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Reasons explaining high emergency departments use among patients with common mental disorders or substance-related disorders

Abstract (100 words)

AIMS: Study examined reasons for high emergency department (ED) use among patient with common mental disorders (MD), substance-related disorders (SRD) or co-occurring MD-SRD. **METHOD**: Following content analysis, 42 high ED users (3+ visits/year), recruited in two Quebec (Canada) ED were interviewed. **RESULTS**: Reasons included barriers to outpatient care, patient disabilities, and professional practices. Patients with SRD trust outpatient services less, those with MD had important unmet needs, while those with MD-SRD faced care coordination issues. **CONCLUSION**: Improvements are needed in ED and outpatient services to enhance access and continuity of care: ED use monitoring, consolidating MD-SRD practices and continuous training.

Short annotation (50 words)

Following content analysis, this study examined reasons for high emergency department (ED) use among patient with common mental disorders (MD), substance-related disorders (SRD) or co-occurring MD-SRD. Reasons included barriers to outpatient care, patient disabilities, and professional practices. Improvements are needed in ED and outpatient services to enhance access and continuity of care.

Key words: emergency departments, high users, mental disorders, substance-related disorders, healthcare system, patient experiences, qualitative study

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Author contributions

MJF received the study funding and led the research. FF and LF helped in the recruitment of study participants. KMD, MJF, and LG designed the plan for data analysis. KMD and MJF wrote the article. FF, LF, and LG reviewed the article prior to submission. All authors approved the submitted version.

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Declaration of conflicting interest

The authors declare that there is no conflict of interest.

Ethics Approval

The Douglas Mental Health University Institute Ethics Committee approved the study protocol. Analyses reported in this paper were also approved by the Comité d'éthique de la recherche en science de la santé of the University of Montreal. Research procedures were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

Data Availability Statement

Healthcare Policy follows also the ICMJE Privacy and Confidentiality policy. In accordance with the relevant ethics regulations, the principal investigator is responsible for preserving confidentiality of the data.

Manuscript (3,499 words, one figure and three tables)

Introduction

Emergency departments (ED) are used as a first or last service resort when seeking help for acute conditions, or when outpatient resources have been exhausted (Fleury et al., 2019; Navas et al., 2022). A significant number of patients account for a disproportionate amount of ED use; they are referred to as high ED users, defined by 3+ ED visits/year – the lowest standard for high ED use (Pines et al., 2011). High ED use is costly, and contributes to ED overcrowding (Morley et al., 2018). Patients with mental disorders (MD), including substance-related disorders (SRD), are often reported as high ED users (Moe et al., 2021; Roennfeldt et al., 2021). Most studies on high ED users with MD are based on hospital health records, and investigate sociodemographic and clinical patient characteristics predicting high ED use (Kromka et al., 2019). High ED users with MD are more likely to have a low income, limited social networks, multimorbidity, recurring health issues, and serious MD (e.g., schizophrenia) or co-occurring MD-SRD (Casey et al., 2021).

Few qualitative studies have explored the reasons why patients with MD repeatedly use ED. For these patients, the decision to use ED instead of outpatient care is rarely taken lightly, nor perceived as desirable (Schmidt et al., 2018). Reasons for disproportionate ED use include difficulty in accessing effective treatment (Wise-Harris et al., 2017), limited alternatives to ED use when in crisis (Aagaard et al., 2014), previous negative outpatient experiences, and lack of continuous care (Vandyk et al., 2018). Patients included in these studies usually experienced acute mental distress or complex health conditions (Wise-Harris et al., 2017), or displayed disruptive behaviors that led relatives, the police, or other clinicians to referring them to ED (Poremski et al., 2020).

To our knowledge, no previous qualitative study has investigated reasons for high ED use among patients who exclusively have common MD (e.g., anxio-depressive disorders). Only two have studied patients with SRD (McCormack et al., 2015; Parkman et al., 2017), and they

found that few were inclined to receive SRD treatments, mostly because of motivational barriers or engagement issues. Common MD are the most prevalent type of MD (McGrath et al., 2023), though MD are known to often co-occur with SRD (Huỳnh et al., 2020). MD treatments, usually provided in primary care, have been consolidated in current reforms (NICE, 2011). However, historically, services have focused on patients with serious MD (Fleury et al., 2016). Patients with co-occurring conditions are found to be more difficult to treat, turning alternately to mental health or addiction services without much integration between these (Gaulin et al., 2019). Ascertaining reasons for high ED use, especially for patients with common MD, SRD, or MD-SRD, could offer insights to improve services, especially as these patients may display different needs, patterns of service use, and barriers to care.

This study is based on a conceptual framework adapted from an existing implementation model (Fleury et al., 2019) integrating mental healthcare system features (adequacy, accessibility, continuity of care), patient profiles (urgent and recurrent biopsychosocial problems, support systems, individual disabilities), and professional practices (knowledge of and comfort in treating MD or SRD, quality of exchanges with patients, collaboration between clinicians) influencing ED use. It examined reasons for high ED use by comparing the perspectives of patients with common MD, SRD, or co-occurring MD-SRD, and aspects patients identified as helpful in decreasing ED use.

Methodology

Study context

In Quebec (Canada), health and social services are mostly public, covering medical and some psychosocial services (Martin et al., 2018). Primary mental healthcare relies on general practitioner clinics and community healthcare centers (mainly providing psychosocial services). The mental healthcare system is complemented by helplines, crisis centers, suicide prevention centers, and detox centers mostly operated by community-based organizations, and

counseling services dispensed by psychologists working mostly in private practice. Specialized care is provided in psychiatric departments of general or psychiatric hospitals, or in the case of SRD, in addiction treatment centers (MSSS, 2022). Patients access public MD services mostly through one-stop services in community healthcare centers.

