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UTILISATION OF SPECIALIST MENTAL HEALTH SERVICES IN IRELAND – BASELINE ANALYSIS FOR THE HIPPOCRATES MODEL

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ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

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ABBREVIATIONS

ADHD	Attention deficit hyperactivity disorder
CAMHS	Child and Adolescent Mental Health Service
CAUs	Child and adolescent units
CHO	Community healthcare organisation
CMHT	Community mental health team
CSO	Central Statistics Office
DRG	Diagnosis-related group
GA	General adult
GHPUs	General hospital psychiatric units
HIPE	Hospital In-Patient Enquiry Scheme
HRB	Health Research Board
HSE	Health Service Executive
IPPCCs	Independent/private and private charitable centres
KPI	Key performance indicator
LHO	Local health office
MHC	Mental Health Commission
NPIRS	National Psychiatric In-Patient Reporting System
PHCCs	Psychiatric hospitals/continuing care units
POA	Psychiatry of old age
SYOA	Single year of age
WTE	Whole-time equivalent

EXECUTIVE SUMMARY

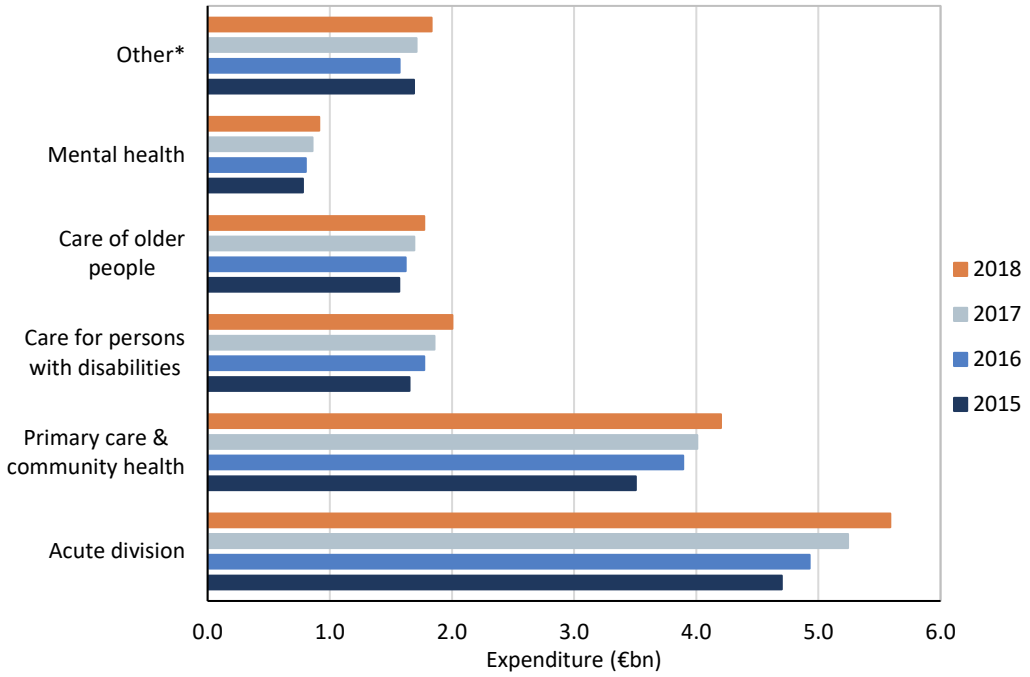
The Hippocrates model provides estimates and projections of public and private healthcare demand for a range of health and social care services in Ireland between 2015 and 2030. To extend the model to include specialist mental health services, it was necessary to scope currently available data in Ireland. Data from a number of sources were considered. It was concluded that data on the utilisation of in-patient mental health services collected by the Health Research Board are sufficiently detailed to include in the model. Data on services provided in the community are not currently detailed enough for inclusion in the model.

1 INTRODUCTION

The first report from the Hippocrates model, published in 2017, provides baseline estimates and projections of public and private healthcare demand for a range of Irish health and social care services for 2015–2030 (Wren et al., 2017). The model continues to be developed in stages and aims to add additional service activity as data availability allows. One such area of activity that was excluded from the first report was specialist mental health services.

In 2018, the Health Service Executive's (HSE) gross non-capital vote allocation amounted to €16.3bn (Department of Health, 2019).[1] The National Hospitals Office accounted for 34.3 per cent of the total while specialist mental health services accounted for just 5.6 per cent or €913m (Figure 1).[2] This was a 17.1 per cent increase on the 2015 (€780m) expenditure.

FIGURE 1 HSE gross non-capital vote allocation, 2015–2018 (€bn)



Notes: In 2015 the Vote of the HSE was disestablished and the funding transferred to Vote 38 (Office of the Minister for Health) from which Vote grants are now paid to the HSE (Department of Health, 2019).
* Other includes statutory pensions, health and wellbeing, palliative and chronic illness, long-term charges repayment scheme, social inclusion, and other.
Source: Department of Health (2019), Table 6.4.

The aims of this report are to scope the types of data available on specialist mental health services in community and in-patient settings, and to establish how these can be incorporated into the Hippocrates model. Services provided through Primary Care and Community Health are beyond the scope of this analysis. This

1 In 2015 the Vote of the HSE was disestablished and the funding transferred to Vote 38 (Office of the Minister for Health) from which Vote grants are now paid to the HSE (Department of Health, 2019).
2 The CSO System of Health Accounts 2017 estimates that a further €19m in mental health spending comes from other sources (for example, out-of-pocket) (personal communication, HSE, 5 July 2019).

includes mental health services provided by general practitioners (GPs) and psychologists working in primary care.

The Hippocrates model employs a macro-simulation (cell-based) approach to project demand for, and expenditure on, health and social care services. A macro-simulation approach was deemed most appropriate as it offers more flexibility than standard macro-level modelling, yet is still feasible with the considerable data constraints faced in the Irish system. In these models, individuals are grouped into cells according to age and sex, and expenditure is estimated by multiplying the number of individuals in a cell by the unit (or average) cost (Wren et al., 2017).

Where possible, the model disaggregates demand and expenditure estimates for each healthcare service by single-year-of-age (SYOA) and sex (Wren et al., 2017), and aims, where possible, to include both public and private activity and cost. The first step in the modelling is to estimate utilisation and demand in the base year. In the next step, healthcare demand will be projected based on projected population growth, with sensitivity analyses varying assumptions about population growth, unmet need and demand and healthy ageing. Projections of expenditure (Figure 2) will be developed by applying cost data to projected demand.

FIGURE 2 Hippocrates model

Source: Author representation of the Hippocrates model.

In the following sections, baseline utilisation and demand data for specialist mental health services for 2018 are presented where available, and the limitations of the data in the context of model inclusion are outlined. Not all data presented are suitable for inclusion in the model; therefore, at the end of Section 3 and Section 4, we clearly outline the metrics for inclusion in Hippocrates. Some data improvements needed to expand our understanding of mental health services in Ireland in in-patient and community settings are also outlined.

2 CONTEXT

A Vision for Change, the policy document published in 2006, set out a radical reform programme for planning and delivering mental health services over the subsequent ten years in Ireland (Government of Ireland, 2006).[3] The policy framework outlined describes how individuals should access different levels of support services depending on the severity of their symptoms. The report outlines how a proportion of those presenting with mental health problems will only receive informal care from family and friends and support in their community. A further group will have mild to moderate symptoms that can be managed in a primary care setting, while another will have moderate to severe symptoms and will be referred to specialist mental health services.

