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Acute Care for a Chronic Brain Disorder: A Three-Year Descriptive Study of Substance-Related Admissions in a Romanian Psychiatric Hospital

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Abstract: ***Background:*** *Substance dependence is a chronic relapsing brain disorder, yet inpatient services frequently deliver only acute stabilisation. The weeks following detoxification represent the period of most rapid cortical recovery in early abstinence and, simultaneously, of high relapse risk. Whether this window is protected depends largely on how inpatient services are organised.* ***Objective:*** *To characterise three years of substance-related inpatient activity at a Romanian tertiary psychiatric hospital and to assess whether the pattern of care is consistent with the management of a chronic disorder.* ***Methods:*** *Retrospective, observational, descriptive study of routinely collected discharge data from 1 January 2023 to 31 December 2025. Records were pseudonymised and linked across the full 36-month window. Two nested cohorts were analysed: admissions with an ICD-10 F10–F19 code as principal diagnosis (Cohort A) and admissions with such a code in any diagnostic position (Cohort B). Analysis was descriptive; no inferential testing was performed. Readmission was defined as any subsequent inpatient admission within the observation window, irrespective of the diagnosis recorded, and therefore indexes return to hospital rather than relapse.* ***Results:*** *Cohort B comprised 10,400 admissions among 6,038 patients; Cohort A comprised 1,681 admissions among 1,455 patients, a ratio of 5.2 secondary-diagnosis admissions to each principal-diagnosis admission. Cohort A patients were predominantly male (88.9%; mean age 45.1 years). Acute intoxication and harmful use accounted for 61.4% of principal-diagnosis admissions, with a median length of stay of 3.9 days in Cohort A. Discharge at the patient's own request occurred in 38.5% of admissions, rising from 36.0% to 40.9% across the period and reaching 54.2% for harmful use. The highest-utilising 20% of patients generated 49.4% of admissions. Median time to readmission was 67.6 days; 33.0% of readmissions occurred within 30 days and 14.6% within seven. One-year readmission was 40.4%. Total reimbursement was 4,817,022 RON across 10,116 bed-days (approximately EUR 965,000).* ***Conclusions:*** *Care was delivered almost entirely within the acute phase. Engagement frequently ended once the physical crisis had resolved, and readmissions clustered in the weeks immediately following discharge; the interpretation of this clustering in neurobiological terms is a hypothesis suggested by these data rather than a finding tested by them. Case identification based on principal diagnosis captures approximately one sixth of relevant activity. These findings provide a descriptive baseline that supports prospective evaluation of post-detoxification rehabilitation capacity.*

Keywords: *alcohol use disorder; hospital readmission; discharge against medical advice; early abstinence; continuing care; health services research.*

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1. Introduction

1.1. Addiction as a Chronic Disorder Treated by Acute Means

The conceptual reclassification of substance dependence from a moral or social problem to a chronic medical illness is now a quarter of a century old (Olsen, 2022). It was observed and demonstrated that heritability, the role of personal choice and environmental factors, treatment adherence and relapse rates were broadly comparable across these conditions, and it was concluded that drug dependence produces significant and lasting changes in brain chemistry and function, that it has generally been treated as though it were an acute illness, and that long-term strategies of medication management and continued monitoring produce lasting benefits (Brainstorm Consortium et al., 2018; Kalivas & Volkow, 2005; McLellan et al., 2000).

The clinical implication was unambiguous: a disorder with a relapsing course requires a continuum of care rather than a sequence of discrete acute interventions (Clay et al., 2008). In practice, the reclassification has been more readily accepted in principle than implemented in service design. Detoxification remains, in many health systems, the only component of addiction care that is reliably financed, reliably staffed and reliably delivered, while detoxification resolves the physical withdrawal syndrome without addressing the disorder that produced it (Brand et al., 2025; Koob, 2024).

1.2. The Neurobiology of the Post-Detoxification Interval

There is a specific neurobiological reason why the weeks following detoxification are decisive, and why an intervention delivered during that interval is not simply more of the same treatment. Chronic alcohol exposure produces measurable structural changes in the cortical and subcortical systems that support inhibitory control, salience attribution and the valuation of delayed outcomes. These changes are partially reversible, but their reversal follows a characteristic time course. Longitudinal imaging studies indicate that grey matter volume recovery in abstinence is non-linear and region-specific, with the dorsolateral prefrontal cortex, orbitofrontal cortex and insula showing their steepest gains during the first month, and the anterior cingulate cortex recovering later, between the first month and approximately seven months (Compton et al., 2022; Nestler, 2025; Parvaz et al., 2022). Cortical thickness follows a comparable trajectory, with the most rapid change occurring between one week and one month of abstinence (Nutt et al., 2021). The functional significance of these structural changes is examined in Section 4.6.

The consequence may be a period of structural mismatch. At the moment of discharge from a short detoxification admission, the patient's capacity for inhibitory control and future-oriented decision-making may remain impaired, while exposure to the environmental cues that maintain the disorder returns immediately to baseline. Consistent with this, the configuration of the extended brain reward system measured at one month of abstinence has been shown to distinguish patients who subsequently maintain abstinence from those who relapse(Gardner, 2011; Muller & Meyerhoff, 2021;Volkow et al., 2019) and 40% to 60% of patients with alcohol use disorder entering treatment relapse within the first year (Koob & Le Moal, 2001;Nutt et al., 2021). Prefrontal engagement has been associated with resilience against relapse in early abstinence, and partial recovery of cerebral glucose metabolism and of executive and general cognitive function has been documented across short-, medium-, and long-term abstinence (Charlet et al., 2018). The interval immediately following detoxification is therefore simultaneously the window of substantial neuroplastic opportunity and of greatest behavioural vulnerability. Whether that window is protected or left unprotected may depend, in large part, on how inpatient services are organised (Rodger et al., 2024).

1.3. Continuing Care and the Evidence for its Effect

Evidence for continuing care interventions is positive but modest. A meta-analysis of controlled trials found a small but statistically significant benefit both at the end of the intervention and at follow-up, with no significant moderating effect of intervention duration, intensity, modality

or setting detected across the available studies (Blodgett et al., 2014). Narrative synthesis has nonetheless suggested that interventions producing positive effects have tended to feature longer planned durations of at least twelve months together with more active efforts to engage and retain patients (Hurlocker et al., 2023; McKay, 2021; Zhu et al., 2023).

The modesty of these effects is frequently cited as an argument against investment in post-acute services. An alternative reading, developed in Section 4.6, is that most evaluated interventions consist of low-intensity outpatient contact begun after the patient has returned to an unchanged environment, and therefore after the neurobiologically critical interval has passed (Bergman et al., 2015; Ingram et al., 2022).

1.4. Epidemiological Context

Romania presents an unusually adverse epidemiological profile for alcohol-related harm. According to OECD analyses, Romania records among the highest levels of per-capita alcohol consumption in the European Union, and was one of only three EU countries in which consumption rose by two litres or more per capita between 2013 and 2023, against a general trend of decline elsewhere in the Union (*Harmful Alcohol Consumption*, n.d.).

