department and ED users with BPD and self-harming behavior at a hospital in Sudbury, Ontario, Canada. Secondly, this study aimed to determine the impact of two models of psychiatric care; the traditional model that was utilized at the hospital, and the triage by office manager to psychiatrist model on the frequency of subsequent crisis or ED visits in the year after the marked index visit. This project is a prospective chart review aimed at characterizing the population of frequent users diagnosed with psychiatric illness and has the potential to target evidence-informed clinical interventions.

Methods and Materials

Health Sciences North (HSN) is the largest hospital in northern Ontario, Canada and is the only tertiary care hospital within an area encompassing several hundred kilometers. It offers urgent care services for people with mental health issues through the ED and the affiliated crisis department. There are many mental health care resources in the area, but they are mostly clustered in the city of Sudbury proper. The catchment area for psychiatric services encompasses the entire region which includes a large rural area and many small towns. This large geographical region with the cluster of service locations may be a barrier to some and adds to the importance of exploring differing models of psychiatric care [14].

A prospective chart review was conducted to collect data on patients aged 18–59 who utilized ED and crisis services at HSN in 2015. This age range was chosen to focus on the adult population excluding the youth and geriatric populations as per organizational definitions. Ethics approval was received from Health Sciences North Research Ethics Board project number 17101 and Laurentian University Research Ethics Board file number 6012449 to collect a dataset from patient files from HSN. Variables included psychiatric diagnoses, the dates and reasons for ED visits including crisis events, the use of crisis services and the number of total admissions to psychiatric in-patient care. In addition, data was collected about presentations to community mental services including the physician follow-up timeline post crisis event and the frequency of visits to the ED before and after the initial ED visit in 2015.

Data was obtained from HSN charts which included visits to the ED and Crisis services as well as to the Psychiatric Outpatient Clinic and other outpatient mental health clinics. Data from the charts were also obtained from two standardized patient assessments tools. The tools are provincially mandated and are completed by regulated clinical staff, not including psychiatry, when a patient presents for mental health services. The first tool

is the Common Data Set Mental Health (CDS-MH) assessment. The CDS-MH is used for collecting administrative and clinical data for community mental health patients across Ontario [15]. The second assessment tool mandated provincially is the inter Resident Assessment Instrument Mental Health (RAI-MH). The RAI-MH is a comprehensive standardized instrument for evaluating the needs, strengths, and preferences of adults with mental illness in inpatient psychiatric settings [16] and at HSN is completed by nurses from the inpatient units. Both of these tools also provide information about where the patient was seen and by whom. For example, if a Psychiatric Outpatient Clinic visit with a psychiatrist occurred, the mandated tools would identify this. Further, the CDS-MH identifies if a visit to an outpatient center including the emergency department and crisis services occurred as it is completed at that time and a completed RAI-MH represents a psychiatric inpatient admission as is it completed upon admission.

Results

There was a total of 73,116 ED visits to the target hospital in 2015, 40,055 of which were for patients between the ages of 18 and 59. Of this latter group, 2,879 presented with mental health issues. In particular, 220 ED visits were related to BPD and/or self-harming behavior. The remaining highest mental health presentations to the ED included; mental and behavioral disorders due to psychoactive substance use, depressive episode, unspecified, anxiety disorder, unspecified, acute stress reaction, unspecified nonorganic psychosis and schizophrenia, unspecified.

Of the 220 BPD and/or self-harming presentations, there were 192 unique patients. Of these, 129 patients presented once to ED and did not have a follow up ED or crisis presentation. 63 of the 192 unique patients (32.8%) accounted for an additional 66 ED visits within one year from their index visit and 157 visits to crisis. These 63 patients accounted for 286 total visits (including index) to ED/crisis within a one-year time frame.

This clearly suggests that there were differences in the level of acuity of this group of patients with BPD and/or self-harming behavior.

Many patients had evidence of a Psychiatric Outpatient Clinic, a completed CDS-MH, or RAI-MH, either individually or in combination with one or both (**Table 1**). Analysis of variance showed that the differences in ED and crisis counts for these groups is significantly different ($p=0.01$). To determine which groups were significantly different from each other a Tukey Multiple Pairwise Comparison test found that subjects receiving all care, Psychiatric Outpatient Clinic+Common Data Set Mental Health+Resident Assessment Instrument Mental Health 83/192 (43%), have a significantly higher count of ED and crisis than subjects using none ($p=0.03$). The subjects who use the aforementioned services also had the highest use of ED and Crisis services. Not surprisingly, these findings suggest that the clients who utilize all services more often are the same patients who also utilized the ED and crisis most often.