Since the publication of this policy, the delivery of public specialist mental health services in Ireland has undergone transformation, moving from a hospital/in-patient-centred model to a community-based outpatient model. The two main avenues for public mental health service delivery are community mental health teams (CMHTs) and in-patient units and hospitals. These services are administered and delivered, for the most part, through the public system by the HSE, though independent/private and private charitable centres also provide care for a significant number of in-patients, some of which may be publicly funded. In addition, patients can access psychiatry and psychology outpatient services through the private system.[4]

Highlighting the change in policy over time, which has moved the balance of care away from hospital-based treatment towards treatment in the community (O'Shea et al., 2008), the number of in-patients in Irish psychiatric units and hospitals has fallen substantially. Each year, the Irish Psychiatric Units and Hospitals Census, undertaken by the Health Research Board (HRB), counts all in-patients (including those on leave) on census night.[5] The number of in-patients in adult units decreased from 661.4 hospitalisations per 100,000 population in 1965 to 49.5 per 100,000 in 2018 (Figure 3).

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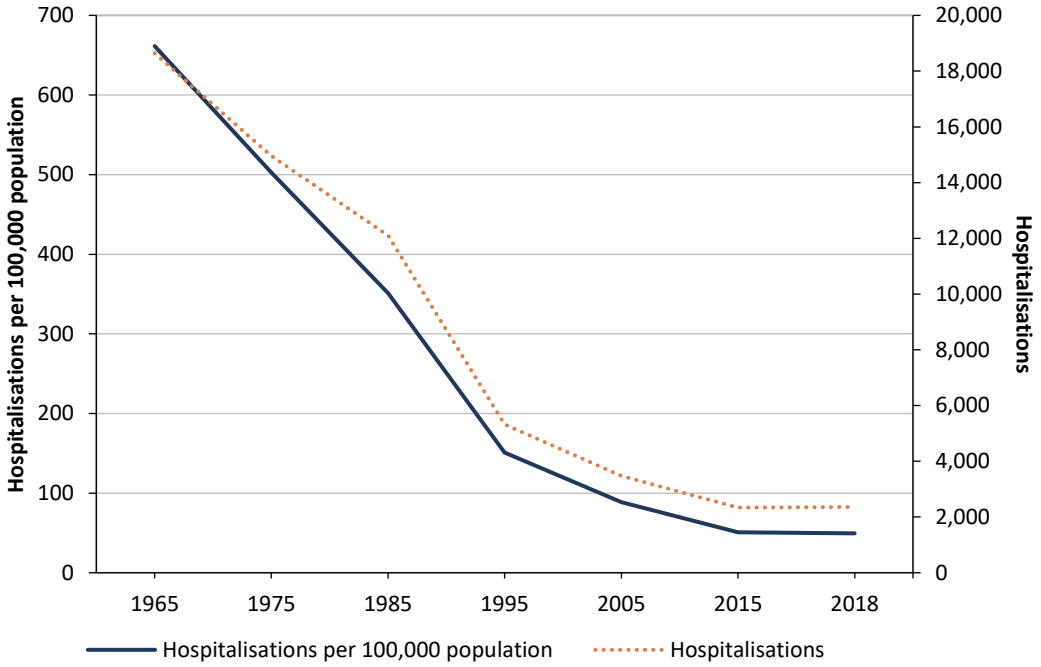
3 An update to *A Vision for Change* entitled *Sharing the Vision – A Mental Health Service for Everyone* (Department of Health, 2020) was recently published (16 June 2020). While the strategy may impact the way in which mental health services are delivered in the future the focus of this report is service utilisation in 2018.

4 There are no data available on the utilisation of private psychiatry and psychology outpatient services.

5 Some patients are granted overnight leave but still counted in the HRB's Irish Psychiatric Units and Hospitals Census.

FIGURE 3 NPIRS – Hospitalisations in Irish psychiatric units and hospitals, number and rate per 100,000 population, 1965–2018



Notes: Does not include admissions to child and adolescent units.
Rate calculated using CSO Census data from the most recent previous census on a whole-population basis.
Source: HRB Irish Psychiatric Units and Hospitals Census, 2018.

3 IN-PATIENT MENTAL HEALTH SERVICES

In 2018, there were 66 units providing in-patient services.[6] These include general hospital psychiatric units, psychiatric hospitals/continuing care units, independent/private and private charitable centres, and child and adolescent units. Of these, the Mental Health Commission (MHC) classifies 28 as acute adult units (MHC, 2020). A census carried out by the MHC on 28 November 2018 found that these units had an overall occupancy rate of 89.3 per cent. The rate was found to vary across facilities, with only nine of the 28 units found to be operating within a safe occupancy level of less than 85 per cent on the night (MHC, 2020). The MHC found that, while the total number of adult acute beds (1,050) was higher than that recommended in *A Vision for Change*, availability of services varied widely depending on location.

The following section examines utilisation data on specialist in-patient mental health services in Ireland. It considers the profile of episodes in 2018 by age, sex, length of stay and diagnosis.

3.1 Data

The National Psychiatric In-Patient Reporting System (NPIRS), which is managed by the HRB, is the national psychiatric in-patient database in Ireland. Under the Mental Health Act 2001, all in-patient mental health facilities must be on the Register of Approved Centres. A 'centre' is defined in the Act as 'a hospital or other in-patient facility for the care and treatment of persons suffering from mental illness or mental disorder'. An approved centre is one that is registered by the MHC. Since the Act prohibits unregistered centres, all facilities that operate as a 'centre' must be registered by the MHC.[7] All approved centres must provide data to the NPIRS, so there is 100 per cent coverage. Data on admissions to, discharges from, and deaths in general hospital psychiatric units, psychiatric hospitals and continuing care units, independent/private and private charitable centres, child and adolescent centres, and the Central Mental Hospital are returned to the HRB.

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6 There were 22 acute units in general hospitals, 28 psychiatric hospitals/continuing care units, seven private/ independent providers, six children's units, and three other units, one of which is for intellectual disability, while the others are intensive-care services and/or rehabilitative units (NPIRS, Published Tables 2018; https://www.hrb.ie/fileadmin/2._Plugin_related_files/Publications/2019_Publication_files/MHIS/NPIRS_Activities_2018_all_tables.xlsx (last accessed 19 February 2020).

7 http://www.mhcirl.ie/registration/ (last accessed 19 February 2020).

3.2 Methods

The metrics for analysis in this report are 'episodes' and 'bed days'. The term episodes is used rather than discharges, admissions or patients, as this analysis uses an aggregation of the following activity in 2018:

1) completed episodes – discharges and deaths in 2018 (17,274[8]);
2) active new episodes – patients admitted in 2018 who have not yet been discharged by 31 December 2018 (1,430 patients), and
3) active long-stay episodes – patients admitted prior to 2018 that have not yet been discharged on 31 December 2018 (995 patients).

Unless otherwise stated, the length-of-stay measure used in the analysis measures the number of bed days per episode in 2018, rather than the total number of bed days accruing over the entire episode. This is to avoid the distorting effects of the small number of patients who accrue very long lengths of stay. This approach also seeks to isolate service utilisation within the 2018 calendar year to align with currently available expenditure data.