This consumption is not matched by treatment provision. A representative cross-sectional study across European primary and specialised health care found a 12-month prevalence of alcohol use disorders of 11.8% among primary care attenders, of whom only 17.6% were receiving treatment (Rehm et al., 2015). The authors attributed this undertreatment to the stigma attached to these disorders and to insufficient systematic screening in primary care, noting that effective and cost-effective psychosocial and pharmacological interventions are available. The gap between the burden of the disorder and the volume of treatment delivered is therefore a European problem in general, and one that a country with Romania's consumption profile may experience in an accentuated form.

1.5. Readmission as a Service-Level Indicator

Where treatment outcomes cannot be measured directly, patterns of readmission provide an accessible, if imperfect, proxy for the adequacy of the care continuum. Readmission data have the advantage of being routinely collected, complete within the reporting institution, and interpretable at the level of service organisation rather than individual clinical decision-making. Two features of the readmission literature in addiction are relevant here. The first is the association between irregular discharge and early return: an analysis of national readmission data has shown that discharge against medical advice carries approximately twice the odds of unplanned 30-day readmission relative to routine discharge (Kumar, 2019). The second is the wide variation in the prevalence of irregular discharge itself: a review of 61 studies of psychiatric inpatient care found rates ranging from 3% to 51%, with rates increasing over time, and irregular discharge being predicted most consistently by young age, male sex, comorbid personality or substance use disorder, and a history of previous irregular discharges (Barb et al., 2026; Brook et al., 2006; Durbin et al., 2007; Frimpong et al., 2016; Powell et al., 2024; Singh-Tan et al., 2023).

1.6. The Romanian Evidence Base and the Present Study

Romanian contributions to this literature exist but remain limited in scope. Recent work has examined cost burden and readmission dynamics across a full year of psychiatric admissions in a county hospital, establishing the feasibility and value of routine-data analysis in this setting (Bondar et al., 2026).

What has not been reported, to our knowledge, is a multi-year analysis of substance-related inpatient activity in a Romanian psychiatric institution that systematically distinguishes between admissions in which a substance use disorder is the recorded reason for admission and those in which it is documented as comorbidity, and that links these to length of stay, discharge type, readmission timing and reimbursed cost.

That distinction is not merely technical. If the two categories differ substantially in size, then the volume of substance-related activity within an institution, and consequently the scale of any service designed to address it, cannot be estimated from principal-diagnosis counts alone.

1.7. Aim and Objectives

The aim of this study was to characterise the pattern of inpatient care delivered to patients with substance-related disorders at a single tertiary psychiatric institution over three consecutive years, and to evaluate whether that pattern is consistent with the management of a chronic relapsing disorder.

The specific objectives were to quantify the volume and demographic profile of substance-related admissions, distinguishing admissions with a substance use disorder as principal diagnosis from those in which it occupied a secondary diagnostic position; to describe the diagnostic composition of these admissions and the associated lengths of stay; to determine the proportion of admissions terminated at the patient's own request, and its distribution across diagnostic categories and over time; to measure the frequency and timing of readmission, and the degree to which inpatient utilisation is concentrated within a subgroup of high-frequency users; to quantify the bed-days and reimbursement associated with this activity; and to consider the implications of these findings for the development of post-detoxification rehabilitation capacity.

2. Materials and Methods

2.1. Study Design

This was a retrospective, observational, descriptive epidemiological study of routinely collected hospital discharge data covering three consecutive calendar years. The study characterises the demographic profile, hospital utilisation pattern, readmission behaviour and resource consumption of patients admitted with substance-related disorders to a single tertiary psychiatric hospital. No intervention was administered and no comparison group was constructed. The study is reported in accordance with the applicable items of the STROBE Statement for observational studies.

2.2. Setting

The study was conducted at the "Socola" Institute of Psychiatry in Iaşi, Romania, the principal tertiary psychiatric facility serving the North-East development region of Romania and the main referral centre for acute psychiatric admissions in the region, including admissions for intoxication, withdrawal states and substance-induced disorders.

During the study period the Institute operated ten acute inpatient psychiatric wards, one of which was designated for toxicodependence. This ward is nevertheless an acute ward: it provides medically assisted withdrawal and stabilisation, not structured residential rehabilitation. The Institute did not operate a post-detoxification ("post-cure") inpatient rehabilitation facility at any point during the study period. Care for substance use disorders therefore consisted of acute stabilisation followed by discharge to the community, without a structured residential continuum of care. This organisational feature is central to the interpretation of the findings.

2.3. Study Period

The observation window covered from 1 January 2023 to 31 December 2025 inclusive (36 months). Because patients were linked across the whole window by means of a stable pseudonymous identifier, inter-admission intervals were not confined within single calendar years. This was a substantive methodological improvement over single-year analyses of the same data, in which the maximum observable interval was bounded by the length of the calendar year; the present design raises the longest observable interval to 1,034 days.

Right-censoring nevertheless remains: admissions occurring late in 2025 had less opportunity to be followed by an observed readmission than admissions occurring in 2023, and any

readmission occurring after 31 December 2025 was unobserved. The intervals reported here are therefore descriptive summaries of observed inter-admission intervals within a closed 36-month window and are not survival-analytic estimates of time to relapse.

2.4. Data Sources

Three routine reporting outputs of the Institute's electronic hospital information system were used.

(a) Discharge index reports. For each ICD-10 chapter from F10 to F19 and for each study year, the system generated a listing of all discharges in which a code from that chapter was recorded. Each listing contained two consecutive sections: discharges in which the chapter code was the principal discharge diagnosis, and discharges in which it appeared as a secondary diagnosis. Both sections were parsed separately and the diagnostic position was retained as an explicit variable. This distinction is fundamental to the present analysis and, if collapsed, produces a dataset in which admissions attributable to substance use as the reason for admission are indistinguishable from admissions in which substance use was a recorded comorbidity.

(b) Aggregate morbidity and settlement reports. For each study year, this output provided, per four-character ICD-10 code: number of cases, total bed-days, mean length of stay, mean cost per case, total amount reimbursed, case-mix index, and the distribution of discharge type (routine medical discharge, discharge at the patient's own request, inter-hospital transfer, death) and discharge status. The unit of this output was the settlement case as closed by the national health insurance system. This was not identical to the de-duplicated hospital admission that served as the unit of the admission-level dataset. Across the three years the settlement output recorded 1,692 principal-diagnosis substance cases, against 1,681 admissions in the admission-level dataset. The difference of 11 cases (0.7%) arose entirely within the 2025 reporting year. It reflected episodes that generated more than one settlement record, chiefly internal transfers between wards, together with episodes settled in a reporting period other than the one in which the admission occurred. The two denominators were therefore reported separately and were not interchangeable: 1,681 was used for all admission-level analyses (Tables 1 to 5, 7 and 8), and 1,692 for all analyses derived from the settlement system (Tables 6, 9 and 10). Because the difference concerns 0.7% of cases and is confined to a single reporting year, it does not materially affect the resource estimates.

