# Trend of hospitalizations in the Short Stay of Psychiatry Unit at Herminda Martin Clinical Hospital, for 14 years.

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***Introduction:*** *short stay psychiatric hospitalization is a necessary resource for treating mental disorders with severe decompensation which cannot be solved with outpatient treatment. Learning about results of this study helps clinical and administrative management. This study is aimed to evaluate the evolution of hospital indicators, socio demographic and clinic characteristics of patients hospitalized in the Short Stay Psychiatric Unit (SSPU).* ***Material and Method:*** *Longitudinal/retrospective/tendency study, performed on a universe of 4,563 discharges from SSPU at the Hospital de Chillán, Chile, during 14 years, from July 1st, 2005 to June 30th , 2019. Hospitalary, socio demographic and clinic variables were evaluated.* ***Results:*** *During the period under study discharges decreased, average stay days prolonged, occupational index increased and rotation index decreased. A low number of patients, with predominance of socio economic and psycho social problems was frequently re-hospitalized. The higher the number of admission the longer the stay was. Administrative and judiciary hospitalizations increased; the latter with longer average stay. Males/adolescents/young people/elderly people hospitalizations increased. Predominance was on on highly populated communes, Primary Care Units, closeness and access. Frequency of schizophrenia, other psychotic disorders, and personality disorders remained the same. Affective disorders duplicated, disorders caused by substances abuse tripled, dual pathologies duplicated, personality disorder was frequent in comorbility with disorders caused by substances abuse and affective disorders.* ***Conclusions:*** *joint strategies with the Judiciary System and with the Health Service are required. It is necessary to implement a Adolescents Unit and an Addiction Unit, and to improve multidisciplinary consultations for elderly people.*

***Key Words:*** *hospitalized patients, psychiatric illness, hospitalization, psychiatry.*

## INTRODUCTION

In order to meet mental health needs of the population, a network of mental health services, integrated to the General Health Network is required. It must have a model of continuous community care[1,2]. The Short Stay Psychiatric Unit (SSPU) is part of the network. It admits patients referred by mental health and outpatient psychiatry teams and from other clinical services of the General Hospital, for handling acute and severe episodes and with

The authors declare that they have no conflicts of interest with respect to this article.
Accepted: 2020/12/15
Received: 2020/04/23

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hospitalization not longer than 60 days[1,2]. Its objective is to perform integral diagnosis and treatment on people who have severe decompensation on their mental disorder, or else, they require diagnosis studies or treatments that cannot be performed in an outpatient setting[2].

In Chile, beds for short stay psychiatric hospitalization have increased and have a better territory distribution. Most of them are set at general hospitals. In 2016 there was a total of 1,150 beds, distributed within 28 of the 29 Health Services[1].

Evaluations carried out by the Ministry of Health in Chile state that, account for SSPU increase for adults, from 18 years old, in 2004 to 23, in 2012[3,4]. Within those years an increase of urgency services admissions, involuntary/ administrative/judicial hospitalizations has been observed. During 2012 (32.1%) urgency unit admissions had tripled; admissions authorized by the Regional Ministerial Secretaries (SEREMIS), (7.8%) quadruplicated; judicial admissions[2-4] increased from 2.5 to 3.4%. Regarding the latter, there are significant variations from the SSPU, having none to others where admissions are 44% of the total[2]. Significant fluctuations in the average of stay days are also described, from 9 to 44 days among the various Health Services (SS)[2]. In 2012 the occupational index was 87.6 and rotation index was 17.2, at a national level. That year, the most frequent diagnosis were schizophrenia and delusional disorders (36.3%), affective disorders (21.9%), disorders caused by substances abuse (13.5%) and personality disorders (7.9%). The frequency order remained the same, but the percentage compared with 2004 increased in the first three pathologies (27.8%, 26% and 16.8%, respectively)[3,4].

National statistics is replicated internationally. where Emergency Room and Administrative[5,6] Non Voluntary and Judiciary[7,8] Admissions have increased progressively. During the last few years, an increase of hospitalizations derived from consumption of substances and of dual pathologies has been observed. Such situation has made management more complex and led to less favorable[9-11] and more complex results.

Locally, the Health Department of Ñuble (HDÑ), in 2002 opened the Adults SSPU. It is part of the Clinic Hospital Herminda Martin (CHHM). It has a total capacity for 10 beds. From 2005 its capacity progressively increased till reaching 26 beds, in July that year, for adults and adolescents. To date, no longitudinal evaluation of the Unit performance has been made.

Except for the two studies requested by the Ministry of Health (in 2004 and 2012)[3,4], our country does not have any publications of other longitudinal investigations on psychiatric hospitalizations at the Short Stay Unit.