3.3 Findings

3.3.1 Episode type

In 2018, there were 19,699 in-patient episodes in psychiatric in-patient facilities in Ireland.[9] Most were in general hospital psychiatric units (56 per cent), 18 per cent in psychiatric hospitals/continuing care units, and 24 per cent in independent/private and private charitable centres (Figure 4).[10,11] However, psychiatric hospitals/continuing care unit episodes accounted for a higher proportion of total bed days (38 per cent compared to 32 per cent for general hospital psychiatric units). This reflects the longer lengths of stay of these in-patients in 2018. Independent/private and private charitable centres and child and adolescent units accounted for similar proportions of total bed days as episodes (24 per cent and 27 per cent, and 2 per cent and 3 per cent, respectively).

Of the 923,751 bed days in 2018, one-quarter (234,695 days) were attributed to 643 patients in psychiatric hospitals/continuing care units, each with a length of stay in 2018 of 365 days.

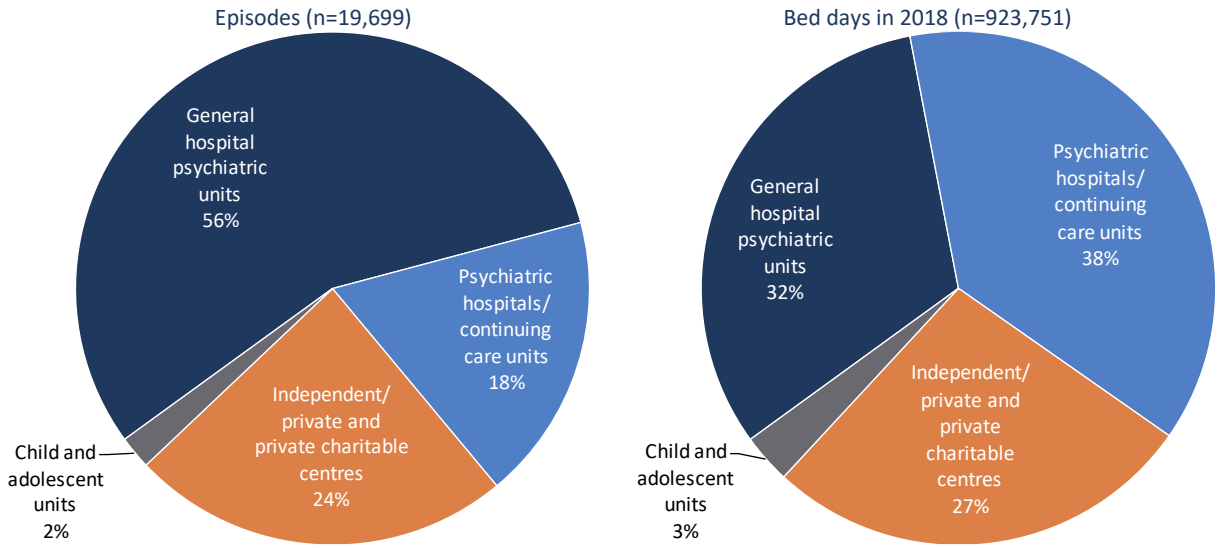
8 Discharges refers to the number of discharges in 2018; any individual patient may have had several discharges in the year.

9 A total of 19,701 episodes were recorded on the NPIRS; several variables were missing for two episodes on the database and these have been excluded from this analysis.

10 Psychiatric hospitals/continuing care units include the Central Mental Hospital, Carraig Mór, St Joseph's and Phoenix Care Centre.

11 See Appendix 1 for trends in completed episodes by hospital type.

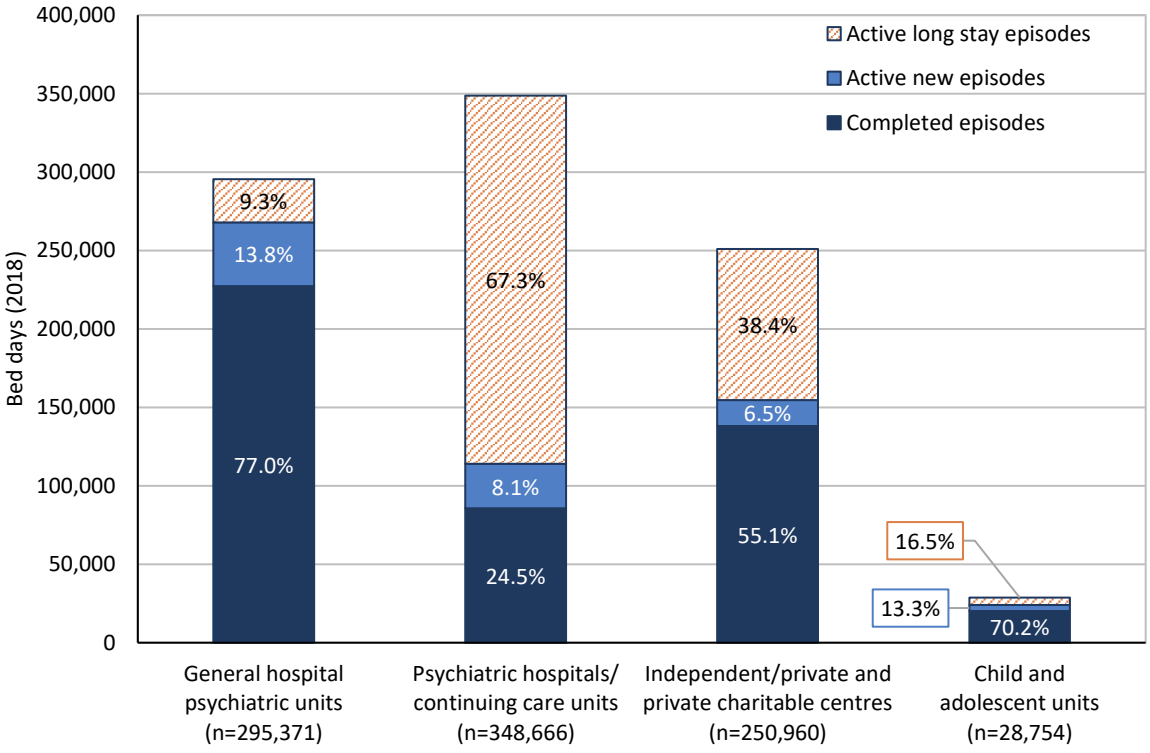
FIGURE 4 NPIRS – Episodes and bed days by facility type, 2018



Source: NPIRS, 2018.

Figure 5 presents the number and proportion of bed days accounted for by each type of episode in each facility type in 2018. It shows that active long-stay episodes accounted for almost 70 per cent of bed days in psychiatric hospitals/continuing care units, while in general hospital psychiatric units almost 80 per cent of bed days are accounted for by completed episodes.

FIGURE 5 NPIRS – Bed days by episode type and facility type, 2018



Source: NPIRS, 2018.

Table 1 focuses on total bed days of completed episodes of care in 2018 (i.e. additionally incorporating any bed days recorded prior to 2018). Of these episodes, the median length of stay is shortest for general hospital psychiatric units, at 12 days. The figure is 14 days for psychiatric hospitals/continuing care units and 31 days for independent/private and private charitable centres. Median in-patient length of stay is longest for child and adolescent units, at 48 days.[12]

The mean number of bed days for completed episodes varies across facility type, from 29.1 days in general hospital psychiatric units to 219.5 days in psychiatric hospitals/continuing care units. The high proportion of long-stay patients in these units accounts for the large differential between mean and median bed days.[13] A small number of episodes in these units (69) had a length of stay of five years or more. They accounted for 0.4 per cent of total episodes and 41.5 per cent of total bed days in these units.