(c) Admission-level records were linked to source (b) at the level of the four-character diagnostic code and study year. Individual-level cost data were not available.

2.5. Data Preparation and Pseudonymisation

Records were extracted at the level of the individual admission and processed as follows.

Direct identifiers,including patient name, national personal identification number (CNP) and identity document series and number, were removed at the first processing step. Prior to removal, the CNP was converted into a stable pseudonymous patient identifier. This identifier permitted the linkage of repeated admissions by the same individual across the full 36-month window. No direct identifier was retained in the analytical dataset at any subsequent stage.

Admission and discharge timestamps were parsed to full date-time precision. Because an admission carrying secondary diagnoses from more than one F1x chapter appeared in more than one chapter listing, records were de-duplicated on the unique hospital admission identifier, with the principal-diagnosis record retained in preference where an admission appeared in both positions. This step reduced 10,624 extracted records to 10,400 unique admissions.

2.6. Cohort Definitions

Two nested cohorts were defined and are reported in parallel throughout.

Cohort A: substance use disorder as the principal diagnosis. This included all admissions in which a code from F10–F19 was recorded as the principal discharge diagnosis (n = 1,681 admissions; 1,455 unique patients). This cohort represents the population for whom the substance use disorder was itself the reason for admission, and is the population to which the aggregate cost and length-of-stay data from source (b) apply.

Cohort B: substance use disorder in any diagnostic position. This included all admissions in which a code from F10–F19 was recorded either as the principal or as a secondary discharge diagnosis (n = 10,400 admissions; 6,038 unique patients). This cohort represents the total footprint of substance use disorders within the institution's inpatient activity, including admissions whose stated reason was a personality disorder, an affective disorder, an organic disorder or a psychotic disorder, with substance use documented as comorbidity.

Cohort A is a subset of Cohort B. The two are reported side by side rather than merged, because the relationship between them is itself a finding: it quantifies the extent to which the institutional burden of substance use is carried by admissions in which substance use is not the recorded reason for admission.

2.7. Units of Analysis

Two units of analysis were used and were maintained consistently. The admission is the unit for all analyses of length of stay, diagnostic distribution, ward allocation, discharge type and cost. The patient is the unit for all analyses of admission frequency and inter-admission intervals, and for the analysis of concentration of utilisation. A finding expressed per admission and the same finding expressed per patient carry different implications for service planning and are not interchangeable.

2.8. Variables

The following variables were available at admission level: pseudonymous patient identifier; unique admission identifier; sex; age in completed years at admission; date and time of admission; date and time of discharge; discharging ward; four-character principal discharge diagnosis; diagnostic position of the substance-related code (principal or secondary); study year. Length of stay was computed directly from the admission and discharge timestamps and was expressed in days to one decimal place. This measure differs slightly from the administratively recorded bed-day count of source (b), which counts calendar days; both are reported where relevant and the distinction is stated. Available at aggregate level, by diagnostic code and year: number of cases, bed-days, mean length of stay, mean cost per case, total amount reimbursed by the National Health Insurance House, case-mix index, discharge type and discharge status.

Not available, and not analysed: area of residence, educational attainment, occupational and marital status, psychiatric and somatic comorbidity beyond the recorded discharge diagnosis, pharmacological treatment at discharge, referral to community mental health services, voluntary versus non-voluntary admission status, and mortality outside the institution. Their absence is the principal limitation of the study and precludes any analysis of predictors of readmission. The routine reporting outputs also contain no record of specialised detoxification or addiction treatment received before the observation window, of the pharmacological or psychosocial treatment recommended at discharge, of adherence to that treatment, or of any contact with outpatient, community-based or rehabilitation services occurring between admissions. These variables were sought and could not be retrieved from the available data sources. Their implications are considered in Section 4.9.

2.9. Definitions

- Readmission: any admission of a patient with at least one prior admission recorded within the observation window, irrespective of the diagnosis recorded at either admission. Readmission is used throughout as an administrative, all-cause indicator of return to

inpatient care. It is not used as a measure of relapse. The two constructs are distinct: a patient may relapse without being readmitted, and a patient may be readmitted for reasons unrelated to a relapse of the substance use disorder. The distinction is particularly important in Cohort B, where the principal diagnosis at the readmitting episode is frequently an affective, organic or personality disorder. Where the term relapse appears in this manuscript, it refers to the construct described in the cited literature and not to an outcome measured in the present dataset.

- Inter-admission interval: days elapsed between discharge from one admission and admission to the next for the same patient. Intervals were computed on consecutive admissions ordered by admission timestamp; negative intervals, arising from overlapping ward transfers, were excluded. Intervals were computed to one decimal day. For the categorical presentation in Table 8, they were assigned to continuous, mutually exclusive bands defined on the interval (lower bound, upper bound] in days, so that non-integer values falling between the labels of adjacent bands are assigned to the higher band. The bands therefore sum exactly to the number of computable intervals.
- Early readmission: interval below 30 days; intermediate: 30 to 90 days; late: above 90 days. The 90-day threshold corresponds to the minimum treatment duration below which continuing care has repeatedly been shown to have limited efficacy and to the documented period of maximal post-detoxification relapse vulnerability; the 30-day threshold identifies readmissions occurring so soon after discharge as to be most plausibly attributable to the absence of a structured post-discharge transition.
- High-frequency user: patient with five or more admissions within the observation window.
- Discharge at the patient's own request: discharge recorded administratively as initiated by the patient rather than by the treating physician, used here as a proxy indicator of premature interruption of the therapeutic course.
- Cost: amount reimbursed by the National Health Insurance House, in Romanian lei (RON), unadjusted for inflation. Amounts are additionally expressed in euro at the average National Bank of Romania reference rate for each study year (4.9465 RON/EUR for 2023, 4.9746 RON/EUR for 2024 and 5.0415 RON/EUR for 2025).

2.10. Statistical Analysis

Analysis was descriptive throughout. Categorical variables are reported as absolute frequencies and percentages; continuous variables as mean with standard deviation and as median with interquartile range, both measures being reported for length of stay and inter-admission interval given the pronounced right-skew of these distributions. Distributions of admissions per patient and of inter-admission intervals are presented as frequency distributions and graphically. Concentration of hospital utilisation was quantified by ranking patients by number of admissions and computing the proportion of all admissions attributable to the highest-utilising 5%, 10% and 20% of patients.

No inferential statistical testing was performed and no confidence intervals were reported. The dataset represents the complete population of substance-related admissions at the institution during the observation window rather than a sample drawn from it; no comparison group exists; and the covariates required to adjust any comparison were unavailable. Reporting p-values in this context would convey a spurious impression of inferential strength. All differences described in the Results are observed differences within a complete institutional caseload.

Data processing and analysis were performed in Python 3 using the pandas and NumPy libraries; figures were produced with Matplotlib and Seaborn. Age was missing for one admission (<0.01%); no imputation was performed and denominators were stated for each analysis.