Study setting, data collection, analytical dimensions

Data from this qualitative study came from a larger mixed-methods research on high ED users with MD, conducted in Quebec health territories serving roughly one fourth of the province's population (Fleury et al., 2020). Two health territories were selected for the present study, including a psychiatric ED in a university region with specialized care, teaching, and research mandates, and a general ED from a peripherical region with MD staff but less specialized care. Participants had to be 18 or older, high ED users (3+ ED visits/year for MD or SRD issues), speak French or English, be functional enough to be interviewed – if intoxicated or in psychosis their interview was postponed –, and grant the research team access to their medical records. Randomized recruitment was done between March 1st, 2021 and May 13th, 2022, through a list of 1,008 ED users (identified by ED staff) meeting the aforementioned criteria. Of the first 308 patients reached, 247 agreed to be referred to the research team and be contacted for an interview. To be selected for the qualitative study, patients had to have common MD or SRD only, or co-occurring common MD-SRD. All patients with such diagnoses were included in this study, with an equal number of patients coming from each of the two ED sites. Patients provided prior consent and received a $20 compensation. The multisite protocol was approved by the human research ethics board of the Douglas Mental Health University Institute ethics board.

Phone interviews for the larger project lasted about one hour. They included closed- and open-ended questions, and were conducted by trained staff using an online platform. Medical records for the 12-month preceding interviews were used to confirm high ED use and

MD or SRD diagnoses. ED use was measured using data from an ED use database (BDCU), while MD or SRD diagnoses came from a hospitalization database (MED-ECHO). Common MD and SRD diagnosis codes were based on the International Classification of Diseases, Tenth Revision (ICD-10). Common MD included: anxiety; depressive, adjustment, and attention deficit/hyperactivity disorders; and SRD: alcohol and drug use – induced, use, intoxication, or withdrawal (**Appendix 1**). As SRD tend to be underdiagnosed in medical records (Huỳnh et al., 2021), two standardized scales were included in the interviews and merged with results from medical records: the Alcohol Use Disorders Test (AUDT) (Bohn et al., 1995), and the Drug Abuse Screening Test-20 (Skinner, 1982).

Self-reported quantitative patient sociodemographic variables included: sex, age group, education, civil and employment status, personal income, housing situation. The open-ended questions (**Appendix 2**) took about 20 minutes to complete, out of the one-hour interview time. The interview guide was validated by a steering committee of ED experts, including clinicians and managers, created to support the study design. The open-ended questions, which were recorded then transcribed, focused on reasons explaining high ED use, on the other services patients had used before ED, on recommendations to avoid high ED use, on services that would better respond to their needs, and on what most helped recovery.

Analyses

Descriptive analyses were produced from the quantitative data, while content analysis was used for the qualitative data, allowing themes to emerge (Vaismoradi et al., 2013). The process involved six steps: (1) familiarization with data; (2) generating initial codes and the analysis grid; (3) combining codes into themes; (4) reviewing themes and verbatims for consistency and completeness; (5) presenting and describing themes clearly, with relevant quotes; (6) interpreting the data. The aforementioned conceptual framework guided the analysis, categorizing reasons contributing to high ED use in mental healthcare features, patient

profiles, and professional practices (**Figure 1**). Themes were examined according to their frequency and percentage of patients reporting them. Data saturation was reached when themes were found to represent enough of the data (Saunders et al., 2018). Study rigor was ensured by combining different strategies: training and close monitoring of the research team, research tools validation by the steering committee, keeping a reflective journal (Patton, 2015). Three team members produced the analysis involving an inter-judge agreement on 10% of the verbatims to minimize the impact of personal biases.

Results

Of the 247 ED users referred to the research team, 31 were unreachable, 61 declined to participate, and 155 had completed the larger study's interview – a 72% response rate. Of these, 42 had common MD and/or SRD (n=21 per site), and were classified in one of three groups: 43% (n=18) common MD only; 40% (n=17) SRD only; 17% (n=7) co-occurring MD-SRD. Of these patients, 43% were women, median age 42 years old, 48% had a post-secondary diploma, 74% were single, 74% on welfare, and 10% were living in supervised housing (**Table 1**). About half the patients with MD reported trying to reach a general practitioner before using ED. In contrast, very few patients with SRD or co-occurring MD-SRD reported seeking help in outpatient services. Reasons leading to high ED use and aspects identified as helpful in decreasing such use are summarized in **Table 2**. Quotes from patients are presented in **Table 3**.

Mental healthcare system

For all patients, the main reasons for high ED use were associated with mental healthcare system accessibility, and adequacy to respond to urgent MD or SRD crises. ED was considered the most accessible (free, open 24/7), responsive, safe, and appropriate service for patients facing a crisis. Many talked about the lack of alternative services; other services were usually closed between 5pm-9am and on weekends, and lacked resources. Patients were often referred to ED by relatives or outpatient care providers. Most participants had trouble accessing

regular outpatient care: family doctors, social workers, psychiatrists, free public psychologists. For patients with MD and MD-SRD especially, procedures to access MD services via one-stop services were found complex and lengthy, with wait times of over six months not being uncommon.

Most patients mentioned lack of continuity of care as another reason for high ED use, with many lacking a regular care provider offering close follow-up care. Patients with a regular care provider often felt follow-up care wasn't adapted to their needs, and that their provider's responses to urgent requests weren't swift enough. Patients didn't consider this optimal for recovery, as it left them alone and could worsen their health conditions. The few patients who received public psychosocial counseling criticized the limited number of sessions available to them.

Contrasts emerged in patients with SRD and MD-SRD who were more anxious to receive adapted follow-up care from a trusted provider. They found having to deal with different clinicians (general practitioners, MD and SRD specialists) and to constantly repeat their personal history disruptive, which negatively impacted their hopes of progress and recovery. Outpatient services that, when available, were identified as helpful included psychosocial services for patients with MD and SRD, specialized addiction treatments for those with SRD or MD-SRD, along with case management for the latter.

Patient profiles

Patient profiles explaining high ED use were mostly associated with urgent and recurrent biopsychosocial problems. Patients viewed their high ED use as inevitable considering their multiple, complex health issues. Most reported ED visits were due to psychological and physical distress – panic attacks, acute gastro-intestinal issues, etc. More than half reported intoxication problems or issues with medication, while a few had social problems – grievances, interpersonal conflicts, etc. ED were used as a last resort when patients

could no longer self-regulate and had no one else to turn to. Most participants talked about lacking emotional and psychological support from their relatives, clinicians, or peers. Compliance aside, patients with MD complained more about medication being prescribed too hastily, with no adequate information nor consideration for their overall conditions, which could lead to adverse events.