In order to provide information estimated to be useful for clinic and administrative management regarding short stay psychiatric hospitalizations, a decision was made in order to perform this study, whose objective is to evaluate the evolution of hospital indicators, socio demographic and clinic characteristics of hospitalized patients at the SSPU of the (CHHM), by analyzing discharges for the last 14 years.

## MATERIAL AND METHOD

A quantitative/descriptive/longitudinal/ retrospective/ tendency investigation was made. The study was carried out with a universe of total of discharges at the SSPU of the (CHHM), between July 1st, 2005 and June 30th, 2019.
The following variables were considered:

For hospital indicators: average of stay days, occupational index, rotation index, rehospitalization and type of hospitalization (voluntary, involuntary administrative authorized by Regional Ministerial Secretaries and by the Judiciary).

For socio demographic characteristics: sex, age, commune, Primary Care Unit and socio economic and psycho social situation (as per CIE-10 Classification).

In clinical characteristics: main and secondary diagnosis, both considered as such in the hospital discharge record, as per CIE-10.

This study was approved by the Ethics Committee of the (CHHM). Regarding the procedure, discharge data of the SSPU was requested from July 1st, 2005 till June 30th, 2019 from the Statistics Medical Service and from the Diagnosis-related Groups (record

keeper from 2011). The record of administrative and judiciary admissions was requested from the SSPU Secretary (record keeper from 2013). The data obtained were compared and complemented among the three sources of information and then a data base, created for such purpose, was populated. Clinical records of patients were not reviewed. Work was made only with information on discharge records of the hospital.

The data were analyzed with statistics software SPSS. A descriptive analysis by using frequency distribution tables, summary statistics and charts was made. Statistical inference tests were not made, because the study was made with the universe.

## RESULTS

Between July1st, 2005 and June 30th, 2019 a total of 4,563 discharges were recorded, with an average of 326 discharges per year.

The number of discharges decreased, progressively from 361 in 2006 to 265, in 2018 (Figure 1); at the expense of female discharges (nearly half of them), with an increase of males discharges (from 102 to 127).

Average of stay days was 29.2 days (DS 38).Minimum 1 day, maximum 681 days. As depicted in Figure 2, such average was increased to be nearly duplicated within 14 years (total: 20.8 to 40; women: 18 to 34; men: 25 to 40 days), every year was longer for men than for women.

The SSPU had a high occupational index (above 97%), which increased from 97.2% in 2008 to 99.8 in the first semester, 2019. However, during the same period, the rotation index decreased progressively from 1.4 to 0.7.

Within the 14 years the study covered there was a total of 2,924 hospitalized patients. Out of these, 73.8% (N: 2.155) was hospitalized only once with an average stay of 25.4 days. 14,4% (N: 422) was hospitalized twice, with an average of 28.9 days. 8.2% (N: 241) was hospitalized three to four times, with an average of 34.4 days. 2,8% (N: 85) was hospitalized between five to nine times, with an average of 35.7 days. 0.6 % (N: 19) was hospitalized between 10 to 22 times, with an average of 36.5 stay days. The 19 patients with more re-hospitalizations were hospitalized 9,100 days in total.

Between 2013 and 2018 the most frequent type of hospitalization was voluntary admission