2.11. Ethical Considerations

The study used exclusively pre-existing, routinely collected administrative data, pseudonymised prior to analysis as described in Section 2.5. No patient was contacted, no clinical decision was influenced, and no data were collected for research purposes beyond those generated in the course of routine care and reporting. Approval for the use of these data for research and publication was obtained from the Ethics Committee of the "Socola" Institute of Psychiatry, Iași, (23799/04.08.2026) and institutional permission for the publication of aggregated financial data was granted by the management of the Institute. The requirement for individual informed consent was waived by the Ethics Committee on the grounds that the study involved only secondary use of pseudonymised administrative records, in accordance with Article 9(2)(j) of Regulation (EU) 2016/679 and with Romanian legislation governing the processing of health data for scientific research. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Because the institution is identified by name and several diagnostic categories contain very small numbers of patients, cell counts below five are reported in aggregate form wherever there is any conceivable risk of indirect re-identification.

3. Results

3.1. Study Population

Over the 36-month observation window, 10,400 unique inpatient admissions involving a substance-related diagnosis were recorded, corresponding to 6,038 individual patients (Cohort B). Of these, 1,681 admissions (16.2%), corresponding to 1,455 patients, carried a substance use disorder as the principal discharge diagnosis (Cohort A) (Table 1).

Table 1. Admissions and patients by cohort and study year

Year	Cohort A admissions	Cohort A patients	Cohort B admissions	Cohort B patients	A as % of B
2023	505	471	3,044	2,233	16.6
2024	595	548	3,631	2,538	16.4
2025	581	528	3,725	2,610	15.6
Total	**1,681**	**1,455**	**10,400**	**6,038**	**16.2**

Total substance-related admissions rose by 22.3% between 2023 and 2025, while admissions with a substance use disorder as the principal diagnosis rose by 15.0% and were essentially stable between 2024 and 2025. The proportion of the institution's substance-related activity recorded under a principal substance-use diagnosis declined slightly across the period, from 16.6% to 15.6% (Table 1).

Both cohorts were overwhelmingly male: 88.9% of Cohort A admissions (1,494 of 1,680 with sex recorded) and 88.0% of Cohort B admissions (9,148 of 10,399). Mean age was 45.1 years (SD 12.9) in Cohort A and 45.7 years (SD 12.3) in Cohort B, with medians of 45 and 46 years, respectively. In both cohorts, women were on average approximately three years older than men (Cohort A: 47.9 versus 44.7 years; Cohort B: 48.1 versus 45.4 years) (Table 2).

Table 2. Age distribution by cohort (admissions)

Age group	**Cohort A n (%)**	**Cohort B n (%)**
Under 30	195 (11.6)	984 (9.5)
30–39	377 (22.4)	2,381 (22.9)
40–49	503 (29.9)	3,151 (30.3)
50–59	378 (22.5)	2,557 (24.6)
60–69	163 (9.7)	961 (9.2)
70 and over	64 (3.8)	365 (3.5)
Total	**1,680**	**10,399**

Approximately 75% of Cohort A and 78% of Cohort B admissions fell between the ages of 30 and 59, with the single largest decade being 40–49 years.

3.2. Diagnostic Distribution and the Relationship Between the Two Cohorts

Alcohol-related disorders dominated Cohort A, accounting for 1,631 of 1,681 admissions (97.0%). Disorders due to multiple drug use and other psychoactive substances (F19) accounted for a further 30 admissions (1.8%), cannabinoids (F12) for 8 (0.5%), volatile solvents (F18) for 5 (0.3%), opioids (F11) for 4 (0.2%), and sedatives (F13) and cocaine (F14) for one admission each. The single most frequent presentation was acute intoxication (F10.0), and together with harmful use (F10.1) they accounted for 61.4% of all principal-diagnosis admissions. Dependence syndrome (F10.2) — the diagnosis that formally designates the chronic disorder — was recorded as the principal diagnosis in only 6.1% of admissions. The clinical entities requiring the most intensive management, withdrawal state and withdrawal with delirium, together accounted for 26.7% (Table 3).

Table 3. Principal discharge diagnosis, Cohort A, pooled 2023–2025

ICD-10	Category	n	%
F10.0	Acute intoxication	686	40.8
F10.1	Harmful use	347	20.6
F10.3	Withdrawal state	337	20.0
F10.4	Withdrawal state with delirium	112	6.7
F10.2	Dependence syndrome	103	6.1
F10.5	Psychotic disorder	25	1.5
F10.6	Amnesic syndrome	14	0.8
F10.7	Residual and late-onset psychotic disorder	6	0.4
F10.8	Other mental and behavioural disorders	1	0.1
—	All non-alcohol substances (F11–F19)	49	3.0
	Total	**1,681**	**100.0**

The relationship between the two cohorts is itself a principal finding of this study. For every admission in which a substance use disorder was the recorded reason for admission, there were 5.2 admissions in which a substance use disorder was documented but the principal diagnosis was different. Among the 8,719 admissions in which the substance-related code occupied a secondary position, the principal diagnoses were distributed as shown in Table 4.

Table 4. Principal discharge diagnosis of admissions carrying a substance-related secondary diagnosis (n = 8,719)

ICD-10 chapter	Category	n	%
F60	Specific personality disorders	3,673	42.1
F07	Personality and behavioural disorders due to brain disease/damage	1,411	16.2
F32	Depressive episode	1,028	11.8
F34	Persistent mood disorders	476	5.5
F33	Recurrent depressive disorder	292	3.3
F38	Other mood disorders	279	3.2
F70	Mild intellectual disability	275	3.2
F06	Other mental disorders due to brain damage/disease	248	2.8
F01	Vascular dementia	242	2.8
F20	Schizophrenia	180	2.1
—	All other chapters	615	7.0

Nearly six in ten of these admissions were recorded under a personality disorder or an organic personality and behavioural disorder — diagnostic categories whose clinical presentation in this population is frequently inseparable from chronic alcohol use.

3.3. Length of Stay

Mean length of stay in Cohort A was 5.84 days (SD 8.95), with a median of 3.9 days (IQR 2.5–6.9). The distribution was strongly right-skewed: 32.5% of admissions lasted three days or less and 7.3% lasted one day or less, while the longest single admission lasted 263 days. Length of stay was stable across the three years (mean values of 6.17, 5.60 and 5.80 days in 2023, 2024 and 2025, respectively).

Length of stay increased monotonically across diagnostic categories, from under four days for acute intoxication to over thirty-six days for the amnesic syndrome, the end-stage neurocognitive consequence of prolonged alcohol exposure. Admissions Cohort A (mean 6.58 days, median 5.3), were principally coded as shown in table 5.