Disabilities or limitations related to the patients' conditions, and lack of health literacy were also driving high ED use. Most struggled with impairment symptoms linked to their conditions (loss of stamina/autonomy), and had trouble recognizing and communicating their symptoms, triggers, and needs. That was especially true of patients experiencing new acute symptoms and patients with ongoing SRD or MD-SRD. Many of those participants explained how feeling misunderstood and stigmatized isolated them, leading to periods of withdrawal, low self-esteem, and risky behaviors, and how they'd wait for their conditions to become acute and overwhelming before seeking help, all of which could heighten ED use. More contrast emerged from patients with SRD who were preoccupied about being autonomous, to the best of their ability, upon returning to their living environment after addiction treatment. This was a key reason for relapsing and led to repeated ED use.

For all patients, having a non-judgmental social network was viewed as helpful to maintain good mental health and reduce ED use. Proper medication, providing patients more information on their conditions and available resources (especially for those with MD), and helping them develop symptom management capabilities were identified as key components for decreasing ED use.

Professional practices

High ED use reasons linked to professional practices were mostly associated with the patients' perception of the clinicians' lack of knowledge or comfort towards treating MD and SRD. This was especially true of general practitioners, nurses, emergency doctors, and in

complex crises, which favored revolving-door services and discouraged patients. About half the patients felt their biopsychosocial conditions were not fully evaluated, and care not appropriately planned for their multiple needs. They felt being evaluated for acute symptoms only, which didn't support recovery and led to high ED use. It often took several outpatient or ED visits to be referred to appropriate outpatient services.

Patients were also critical of the quality of communication with some clinicians, mentioning they felt judged, not taken seriously, hastily sent home, thus contributing to the stagnation of their conditions and high ED use. Patients with SRD or MD-SRD particularly felt treated differently. Clinicians were perceived as working in silos, leading to patient confusion on prognosis and treatments, and subsequent high ED use. Destigmatization and better-informed assessments were identified as key drivers to improving professional practice. Finding trustworthy, stable healthcare providers who didn't judge patients, and receiving patient-centered treatments that catered to their needs contributed to lower ED use.

Discussion

This qualitative study explored reasons for high ED use in patients with MD, SRD, or co-occurring MD-SRD. Factors leading to high ED use were mostly linked to mental healthcare features, followed by patient profiles and professional practices. The main reasons found in this study were close to those uncovered in previous ones, that included all types of MD and SRD (Poremski et al., 2020; Wise-Harris et al., 2017). ED use was mainly driven by a complex interplay of factors whose cycles led to high ED use. A few notable differences were identified distinguishing needs and barriers to recovery for patients with MD, SRD, or co-occurring MD-SRD. Patients with MD felt they should receive more comprehensive MD care from general practitioners and psychosocial resources, integrating patient-centered-care and self-management strategies (Menear et al., 2020). Echoing a previous study (McCormack et al., 2015), patients with SRD showed less interest and trust in outpatient services, preferring to

self-manage until needing acute care. Patients with SRD, including with MD-SRD, were lacking integrated care, and experiencing more stigmatization and lower self-esteem (Huỳnh et al., 2020).

Overall, high ED use was mostly found to be justified by insufficient access to outpatient care, lack of ED alternatives in outpatient care when in crisis, and insufficient care continuity. Underlying reasons explaining insufficient access to appropriate care by patients echoed challenges reported in other studies on mental healthcare systems: insufficient resources, restrictive opening hours, and poor care integration (Canadian Mental Health Association, 2023). Several past reforms have aimed to improve access, continuity, and quality of mental health services, and especially primary care mental health teams were consolidated after 2005 (Fleury et al., 2016). However, requests for help exceed available resources, and long waiting lists prioritizing the least functional patients persist (Vérificateur général et al., 2023), which explains why patients are frequently being referred to ED. In Quebec, it may be appropriate to increase the mental healthcare budget, which represents 5-7% of the province's global healthcare budget, to a figure closer to 13% in the UK (Bartram, 2019). Outpatient care, community-based services, and early interventions (Colizzi et al., 2020) could be consolidated.

Even patients who received outpatient services often felt these lacked patient-centered (Walsh et al., 2022) and recovery-oriented treatments (Mousavizadeh et al., 2023), thus contributing to negative care experiences, distress, and high ED use. While studies have shown that patients with common MD favored psychosocial services over medication (Casey et al., 2021) and that public coverage for psychotherapy has been proven effective in countries like UK and Australia (Clark, 2018; Cromarty et al., 2016), most of these services are not covered in Quebec (Vasiliadis et al., 2015). Psychosocial services, including psychotherapy, should be more accessible to the province's population, as an approach combining psychosocial and medication is often recommended (Weeghel et al., 2019).

Study results also outlined the overall vulnerability of high ED users who were mostly poor, had limited networks, a low sense of self-efficacy and a strong feeling of hopelessness. These patients' difficulty to prevent, recognize or communicate distress were commonly mentioned as barriers to recovery, leading to high ED use – as shown in other studies (Slankamenac et al., 2020). As previously noted (Schmidt et al., 2018), patients turned to ED when they were no longer able to self-regulate and sought emotional relief (feeling safe and heard), short-term solutions (diagnosis and medication), or recovery planning. To prevent ED use, primary care organized according to the chronic care model (Wagner et al., 2001), including better MD and SRD detection, should be further implemented, with integration of the stepped-care model along with patient symptoms management training. ED should monitor better high ED users, and embrace known strategies to reduce high ED use – e.g., individual care plans, case management, peer-support initiatives (Gabet et al., 2023), short-stay crisis units (Gabet et al., 2020; Wheeler et al., 2015). Several new ED strategies are being deployed in Quebec's current Mental Healthcare Plan (MSSS, 2022) to reduce acute care use (e.g., short-stay crisis units (Anderson et al., 2022)), but no initiatives are promoted or prioritized to reduce high ED use. Addiction liaison teams (Blanchette-Martin et al., 2016; Musgrave et al., 2018) that use motivational approaches (Schwenker et al., 2023) could be more consolidated in ED, and better integrated with other key community partners to reinforce treatment adherence among patients with SRD.