TABLE 1 NPIRS – Completed episodes mean and median bed days by facility type

	Completed episodes	Total bed days		
		Sum	Mean	Median
General hospital psychiatric units	10,217	297,566	29.1	12
Psychiatric hospitals/continuing care units	2,637	578,786	219.5	14
Independent private and private charitable centres	4,081	189,232	46.4	31
Child and adolescent units	339	26,090	77.0	48
Total	**17,274**	**1,091,674**	**63.2**	**15**

Source: NPIRS, 2018.

3.3.2 Age and sex

The total volume of in-patient episodes and the episode rate were slightly higher for males (50.4 per cent, 4.1 per 1,000 population) than females (49.6 per cent, 4.0 per 1,000 population). There was variation across age groups (Figure 6) with the general trend of males having a higher number of episodes/episode rate in the younger age groups and females in older age groups.[14] The differential between the male and female numbers of episodes and episode rates was also greatest at younger ages. For both males and females, the number of episodes peaked at 35–39 years and decreased for every age group thereafter. The episode rate peaked at 25–29 years for males (6.6 per 1,000 population) and decreased thereafter to 4.8 per 1,000 at 40–44 years. The rate remained stable until 65–69 years, at which point it increased again until 75–79 years. There was a high episode rate for females in the 20–24 years (5.5 per 1,000 population), but the highest rates for females were seen at 70–74 years (6.0 per 1,000 population).

12 Median length of stay across the entire episode, regardless of the year of admission, does not differ greatly from that for 2018 (12 days, 14 days, 31 days, and 48 days respectively).

13 See Appendix 2 for a comparison of discharges and cumulative bed days.

14 See Appendix 3 for further analysis of patient episodes/bed days and rates by hospital type.

Males accounted for 53.5 per cent of total bed days. The total number of bed days in 2018 was higher for males than females in 11 of the 15 age groups, with particularly large differences for those aged 30–39 and 65–69 years. The in-patient bed day rate per 1,000 population was higher for males (204.8) than females (174.5) and increased gradually with age. The bed day rate peaked at 80–84 years for females and 85+ years for males. The 85+ age group also has the largest differential between the male and female rate, with males having had a rate of 720.2 days per 1,000 population compared to 474.6 days for females. The higher rate in the oldest age groups may reflect a legacy of institutionalisation at older ages.

FIGURE 6 NPIRS – Age-specific (5-year age group) episodes/bed days and episode/bed day rate per 1,000 population by sex, 2018

Note: Rates calculated using ESRI population calculations for 2018.
Source: NPIRS, 2018.

It must be noted that a small number of episodes accounted for a very high proportion of bed days in 2018. In particular, the 995 active long-stay in-patients accounted for 39.3 per cent of bed days in that year.[15]

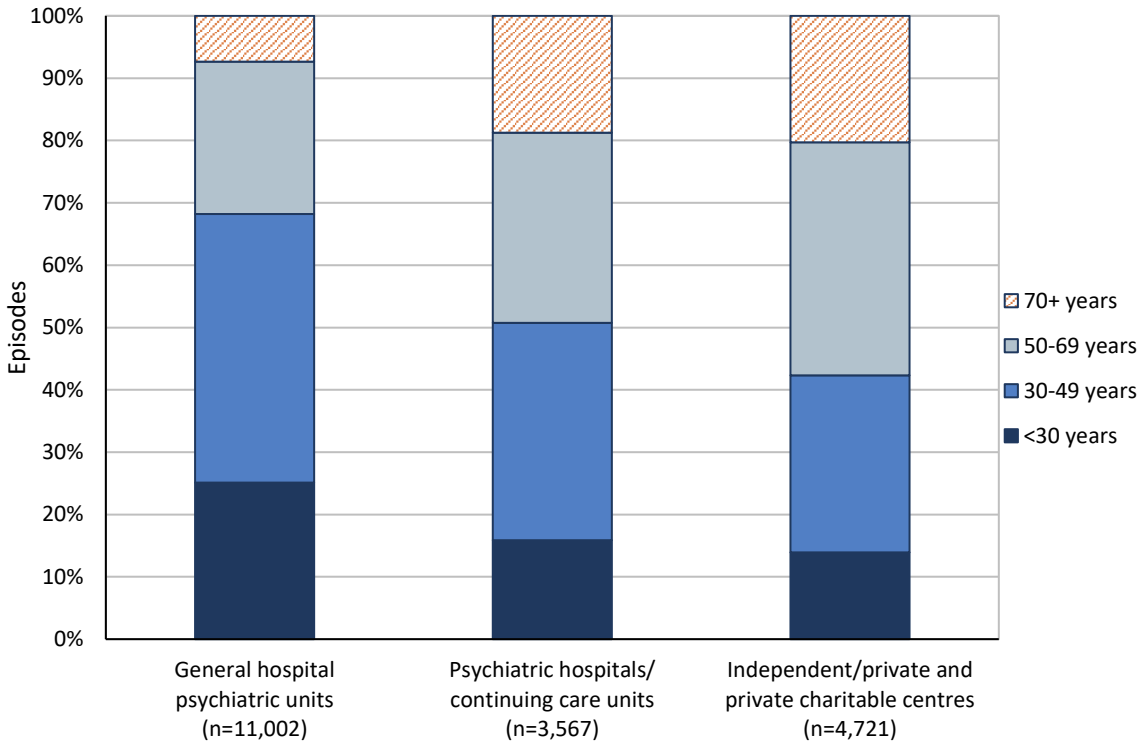
The age profile of episodes varies across the three adult facility types (Figure 7).[16] Just under one-third of episodes in general hospital psychiatric units (31.8 per cent)

15 Of the 137 deaths in 2018, 82 (59.9 per cent) were of people with a length of stay longer than one year. Of the 13 discharges in 2018 with a length of stay of 25 years of more, eight (61.5 per cent) were deaths (HRB, 2019 – Table 2.9).

16 Child and adolescent units are not presented as all discharges are in the <30 years age group.

were recorded by those aged 50 years and older, while half of episodes in psychiatric hospitals/continuing care units and 60 per cent of episodes in independent/private and private charitable centres were recorded by those aged 50 years and older. Of the 409 episodes in child and adolescent units, 38.1 per cent were aged 15 years or under, with the remainder aged between 16 and 18.

FIGURE 7 NPIRS – Episodes by age and facility type, 2018



Note: Child and adolescent units are not presented as all episodes are in the <30 years age group.
Source: NPIRS, 2018.

3.3.3 Diagnoses

The following sections examine diagnoses in 2018. For completed episodes, diagnosis refers to the diagnosis on discharge or death. For new active episodes, the diagnosis is that made at admission, and for long-stay active episodes the diagnosis is that reported in the Census. The diagnoses reported in the data are grouped according to Chapter 5 – Mental and Behavioural Disorders (F00-F99) in the International Classification of Diseases 10th Revision.

Two diagnosis groups accounted for 55.6 per cent of total episodes and 57.8 per cent of bed days in 2018 (Table 2): 'F30-F39 Mood [affective] disorders' (32.9 per cent, 24.2 per cent) and 'F20-F29 Schizophrenia, schizotypal and delusional disorders' (22.6 per cent, 33.6 per cent).