Table 5. Length of stay by principal alcohol-related diagnosis, Cohort A, pooled 2023–2025

ICD-10	n	Mean (days)	Median	IQR
F10.0 Acute intoxication	686	3.68	3.3	1.9–4.4
F10.1 Harmful use	347	4.34	3.5	2.4–5.6
F10.2 Dependence syndrome	103	6.44	5.5	3.8–8.5
F10.3 Withdrawal state	337	7.68	5.7	3.7–8.8
F10.4 Withdrawal with delirium	112	10.91	9.4	6.6–12.7
F10.5 Psychotic disorder	25	11.54	10.7	8.6–14.5
F10.6 Amnesic syndrome	14	36.34	25.0	19.7–55.7

3.4. Ward Allocation

Of the 1,681 Cohort A admissions, only 95 (5.7%) were managed on the Institute's designated toxicodependence ward (Clinical Psychiatry Ward VIII). The remainder were distributed across general acute psychiatric wards, with two wards alone accounting for 59.3% of all principal-diagnosis substance admissions (Ward III Acute–Men, 535 admissions, 31.8%; Clinical Ward II Acute–Women, 463 admissions, 27.5%).

The number managed on the designated ward declined across the study period, from 45 admissions in 2023 to 33 in 2024 and 17 in 2025. Substance use disorders at this institution were therefore, in practice, managed predominantly within general acute psychiatric capacity rather than within dedicated addiction services, and increasingly so.

3.5. Type of Discharge

The distribution of discharge type, derived from the aggregate settlement reports for principal-diagnosis admissions, is presented in Table 6.

Table 6. Discharge at the patient's own request, principal-diagnosis substance admissions

Year	Cases	Routine medical discharge	Discharge at own request	% at own request
2023	505	323	182	36.0
2024	595	367	228	38.3
2025	592	350	242	40.9
Total	**1,692**	**1,040**	**652**	**38.5**

More than one admission in three ended with the patient leaving at their own request rather than on medical advice, and the proportion increased in each successive year, from 36.0% to 40.9%. The pattern varied sharply by diagnosis: among admissions for harmful use (F10.1) the rate was 54.2% and among admissions for acute intoxication (F10.0) 46.1%, whereas among admissions for withdrawal with delirium (F10.4) it was 5.4% and for the amnesic syndrome (F10.6), 7.1%.

Premature self-discharge was thus concentrated precisely in the presentations in which the acute physical crisis resolves quickest and in which the opportunity for engagement in longer-term treatment is correspondingly greatest.

3.6. Readmission and Concentration of Hospital Utilisation

Cohort A. Of 1,455 patients, 1,294 (88.9%) had a single admission across the entire 36-month window and 161 (11.1%) had two or more. Six patients (0.4%) met the definition of high-frequency user, and one patient accounted for 15 admissions. The highest-utilising 10% of patients generated 21.2% of admissions and the highest-utilising 20% generated 30.8%. Among 220 computable inter-admission intervals, the mean was 201.6 days (SD 217.0) and the median 126.2 days (IQR 28.3–294.0). Readmission occurred within 30 days of the preceding discharge in 24.1% of cases, and within 90 days in 42.3%.

Cohort B. Concentration of utilisation was far more pronounced. Of 6,038 patients, 4,398 (72.8%) had a single admission and 1,640 (27.2%) had two or more; 283 patients (4.7%) were high-frequency users, accounting for 25.9% of all admissions. Sixty-four patients (1.1%) had eleven or more admissions and together accounted for 1,220 admissions (11.7%); the single most frequently admitted patient accounted for 89 admissions over three years (Tables 7 and 8).

Table 7. Concentration of admissions among the highest-utilising patients

Patient stratum	Cohort A: % of admissions	Cohort B: % of admissions
Highest-utilising 1%	4.3	11.3
Highest-utilising 5%	12.6	26.6
Highest-utilising 10%	21.2	36.5
Highest-utilising 20%	30.8	49.4

In Cohort B, one fifth of patients accounted for almost exactly half of all admissions.

Table 8. Distribution of inter-admission intervals

Interval	Cohort A n (%)	Cohort B n (%)
0–7 days	27 (12.3)	611 (14.6)
8–14 days	11 (5.0)	315 (7.5)
15–30 days	15 (6.8)	453 (10.8)
31–60 days	25 (11.4)	549 (13.1)
61–90 days	15 (6.8)	377 (9.0)
91–180 days	35 (15.9)	681 (16.3)
181–365 days	50 (22.7)	652 (15.6)
Over 365 days	42 (19.1)	547 (13.1)
Total intervals	**220**	**4,185**
Under 30 days	53 (24.1)	1,379 (33.0)
30–90 days	40 (18.2)	926 (22.1)
Over 90 days	127 (57.7)	1,880 (44.9)

Note. Interval bands are defined on the interval (lower bound, upper bound] in days. They are mutually exclusive and sum exactly to the total number of computable intervals.

In Cohort B, the median interval was 67.6 days (IQR 15.9 -- 203.4; mean 146.1, SD 187.6), and one readmission in three occurred within 30 days of the preceding discharge.In both cohorts, readmissions occurred across the full range of interval categories, with 0–7-day returns accounting for 12.3% of intervals in Cohort A and 14.6% in Cohort B. Restricting the analysis to index admissions discharged before 31 December 2024, so that every index admission had at least twelve months of subsequent observation, yielded readmission rates of 3.3% at 30 days, 5.5% at 90 days

and 11.9% at one year in Cohort A (1,093 index admissions), and 14.4%, 24.2% and 40.4% ,respectively, in Cohort B (6,645 index admissions).

3.7. Resource Consumption

Over the three years, the 1,692 principal-diagnosis substance admissions recorded in the settlement system consumed 10,116 bed-days and 4,817,022 RON in reimbursement, equivalent to approximately EUR 965,000 at the annual average reference rates. The relationship between this denominator and the 1,681 admission-level records is set out in Section 2.4. Alcohol-related diagnoses accounted for 95.8% of total reimbursement related to substance-related admissions (Tables 9 and 10).

Table 9. Bed-days and reimbursement by year, principal-diagnosis substance admissions

Year	Cases	Bed-days	Total reimbursed (RON)	Mean cost per case (RON)	Mean bed-days per case
2023	505	3,194	1,450,715	2,873	6.32
2024	595	3,417	1,676,569	2,818	5.74
2025	592	3,505	1,689,738	2,854	5.92
Total	**1,692**	**10,116**	**4,817,022**	**2,847**	**5.98**

Table 10. Resource consumption by diagnosis, pooled 2023–2025

ICD-10	Cases	Bed-days	Mean LOS	Mean cost (RON)	Total reimbursed (RON)
F10.3 Withdrawal state	337	2,613	7.75	3,828	1,290,165
F10.0 Acute intoxication	686	2,656	3.87	1,819	1,248,037
F10.1 Harmful use	347	1,559	4.49	2,188	759,359
F10.4 Withdrawal with delirium	112	1,234	11.02	5,576	624,554
F10.2 Dependence syndrome	103	677	6.57	3,287	338,526
F10.6 Amnesic syndrome	14	510	36.43	11,161	156,254
F10.5 Psychotic disorder	25	294	11.76	5,835	145,875
Other and unspecified F1x (including F10.7 and F10.8)	68	573	8.43	3,725	254,252

The three diagnoses representing the acute end of the alcohol spectrum — withdrawal state, acute intoxication and harmful use — together consumed 3,297,561 RON, or 68.5% of all substance-related reimbursement over the period, across 1,370 admissions with a mean length of stay of 4.98 days. Mean length of stay in Tables 9 and 10 was derived from administratively recorded calendar bed-days and therefore differs slightly from the timestamp-derived values in Table 5, as stated in Section 2.8. Conversely, the amnesic syndrome, with only 14 admissions in three years, was by a wide margin the most expensive presentation per case at 11,161 RON, approximately six times the cost of an admission for acute intoxication.