Providing adequate outpatient care was also found to be a key factor protecting against high ED use. In this study as in previous ones (Gentil et al., 2021; Vandyk et al., 2018), many patients felt misunderstood and not properly evaluated by primary care clinicians, which contributed to treatment delays. Studies exploring clinician perspectives on high ED users also reported challenges regarding complex case assessments, mentioning insufficient time spent with patients, lack of best practices guidelines, and the inclination to transfer patients to more

specialized care (Bodenmann et al., 2021; Li et al., 2022). These findings support the need to develop evidence-based clinical practices in line with Quebec's "*From Self-Care to Psychotherapy* Program" (MSSS, 2021) for MD management, and continuous training on MD and SRD (Karazivan et al., 2017) for primary care clinicians and other psychosocial care providers. Teamwork (Rosen et al., 2018) and collaborative care between psychiatrists and primary care clinicians (Fleury et al., 2021) may also be better implemented to address complex biopsychosocial issues. Ultimately, ED should not replace outpatient care.

Limitations

This study has limitations. First, given the stigma patients with MD or SRD encounter, participants may not have disclosed all pertinent information, and memory bias may have hindered such information. Second, the studied ED had specialized psychiatric staff and were in large urban territories, limiting generalization to other ED or areas. Third, the perspectives of high ED users' relatives and clinicians were not accounted for; seeking those perceptions could provide additional insights. Finally, the study results may not be generalizable to other mental healthcare systems, notably those without universal healthcare coverage.

Conclusion

This study found that patients identified multiple barriers to outpatient care, disabilities related to their conditions, and professional practices that explained their high ED use. Patients with MD were faced with important unmet needs, while patients with SRD mostly differentiated themselves by their lack of trust in outpatient services, and those with MD-SRD especially struggled with care coordination issues. This led to potentially disruptive cycles in patient recovery, with ED being used to alleviate distress and inadequate care. Study findings support the need to improve outpatient services for high ED users. Greater investments are needed in Quebec's mental healthcare system to enhance access to and continuity of diversified care, especially as pertains to psychosocial services. Extending teamwork and collaborative

care may help consolidate mental health evidence-based practices in primary care, with continuous training contributing to the reduction of ED use. High ED users might be monitored more extensively, and strategies such as integrated MD-SRD treatments deployed to help these patients. Breaking the cycles leading to high ED use will require efforts from all parties involved in the mental health system.

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Annexes

Figure 1: Conceptual framework of reasons reported by patients for high emergency department use

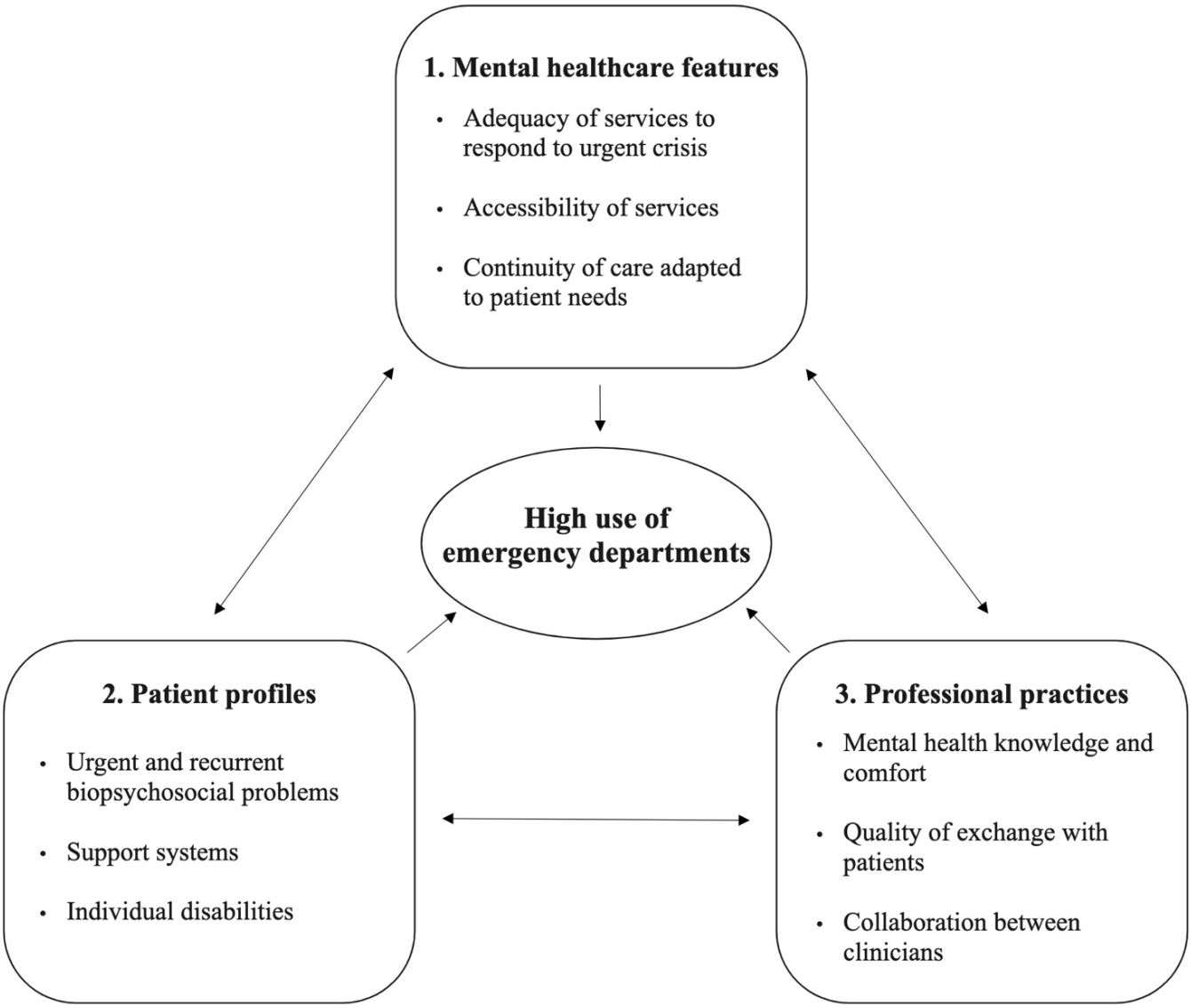
1. Mental healthcare features
• Adequacy of services to respond to urgent crisis
• Accessibility of services
• Continuity of care adapted to patient needs
High use of emergency departments
2. Patient profiles
• Urgent and recurrent biopsychosocial problems
• Support systems
• Individual disabilities
3. Professional practices
• Mental health knowledge and comfort
• Quality of exchange with patients
• Collaboration between clinicians