Overall, the mean number of ED and crisis visits for all subjects in the study period (not including the index visit) was 2.3. The minimum was 0 and the maximum 70.

There were a large number of subjects with no visits to either ED or crisis aside from the index visit. Fifty-four percent (104/192) of subjects had only one visit to ED or crisis in the study period before or after the index visit. Considering ED and crisis separately, 80% of patients did not have additional ED visits in the year before or the year after the index visit and 59% of subjects did not visit crisis services in the years before or after the index visit. Considering only the subjects who had at least one additional visit to ED or crisis, the mean number of visits in the study period was 5.0. **Figure 1** shows the number of ED or crisis visits grouped by whether the subject had a CDS-MH visit to an outpatient center including the ED and crisis services, an RAI-MH, inpatient admission visit, or was seen in the Psychiatric Outpatient Clinic, for outpatient psychiatry.

Table 1. Frequency of Psychiatric Outpatient Clinic visits and Completion of Common Data Set Mental Health or Resident Assessment Instrument Mental Health.			
Group	N	Mean # ED+crisis	SD
Psychiatric Outpatient Clinic only	10	0.1	0.32
Common Data Set Mental Health only	12	0.58	1
Resident Assessment Instrument Mental Health only	13	0.15	0.38
Common Data Set Mental Health + Psychiatric Outpatient Clinic	13	2.23	2.28
Resident Assessment Instrument Mental Health + Psychiatric Outpatient Clinic	17	0.24	0.44
Common Data Set Mental Health + Resident Assessment Instrument Mental Health	13	0.92	1.04
Common Data Set Mental Health + Resident Assessment Instrument Mental Health + Psychiatric Outpatient Clinic	83	4.66	10
NONE	31	0.03	0.18

