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ORIGINAL PAPER

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Who visits the psychiatric emergency room for the first time?

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Abstract *Objective:* To examine patient and system characteristics of first-time ("incident") vs. recurrent ("recurrent") use of a psychiatric emergency room (PER). *Methods:* Data on demographic and clinical characteristics and health service utilization were collected for incident and recurrent users (n=3,719) who visited the PER of the university hospital in Leuven, Belgium, between March 2000 and March 2002. *Results:* About 64% (n=2,368) were incident and 36% (n=1,351) were recurrent users. The PER was the first treatment setting ever for 50% of the incident users. Incident users were most likely over 69 years (OR=2.84, P<0.001), employed (OR=2.21, P<0.001), or referred by a health care professional (OR=1.72, P<0.001). They were less likely to have a personality disorder (OR=0.40, P<0.001) or to have used inpatient or outpatient services in the past (OR's 0.11 and 0.65, respectively, P<0.001). About 44% were admitted, 38% referred for outpatient treatment, 9% referred to the outpatient crisis-intervention program, and 9% refused any follow-up. *Conclusions:* The PER was a first treatment setting *ever* for 1 in 3 patients. Incident and recurrent users differed in sociodemographic characteristics, pathways to care, service use, and the presence of a personality disorder. They did not differ in axis 1 disorders, comorbid mental disorders, or pathways after care.

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Introduction

Over the last two decades, the organization and provision of mental health care has changed dramatically. The deinstitutionalization of mental health services has resulted in an decreased length of stay in psychiatric hospitals, and to an increased number of psychiatric patients living in the community [1]. Too often, services were too uncoordinated or integrated to provide adequate outpatient mental health care for patients who would be hospitalized otherwise. In this light, one of the main functions of the PER has been to triaging patients with severe mental illness to more appropriate treatment settings [1, 2].

During the past decade, however, two interesting evolutions in help-seeking for mental disorders have occurred. First, the proportion of patients attending a PER annually increases. Emergency departments have observed up to a 150% increase over a 13-year period in the number of patients attending PERs [3, 4]. This trend was being observed in the United States as well as in Europe [5]. Especially interesting is that this increase was more common in disorders that used to be relatively scarce in the PER: mood and anxiety disorders [3]. This particular finding indicates that clinical profiles of PER patients seems subject to a progressive change: the PER seems to become a central entry point for a wide range of patients, or "for both the worried well and the acutely psychotic patient" [3, p. 675]. Second, over the past 10 years, the incidence of mental disorders in the community stabilized whereas the proportion of persons seeking help for these disorders increased significantly. In a recent contribution to the *New England Journal of Medicine*, Kessler et al. [6] found that about 20% of persons with a mental disorder sought professional

help in the early nineties, whereas in the period 2001–2003 this proportion increased by approximately 12%. Interestingly, the most notable increase (more than 150%) was found in rate of treatment of mental disorders in general medical services, and, surprisingly, not in specialized services. These findings indicate that patterns of help-seeking for mental disorders are subject to change: persons with emotional problems seem more likely to seek mental health care in general medicine facilities (e.g. general practitioners, other medical doctors) than in specialized facilities.

These two recent contributions beg the question whether, in the 21st century, the PER may have a role in establishing initial contact with a health care provider following the first onset of emotional problems. The focus of previous studies however lied almost entirely on investigating the frequent utilization of a PER [e.g. 7–15] whereas there was remarkably less interest on investigating incident use. To our knowledge, there are no recent European studies focusing on this issue. Hence, in this manuscript, we aim at (a) estimating the proportion of incident and recurrent users of the PER, (b) describing differences in sociodemographic, clinical, and service characteristics of incident and recurrent PER users, (c) modeling multivariate independent predictors of incident PER use, and (d) describing what happens with incident and recurrent patients after their referral.

Materials and methods

Study setting

The study was conducted in the emergency department of the University Hospital Gasthuisberg in Leuven (Belgium). Leuven includes about 100,000 inhabitants, but the university hospital catchment area includes more than 250,000 persons. The University Hospital Gasthuisberg is a general hospital, with a public health care function and it is the only hospital in Leuven with a psychiatric emergency service. The general hospital site is a major child and adult referral center offering all major somatic and psychiatric services. With approximately 1,900 beds, more than 320,000 patients per year, and nearly 50,000 patients visiting the emergency department yearly, the hospital is the largest hospital of Belgium and one of the major hospitals in Europe.