Table 1: Sociodemographic characteristics of patients with common mental disorders (MD), substance-related disorders (SRD) or co-occurring common MD-SRD

	Common MD[a]		SRD[b]		Co-occurring MD-SRD		Total	
	n=18	**42.86**	**n=17**	**40.48**	**n=7**	**16.67**	**n=42**	**100**
	N[c]	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Sex								
Women	8	44.44	6	35.29	4	57.14	18	42.86
Men	10	55.56	11	64.71	3	42.86	24	57.14
Age (years)								
19-35	11	61.11	3	17.65	1	14.29	15	35.71
36-73	7	38.89	14	82.35	6	85.71	27	64.29
Education								
Secondary	11	61.11	8	47.06	3	42.86	22	52.38
Post-secondary	7	38.89	9	52.94	4	57.14	20	47.62
Civil status								
Single, separated, divorced	10	55.56	14	82.35	7	100	31	73.81
Common-law, married	8	44.44	3	17.65	0	0	11	26.19
Employment status								
Work or study	2	11.11	3	17.65	1	14.29	6	14.29
On welfare	16	88.89	11	64.71	4	57.14	31	73.81
Retired	0	0	3	17.65	2	28.57	5	11.9
Personal income ($/year) (n=39)								
0-19K[d]	1	6.25	7	46.67	3	42.86	11	28.95
20-39K	6	37.5	5	33.33	3	42.86	14	36.84
40+K	9	56.25	3	20	1	14.29	13	34.21
Housing situation								
Owned housing	7	38.89	2	11.76	1	14.29	10	23.81
Rented housing	11	61.11	12	70.59	5	71.43	28	66.67
Supervised housing	0	0	3	17.65	1	14.29	4	9.52

[a]MD: mental disorders, [b]SRD: substance-related disorders. [c]N: number of patients within group, [d]K: thousands of Canadian dollars.

Table 2: Reasons reported for high emergency department (ED) use among patients with common mental disorders (MD), substance-related disorders (SRD) or co-occurring common MD-SRD

Groups	MD[a] n=18	SRD[b] n=17	MD-SRD[c] n=7	Total n=42
Themes studied	**N (%)**	**N (%)**	**N (%)**	**N (%)**
1. Mental healthcare system features				
Adequacy of services responding to urgent MD-SRD crises	**17** (94)	**17** (100)	**7** (100)	**41** (98)
ED is considered the most appropriate place to receive a rapid response	16 (89)	16 (94)	7 (100)	39 (93)
Some outpatient healthcare services are considered inadequate	10 (56)	9 (53)	5 (71)	24 (57)
Outpatient healthcare services referred patient to ED during MD-SRD crisis	9 (50)	8 (47)	5 (71)	22 (52)
*Some outpatient healthcare services identified as helpful	10 (56)	11 (65)	6 (86)	27 (64)
Accessibility of services	**18** (100)	**15** (88)	**6** (86)	**39** (93)
Outpatient care unavailable during an urgent crisis	16 (89)	15 (88)	6 (86)	39 (93)
Long waiting list to access long-term care	16 (89)	8 (47)	6 (86)	30 (71)
Some outpatient healthcare services not available for free	7 (39)	3 (17)	3 (43)	13 (31)
*Short delay for obtaining an appointment in outpatient services	12 (67)	4 (24)	1 (14)	17 (40)
Continuity of care adapted to patient needs	**18** (100)	**14** (82)	**7** (100)	**39** (93)
Frequency of follow-up care not adapted to patient needs	17 (94)	14 (82)	7 (100)	38 (90)
No designated clinician to provide follow-up care	15 (83)	9 (53)	5 (71)	29 (69)
Lack of follow-up care after ED use	14 (78)	8 (47)	3 (43)	25 (59)
*Frequent and regular follow-up care, adapted to patient needs	10 (56)	8 (47)	3 (43)	21 (50)
2. Patient profiles				
Urgent and recurrent biopsychosocial problems	**18** (100)	**17** (100)	**7** (100)	**42** (100)
Psychological or physical distress	18 (100)	9 (53)	6 (86)	33 (78)
Substance-related problems	2 (11)	15 (88)	7 (100)	24 (57)
Social problems	4 (22)	1 (5)	0	5 (12)
Problems associated with medication	2 (11)	1 (5)	1 (14)	4 (9)
Support systems	**17** (94)	**14** (82)	**7** (100)	**38** (90)
Emotional and psychological support	17 (94)	13 (76)	7 (100)	37 (88)
Medication support	12 (67)	6 (35)	3 (43)	21 (50)