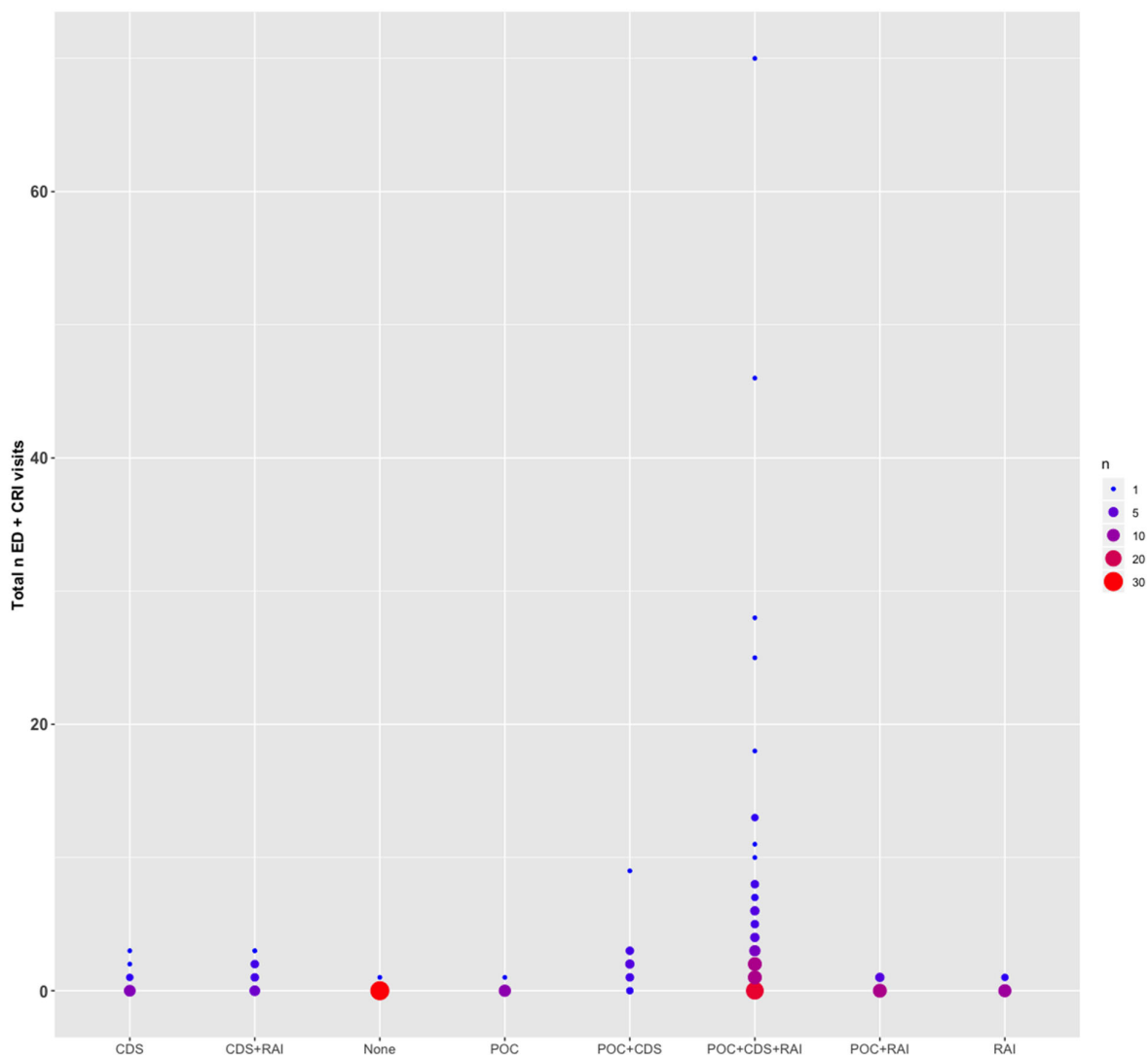


Figure 1. Number of ED and crisis visits grouped by whether the subject had a Common Data Set Mental Health, a Resident Assessment Instrument Mental Health and was seen in Psychiatric Outpatient Clinic.

A generalized linear model with a negative binomial distribution was found to be the most appropriate for analyzing factors affecting the number of ED and crisis visits. The response variable, the total number of ED and crisis visits per patient in the year before and after the index visit, is represented by a count of the number of visits for each study subject. Other variables in the model included the number of Psychiatric Outpatient Clinic visits (outpatient psychiatry), CDS-MH (visits to an outpatient center including the emergency department and crisis services) or RAI-MH (inpatient admissions) assessment was done during the study period indicating the number of times the subject was seen during the study period. For those 121 subjects who had a CDS-MH assessment, 15 of them were done on the same day as the index visit, 72 were done after the visit date and 34 were completed before the visit date. A total of 126 subjects had a

RAI-MH assessment done, 3 of which were done on the same day as the visit date, 15 were done before the visit date and 108 were completed afterwards. Also included in the model were the subject’s age and sex, and whether the index visit indicated that there was self-harm and/or a BPD diagnosis.

A regression analysis was selected based on the stepwise method using the Akaike Information Criterion which is used to strike a balance between model fit and complexity. The best fitting model found that the following variables were significant at $p < 0.05$: the number of Psychiatric Outpatient Clinic visits, whether a CDS-MH assessment was done, and whether a RAI-MH assessment was done. Sex was trending toward significance, and it helped improve model fit; therefore, it was kept in the model (**Table 2**).

Table 2. Final model output.			
Coefficients	Estimate	Std. Error	Pr(> z)
Intercept	-2.88891	0.44977	1.34E-10
Total Psychiatric Outpatient Clinic	0.0396	0.01144	0.00054
Common Data Set Mental Health any	2.85205	0.42236	1.45E-11
Resident Assessment Instrument Mental Health any	0.78554	0.32879	0.01688
sex: Male	0.47763	A 0.26066	0.0669

All variables in the model except for sex were significant at a p value <0.02. However, sex had a p value of approximately 0.07 and was trending toward significance. In addition, male subjects had a higher expected count of ED and crisis visits (p= 0.07).

Below we present a **Table 3** showing the expected counts of ED and crisis. We stop at 20 Psychiatric Outpatient Clinic visits since there were only 6 subjects with greater than 20 visits (2 male, 4 female).

These results indicate that the subjects who do not require a Psychiatric Outpatient Clinic, RAI-MH and CDS-MH present the least often to ED and crisis. Subjects requiring ‘Psychiatric Outpatient Clinic only’ with less than 20 Psychiatric Outpatient Clinic visits in the study period present to ED and crisis less often than the subjects who also have a CDS-MH or RAI-MH assessment. Having a CDS-MH, or a RAI-MH, or being male increased the expected count of ED and crisis visits. Analysis showed that as total Psychiatric Outpatient Clinic visits increased, so did predicted ED and crisis visits. Self-harm and/or BPD at index visit were not found to be significant predictors of the number of ED + crisis visits during the study period.