The median length of stay for each diagnosis group is calculated for completed episodes and varies across facility type. In the main, general hospital psychiatric units recorded the shortest median lengths of stay for almost all diagnosis groups in the adult units.

For example, 'F01-F09 Organic, including symptomatic, mental disorders' had a median length of stay of 21.5 days in general hospital psychiatric units, 68.0 days in psychiatric hospitals/continuing care units, and 29.0 days in independent/private and private charitable centres. In addition, the median length of stay for 'F30-F39 Mood [affective] disorders' was 14.0 days in general hospital psychiatric units, 15.0 days in psychiatric hospitals/continuing care units, and 32.0 days in independent/private and private charitable centres.

In child and adolescent units, the longest median length of stay was for patients with diagnoses of 'F50-F59 Behavioural syndromes associated with physiological disturbances and physical factors' (98 days). The majority of the episodes in this category had a reported diagnosis of 'F50 Anorexia nervosa'.

TABLE 2 NPIRS – Diagnosis by episodes, bed days and median length of stay

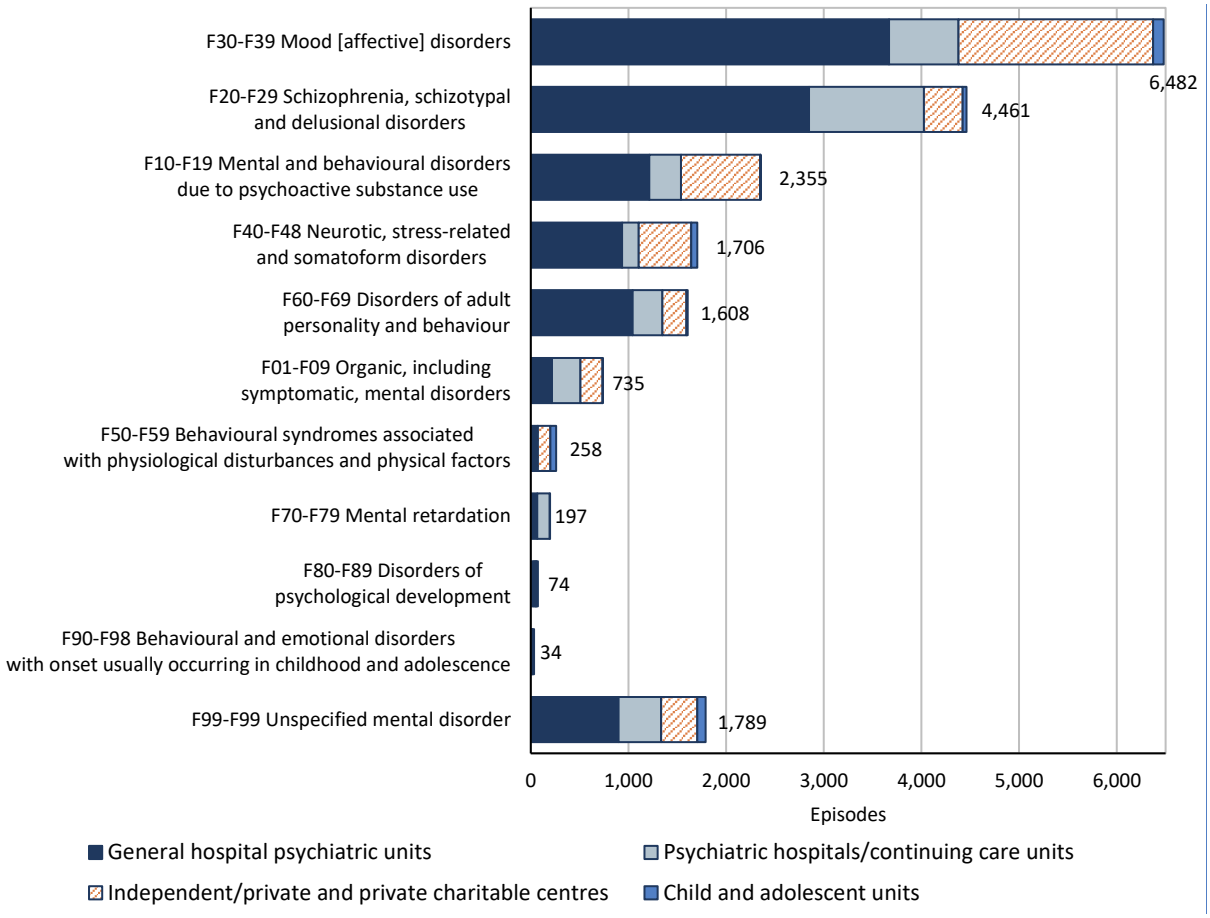
	Episodes		Bed days[a]				Median length of stay Completed episodes			
			2018		Total		GHPU	PHCC	IPPCC	CAU
	N	%	N	%	N	%	Total	Total	Total	Total
F01-F09 Organic, including symptomatic, mental disorders	735	3.7	102,306	11.1	412,050	8.9	21.5	68.0	29.0	~
F10-F19 Mental and behavioural disorders due to psychoactive substance use	2,355	12.0	52,310	5.7	139,679	3.0	6.0	6.0	29.0	~
F20-F29 Schizophrenia, schizotypal and delusional disorders	4,461	22.6	310,191	33.6	2,033,270	44.0	19.0	22.0	27.0	83.5
F30-F39 Mood [affective] disorders	6,482	32.9	223,547	24.2	497,564	10.8	14.0	15.0	32.0	49.0
F40-F48 Neurotic, stress-related and somatoform disorders	1,706	8.7	44,309	4.8	84,047	1.8	7.0	8.0	32.0	42.0
F50-F59 Behavioural syndromes associated with physiological disturbances and physical factors	258	1.3	13,871	1.5	26,858	0.6	20.0	~	39.0	98.0
F60-F69 Disorders of adult personality and behaviour	1,608	8.2	35,657	3.9	133,055	2.9	5.0	5.0	30.5	37.5
F70-F79 Mental retardation	197	1.0	43,153	4.7	1,121,727	24.3	12.0	29.5	~	~
F80-F89 Disorders of psychological development	74	0.4	4,718	0.5	12,838	0.3	14.0	23.0	~	23.0
F90-F98 Behavioural and emotional disorders with onset usually occurring in childhood and adolescence	34	0.2	1,167	0.1	1,638	0.0	3.0	~	27.5	34.0
F99-F99 Unspecified mental disorder	1,789	9.1	92,522	10.0	161,522	3.5	7.0	14.0	32.5	36.0
Total	**19,699**	**100.0**	**923,751**	**100.0**	**4,624,248**	**100.0**	**12.0**	**14.0**	**31.0**	**48.0**

Notes: a '2018' refers to bed days accumulated between 1 January 2018 and 31 December 2018 while 'total' refers to total accumulated bed days since admission.
~ Median length of stay is not presented when there is a small number of discharges in a diagnosis group.
GHPU – General hospital psychiatric units, PHCC – Psychiatric hospitals/continuing care units, IPPCC – Independent/private and private charitable centres, CAU – Child and adolescent units.

Source: NPIRS, 2018.

General hospital psychiatric units account for the majority of episodes in seven of the 11 diagnosis groups (Figure 8). A notable exception is 'F50-F59 Behavioural syndromes associated with physiological disturbances and physical factors', where most of the discharges were from independent/private and private charitable centres.