	Need for more information regarding MD-SRD management and available services	11 (61)	6 (35)	1 (14)	18 (43)
	*Receiving adequate emotional and psychological support, adapted to patient needs	10 (56)	9 (53)	6 (86)	25 (59)
	*Having a social network that helps maintain health	11 (61)	8 (47)	2 (29)	21 (50)
	*Receiving proper medication, adapted to patient needs	5 (28)	3 (17)	2 (29)	10 (24)
Individual disabilities		**15** (83)	**17** (100)	**5** (71)	**37** (88)
	Symptoms of short- or long-term impairments	14 (78)	15 (88)	5 (71)	34 (81)
	Lack of knowledge about MD-SRD and of guidance to acquire such knowledge	13 (72)	13 (76)	4 (57)	30 (71)
	Negative self-image and inadequate living environment	7 (39)	15 (88)	4 (57)	26 (62)
	*Feeling autonomous (to the best of the patient's ability), having help to decrease ED use	5 (28)	12 (71)	4 (57)	21 (50)
	*Daring to ask for help	4 (22)	8 (47)	0	12 (29)
3. Professional practices					
MD-SRD knowledge and comfort		**17** (94)	**14** (82)	**7** (100)	**38** (90)
	Lack of knowledge, interest, or comfort in dealing with MD-SRD problems	17 (94)	13 (76)	7 (100)	37 (88)
	Lack of biopsychosocial evaluation, failure to establish a short- or long-term action plan	12 (67)	10 (59)	2 (29)	24 (57)
	*Receiving appropriate care (medical or emotional), adapted to patient needs	11 (61)	10 (59)	6 (86)	27 (64)
	*Receiving personalized MD-SRD information that reassures patient	11 (61)	4 (24)	3 (43)	18 (43)
Quality of exchanges with patients		**16** (89)	**15** (88)	**6** (86)	**37** (88)
	Quality of patient/health professional relationship	16 (89)	15 (88)	6 (86)	37 (88)
	MD-SRD are not taken seriously enough	14 (78)	11 (65)	3 (43)	28 (67)
	*Having a stable and trusting relationship with the appropriate care provider	11 (61)	11 (65)	4 (57)	26 (62)
Collaboration between clinicians		**12** (67)	**9** (53)	**3** (43)	**24** (57)
	Clinicians work in silos, diagnosis and treatment can differ from one to the other	9 (50)	8 (47)	3 (43)	20 (48)
	*A combination of treatment approaches can help to decrease ED use	5 (28)	5 (29)	3 (43)	13 (31)

[a] MD: common mental disorders, [b] SRD: substance-related disorders, [c] MD-SRD: co-occurring MD-SRD disorders. N: number of patients mentioning the theme within that group. %: proportion of patients mentioning the theme within that group. *Reasons identified as helpful for decreasing ED use.

Table 3: Quotes illustrating different themes linked to high emergency department (ED) use, taken from interviews done with patients with common mental disorders (MD), substance-related disorders (SRD), or co-occurring common MD-SRD

1- Mental healthcare system features
Adequacy of services responding to urgent MD and SRD crises
"It [non-emergency department services] didn't meet my needs [...], I was at the end, at the limit, you know, at the end of the rope [...]and just receiving little comments, you know, 'take charge, take care of yourself' or things like that, I wasn't able to hear it anymore." Co-occurring MD-SRD group
"I am currently satisfied with my service [in psychology], but it took me a long time to find it." Common MD group
Accessibility of services
"For the first 6 months [on the waiting lists] when I was going through these crises, I had no help, I couldn't recharge, I didn't know of any other place to go." Common MD group
"When we call them [CRDQ], it's not that things haven't been going well since the day before yesterday, it's that things have not been going well for six months, a year, two years, and sometimes it takes several weeks or even several months before we can enter the system." SRD group
"Once you get into the system, things can go quickly, but being taken care of by the healthcare system can take a while. But afterwards, once in, things go very well I've found." SRD group
Continuity of care, adapted to patient needs
"I have a good relationship with my psychologist [free service from the CLSC], and it's rare that it happens, but it will end, sadly." Common MD group
"My family doctor knows me, at the walk-in clinics, the doctor doesn't know anything, he doesn't do anything. He doesn't know me. I've done a lot of walk-in clinics, medication changes often between them." SRD group
"When I came home [post-hospitalization for withdrawal], I was no longer able to walk, but it wasn't just about the use, it was the anxiety that was off the roof [caused by the feeling of being left alone]." Co-occurring MD-SRD group
2- Patient profiles
Urgent and recurrent biopsychosocial problems
"I was at my wits' end. Unbearable anxiety. I had stopped my medication. Nothing was working with my doctor. I was in burnout. I was desperate. I couldn't find help, medications that worked, or even a private psychologist." Common MD group
"It was a drinking problem, a loss of self-esteem, a need for attention, a need for reassurance. That sums most of it." SRD group

"When I go to the emergency department it's because I'm lying on the floor, I'm really not okay [psychologically], I'm not able to just get through it, so I need to go to the emergency department because it's beyond me, it's not like a liver attack, it's really beyond my ability." SRD group

Support systems

"You know, it's really feeling some support at that point, it's not just getting treatment [receiving medication]." Common MD group

"She [the social worker] cheered me up a lot by giving me resources that I didn't even know existed [...] I would have liked to see her even as an outpatient, but unfortunately, she only does hospital visits." Co-occurring MD-SRD group

Individual disabilities

"Sometimes, psychologically, you're not doing so well, that even if they say you just have to do two more steps to see a psychologist or a psychiatrist. But you know, it's so discouraging that you don't even want to do it." Common MD group

"It is important to take the time to calm people in a crisis, to try to make them understand what they are going through because it is always in a state of incomprehension that someone has a panic attack or an anxiety attack because they do not understand what is happening with their body." Common MD group

"I wait all the time for it to be dramatic...I always wait like at the last minute [because of] the embarrassment and the pride and the shame, so I always end up being brought to the emergency department, either by a friend or a family member." Co-occurring MD-SRD group

3- Professional practices

MD-SRD knowledge and comfort

"They [the ED staff] remember that you came in and they're kind of tired of seeing you [...] they don't really understand your situation, they don't understand your need, they don't understand why you're all messed up; you know, they're like last week I was here and then we gave you meds and then it took a week, I was sober, why do you come back to us a week later and now you're drunk again?" SRD group

"The family doctor as I tell you he is a good doctor, I love him but the time allocated now I think they are timed, it's very short you know, you have no time to communicate." Co-occurring MD-SRD group

"My clinic, personally I am very satisfied, because it is a clinic that has a pilot project, the Archimedes clinic, [regular follow-up with a nurse practitioner] [...] the doctor, he is there in reference only when needed. Communication is done internally, I'm happy with my clinic. It's working now, so that's all it took." Co-occurring MD-SRD group

Quality of exchanges with patient

“I felt judged for being there for a mental health problem at the emergency department, as if I didn't belong. They weren't able to help me. They just send you home or lock you in a cushioned room. No, it's really not great [...] there's like no procedure in place to help us when we get to the ED.” Common MD group

“There should be more awareness among nurses, so that they realize that it is a disease [substance abuse] that it’s progressive and degenerative and causes death. Sometimes they tend to think that I'm a good-for-nothing, he doesn't want to help himself, he's been here 14 times.” SRD group