Psychiatric Outpatient Clinic: standard vs unique model of care

We conducted several analyses to determine if there were differences between the ED and crisis visits of patients

receiving traditional care or care in the unique triaged model. There were 123 subjects (64.1%) seen in Psychiatric Outpatient Clinic either before or after the index visit. Of these, 70 subjects had a Psychiatric Outpatient Clinic visit prior to the index visit, 117 had a Psychiatric Outpatient Clinic visit after the index visit and 64 subjects had a Psychiatric Outpatient Clinic visit both before and after the index visit. For this group of 64 subjects, we calculated the overall mean time between the last Psychiatric Outpatient Clinic visit before the index and the next Psychiatric Outpatient Clinic visit after the index visit as 104 days.

For the first model of care, for everyone with a Psychiatric Outpatient Clinic visit prior to the index (70 subjects), the mean time between the Psychiatric Outpatient Clinic visit prior to the index visit including the date of the index visit itself was 76 days. For everyone with a Psychiatric Outpatient Clinic visit following the index (117 subjects), the mean time between the Psychiatric Outpatient Clinic visit after the index visit and the date of the next Psychiatric Outpatient Clinic visit was 77 days.

Six subjects were seen in the unique practice model, with a setup meant to allow more accessibility. Of these six subjects, five were seen in Psychiatric Outpatient Clinic both before and after the index visit. The mean time between the last Psychiatric Outpatient Clinic visit before the index visit and the next Psychiatric Outpatient Clinic visit after the index visit for these five subjects was 44 days, compared to the

Table 3. Expected counts of ED and crisis visits.				
#Psychiatric Outpatient Clinic Visits	Common Data Set Mental Health Completed	Resident Assessment Instrument Mental Health Completed	Sex	Expected # of Visits
None	No	No	Female	0.056
None	Yes	No	Female	0.964
None	No	Yes	Female	0.122
None	No	No	Male	0.09
1	No	No	Female	0.058
10	No	No	Female	0.083
20	No	No	Female	0.183

much larger mean for the other 59 subjects in the traditional practice model at 109 days. As the caveat that the sample size for the accessible practice model is small ($n=5$ vs $n=59$), we carried out Welch's two sample t test for comparing means with unequal variances and found that the accessible practice model subjects have a significantly shorter time between Psychiatric Outpatient Clinic visits ($p=0.0001$).

We then used Fisher's Exact Test for Count Data to analyze differences in the number of ED and crisis visits, by practice model. While not reaching statistical significance ($p>0.05$) the findings are still clinically relevant and warrant additional study. Again, with our small sample size, this result should be interpreted with caution, however, clinically, in this Psychiatric Outpatient Clinic subset, 4/6 (66.7%) of subjects in the accessible practice model had 0 ED and crisis visits while in the traditional practice model, 45/117 (38.5%) of subjects had 0 ED and crisis visits.

For the unique practice model, the mean time between the Psychiatric Outpatient Clinic visit prior to the index visit and the date of the index visit itself was 21 days (5 subjects). For everyone with a Psychiatric Outpatient Clinic visit following the index (6 subjects), the mean time between the Psychiatric Outpatient Clinic visit after the index visit and the date of the next Psychiatric Outpatient Clinic visit was 24 days. For the traditional practice model, the mean time between the Psychiatric Outpatient Clinic visit prior to the index visit and the date of the index visit itself was 80 days (65 subjects). For everyone with a Psychiatric Outpatient Clinic visit following the index (111 subjects), the mean time between the Psychiatric Outpatient Clinic visit after the index visit and the date of the next Psychiatric Outpatient Clinic visit was also 80 days.

Discussion

This study adds to the body of knowledge about characteristics of patients with mental health issues who present to ED and crisis services. The majority of patients had only one visit to ED or crisis in the study period, and of those who had at least one additional visit, the mean number of visits was 5.00. A small number of individuals had a high number of visits, suggesting either a lack of access to community care, highly complex cases resistant to treatment, or a combination of both [3,4,8,17]. Of interest and worthy of future research is the finding that the number of ED and crisis visits for male patients in this study was trending toward significance.

Limitations

There were several limitations to this study. Firstly, the small sample size, based on one year of index visits to the ED and Crisis services at a single northern Ontario hospital, limited statistical significance in many areas. Secondly, while the study utilized provincially standardized tools, the focus on a single organization's definitions of populations including age range

restricted exploration of broader variables and populations. Further, trends observed in comparing care models are interesting but not generalizable due to the limited sample. The data collected also did not include the full number of BPD or self-harm patients in the triage model who did not access ED or crisis services ($n=17$). Also, group psychotherapy sessions within the triage model (offered twice per month) were not fully captured in the HSN charts. Larger, more comprehensive studies are needed, including broader age categories and more diverse data points.