The psychiatric emergency team is imbedded in the emergency department and consists of a psychiatrist supervisor, two psychiatric residents, one psychologist, and four licensed mental health nurses. Patients who visit the hospital psychiatric emergency service are automatically enrolled in the psychiatric emergency program, which provides a full range of emergency evaluation, intervention, referral, and disposition services for adult patients in crisis. Services are provided 24 h a day at the university hospital site. The program has a philosophy of referring patients to the most appropriate and least restrictive treatment setting. The psychiatric emergency program provides comprehensive assessment and a treatment and disposition plan for each patient. Patients may be scheduled for follow-up visits for further evaluation, short-term crisis intervention, medication assessment and management, or counseling, or they may receive immediate referral and admission to the full continuum of both inpatient and outpatient mental health and addictions services.

The Belgian health care system has a universal health insurance covering mental health and substance abuse treatment. Although our health care system does not put limits on the number of mental health specialists (medical doctors [MD] nor psychologists), consumers have only limited public coverage of psychotherapy since only psychiatric consultations and psychotherapy with MDs are covered. There is a high overall access to specialized mental health care. For example, in the current Belgian mental health care, there are about 21 psychiatric beds per 10,000 inhabitants. In this, Belgian has the largest number of psychiatric beds in Europe [16]. Apart from the overall high availability of psychiatric beds, there are also many outpatient mental health providers: per 10,000 inhabitants there are 1.4 psychiatrists, 3.2 psychologists, and 15.3 general practitioners [17, 18]. Moreover, if we look at the physical proximity of the existing PERs in Belgium, we could see that in most of the country (except for the southern part), the majority of PERs are within a range of 35 km of each other [18].

Patient enrollment

Patients who were referred to the PER were consecutively recruited for the study over a 2-year period (March 2000–March 2002). They were evaluated by staff members of the psychiatric emergency program, who were trained in the use of structured assessment instruments. The constraints of an emergency setting did not allow the use of a full structured interview. A semi-structured interview based on the Minimal Psychiatric Data form, a standardized and validated psychiatric patient registration form used by the Belgian Ministry of Social Affairs, Public Health, and Environment [19] was used to gather information on patients' demographic and clinical characteristics and mental health service use.

Study variables

The primary dependent variables that we assessed were whether patients were visiting the PER for the first time ("incident use") or whether they have visited the PER recurrently ("recurrent users"). We classified incident and recurrent PER patients based on their answers on the following question: "*Did you visit an emergency service ever before, either in this or another hospital?*". We also assessed whether patients have had a psychiatric hospitalization in the past, by asking "*Have you ever had a psychiatric admission in this or any other hospital?*". Patients were also asked whether they ever had consulted a health care professional (i.e. general practitioners, psychologists, psychiatrists, or any other health professional) for their problems.

We also assessed the pathways that lead patients to the PER. Internal referrals consisted of patients who presented with somatic complaints at their arrival at the emergency service. These patients were directly referred to the emergency physician, who assessed the presented complaints to treat any medical problem that may need immediate attention. If the emergency physician felt that psychiatric assessment was needed or a psychiatric consultation was requested, the PER was contacted. External referrals were directly referred to the psychiatric emergency team and the following categories were used: referrals by health care professionals, referrals by family members, police referrals, and self-referrals. Data were also included about what happened with patients after their present PER visit. We included the following aftercare dispositions: voluntary or involuntary hospital admission, referral for outpatient treatment, referral for onsite crisis-intervention program, and refusal of any follow-up.

Apart from service use variables, we also assessed demographic characteristics (including age, gender, working, and living arrangements) and mental disorders. Psychiatric diagnoses were given by residents-in-training and the senior supervisor, according to DSM-IV criteria [20]. We used broad diagnostic categories as reported in previous research [21, 22]: psychotic spectrum disorders, mood disorders, adjustment disorders, anxiety disorders, psychoactive substance use disorders, absent axis 1 disorder, and other disorders. Personality disorders were also assessed according

to the DSM-IV criteria. Data on these diagnoses were recoded according to a dichotomous variable that indicated the presence of any personality disorder. Clinical characteristics were also described in terms of the complaints that they presented at the moment of their referral: suicidality (suicidal behavior, suicidal thoughts, or suicidal ideation), violence or hostility towards others, substance abuse, delusions and hallucinations (psychotic symptoms), depressed mood, or anxious mood.