4. Discussion

4.1. Principal Findings

This three-year analysis of a complete institutional caseload produced four findings that together describe a service operating almost entirely within the acute phase of a chronic disorder.

First, substance-related disorders were the recorded reason for admission in only one admission in six; in the remaining five sixths, they were documented as comorbidity beneath a principal diagnosis of personality disorder, organic personality disorder or affective disorder. Second, the modal presentation was acute intoxication or harmful use, managed in a median of under four days, while the dependence syndrome itself, the diagnosis that names the chronic condition, was the principal diagnosis in only 6.1% of admissions. Third, more than one admission

in three ended with the patient leaving at their own request, with the proportion rising each year and concentrated in the shorter-stay presentations. Fourth, hospital utilisation was highly concentrated: one fifth of patients generated almost half of all admissions, and early readmissions were common. These four observations are descriptive. The interpretation developed in the sections that follow, namely that they describe a service configured for acute stabilisation rather than for the management of a chronic disorder, is an inference drawn from this pattern and not a hypothesis tested by the present design.

4.2. A Service Configured for Stabilisation Rather than Treatment

The diagnostic and length-of-stay profile of Cohort A describes a pattern of care organised around the resolution of acute presentations. Acute intoxication and harmful use together accounted for 61.4% of principal-diagnosis admissions with mean lengths of stay of 3.68 and 4.34 days respectively, durations generally consistent with acute stabilisation, but insufficient to constitute treatment of an addictive disorder.

This is not a local anomaly but a well-documented structural feature of general hospital systems. In England, the majority of patients with alcohol dependence, including those requiring withdrawal management, receive their care in acute hospitals rather than in specialist services where the relevant competencies are concentrated. The literature notes that patients with alcohol use disorders impose a disproportionate burden on health systems and typically enter care through emergency pathways. Our finding that only 5.7% of principal-diagnosis substance admissions were managed on the Institute's designated toxicodependence ward, and that this number fell from 45 admissions in 2023 to 17 in 2025, indicates that the same pattern of dispersal into general acute capacity is operating here, and intensifying (Coleman et al., 2023).

The gradient of length of stay across diagnostic categories reinforces this reading. Duration of admission increased across diagnostic categories, from 3.68 days for intoxication to 36.34 days for the amnesic syndrome, but did not directly reflect the chronicity of the underlying disorder. The observed pattern suggests that time is allocated more closely in relation to acute medical risk than to longer-term treatment need.

4.3. The Submerged Burden of Substance Use

The ratio of 5.2 admissions with a substance-related secondary diagnosis to every one with a substance-related principal diagnosis is, to our knowledge, not a figure that has been reported in this form for a Romanian psychiatric institution, and it has direct planning implications. Nearly six in ten of these admissions were coded principally as a personality disorder (42.1%) or an organic personality and behavioural disorder (16.2%), categories whose presentation in this population is frequently inseparable from chronic alcohol exposure.

Two interpretations are possible and are not mutually exclusive. The first is clinical reality: genuine dual pathology, in which the personality or affective disorder is indeed the dominant clinical problem and substance use a genuine comorbidity. The second is a coding and case-formulation artefact, in which chronic alcohol use is systematically relegated to secondary status. Our data cannot adjudicate between them. What they establish is that any service planning based on principal-diagnosis counts alone will underestimate the institutional footprint of substance use by approximately a factor of six.

This matters because it aligns with the broader European picture of under-identification and under-treatment. As set out in Section 1.4, only a small minority of people with alcohol use disorders in European primary care receive treatment, an undertreatment attributed to stigma and to insufficient systematic screening. Our finding suggests that diagnostic subordination does not stop at the hospital door: within a psychiatric institution, where these patients are already admitted and already assessed, the disorder frequently remains diagnostically subordinate (Rehm et al., 2015).

Romania is a context in which this gap carries particular weight, given the consumption patterns set out in Section 1.4 (Harmful Alcohol Consumption, n.d.)

4.4. Premature Self-Discharge as the Operative Point of Failure

The most actionable finding of this study is the rate and distribution of discharge at the patient's own request. At 38.5% pooled across three years, and rising from 36.0% to 40.9%, the rate sits at the upper end of the internationally reported range. A review of 61 studies of discharge against medical advice from inpatient psychiatric treatment found prevalence ranging from 3% to 51%, increasing over time, and most commonly predicted by patient factors including young age, male sex, comorbid personality or substance use disorders, and a history of numerous hospitalisations ending in irregular discharge. Our cohort is composed almost entirely of the demographic profile that the review identifies as highest-risk: 88.9% male, median age 45, with substance use disorders by definition and personality disorder comorbidity in a large proportion (Brook et al., 2006).

The clinically informative pattern is the inverse gradient between severity and self-discharge. The rate was 54.2% for harmful use and 46.1% for acute intoxication, but 5.4% for withdrawal with delirium and 7.1% for amnesic syndrome. Patients remain in hospital as long as they are physically unable to leave. Self-discharge was highest in the groups with shorter admissions, which may represent an important opportunity for engagement in longer-term rehabilitation.

This is consequential rather than merely descriptive. An analysis of the US Nationwide Readmissions Database found that discharge against medical advice carried approximately twice the odds of unplanned 30-day readmission compared with routine discharge (Kumar, 2019). Qualitative work with patients who leave against medical advice frames these episodes as missed opportunities for health system engagement and supports the need for inpatient addiction treatment capacity and attention to provider stigma. Our data are consistent with a system in which the therapeutic sequence is interrupted at its most decisive point, in roughly four cases out of ten, and increasingly so (Coleman et al., 2023).

4.5. Concentration of Utilisation and the Revolving-Door Pattern

The concentration statistics quantify what is clinically familiar. In Cohort B, the highest-utilising fifth of patients accounted for almost half of all admissions, and 4.7% of patients met criteria for high-frequency use (Table 7).

The temporal structure of readmission is equally telling. In both cohorts,early readmissions were common, and one readmission in three in Cohort B occurred within thirty days of the preceding discharge (Table 8). Using index admissions with at least twelve months of follow-up, one-year readmission reached 40.4% in Cohort B. This sits squarely within the range reported in the neuroimaging and clinical literature, where approximately 40% to 60% of patients with alcohol use disorder in treatment relapse within the first year (Muller & Meyerhoff, 2021).