**Figure 1**. Discharges trends of SSPU of the HCHM, from 2006 to 2018

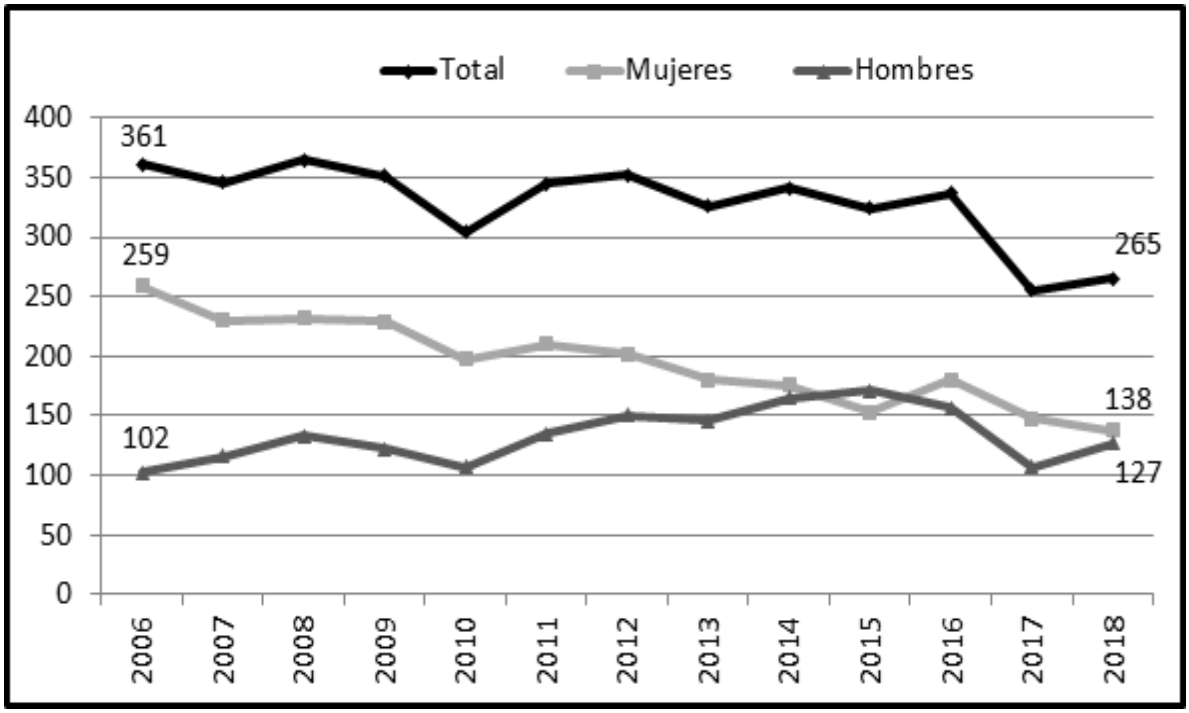
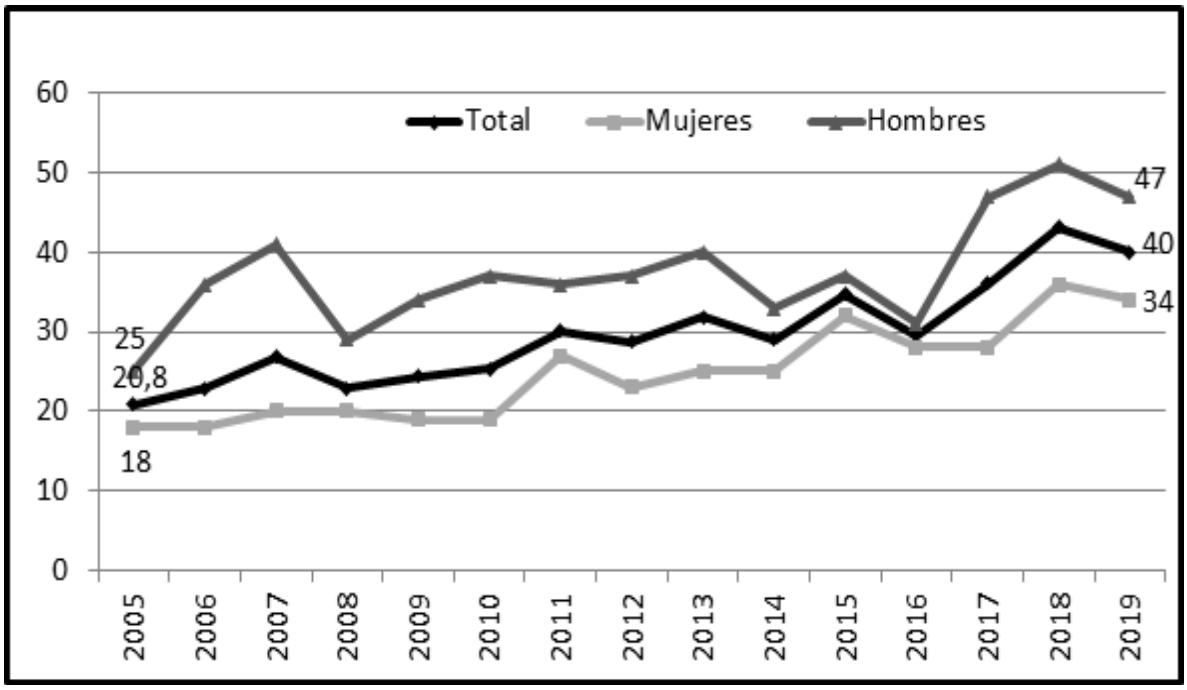


**Figure 2.** Trends of Average Stay Days, Per Year and Sex, SSPU of the HCHM, from 2005 to 2019




with a percentage of around 82%, which remains in time. However, hospitalizations authorized by The Regional Ministerial Secretaries increased (from 11.3% to 29.1%). Judiciary hospitalizations increased as well (from 5,5% to 8,3%), (Figure 3). Figure 4 reports that judicial hospitalization had longer stays, with an average of 69.3 days, followed by administrative hospitalizations (44.5 days). Each year voluntary hospitalizations had the lowest average of stay days (27.8 days).

59,4% of the discharges were women. Men tendency was increasing, from 34.7% in 2005 to 47.3% in 2019. Women discharges decreased from 65.3% to 52.7%.