Statistics

Chi-square and Fisher exact tests were performed to assess differences in the characteristics of categorical variables. Student's *t*-test was used to test differences in continuous variables. Descriptive statistics were provided and described in absolute numbers and percentages. Binary logistic regression analysis was performed to model independent predictors of incident PER utilization. To make sure that important predictors were not omitted, we first ran univariate analyses with the dependent and all possible independent variables. Those independent variables yielding a statistical association with the dependent variable were then entered in a multivariate backward stepwise logistic regression analysis to compute the best-fit model of variables that predicted the dependent variable. The quality of the regression models was determined by the proportion of explained variance, the percentage of correctly classified cases, and results of the Lemeshow and Hosmer goodness-of-fit test [23]. Goodness-of-fit index values with a *P*-value greater than 0.05 were considered to indicate a good fit. Because studies in the emergency department may often be plagued by a large number of missing values that could lead to a considerable bias of the results and their interpretation [24], we ran missing value analyses to investigate the distribution of the missing cases. All statistical analyses were performed by using SPSS 12.0 statistical software. *P*-values <0.01 were considered as indicating statistical significance.

Results

Of the 3,719 patients that visited the PER between March 2000 and March 2002, 63.7% (n=2,368) of the patients used the PER for the first time ("incident users") and 36.3% (n=1,351) reported that they had one or more previous referrals ("recurrent users"). Sociodemographic charcteristics of the sample can be found in table 1. Mean age was 38 years (SD=13.4). Males represented 45% of the sample. Nearly 73% was married or living with someone, and 66% of the sample was unemployed at the time of their referral. Only 1.7% were homeless, with more homeless persons among recurrent users (2.8%). Recurrent users were more likely to be unemployed or to be living alone compared to incident users (all P<0.001).

If we look at the number and proportion of missing cases, we could see that the percentage of missing values did not exceed 10% of the total number of subjects. Moreover, missing cases were not significantly linked with major outcome measures (data by request). We did find however that missing values were more common in the early months after the start of the study. For example, in the variable "working arrangements", we found that 16% of the cases were missing in the first 6 months of administration of the questionnaire. This proportion gradually decreased to 9.3% in months 6–12, with a further decrease to 4.5% (in months 12–18) and 5.3% (in months 18–24). Consequently, we suppose that the implementation of the questionnaire yielded a higher proportion of missing values in the early days of the study.

DSM-IV disorders and presented symptoms

Table 2 shows that recurrent users had more personality, substance use, and psychotic disorders than incident users. Moreover, personality disorders were much more likely to be comorbid with axis 1 disorders in recurrent than in incident users. We especially found high comorbidity rates between substance use and personality disorders in recurrent users (44.3%) compared to incident users (27.2%, P<0.01).

If we look at presenting symptoms, there are three important findings that emerge: first, recurrent users were more likely to present with substance abuse and violence towards self or others. Second, incident users presented more often with depressed mood symp-

Table 1 Sociodemographic characteristics of incident and recurrent PER users

	Incident users		Recurrent users		Total		Sig.
	n	%	*n*	%	*n*	%	
Age							
<20	242	10.2	111	8.2	353	9.5	$\chi^2(6)=68.27$, P<0.0001
20–29	546	23.1	287	21.3	833	22.4	
30–39	521	22.0	406	30.0	927	24.9	
40–49	521	22.0	326	24.1	847	22.8	
50–59	257	10.9	141	10.5	398	10.7	
60–69	132	5.6	54	4.0	186	5.0	
>69	149	6.3	26	1.9	175	4.7	
Male gender	1,067	45.0	604	44.6	1,672	45.0	$\chi^2(1)=0.03$, P=0.86
Living arrangements							
Living with someone	1,802	76.1	898	66.5	2,700	72.6	$\chi^2(1)=39.61$, P<0.0001
Living alone	566	23.9	453	33.5	1,010	27.4	
Working arrangements							
Employed	860	37.2	296	25.6	1,156	33.8	$\chi^2(1)=45.76$, P<0.0001
Unemployed	1,420	62.8	841	74.4	2,261	66.2	