An important methodological caveat applies to the comparison between our two cohorts. The apparently low readmission figures in Cohort A (11.1% of patients with two or more admissions; 11.9% one-year readmission) should not be read as evidence of favourable outcome. Cohort A membership is defined by the principal diagnosis at each admission, so a patient admitted for alcohol withdrawal in March and readmitted in May under a principal diagnosis of depressive episode contributes only one admission to Cohort A while contributing two to Cohort B. Cohort A therefore systematically undercounts return to hospital.Cohort B is the more comprehensive estimate of the revolving-door phenomenon, and it is the one that shows a quarter of index admissions followed by readmission within 90 days.

Readmission and relapse are not equivalent, and the distinction matters for the interpretation of these figures. Readmission is an administrative event: it records that a patient returned to this institution and was admitted. Relapse is a clinical event, and the present dataset contains no direct measure of it. The two diverge in both directions. Patients who resume substance use without seeking or requiring hospital admission are invisible in these data, so the readmission figures may underestimate relapse. Conversely, a proportion of readmissions, particularly in Cohort B, may have been prompted by affective, organic or psychotic decompensation in which substance use played

little part in that episode. Cohort B is defined by the presence of a substance-related code in any diagnostic position, and the principal diagnosis at the readmitting episode was frequently different. Not every readmission in Cohort B therefore represents a relapse of the substance use disorder.

The readmission figures reported here should accordingly be read as an index of continuing dependence on inpatient care rather than as a relapse rate. This is the more conservative reading, and it is sufficient for the argument advanced in this paper, which concerns the organisation of services rather than the natural history of the disorder. Comparisons with the relapse rates reported in the clinical and neuroimaging literature are offered as context and not as like-for-like comparisons.

4.6. The Neurobiological Rationale for the Post-Detoxification Window

The occurrence of early readmissions after discharge is not merely an organisational observation; it coincides with a period during which the neural systems supporting sustained abstinence may remain impaired.

Structural neuroimaging in alcohol use disorder shows that recovery of cortical morphology begins early and follows a non-linear course. Grey matter volume recovery has been shown to follow a non-linear trajectory with a steeper slope early in abstinence, and to be region-specific: the dorsolateral prefrontal cortex, orbitofrontal cortex and insula show their greatest volume increases within the first month of abstinence, whereas the anterior cingulate cortex increases only between the first month and approximately seven months. Cortical thickness increases across the majority of cortical regions over seven months of abstinence, with more rapid change between one week and one month than thereafter, approaching control values in most regions by the end of that period (Fisher et al., 2010; Goldstein & Volkow, 2011; Horvath et al., 2020; Parvaz et al., 2022).

These structural findings acquire their clinical significance from the functions supported by the regions concerned. The dorsolateral prefrontal cortex subserves working memory, cognitive flexibility and the top-down inhibition of prepotent responses. The orbitofrontal cortex supports the valuation of outcomes and the updating of that valuation when contingencies change. The anterior cingulate cortex contributes to conflict monitoring, error detection and the recruitment of cognitive control when a habitual response must be overridden. The insula supports interoceptive awareness, including the representation of craving states. Reduced volume and cortical thinning across this network in alcohol use disorder are accompanied by impaired inhibitory control, by steeper discounting of delayed rewards, and by a shift in reward processing away from natural reinforcers and towards substance-related cues (Parvaz et al., 2022).

Read against the recovery trajectories described above, this means that the first weeks of abstinence are a period during which inhibitory control, the evaluation of delayed outcomes, error monitoring and reward processing are all still returning towards normative values, and during which cue-driven responding may be correspondingly less well opposed. This account is imported from the imaging literature. It is not tested by the present data, which contain no imaging, cognitive or clinical measures, and it is advanced here as a mechanistic hypothesis that may explain the observed clustering of readmissions rather than as a demonstrated mechanism.

The clinical implication is that the weeks immediately following detoxification are simultaneously the period of maximum neuroplastic opportunity and the period of maximum vulnerability. Consistent with this, the organisation of the extended brain reward system at one month into abstinence has been shown to differentiate patients who subsequently abstain from those who relapse, supporting the view that this interval is a genuine biological inflection point rather than merely an administrative one. Imaging studies further indicate that prefrontal engagement is associated with resilience against relapse in early abstinence, and that at least partial recovery of cerebral glucose metabolism, executive function and structural integrity occurs over short-, medium- and long-term abstinence (Charlet et al., 2018).

Discharging a patient after a short admission therefore does not simply return them to a risky environment; it may return them to that environment while neural systems relevant to

self-regulation remain in recovery. A post-detoxification facility is, in these terms, not an amenity appended to acute care but a means of protecting the interval during which the capacity for self-regulation is being physically rebuilt.

This reading also supplies a plausible explanation for the modest effect sizes observed in the continuing-care literature. A meta-analysis of 33 controlled trials found continuing care to have a small but significant positive effect, with Hedges' g of 0.187 at the end of the intervention and 0.271 at follow-up, and identified no significant moderators of overall effect. Reviews have nonetheless observed that interventions generating positive effects tended to have longer planned durations of at least twelve months, together with more active efforts to engage and retain patients. Interventions that begin after the critical early window has already closed, or that consist of low-intensity outpatient contact for patients who have returned to an unchanged environment, would be expected to yield exactly the modest and heterogeneous results the literature reports (Blodgett et al., 2014; McKay, 2021).

4.7. Economic Considerations

Over three years, the Institute was reimbursed 4,817,022 RON for 1,692 principal-diagnosis substance admissions consuming 10,116 bed-days. Of this, 68.5% was spent on the three diagnoses at the acute end of the alcohol spectrum, withdrawal state, acute intoxication and harmful use, across 1,370 admissions with a mean length of stay of 4.98 days.

Three features of this expenditure deserve emphasis. It is recurrent, since it is generated substantially by patients who return. It is concentrated in exactly the presentations with the highest rate of premature self-discharge, meaning that a large share of it purchases an intervention the patient does not complete. And it is, on our figures, a conservative estimate, because it counts only admissions coded principally to a substance-related diagnosis and therefore excludes the five-fold larger volume of admissions in which substance use appeared as comorbidity.

The cost gradient across the alcohol spectrum is also instructive.A single admission for the amnesic syndrome cost on average 11,161 RON, approximately six times the cost of an admission for acute intoxication, and occupied a mean of 36.4 bed-days.

This diagnosis represents a severe chronic neurocognitive consequence of prolonged alcohol exposure. Expenditure that appears low per episode at the acute end of the spectrum accumulates into a small number of very expensive chronic presentations at the other. We deliberately refrain from converting these observations into a projected return on investment for a post-detoxification unit. Published benefit-cost ratios for addiction treatment derive from health systems with different cost structures, different treatment configurations and different comparators, and applying them to these data would produce a figure with the appearance of precision and no evidentiary basis. What our data establish is the current pattern and magnitude of recurrent acute expenditure; establishing what a rehabilitation service would cost and avert requires a prospective evaluation.