FIGURE 8 NPIRS – Episode diagnosis by hospital type, 2018

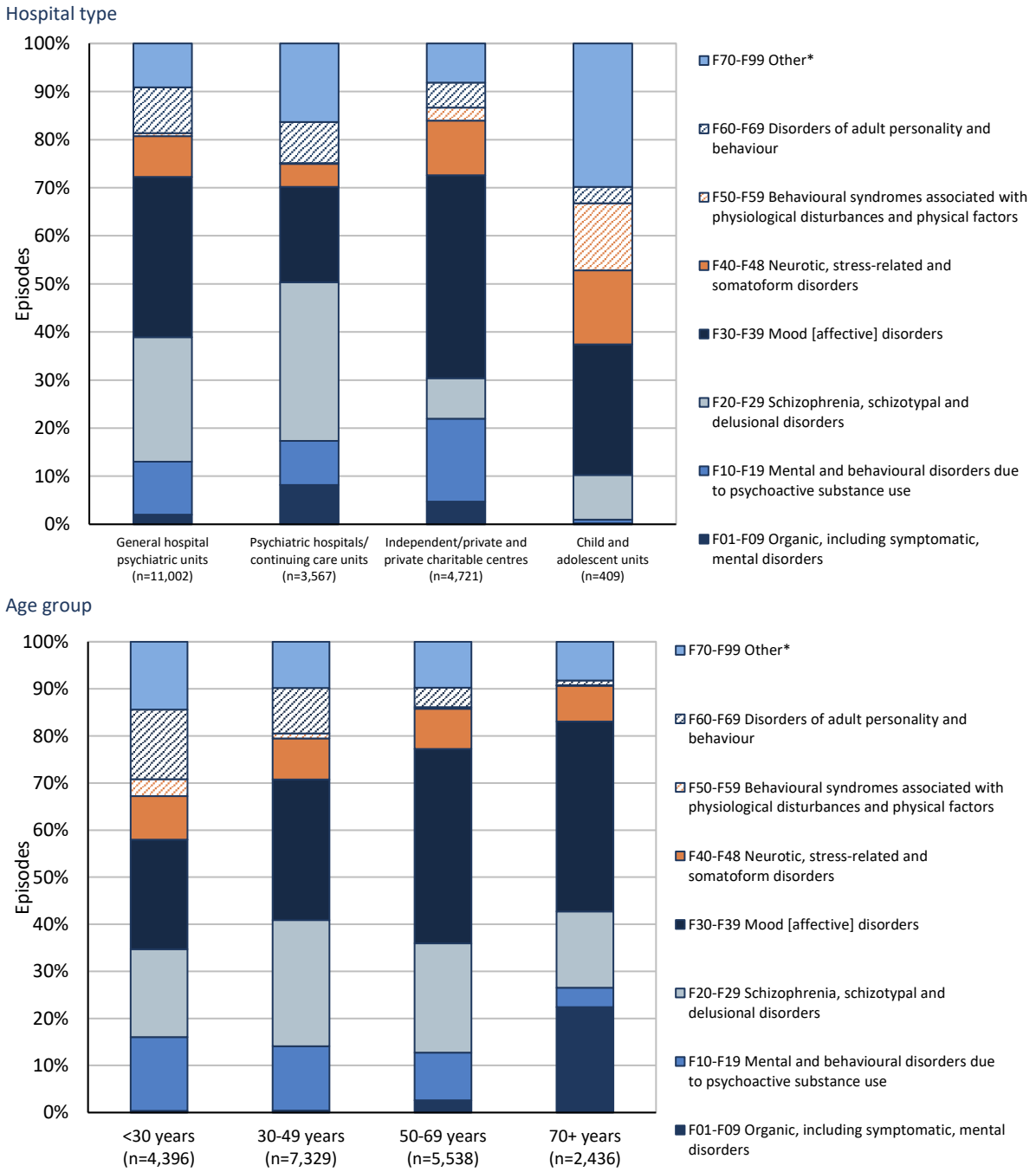


Source: NPIRS, 2018.

The diagnosis profile of patients varied by facility type (Figure 9). For example, 'F20-F29 Schizophrenia, schizotypal and delusional disorders' accounted for over one-quarter of episodes in general psychiatric units (25.9 per cent) and one-third in psychiatric hospitals/continuing care units (33.0 per cent), compared to just 8.4 per cent of episodes in independent/private and private charitable centres. While 17.2 per cent of episodes in independent/private and private charitable centres related to 'F10-F19 Mental and behavioural disorders due to psychoactive substance use', this compares to under 11 per cent in each of the other two types of adult unit. In child and adolescent units, 'F30-F39 Mood [affective] disorders' account for the highest proportion of episodes, at 27.1 per cent, followed by 'F40-F48 Neurotic, stress-related and somatoform disorders' (15.4 per cent) and 'F50-F59 Behavioural syndromes associated with physiological disturbances and physical factors' (13.9 per cent).

Figure 9 also disaggregates total episodes in each age category by diagnosis. The diagnosis profile of younger age groups varied more than that of older age groups. The two older age groups were dominated by 'F30-F39 Mood [affective] disorders' and 'F20-F29 Schizophrenia, schizotypal and delusional disorders'. 'F01-F09 Organic, including symptomatic, mental disorders' was also prominent in the oldest age group. This category includes dementia.

FIGURE 9 NPIRS – Episode diagnosis by hospital type and age group, 2018



Notes: * Due to small numbers in some categories, the following categories have been merged: F70-F79 Mental retardation, F80-F89 Disorders of psychological development, F90-F98 Behavioural and emotional disorders with onset usually occurring in childhood and adolescence, and F99-F99 Unspecified mental disorder.

Source: NPIRS, 2018.

3.4 Unmet demand

There are no data available on unmet need/demand for in-patient mental health services such as waiting-list data. Recent media reports have indicated that the Central Mental Hospital is operating at capacity, with a new higher capacity facility currently under construction and due to be operational in 2020.[17] The new facility in Portrane, north Dublin can provide care for 170 patients compared to the 103 that can be accommodated in the current facility.[18] In addition, 86 child and adolescent (12–17 years) episodes were recorded in adult facilities in 2018, which suggests a lack of availability of child and adolescent in-patient services.

3.5 Further in-patient data limitations

While the NPIRS data are sufficiently detailed to provide age/sex utilisation disaggregation, there are no data available on complexity. While Hospital In-Patient Enquiry data include diagnosis-related groups (DRGs) to enable the disaggregation of day and in-patient discharges into homogenous cost groups, which are expected to undergo similar treatment processes and incur similar levels of resource use, no similar system is in place for in-patient mental health data.

The Independent Hospital Pricing Authority in Australia has developed a classification for mental health called the Australian Mental Health Care Classification, which currently covers in-patient and community but not residential settings. Six variables are used to classify consumers (patients/clients): setting; mental health phase of care (assessment only, acute, functional gain, intensive extended and consolidating gain); age group; two complexity measures (HoNOS and LSP-16), and end classes (for example, 101Z admitted, assessment only, 0-17 years) (IPHA, 2018).[19] Such innovations in data collection and classification could inform the introduction of similar systems in Ireland, based on best international practice. Ireland currently uses the International Statistical Classification of Diseases and Related Health Problems – Australian Modification for the coding of diagnoses and the Australian Classification of Health Interventions for coding procedures in acute public hospitals.