Table 2 Clinical characteristics of incident and recurrent PER users

	Incident users		Recurrent users		Total		Sig.
	n	%	*n*	%	*n*	%	
Axis 1 disorders[a]							
No disorder	410	17.3	178	13.2	588	15.8	$\chi^2(6)=65.42$, $P<0.0001$
Anxiety disorders	147	6.2	65	4.8	212	5.7	
Mood disorders	407	17.2	152	11.2	559	15.0	
Substance use disorders	514	21.7	409	30.3	923	24.8	
Psychotic disorders	69	2.9	59	4.4	128	3.4	
Adjustment disorder	153	6.5	77	5.7	230	6.2	
Axis 1 disorder NOS[b]	666	28.2	411	30.4	1,077	29.0	
Personality disorders	573	24.2	620	45.9	1,193	32.1	$\chi^2(1)=184.13$, $P<0.0001$
Comorbid axis 1 disorder	610	31.2	301	25.7	911	28.5	$\chi^2(1)=10.64$, $P=0.0011$
Comorbid personality disorder	508	25.9	488	41.6	996	33.8	$\chi^2(1)=81.68$, $P<0.0001$

[a] 2 missing values
[b] NOS, not otherwise specified

toms. Third, there was no difference between the proportion of suicidal patients and incident or recurrent PER use.

Utilization of services and patterns of referral

Taken the sample as a whole, the largest group of included patients were incident users who reported that they already used some kind of inpatient and/or outpatient facilities (n=1,193, or 32.1%), followed by recurrent users with service use in the past (n=1,188, or 31.9%), incident users without any use of services in the past (n=1,175, or 31.6%), and recurrent users without any use of services in the past (n=163, or 4.4%).

Recurrent users were much more likely to have used inpatient and outpatient services in the past (Table 3). If we combine these two variables, we could see that 34.2% of the recurrent users were already in contact with both inpatient or outpatient services, compared to only 13.1% in incident users ($\chi^2(1)=231.67$, $P<0.0001$). Moreover, 12.1% of the recurrent users reported that they have never been in outpatient nor inpatient treatment in the past, compared to 49.6% of the incident users ($P<0.01$). Recurrent users were also much more likely to have used multiple outpatient facilities (Fig. 1): the majority of the recurrent users reported that they have consulted at least a combination of a general practitioner, psychiatrist, psychologist or counselor for their emotional problems. In general, the majority of the outpatient use of services was made to psychiatrists (61.4%), psychologists or counselors (26.6%), and general practitioners (12.0%), without any difference between incident and recurrent users.

Compared to the incident users, recurrent users were also more likely to be self-referred or brought in by the police. Conversely, the number of referrals by health professional decreased from 31% in incident to 21% in recurrent users. Interestingly, the number of referrals by general practitioners was not different in incident and recurrent users ($P>0.05$).

Aftercare linkage and follow-up after PER referral

About 44% were admitted after their visit to the PER, 38% were referred for outpatient treatment, 9% were referred to the onsite short-term outpatient crisis-intervention program, and the remainder (another 9%) refused any follow-up. There were no differences in aftercare linkage between incident and recurrent PER users ($\chi^2(3)=8.64$, $P=0.0345$). In those patients who were admitted (n=1,625), 1,473 (or 90.6%) were voluntary admissions whereas the remainder (n=152,

Table 3 Mental health service utilization and patterns of referral among incident and recurrent users

	Incident users		Recurrent users		Total		Sig.
	n	%	*n*	%	*n*	%	
Outpatient service use in the past	657	27.8	513	38.0	1,170	31.5	$\chi^2(1)=40.93$, $P<0.0001$
Inpatient service use in the past	838	35.4	1,134	83.9	1,972	53.1	$\chi^2(1)=157.75$, $P<0.0001$
Patterns of referral[a]							
Emergency physician	848	35.9	418	31.0	1,266	34.1	$\chi^2(4)=121.90$, $P<0.0001$
Self	330	14.0	363	27.0	693	18.7	
Relatives or friends	280	11.8	153	11.4	433	11.7	
Health professional	730	30.9	280	20.8	1,010	27.2	
Police	174	7.4	132	9.8	306	8.3	