“I have quick appointments with her [general practitioner]. She takes care of my health, I don't feel rushed in her schedule when I go to see her, I feel that she has time to invest in my case.” SRD group

Collaboration between clinicians

“I've already pushed to see a psychologist, I've already pushed to see a psychiatrist, [...] every time [...] I've been told things like ‘Why? Prove to me that I have to send you’.” Common MD group

“I was prescribed a drug at the emergency department that my family doctor doesn't know about, and right now I'm on that drug and I don't have anyone to follow me. I don't have any reference. [...] Where am I going with this problem. I don't have anyone, I can go on the Web, but there is no psychologist specializing in addiction in Quebec City, except in the centers of, like the CRDQ, but they have terrible waitlists.” SRD group

“There is a problem in the current system where we can have psychologists, doctors, therapists but it would take teams that talk to each other, that communicate on the case of the person, because the ED does not respond to the need as such, and the system, in general, we often end up in a void.” SRD group

Appendix 1: Codes for common mental disorders (MD) and substance-related disorders (SRD) according to the International Classification of Diseases, Tenth revision

Common MD diagnoses	***International Classification of Diseases, Tenth Revision, Canada* (*ICD-10-CA)***
Depressive disorders	F320- F323 (major depressive disorder, single episode); F328 (other depressive episodes); F329 (depressive episode, unspecified); F330-F334 (major depressive disorder, recurrent); F338 (other recurrent depressive disorders); F339 (recurrent depressive disorder, unspecified); F348 (other persistent mood [affective] disorders); F380, F381 (persistent mood [affective] disorder, unspecified); F388 (other specified mood [affective] disorders); F39 (unspecified mood [affective] disorders); F412 (mixed anxiety and depressive disorder)
Anxiety disorders	F40 (phobic anxiety disorders); F41(other anxiety disorders); F42 (obsessive-compulsive disorder); F45 (somatoform disorders); F48 (other neurotic disorders); F93, F94 (disturbance of emotions specific to childhood and adolescence)
Adjustment disorders	F430 (acute stress reaction); F431 (post-traumatic stress disorder); F432 (adjustment disorders); F438 (other reactions to severe stress); F439 (reaction to severe stress, unspecified)
Attention deficit/hyperactivity disorder	F900; F901; F908; F909 (attention deficit/hyperactivity disorder)
SRD diagnoses	
Alcohol-related disorders	F101, F102 (alcohol abuse or dependence); F103, F104 (alcohol withdrawal); F105-F109, K700-K704, K709, G621, I426, K292, K852, K860, E244, G312, G721, O354 (alcohol-induced disorders); F100, T510, T511, T518, T519 (alcohol intoxication)
Cannabis-related disorder	F121, F122 (cannabis abuse or dependence); F123-F129 (cannabis-induced disorders); F120, T407 (cannabis intoxication)
Drug-related disorders other than cannabis	F111, F131, F141, F151, F161, F181, F191, F112, F132, F142, F152, F162, F182, F192 (drug abuse or dependence); F113-F114, F133-F134, F143-F144, F153-F154, F163-F164, F183-F184, F193-F194 (drug withdrawal) F115-F119, F135-F139, F145-F149, F155-F159, F165-F169, F185-F189, F195-F199 (drug-induced disorders); F110, F130, F140, F150, F160, F180, F190, T400-T406, T408, T409, T423, T424, T426, T427, T435, T436, T438, T439, T509, T528, T529 (drug intoxication)

[a] Diagnoses identified were based on the Tenth Canadian Revision (ICD-10-CA), using the hospital database (MED-ECHO: *Maintenance et exploitation des données pour l'étude de la clientèle hospitalière*) and the emergency department (ED) database (BDCU: *Banque de données communes des urgences*). MD and SRD diagnoses related to these two databases were considered, and data integrated for the 12 months preceding patient interview, for each patient. MED-ECHO is the only database that includes several diagnoses: principal diagnosis and numerous secondary diagnoses. In the databases used in this study, MD were considered only as principal diagnoses, but substance-related disorders (SRD) as both principal and secondary diagnoses, considering that SRD is often underdiagnosed.

Appendix 2: Closed- and open-ended questions of the interview of the larger mixed-methods study used for this specific study *(however, ED use and diagnostics were based on an administrative database)*

A. Sociodemographic questions:

What is your sex?
- O 1= Women
- O 2= Men
- O 99= Refuse to respond

What is your age? ____

What is your level of education?
- O 1= Elementary
- O 2= Secondary
- O 3= Post-secondary or higher
- O 99= Refuse to respond

What is your marital status?
- O 1= Single/separated/divorced/widowed
- O 2= Common-law/married
- O 3= Other (specify): (enter information)
- O 99= Refuse to respond

Are you currently working?
- O 1= Yes
- O 0= No
- O 99= Refuse to respond

If YES, are you working:
- O Full-time
- O Part-time

If NO, what is your current situation?
- O 1= Student
- O 2= Employment Insurance or *Commission des normes, de l'équité, de la santé et de la sécurité du travail* (CNESST)
- O 3= Social assistance
- O 4= Retired or annuitant
- O 5= No personal income (none of the above sources)
- O 6= Other (proceed to question 7.3)

Other (specify) _____

What was your household income last year?
- O 1= 0 to $9,999/year
- O 2= 10,000 to $19,999/year
- O 3= 20,000 to $29,999/year
- O 4= 30,000 to $39,999/year
- O 5= 40,000 to $49 999/year
- O 6= 50,000 to $59,999/year
- O 7= 60,000 to $69,999/year
- O 8= 70,000 to $79,999/year
- O 9= 80,000 to $89,999/year
- O 10= 90,000 to $99,999/year
- O 11= 100,000$ or plus/year
- O 99= Refuse to respond

Other (*specify*) _____

I will name different types of housing; tell me in which one you live.

- O 1= A private house, condo (you are the owner of your residence)
- O 2= Rented apartment
- O 3= Supervised apartment
- O 4= Subsidized housing (e.g. Low-rental housing (H.L.M.) or Non-profit organization (O.S.B.L))
- O 5= Family-type residence
- O 6= Group home
- O 7= No fixed address
- O 8= Other
- O 99= Refuse to respond

***Note to interviewers**: Make sure to give examples of these types of housing if needed, so that the question is clear for the participant.