Conclusions

The cost of urgent mental health care—through ED and crisis services—is high for both the health system and the individuals experiencing mental health challenges. Strategies that reduce avoidable visits are essential, particularly for individuals with complex psychiatric presentations. This study confirms that a small group of patients with BPD and/or self-harming behavior are disproportionately represented in ED and crisis visits. Focusing psychiatric, psychotherapeutic, and pharmacological resources on these high-utilization patients may reduce overall burden on acute services. Greater access to community-based services is a critical factor in addressing the needs of these vulnerable populations. While the unique care model reviewed here involved a small number of patients, early findings suggest it may hold promise for targeted interventions. Future research should continue to evaluate models of care and their outcomes on system use and patient wellness.

References

1. Dawson H, Zinck G. CIHI Survey: ED spending in Canada: a focus on the cost of patients waiting for access to an in-patient bed in Ontario. *Healthc Q.* 2009;12(1):25–8.
2. Canadian Foundation for Healthcare Improvement. The impact on emergency department utilization of the CFHI healthcare collaborations and initiatives. 2013. Available from: <https://www.cfhi-fcass.ca/docs/default-source/about-us/corporate-reports/risk-analytica.pdf>.
3. Richmond TS, Hollander JE, Ackerson TH, Robinson K, Gracias V, Shults J, et al. Psychiatric disorders in patients presenting to the Emergency Department for minor injury. *Nurs Res.* 2007 Jul-Aug;56(4):275–82.
4. Vandyk AD, VanDenKerkhof EG, Graham ID, Harrison MB. Profiling frequent presenters to the emergency department for mental health complaints: socio-demographic, clinical, and service use characteristics. *Arch Psychiatr Nurs.* 2014 Dec;28(6):420–5.
5. Chang G, Weiss AP, Orav EJ, Rauch SL. Predictors of frequent emergency department use among patients with psychiatric illness. *Gen Hosp Psychiatry.* 2014 Nov-Dec;36(6):716–20.
6. Boyer L, Dassa D, Belzeaux R, Henry JM, Samuelian JC, Baumstarck-Barrau K, et al. Frequent visits to a French psychiatric

-
- emergency service: diagnostic variability in psychotic disorders. *Psychiatr Serv.* 2011 Aug;62(8):966–70.
7. Chaput YJ, Lebel MJ. An examination of the temporal and geographical patterns of psychiatric emergency service use by multiple visit patients as a means for their early detection. *BMC Psychiatry.* 2007 Oct 29;7:60.
 8. Pascual JC, Córcoles D, Castaño J, Ginés JM, Gurrea A, Martín-Santos R, et al. Hospitalization and pharmacotherapy for borderline personality disorder in a psychiatric emergency service. *Psychiatr Serv.* 2007 Sep;58(9):1199–204.
 9. Zun LS. Pitfalls in the care of the psychiatric patient in the emergency department. *J Emerg Med.* 2012 Nov;43(5):829–35.
 10. Paris J. Stepped care: an alternative to routine extended treatment for patients with borderline personality disorder. *Psychiatr Serv.* 2013 Oct;64(10):1035–7.
 11. McCullumsmith C, Clark B, Blair C, Cropsey K, Shelton R. Rapid follow-up for patients after psychiatric crisis. *Community Ment Health J.* 2015 Feb;51(2):139–44.
 12. Brown TT, Chung J, Choi SS, Scheffler R, Adams N. The impact of California's full-service partnership program on mental health-related emergency department visits. *Psychiatr Serv.* 2012 Aug;63(8):802–7.
 13. Haggarty JM, Jarva JA, Cernovsky Z, Karioja K, Martin L. Wait time impact of co-located primary care mental health services: the effect of adding collaborative care in northern Ontario. *Can J Psychiatry.* 2012 Jan;57(1):29–33.
 14. Ontario Ministry of Health and Long-Term Care. Health Services in Your Community. Hospital Locations and Classifications by LHIN. 2019. Available from: <http://www.health.gov.on.ca/en/common/system/services/hosp/northeast.aspx>.
 15. Government of Ontario. Common Data Set / Mental Health (CDS-MH). 2021. Available from: <https://www.ontario.ca/data/common-data-set-mental-health-cds-mh>.
 16. Canadian Institute for Health Information. The Resident Assessment Instrument—Mental Health (RAI-MH). Ottawa: CIHI; 2013.
 17. Sullivan PF, Bulik CM, Forman SD, Mezzich JE. Characteristics of repeat users of a psychiatric emergency service. *Hosp Community Psychiatry.* 1993 Apr;44(4):376–80.