Average age was 36.3 years (DS 14.7), with a minimum of 11 years and a maximum of 91 years. Hospitalizations of adult patients (25 to 64 years) were the most frequent (68,9%), followed by adolescents (15 to 19 years) (14.6%), then young people (20 to 24 years) (12.3%), elderly people (65 years and older) (3.7%) and finally 14 years old or younger (0,5%). Tendency of age groups is depicted in Figure 5. Between 2005 and 2019, the percentage of adults decreased from 73.4% to 61.9%. However, the percentage of young people slightly increased (from 9.8% to 16.9%), adolescents (from 15% to 16.9%) and elderly people (from 1.7% to 3.4%).

Regarding residence communes, the communes with the highest percentage were Chillán (61.1%), San Carlos (6.5%), Coihueco (5.0%), Bulnes (3.2%) and San Ignacio (2.8%). The other 18 communes ranged around 2.5 to 0.1%.

Most discharged patients (94.5%) belonged to a Primary Care Unit or to a community hospital of SSÑ. Only 2.7% did not have an associated Primary Care Unit. 2.8% did not have a record. The most frequent Primary Care Units were: Family Health Center (CeSFam) Violeta Parra (16.5%), CeSFam San Ramón Nonato (11.5%), CeSFam Isabel Riquelme (7.5), CeSFam Ultraestación (6.7%), CeSFam los Volcanes (6.2%) and CeSFam Coihueco (4.7%). The other 31 Centers ranged between 4.3 to 0.1%.

Socio economic and psycho social circumstances were only reviewed in 19 patients with high rehospitalization frequency (admitted between 10 to 22 times during 14 years). All of them (N:19) had severe problems with the primary support group, apart from economic and employment problems (no occupation). 4 of them had housing problems (they did not have any house) and 8 of them had other psycho social situations (legal procedures).