[a] 11 missing values

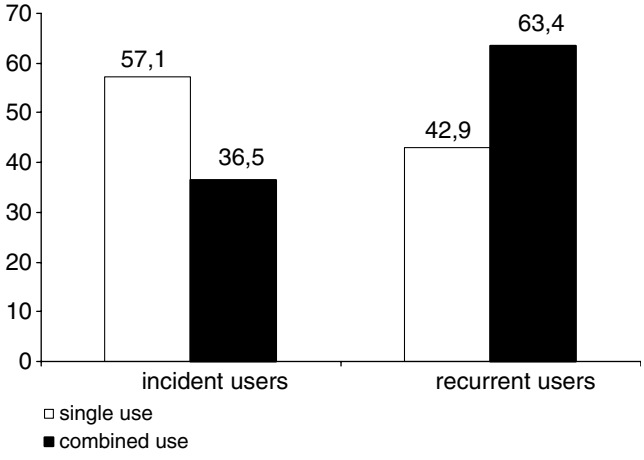

Fig. 1 Single and combined outpatient treatment in incident and recurrent users (%) Fisher Exact Test, P=0.004 (13 missing values)

or 9.4%) were admitted against their will. Almost twice as much recurrent users were admitted against their will compared to incident users (13.4 vs. 7.6%; Fisher Exact Test P-value=0.001).

Multivariate predictors of recurrent PER utilization

The prediction model had an adequate goodness-of-fit (P>0.05) and explained an acceptable proportion of the variance (33%), with 74% of the cases correctly classified. Being referred by a health care professional (OR=1.72 [1.43–2.08]), being employed (OR=2.21 [1.81–2.70]), or belonging to the oldest age category (OR=2.84 [1.40–5.73]) predicted incident use of the PER. By contrast, incident users had less previous use of inpatient (OR=0.11 [0.08–0.14]) or outpatient services (OR=0.65 [0.55–0.76]), or were less likely being diagnosed with a personality disorder (OR=0.40 [0.34–0.48]).

Discussion

This study investigated differences in clinical and epidemiological profiles in patients who used the PER for the first time ("incident users") and those who used the PER more than once ("recurrent users"). Our findings indicated that the majority were incident users, who had notable different patient and service use profiles compared to recurrent users. The results reported here should be interpreted in the light of three important limitations. First, the interpretability of DSM diagnostic categories in PERs is limited. Within an emergency context, acceptable levels of diagnostic reliability were found solely for broad diagnostic categories [25, 26]. In retrospective studies, the highest concordance was found for psychotic, mood, and substance use disorders, with kappa indices between 0.64 (for major depression) and 0.87 (for substance use disorders) [27]. Moreover, in the context of an emergency setting, there is a particular feature that compromises the validity of diagnostic categories: patients are in crisis when they enter the PER. This is well-shown in the finding that "axis 1 disorders not otherwise specified" and "personality disorders not otherwise specified" were frequently used categories in our PER. This provides in itself evidence for the inadequate coverage of the use of a categorical diagnostic system. In assigning diagnoses, we have to be cautious whether the diagnostic categories used are reflecting patients' exhibited symptomatology at the time of referral rather than an existing psychiatric syndrome. This is especially the case with regard to personality disorders. We may indeed be doubtful regarding the diagnosis of a personality disorder in psychiatric emergencies. The question arises, for example, to what extent the clinician uses diagnostic criteria that are sensitive enough to distinguish between axis 1 and personality disorders. Since personality disorders are assumed to be ego-syntonic and stable cross-temporal patterns of behavior, however, the issue is raised whether relying on others than the subject himself would not yield more valid information in order to assign a diagnosis [28]. The lack of validity of categorical diagnostic systems puts researchers for a challenge for future research. In line with the already established critique on categorical classifications of mental disorders [9], we would emphasize the high need not only to validate established DSM-IV disorders in the PER field, but also to establish other, dimensional diagnostic classification systems. These would include, for instance, the extent to which patients have a collaborative attitude towards the PER clinician, patterns of coping with critical stressors, the severity of the symptoms with which the patients presents, an analysis of the social resources of the patient, or hetero-anamnestic information about the patient's past and present functioning. A second limitation that should be addressed is that this was a retrospective study. We could therefore not avoid a certain degree of recall biases in the information we obtained from patients. It might be, for example, that patients with substance abuse disorders might have cognitive or memory deficits that hampered an accurate recall of the requested information [24]. This might imply that we have under- of overestimated some patient-reported data. A third factor that may hamper the interpretability of the results is that our data are limited to those patients presenting at the PER in Leuven between March 2000 and March 2002.