4.8. Implications for Service Development

The findings support four concrete propositions.

The first concerns the target population. The patients most likely to leave prematurely, those admitted with harmful use and acute intoxication, physically stabilised within days, cognitively intact, are the natural candidates for a post-detoxification programme. They are currently the group receiving the least, and they represent 61.4% of principal-diagnosis admissions. The second concerns timing. Any transition to rehabilitation must occur before, not after, the point at which patients currently leave. Given a median length of stay under four days and a self-discharge rate approaching one half in the relevant diagnostic groups, a referral pathway activated at discharge will reach a substantial proportion of patients only after they have already gone. Engagement must begin during the acute admission itself. The third concerns duration. Both the continuing-care literature and the neuroimaging evidence converge on an interval considerably longer than the acute admission, extending across the first several months of abstinence, a period during which prefrontal structural recovery is still in progress. The fourth concerns case identification. If five in six

substance-related admissions carry the substance diagnosis in a secondary position, then a service accessed only by referral from principal-diagnosis cases will reach a small fraction of those who might benefit. Systematic screening across all psychiatric admissions, rather than referral from addiction-coded cases alone, is a precondition for adequate case-finding.

4.9. Limitations

Several limitations constrain the interpretation of these findings.

The study is descriptive and uncontrolled. It documents a pattern of care and its subsequent readmission pattern, but it cannot establish that the absence of post-detoxification services causes that pattern, nor can it estimate what a rehabilitation service would achieve.

The available variables were restricted to those held in routine administrative reporting. No information was available on area of residence, socioeconomic or occupational status, educational attainment, living circumstances, psychiatric or somatic comorbidity beyond the coded discharge diagnoses, pharmacological treatment at discharge, referral to community services, or engagement with outpatient care after discharge. No analysis of predictors of readmission was therefore possible, and the association between self-discharge and subsequent readmission that has been demonstrated elsewhere could not be tested in this cohort.

The absence of clinical-pathway information is a specific limitation for the interpretation of readmission. The data do not record whether a readmitted patient had previously received specialised detoxification or addiction treatment, what treatment was recommended at discharge, whether the patient adhered to it, or whether any outpatient, community-based or rehabilitation contact occurred between admissions. Without these variables, it is not possible to distinguish readmissions associated with a gap in continuity of care from readmissions driven by illness severity, by social circumstances, or by clinical factors unrelated to the substance use disorder. This limitation constrains the inference drawn in Section 4.2, and it is a principal reason for framing a post-detoxification rehabilitation unit as a subject for prospective evaluation rather than as a conclusion of the present study. Linkage of hospital records to outpatient and community mental health datasets would allow these questions to be addressed, and is the priority for further work.

Ascertainment was confined to a single institution. Patients readmitted to other hospitals, treated in private or non-governmental services, or lost to the system through relocation or death were recorded here as not readmitted. All readmission figures are consequently underestimates of true return to care, and the true rate of relapse is higher still, since relapse without readmission is invisible to this dataset.

Right-censoring persists despite the extended window. Admissions late in 2025 had reduced opportunity for an observed readmission. The index-admission analysis restricted to discharges before 31 December 2024 was performed specifically to address this and should be regarded as the more reliable estimate.

The two cohorts are subject to opposite biases. Cohort A undercounts readmission for the reason described in Section 4.5; Cohort B includes admissions in which the substance-related diagnosis may have had limited clinical relevance to that particular episode. The truth regarding the burden attributable to substance use lies between them, and we have reported both rather than selecting one. Diagnostic classification depended on routine clinical coding, which was not validated against case notes. Discharge type was derived from administrative categories that may not distinguish reliably between a patient who left against explicit medical advice and one discharged early by mutual agreement. Cost data reflect amounts reimbursed under the national insurance settlement system rather than the true economic cost of care, and were available only in aggregate by diagnosis and year.

Finally, one patient in Cohort B was recorded with 89 admissions over the study period. This figure is clinically plausible in a severe revolving-door presentation but could also reflect the administrative recording of internal transfers as discrete admissions. Verification of this and comparable outlying records is required.

5. Conclusions

This study examined three consecutive years of inpatient activity at a tertiary psychiatric institution serving a region with one of the highest levels of alcohol consumption in the European Union (Harmful Alcohol Consumption, n.d.). It describes a service that manages the acute presentations of substance use disorders rapidly, and that operated without any structured post-detoxification rehabilitation capacity throughout the study period.

Four observations support this conclusion. The modal admission was for acute intoxication or harmful use and lasted under four days, sufficient to resolve a physical crisis, insufficient to constitute treatment. More than one admission in three ended at the patient's own request rather than on medical advice, and the proportion rose across the study period, reaching 54.2% in the harmful-use group. Hospital utilisation was concentrated, and early readmissions were common. And for every admission in which a substance use disorder was the recorded reason for admission, there were 5.2 in which it was documented beneath a different principal diagnosis.

Taken together, these findings describe a system in which a chronic relapsing disorder is managed through repeated acute episodes, the pattern that McLellan and colleagues identified as the central failure of addiction care a quarter of a century ago, reproduced here in the routine data of a single institution (McLellan et al., 2000).

The timing of readmission is the finding with the clearest implications. Its concentration in the first weeks after discharge coincides with the interval during which cortical recovery in early abstinence is most rapid and least complete, and during which the prefrontal systems required to sustain abstinence are still being physically rebuilt. Discharge after a short acute admission may return patients to their usual environment while neural systems relevant to self-regulation remain in recovery. On this reading, the post-detoxification interval is not a period during which patients happen to relapse; it is a period during which the biological and environmental determinants of relapse are maximally misaligned, and that misalignment is a function of how the service is organised.

Four service implications follow from the data and are set out in Section 4.8. Case identification cannot rest on principal-diagnosis coding. Engagement must begin during the acute admission rather than at discharge. The target population may include patients admitted for intoxication or harmful use who have short inpatient stays. And the duration of any programme must extend across the first months of abstinence rather than the first days. Several qualifications constrain these conclusions. The study is descriptive and single-centre; it documents an association between a service configuration and a pattern of readmission but cannot demonstrate that the former causes the latter, nor estimate what a rehabilitation service would achieve. Readmissions to other institutions were not observable, so all readmission figures are underestimated. The variables required to identify which patients are at highest risk of early return were not available in routine reporting. The economic figures describe current recurrent expenditure and are not, and should not be read as, a projected return on investment.

What the study does establish is a baseline. It quantifies, for one institution and one region, the volume of substance-related inpatient activity, the point in the therapeutic sequence at which it fails, the population in which it fails most often, and the resources currently consumed in the process.

Whether a post-detoxification rehabilitation service would alter these figures is an empirical question that this study cannot answer and that a prospective evaluation could. The case for conducting that evaluation is, we suggest, adequately supported by the pattern described here. The findings reported above are observations. The neurobiological framework used to interpret the timing of readmission is drawn from external literature and is offered as a hypothesis consistent with those observations, not as a result established by them.

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