Within the 14 years under study, the most

**Figure 3.** Trend on type of hospitalization at the UCEP of HCHM, from 2013 to 2018

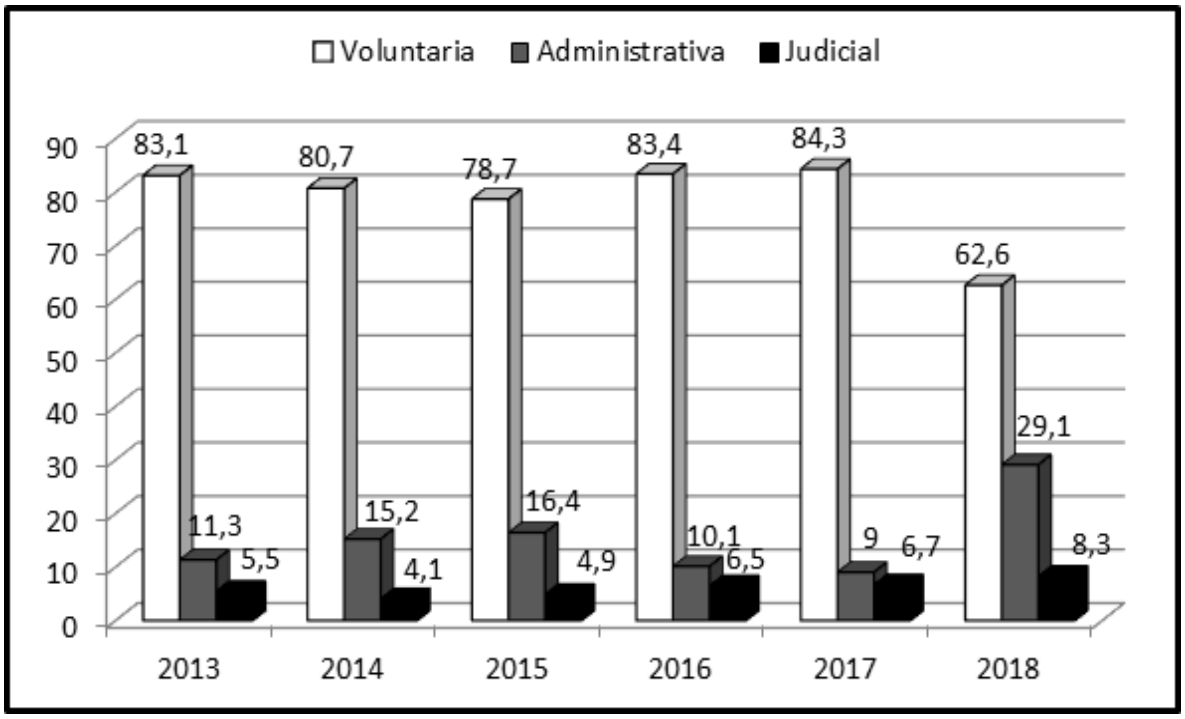



**Figure 4.** Trend of the average of stay days, according to hospitalization type, at UCEP of HCHM, from 2013 to 2018

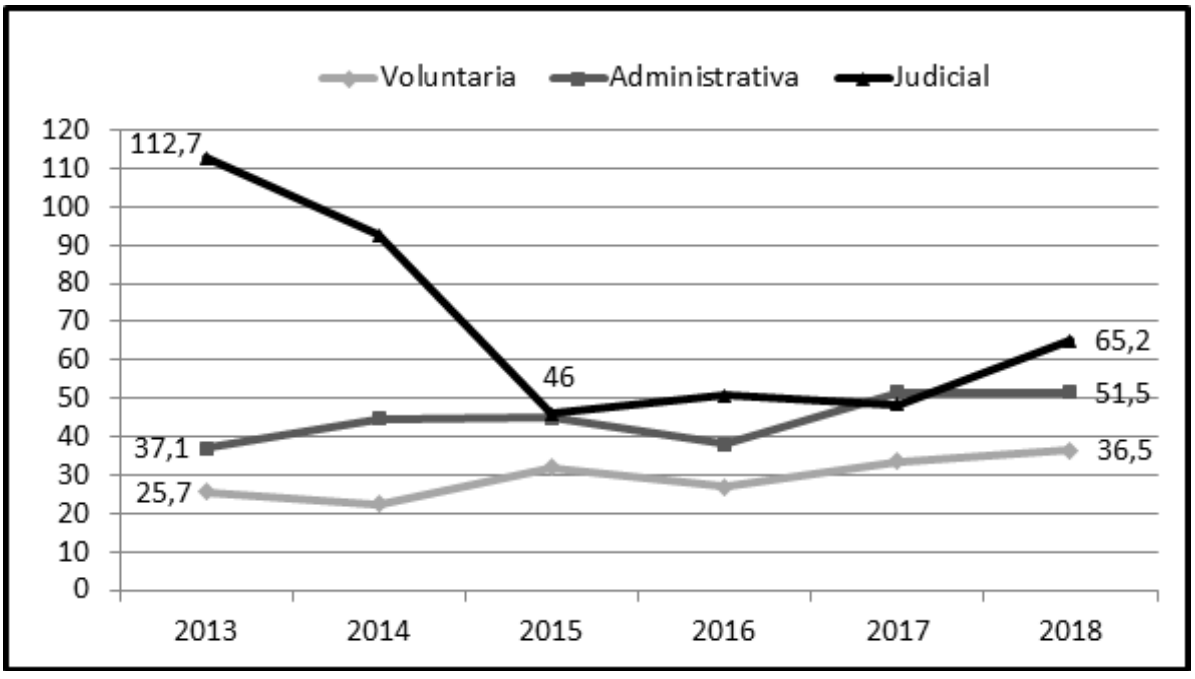
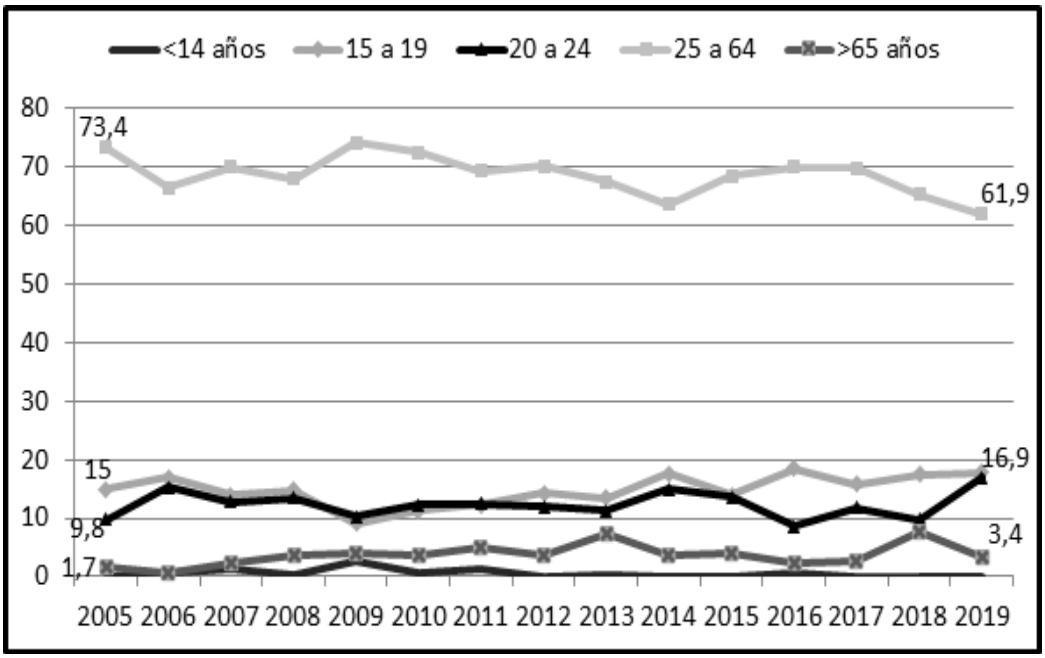