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17 See: https://www.irishtimes.com/news/crime-and-law/courts/circuit-court/court-releases-man-as-central-mental-hospital -full-1.3472984 (last accessed 19 February 2020).
https://www.irishtimes.com/news/social-affairs/prisons-unable-to-meet-rising-population-s-need-for-mental-health care-1.3506062 (last accessed 19 February 2020).
https://www.irishtimes.com/news/health/woman-in-overcrowded-central-mental-hospital-forced-to-sleep-in-interview-room-1.4031734 (last accessed 19 February 2020).
https://www.irishtimes.com/news/crime-and-law/courts/criminal-court/central-mental-hospital-too-full-to-take-mother-who-killed-daughter-1.4061687 (last accessed 19 February 2020).

18 See: https://www.hse.ie/eng/national-forensic-mental-health-service-portrane (last accessed 19 February 2020); https://www.mhcirl.ie/Registration/ACRegister (last accessed 19 February 2020).

19 The Health of the Nation Outcome Scales (HoNOS) is a clinician-rated instrument comprising 12 simple scales measuring behaviour, impairment, symptoms, and social functioning for those aged 18–64 years. The Life Skills Profile – 16 (LSP-16) was developed by an Australian clinical research group to assess a consumer's abilities with respect to basic life skills. Its focus is on the consumer's general functioning and disability rather than their clinical symptoms.

3.6 Summary: in-patient mental health services in Hippocrates model

Table 3 summarises the data and utilisation metric to be used in the Hippocrates model. The 2018 bed day rate by age group and sex will be used. This can be disaggregated by hospital type. There are currently no data on unmet demand for in-patient services.

TABLE 3 Hippocrates model baseline utilisation: in-patient services, 2018

Service	Data Source	Metric	Hippocrates inclusion
Utilisation	HRB NPIRS 2018	Bed day rate by age group and sex in 2018	Yes
Unmet demand	n/a	n/a	n/a

4 COMMUNITY MENTAL HEALTH SERVICES

This section focuses on the provision of public specialist mental health services in the community.[20] The lack of data on service provision in the community setting raises problems. We have been unable to find a consistent utilisation metric across community services that can be included in the Hippocrates model. While some data are available on CMHTs (Section 4.1 and 4.2), no data are available for a large proportion of community services (Section 4.3). For this reason community services will not be included in the current iteration of the Hippocrates model.

4.1 Community mental health teams

Specialist mental health services in the community are provided through a network of CMHTs. These teams provide integrated multidisciplinary care in a community setting. With some minor exceptions, the Child and Adolescent Mental Health Service (CAMHS) provides mental health services to those aged 17 years and younger, while general adult (GA) mental health services are for those aged between 18 and 64, and 'psychiatry of old age' (POA) mental health services are for those aged 65 and over.

Each CAMHS and GA team typically serves a catchment population of 50,000, while POA teams serve a catchment population of 100,000 (Government of Ireland, 2006).[21] As the population changes, so too does the number of recommended teams. Calculations are based on the total national population and are not specific to the catchment area of local health offices (LHOs) or community health organisations (CHOs), for example. When *A Vision for Change* was published in 2006, it was recommended, based on the 2002 Census of Population, that there be 78 teams for both CAMHS and GA and 39 teams for POA.

20 There are no data available on the utilisation of privately financed specialist mental health services in the community.

21 An update to *A Vision for Change* entitled *Sharing the Vision – A Mental Health Service for Everyone* (Department of Health, 2020) was recently published (16 June 2020). While the strategy may impact the way in which mental health services are delivered in the future the focus of this report is service utilisation in 2018.

By 2018, the population had increased by 23.7 per cent and thus the recommended number of teams increased – to 97 teams each for CAMHS and GA and to 49 teams for POA; this was according to our calculations based on ESRI population estimates for 2018, which have been adjusted for Census 2016.

In 2018, for CAMHS, 70 community and two adolescent day service teams were in operation.[22] In addition, there were 114 GA teams and 30 POA teams.[23] This represented 74 per cent of the recommended number of teams for the CAMHS service and 61 per cent of that recommended for the POA service. The number of GA teams was in excess of the recommended level. However, these figures do not reflect team staffing levels, which is another matter.

Table 4 outlines the number of recommended and actual teams and staff for each service in 2018. There were 704.5 staff working across 70 CAMHS teams. Of those, 608.5 were clinical (86.4 per cent), representing only 57.1 per cent of the number of clinical staff recommended in *A Vision for Change*. For GA teams, just under three-quarters (73.4 per cent) of clinical staff recommended in *A Vision for Change* were in place, while for POA the figure was only 58.9 per cent of the relevant recommendation.

TABLE 4 *A Vision for Change* recommended and actual numbers of teams and staff, 2018

		Child and adolescent		General adult	Psychiatry of old age
		Community team	Adolescent day service		
Number of teams	Recommended[a]	81	16	97	49
	Actual	70	2	114	30
Staff per team (clinical)	Recommended	13 (11)	13 (11)	23 (21)	12 (11)
Staff total	Recommended[b]	1,053	208	2,231	576
	Actual	704.5	13.6	1,686.2	354.4
Clinical staff	Recommended[b]	891	176	2,037	528
	Actual (%)[c]	608.5 (57.1%)	11.6 (6.5%)	1,494.5 (73.4%)	313.9 (58.9%)

Notes: a The number of recommended teams and staff are based on ESRI population estimates for 2018.
b This is the recommended number of teams multiplied by the recommended number of staff per team.
c The percentage calculation allows for a fairer balance to younger or older people. For example, for CAMHS (Actual clinical WTE/under-18 year population) x (50,000/100*% under-18 year population))/clinical WTE recommendation in *A Vision for Change*).
Source: Personal communication, HSE, 17 July 2019.

According to *A Vision for Change*, CMHTs should include core skills in the areas of psychiatry, nursing, social work, clinical psychology, and occupational therapy (Government of Ireland, 2006). The skill mix in each team is based on the sector of the population they are working with. For example, the CAMHS teams should include a childcare worker, while GA teams should include an addiction counsellor.

22 The HSE splits the number of CAMHS teams required into community teams (1:50,000); of these teams, a number are allocated adolescent day services (1:300,000). For 2018, the recommendation was 97 teams, with 16 allocated to adolescent day services – these teams also cover hospital liaison activities in the Dublin children's hospitals. In 2018, there were 70 teams, with two allocated to adolescent day services.

23 Personal communication, HSE, 23 July 2019.

The proportions of clinical staff achieved across CMHTs in 2018 (Table 5) were far from those recommended in *A Vision for Change*, though there was also variation across staff category (Table 4). For CAMHS teams, the most acute shortages were for clinical psychologists (40.1 per cent of the recommended level), social workers (46.2 per cent), and speech and language therapists (52.1 per cent). The staffing of GA teams was better overall than that for CAMHS, though again some areas were under-resourced, including mental health support workers (6.8 per cent), for example, and addiction counsellors (46.8 per cent). For POA teams, the shortages were acute for clinical psychology (47.8 per cent), occupational therapy (54.3 per cent) and, again, mental health support workers (2.1 per cent).