The most important finding is that 64% of the patients visited the PER for the first time and that, among these, 50% did not have any contact with any inpatient nor outpatient mental health care in the past. This means that PER was the first mental health

treatment contact ever for 32% (50% out of 64%) of all patients presenting at the emergency room. The PER was clearly an entry point into specialized mental health for persons with mental disorders who did not seek professional help before. This might implicate that one of the roles of a PER within the broader field of mental health care may be to enhance initial treatment contact for persons with mental disorders. Furthermore, an important issue is that incident users were 72% more likely to be referred by a health care professional (mostly general practitioners) than recurrent users. This finding highlights the role of the general practitioner in referring patients to an appropriate treatment setting.

Recurrent users were more likely to have used other (both inpatient and outpatient) mental health services apart from the PER. This points to the idea that the PER was clearly not a low threshold nor a low cost treatment alternative, since recurrent patients already found their way to other treatment alternatives in the past. Moreover, that one in four recurrent users were self-referrals contributes to the idea that, although they have more severe mental disorders, these patients are well-aware of the pathways that lead them to professional mental health care. Against this, the question arises which factors induced a repeated utilization of the PER: was there a lack of an adequate social support system, were aftercare arrangements at the previous referral inefficient to keep patients away from the emergency room, were the services that they already used not sufficient in addressing their needs, or were repeated PER visits inherent to their emotional problems? From earlier studies, we know that patients who received a continuous care (after a previous PER referral or a psychiatric hospitalization) resided a longer time in the society than those without such care [29, 30].

We also found that recurrent users were more likely to have personality disorders. Incident and recurrent PER patients were not different regarding axis 1 mental disorders. We found however that incident users were 60% less likely to be diagnosed with a personality disorder than recurrent users. It could be that a greater disability associated with personality disorders (e.g. troubled relationships, dysfunctions in main activities) may force them into the recurrent use of the PER.

If we look at what happens with patients after their PER referral, we could see that there were no differences in aftercare linkage of incident and recurrent PER users. About 44% were admitted, which is a high rate if compared to the 17–35% reported in other studies [21, 22]. Why did we find such high admission rate? A few important factors, and probably their combination, may be involved: the high number of psychiatric beds in Belgium (about 2 per 1000 inhabitants in 1999 [16]) or the high number of inpatient facilities in the hospital catchment area. Another factor is the length of residency training: admission rates were found to be highest among residents with less experience, progressively decreasing with the number of months of PER training [31]. Against the fact that most PERs are staffed with residents-in-training (and this is also the case for the PER where this study has been performed), high admission rates may be due to their lack of experience in the PER. By and large, this points to the idea that organizational factors may be crucial independent factors contributing to the clinician's decision process in the PER. The extent to which organizational factors contribute to the decision to admit both incident and recurrent PER users needs more systematic study in future research.

In addition, we have observed that only 9% refused to take up any proposed aftercare, a finding that we did not quite anticipate. Indeed, figures of refusal of follow-up in PERs, reported in previous studies, are generally much higher: between 28 and 53% (26, 32, 33). This very low rate may be linked with the high admission rate, but may also related to the fact that in our service we try to maintain a continual care. In the short-term onsite outpatient psychiatric emergency program, patients have the occasion to explore their crisis in a maximum 4 weeks after his initial referral. This program was developed as a low threshold treatment alternative for patients that would otherwise be either referred for inpatient treatment or would refuse any follow-up. Another example of our attempts to maintain continual care is that PER nurses provide names and coordinates of aftercare facilities to patients referred for outpatient treatment. Patients are also offered to opportunity to contact this aftercare facility onsite in the PER.

Conclusions

We have highlighted three important conclusions in this study: (a) 6 in 10 patients entered the PER for the very first time, and the PER was the first mental health treatment contact ever for 1 in 3, (b) aftercare linkages were not different for incident or recurrent users, and (c) the PER was an additional treatment facility for recurrent users since they already utilized inpatient and (multiple) outpatient services in the past. These results have some important implications. First, alleviating the finding that the PER serves mostly incident patients and patients who did not seek any help before emphasizes the need to expand treatment and follow-up possibilities in the PER. Second, there is also the need to rethink the role of the PER in terms of a setting with a treatment-based philosophy offering a continual care instead of triaging them away as soon as possible. Finally, policy makers should be aware of the fact that a unilateral emphasis on recurrent or frequent users of psychiatric emergency services may be detrimental to the needs of incident users of the PER. For these raisons, the need for more

detailed and refined data on the use of services of patients who did not seek any help before may be an important area for further study.

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