**Figure 5.** Trend of the age groups, at UCEP of HCHM, from 2005 to 2019




frequent main diagnosed categories (first diagnosis) were: personality disorder and behavior disorder (TP), 22.3%; schizophrenia, schizotypal disorders and delusional disorders (EyOP), 20.7%; mood disorders (affective) (TA), 19.7% and disorders caused by the use of psychoactive substances (TS), 17%. In women the most frequent were: TP (26.9%), TA (22.0%) and neurotic disorders, stress-related disorders and somatoform disorders (17.5%). In men, however, the first diagnostic majority were: EyOP (28.5%), TS (26.4%) and TA (16.4%) (Table 1). Figure 6 depicts the tendency of the most frequent main diagnosis: EyOP and TP tend to remain flat. However, TA duplicated and TS se tripled within that period.

When reviewing the main/secondary diagnosis, with respect to TS, from 2011 to the first semester, 2019, in total, it was found that TS reached 31.1% (N: 827); 24.4%, as to main diagnosis and 6.7% in comorbility with other mental disorders. On the other hand, TS was diagnosed in 13.1% of EyOP and 17% of the TA (Table 2). When reviewing the tendency, only TS or in comorbility had an increasing progressive tendency from 24.3% in 2011 to 41.5% in 2019. The TS as to main diagnosis increased from 16.5% to 27.1%. The other mental disorders in comorbility with TS were doubled, from 7.8% to 14.4%.

Another of the diagnosis analyzed as main and secondary ones was TP. This was diagnosed in half (49.6%) of discharges between 2011 and first semester, 2019; 24.1% (N: 642) as a main diagnosis and 25.5% (N: 679) in comorbility.

On the other hand, TP was also diagnosed in 58.8% of patients with TS, 34.1% of TA and 6.8% with EyOP (Table 3).

## DISCUSSION

Progressive decrease in the number of discharges may be explained by the increase of the average of stay days, with decrease of the rotation index, despite the increase of occupational index.

Several factors may influence on the average of stay days as median values and on its increase in time. Among them (considering only study variables), the high average of stay days for judiciary hospitalized patients and increase of this type of admission; re-hospitalizations and longer stays, favored by psycho social problems; progressive increase of dual pathologies which makes management more complex. Addressing these factors will not only decrease stay, but it will favor admission of other patients who expect hospitalization.