Other (specify) _____

The next questions are about alcohol or drug use. Let's start with alcohol consumption:

AUDIT QUESTIONNAIRE

Dossier #: ☐☐☐☐☐

Today's Date: ☐☐ / ☐☐ / ☐☐ (Year / Month / Day)

Date of Birth: ☐☐ / ☐☐ / ☐☐ (Year / Month / Day)

● En

This questionnaire deals with the last 12 months.

- A standard drink is equivalent to 341 ml of beer (12 ounces), 142 ml of wine (5 ounces), or 42.6 ml of spirits (1.5 ounces).

Choose the **ONE** answer that is most true for you, and **FILL** the corresponding circle.

1. How often do you have a drink containing alcohol?

   ○ *Never* ○ *Monthly or less* ○ *Two to four times a month* ○ *Two to three times a week* ○ *Four or more times a week*

2. How many drinks containing alcohol do you have on a typical day when you are drinking?

   ○ *1 or 2* ○ *3 or 4* ○ *5 or 6* ○ *7 to 9* ○ *10 or more*

3. How often do you have six or more drinks on one occasion?

   ○ *Never* ○ *Less than monthly* ○ *Monthly* ○ *Weekly* ○ *Daily or almost daily*

4. How often during the last year have you found that you were not able to stop drinking once you had started?

   ○ *Never* ○ *Less than monthly* ○ *Monthly* ○ *Weekly* ○ *Daily or almost daily*

5. How often during the last year have you failed to do what was normally expected from you because of drinking?

   ○ *Never* ○ *Less than monthly* ○ *Monthly* ○ *Weekly* ○ *Daily or almost daily*

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

   ○ *Never* ○ *Less than monthly* ○ *Monthly* ○ *Weekly* ○ *Daily or almost daily*

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

   ○ *Never* ○ *Less than monthly* ○ *Monthly* ○ *Weekly* ○ *Daily or almost daily*

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

   ○ *Never* ○ *Less than monthly* ○ *Monthly* ○ *Weekly* ○ *Daily or almost daily*

9. Have you or someone else been injured as a result of your drinking?

   ○ *No* ○ *Yes, but not in the last year* ○ *Yes, during the last year*

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?

    ○ *No* ○ *Yes, but not in the last year* ○ *Yes, during the last year*

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The next questions are about drug use.

DRUG USE QUESTIONNAIRE (DAST-20)

Dossier #: ☐☐☐☐☐

Today's Date: ☐☐ / ☐☐ / ☐☐ (Year / Month / Day)

Date of Birth: ☐☐ / ☐☐ / ☐☐ (Year / Month / Day)

● En

The following questions concern information about your potential involvement with drugs **(not including alcoholic beverages)** during the past 12 months. Carefully read each statement and darken the appropriate circle (Yes/No).

In the statements, "drug abuse" refers to (1) the use of prescribed or over the counter drugs in excess of the directions and (2) any non-medical use of drugs. The various classes of drugs may include: cannabis (e.g. marijuana, hash), solvents, tranquilizers (e.g. Valium), barbiturates, cocaine, stimulants (e.g. speed), hallucinogens (e.g. LSD) or narcotics (e.g. heroin). **Remember that the questions do not include alcoholic beverages.**

1. Have you used drugs other than those required for medical reasons?	O Yes	O No
2. Have you abused prescription drugs?	O Yes	O No
3. Do you abuse more than one drug at a time?	O Yes	O No
4. Can you get through the week without using drugs?	O Yes	O No
5. Are you always able to stop using drugs when you want to?	O Yes	O No
6. Have you had "blackouts" or "flashbacks" as a result of drug use?	O Yes	O No
7. Do you feel bad or guilty about your drug use?	O Yes	O No
8. Does your spouse (or parents) complain about your involvement with drugs?	O Yes	O No
9. Has drug abuse created problems between you and your spouse or your parents?	O Yes	O No
10. Have you lost friends because of your use of drugs?	O Yes	O No
11. Have you neglected your family because of your use of drugs?	O Yes	O No
12. Have you been in trouble at work because of drug abuse?	O Yes	O No
13. Have you lost a job because of drug abuse?	O Yes	O No
14. Have you gotten into fights when under the influence of drugs?	O Yes	O No
15. Have you engaged in illegal activities in order to obtain drugs?	O Yes	O No
16. Have you been arrested for possession of illegal drugs?	O Yes	O No
17. Have you experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	O Yes	O No
18. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding etc.)?	O Yes	O No
19. Have you gone to anyone for help for a drug problem?	O Yes	O No
20. Have you been involved in a treatment program specifically related to drug use?	O Yes	O No

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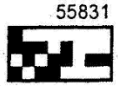

B. Questions to be developed (qualitative component)

1. In a few words, for what reason(s) do you come to the ED frequently?

2. Do you consult other services before coming to the ED? Would you have been able to do so?

a. Where do you go, in particular?
b. Why this service?
c. Effectiveness/appraisal of these services (other than the ED)?

3. Thinking of the services you have received at the ED, please tell me in a few words what you most appreciated about them.

4. Please tell me what could be improved in the services offered at the ED.

5. Thinking about the services you have received outside of the ED, please tell me in a few words what you most appreciated about them.

a. Regarding access, continuity, adequacy of services.
b. Concerning family doctors (or walk-in clinics), ambulatory services (e.g., CLSC, psychiatric services including psychiatrists), community-based services, housing, support services for work or education, daytime activities, etc.

6. Thinking of the services you have received outside of the ED, please tell me in a few words what could be improved.

a. Please refer to the elements listed in questions 5a and 5b.

7. What would help you most in maintaining your health?

38. What should be done to better help you, especially to help you avoid repeated visits to the ED?

39. Do you have any other comments concerning the improvement of services, so that they better respond to your needs?

THANK YOU VERY MUCH!
YOUR RESPONSES ARE VERY IMPORTANT TO US
AND WILL HELP US A LOT IN OUR RESEARCH