Increase of admissions of males could be

**Figure 6.** Trend of the most frequent diagnosed groups, at UCEP of HCHM, from 2005 to 2019

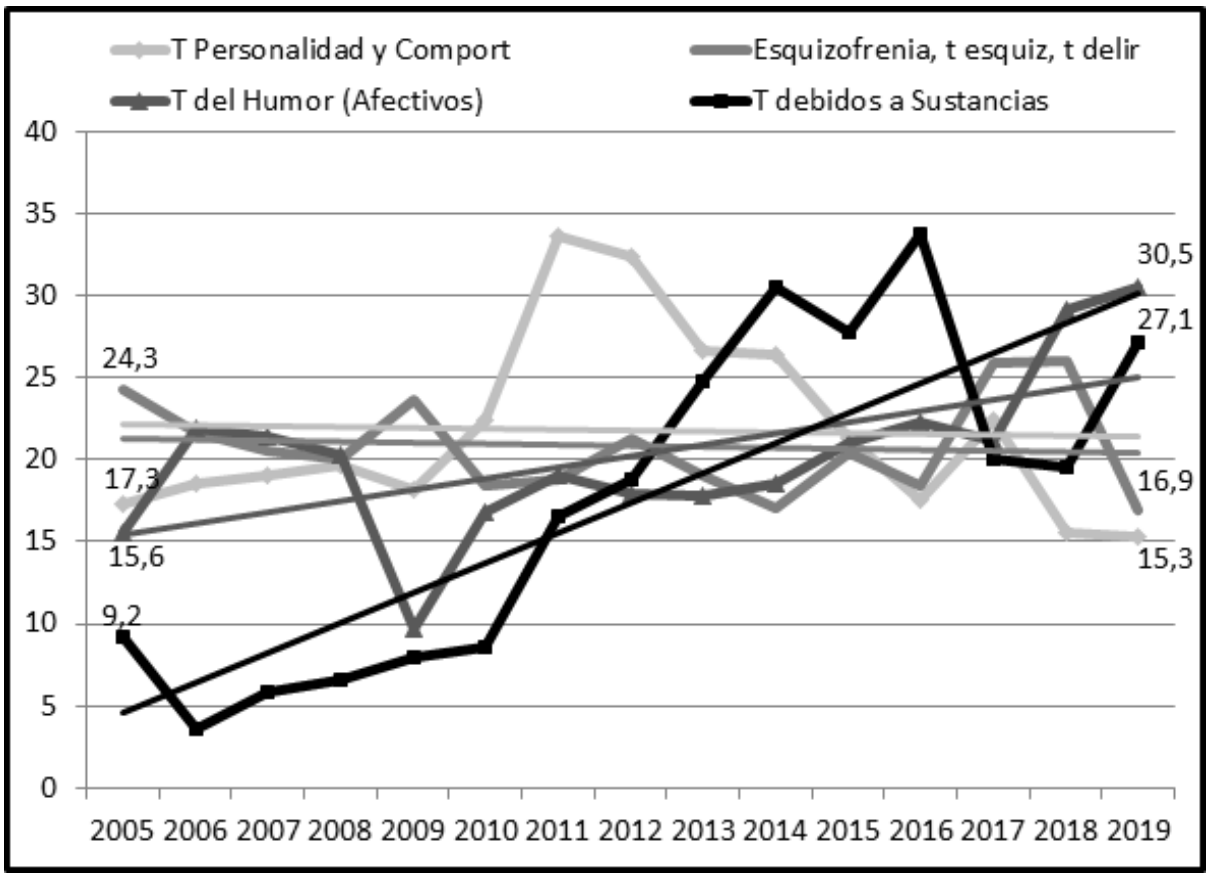



**Table 1.** Distribution of egress, according to main diagnose groups, UCEP of HCHM. Year 2005 to 2019

| Groups of mental disorders | Sex | | | | Total | |
|---|---|---|---|---|---|---|
| | Masculine | | Femenine | | | |
| | N | % | N | % | N | % |
| Organic mental disorders | 49 | 2.6 | 52 | 1.9 | 101 | 2.2 |
| Disorders caused by substances abuse | 489 | 26.4 | 286 | 10.6 | 775 | 17.0 |
| Schizophrenia, schizotypal disorder, delusional disorder | 528 | 28.5 | 418 | 15.4 | 946 | 20.7 |
| Mood disorder (Affective disorder) | 304 | 16.4 | 595 | 22.0 | 899 | 19.7 |
| Neurotic disorder, Stress related disorders, T Somatom | 102 | 5.5 | 473 | 17.5 | 575 | 12.6 |
| Disorders associated to physiological alterations and physical factors | 4 | 0.2 | 81 | 3.0 | 85 | 1.9 |
| Personality and conduct disorders | 288 | 15.5 | 730 | 26.9 | 1018 | 22.3 |
| Mental retardation | 57 | 3.1 | 33 | 1.2 | 90 | 2.0 |
| Psychological development disorders | 19 | 1.0 | 2 | 0.1 | 21 | 0.5 |
| Non specified mental disorders | 13 | 0.7 | 40 | 1.5 | 53 | 1.2 |
| Total | 1853 | 100 | 2710 | 100 | 4563 | 100.0 |

**Table 2.** Discharges distributions per Main Diagnosis and Disorder caused by Psychoactive Substances Abuse. SSPU of the HCHM. SSPU of the HCHM.

| Main Group Diagnosis of Mental Disorders, from 2011 to 2019 | Disorders caused by Substances | | | | Total | |
|---|---|---|---|---|---|---|
| | Without | | With | | | |
| | N° | % | N° | % | N° | % |
| Dirsorders caused by Substances | - | - | 648 | 24.4 (100.0) | 648 | 24.4 (100.0) |
| Schyzophrenia, other Psychotic Disorders | 472 | 17.7 (86.9) | 71 | 2.7 (13.1) | 543 | 20.4 (100.0) |
| Mood Disorder (Affective) | 465 | 17.5 (83.0) | 95 | 3.5 (17.0) | 560 | 21.0 (100.0) |
| Personality & Behavior Disorder | 642 | 24.1 (98.8) | 9 | 0.3 (1.2) | 651 | 24.4 (100.0) |
| Another specific Mental Disorder | 247 | 9.3 (98.4) | 4 | 0.1 (1.6) | 251 | 9.4 (100.0) |
| Unspecified Mental Disorder | 10 | 0.4 (100.0) | - | - | 10 | 0.4 (100.0) |
| Total | 1836 | 68.9 | 827 | 31.1 | 2663 | 100.0 |

**Table 3.** Distribution of Discharges, as per Main Diagnosis & Personality Disorder. UCEP of HCHM. From 2011 to first Semester, 2019

| Groupf of Mental Disorders From 2011 to 2019 | Personality Disorders | | | | Total | |
|---|---|---|---|---|---|---|
| | Without | | With | | | |
| | N | % | N | % | N | % |
| Disorders caused by substances | 271 | 41.2 | 386 | 58.8 | 657 | 100 |
| Schyzophrenia, other Psychotic Disorders | 506 | 93.2 | 37 | 6.8 | 543 | 100 |
| Mood Disorders (Affective) | 369 | 65.9 | 191 | 34.1 | 560 | 100 |
| Personality & Behavioral Disorders | - | - | 642 | 100 | 642 | 100 |
| Other specific Mental Disorders | 187 | 74.5 | 64 | 25.5 | 251 | 100 |
| Non specific Mental Disorders | 9 | 90.0 | 1 | 10.0 | 10 | 100 |
| Total | 1342 | 50.4 | 1321 | 49.6 | 2663 | 100 |

understood by the progressive increase of the TS, that tripled, and are more frequent in men than in women.

The increasing progression of hospitalizations in adolescents, young people and elderly people could also be due to pathologies linked to substances, in the two first ones and to population statistics in the latter.

Communes and Primary Health Care Units linked with a higher frequency of hospitalization are those with more population, closer to the unit and with more expedite entry ways. Units which do not have these features must be taken into account.

Increase of hospitalizations due to TS, TA and dual pathology will require to review ambulatory preventive/treatment/adherence follow up strategies; and also management during hospitalization.

High TP percentage justifies review of psychotherapeutic strategies, both ambulatory and during hospitalization.

Increase of judiciary/ adolescent/elderly people/TS/dual pathologies hospitalizations, and long stays with major psycho social problems, require reviewing coordinations inside and outside the SS. Interventions and Psychiatric Hospitalization/Residence Units available.

In the light of the foregoing, our suggestion is:

To have coordination with the Judiciary System in order to perform Psychiatric Ambulatory expert´s Report at (Coroner´s office) and/or at the Evaluation Unit of defendant patients and with provisional Forensic Psychiatric Units, as used by some SS and, according to the National System of Forensic Psychiatry[1,2].

Judicial hospitalizations must be coordinated, with the Judiciary system, at the Units with Forensic Psychiatry beds available, according to provisions made by the National System of Forensic Psychiatry[1].

Coordination must be made with the SS Mental Health Head in order to implement residencies for patients with psychiatric disorders who do not have to housing and/or do not have to support network.

To create or implement a Hospitalization Unit for adolescents. Due to their vital cycle conditions, they require exclusive Hospitalization Centers with assistance from Child and adolescent psychiatrists.

To reorganize coordination with other specialist physicians and professionals of the hospital in order to improve care effectiveness for elderly people hospitalized at SSPU.

To create/implement an Addiction Unit for ambulatory and hospitalization management, with a dual pathology Hospitalization sub Unit.

To implement/organize a Beds Management Committee, aimed to prioritize psychiatric hospitalizations, and a Health Care/Follow up team while admission is expected.

Strengthen the network management with APS - Secondary Assistance – Tertiary Assistance.

Continuous training to the team of psychiatrists, mental health professionals and SSPU technicians, because of the higher progressive complexity of hospitalized patients.

At an ambulatory level, to review preventive/ treatment/adherence/follow up strategies, mainly on pathologies with increasing hospitalization.

## REFERENCES

1. Ministerio de Salud, Chile. Plan nacional de salud mental 2017 – 2025. Santiago, Chile: Minsal; 2017.

2. Ministerio de Salud, Chile. Modelo de gestión. Unidad de hospitalización de cuidados intensivos en psiquiatría para población adulta e infanto adolescente (UHCIP). Santiago, Chile: Minsal; 2016.

3. Ministerio de Salud, Chile, OPS/OMS. Informe WHO-AIMS sobre sistema de salud mental en Chile. Santiago, Chile: Minsal; 2006.

4. Ministerio de Salud, Chile, OPS/OMS. Sistema de salud mental de Chile. Segundo informe. WHO-AIMS. Santiago, Chile: Minsal; 2014.

5. Bustamante J, Cavieres A. Internación psiquiátrica involuntaria. Antecedentes, reflexiones y desafíos. Rev Med Chile 2018; 146: 511-517.

6. Silva B, Godoy P, Morandi S. Factors associated with involuntary hospitalization for psychiatric patients in Switzerland: a retrospective study. BCM Psychiatry 2018; 18: 401-410.

7. Hare L, Furtado V, Guo B, Völlm B. Long-stay in forensic-psychiatric care in the UK. Soc Psychiatry Psychiatric Epidemiol 2018; 53: 313-321.

8. Mollerhoj J, Stolan L, Brandt-Christensen M. A Thorn in the Flesh? Forensic inpatients in general psychiatry. Perspect Psychiatr Care 2016; 52(1): 32-39.

9. Touriño R. Patología dual y rehabilitación psicosocial. Rehabilitación psicosocial 2006; 3:1.

10. Vidal M, Lamas R, De Usabel P, Armas C, García M. Patología dual en pacientes psiquiátricos hospitalizados. Boletín de la Asociación Galega de Saúde Mental 2016; 58: 137-150. San L, Arranz B, Grupo expertos de la guía de práctica clínica de patología dual.

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