TABLE 5 *A Vision for Change* recommended and actual number of clinical staff by staff category, 2018

	Child and adolescent[a]			General adult			Psychiatry of old age		
	Recommended WTE per team[b]	Actual WTE	Actual %[c]	Recommended WTE per team[b]	Actual WTE	Actual %[c]	Recommended WTE per team[b]	Actual WTE	Actual %[c]
Consultant psychiatrist	1	71.6	73.9	2	159.5	82.2	1	44.0	90.8
Doctor in training	1	100.5	103.7	2	260.7	134.4	1	50.8	104.8
Clinical psychologist	2	77.8	40.1	2	121.1	62.4	1	23.2	47.8
Social worker	2	89.6	46.2	2	135.9	70.1	1	30.2	62.2
Nurse	2	114.9	59.3	8	595.4	76.8	4	133.0	68.6
Occupational therapist	1	56.9	58.7	2	135.1	69.7	1	26.3	54.3
Speech and language therapist	1	50.5	52.1	-	-	-	-	-	-
Other therapist	-	11.4	-	-	28.4	-	-	4.6	-
Child care worker	1	35.2	36.3	-	-	-	-	-	-
Mental health support worker	-	-	-	2	13.2	6.8	2	2.0	2.1
Addiction counsellor				1	45.4	46.8	-	-	-
Total clinical staff	**11**	**608.5**	**57.1**	**21**	**1,494.5**	**73.4**	**11**	**313.9**	**58.9**

Notes: a Does not include adolescent team staff.
b The number of recommended total staff are based on ESRI population estimates for 2018.
c The percentage calculation allows for a fairer balance to younger or older people. For example, for CAMHS (Actual clinical WTE/under-18 year population) x (50,000/100* under 18-year population))/clinical WTE recommendation in *A Vision for Change*).
Source: Government of Ireland (2006), Personal communication, HSE, 17 July 2019.

4.1.1 Utilisation

Table 6 outlines the utilisation metrics (known as key performance indicators – KPIs) reported to the HSE each month for CMHTs in 2018. The only measure of utilisation available *across* the three age-delineated services is the number of *new* cases seen (for example, 10,796 CAMHS). This does not reflect the workload of the teams as it refers only to first appointments of new referrals and not to subsequent appointments or appointments attended by individuals already in the service. Nor does it provide insight into the activity within the team; for example, the number of appointments with psychiatrists or occupational therapists. While the data are disaggregated into three age categories by the nature of the team construction, no additional age or sex disaggregation is available for GA or POA teams.

TABLE 6 Community mental health teams – Activity, 2018

	Child and adolescent	General adult	Psychiatry of old age
Number of CMHTs	70	114	31
Number of:			
Accepted referrals	13,255	37,520	11,033
New referrals offered appointments[a]	11,954	35,002	8,804
New referrals seen	10,796	27,124	8,553
Did not attend	1,158	7,878	251

Note: a Includes re-referrals.
Source: Personal communication, HSE, 17 July 2019.

Child and Adolescent Mental Health Service teams

An additional metric that has been collected for CAMHS teams since 2014 is the number of face-to-face consultation appointments attended. This gives an insight into the utilisation of the CAMHS service. In 2018, a total of 188,469 face-to-face consultation appointments were attended (67.4% were aged 0–15 years). In September 2018 there were 19,093 active open cases in the CAMHS service.[24,25] What is not collected on an ongoing basis is the total number of cases seen or the level of clinical input per attendance.

Another source of data on CAMHS is a series of detailed audits of clinical activity conducted for five consecutive years, from 2008–2012, each November, the results of which were published in a series of reports. These data provide insight into the level of clinical input in the CAMHS teams. While the final report was published in 2013, an additional audit of clinical activity was conducted in 2015.[26] The HSE has made these data available, with the caveat that the final data returns were not reviewed in detail and anomalies were not followed up. The data reported in this audit are used to estimate the level of clinical input in CAMHS teams for 2018. For information, a diagnosis profile of cases seen in the audit month is also presented.

Of particular interest in the audit is the reporting of both the *number of cases seen* (9,612) and the *number of consultation appointments attended* (14,314) in November 2015 (Table 7), with an average of 1.49 appointments per case seen. In addition to reporting the number of appointments in the month, the clinical audit also reports the number of clinical inputs.[27] In November 2015, there were 19,761 clinical inputs reported, giving an average of 1.38 clinical inputs per appointment. Using the number of face-to-face consultation appointments attended (188,469), we estimate that there were 260,087 clinical inputs in 2018.[28]

24 This compares to 18,581 in September 2015, 18,888 in September 2016, and 18,462 in September 2017.
25 Personal communication, HSE, 17 July 2019.
26 No audits took place in 2016 or 2017.
27 There may be several clinical inputs in one appointment.
28 The clinical audit did not provide any disaggregation on number of appointments by age or sex.

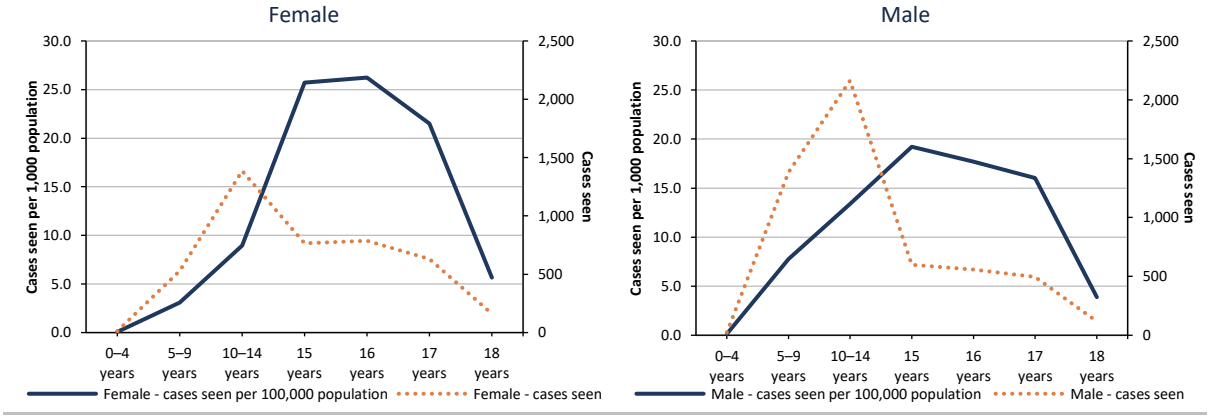
TABLE 7 CAMHS Teams – Audit of clinical activity and annual activity, November 2015 and 2018

	November 2015	Annual 2018	Rate per 1,000[a] 2018
Active open cases (September)	18,581	19,093	15.8
Cases seen	9,612	-	-
New/re-referred cases seen	1,235	10,796	8.9
Attended appointments	14,314	188,469	156.1
0–15 years	n/a	127,064	105.3
16+ years	n/a	61,405	50.9
Clinical inputs	19,761	260,087 (e)[b]	215.5

Notes: (e) author estimates.
a Rates calculated using ESRI population estimates for those aged 17 and under, 2018.
b The average number of clinical inputs per appointment was reported to be 1.38 in the clinical audit month. To estimate total clinical inputs for 2018, this figure is multiplied by the total number of face-to-face appointments attended.
Source: HSE Mental Health Division (2017). Personal communication, HSE, 14 March 2018, 18 June 2018, 17 July 2019.

The audit provides an age and sex profile of the 9,612 cases seen in the audit month but this disaggregation is not available for number of appointments. In that month, 56 per cent of cases seen were male and 44 per cent were female. A higher proportion of males than females used CAMHS services in the younger (5–9 years) age groups while the opposite was the case for the older ages (15–18). Figure 10 shows the number of CAMHS cases seen per 1,000 population in November 2015. Children move into the adult services at 18 years, which is assumed to account for the fall-off in numbers at this age.

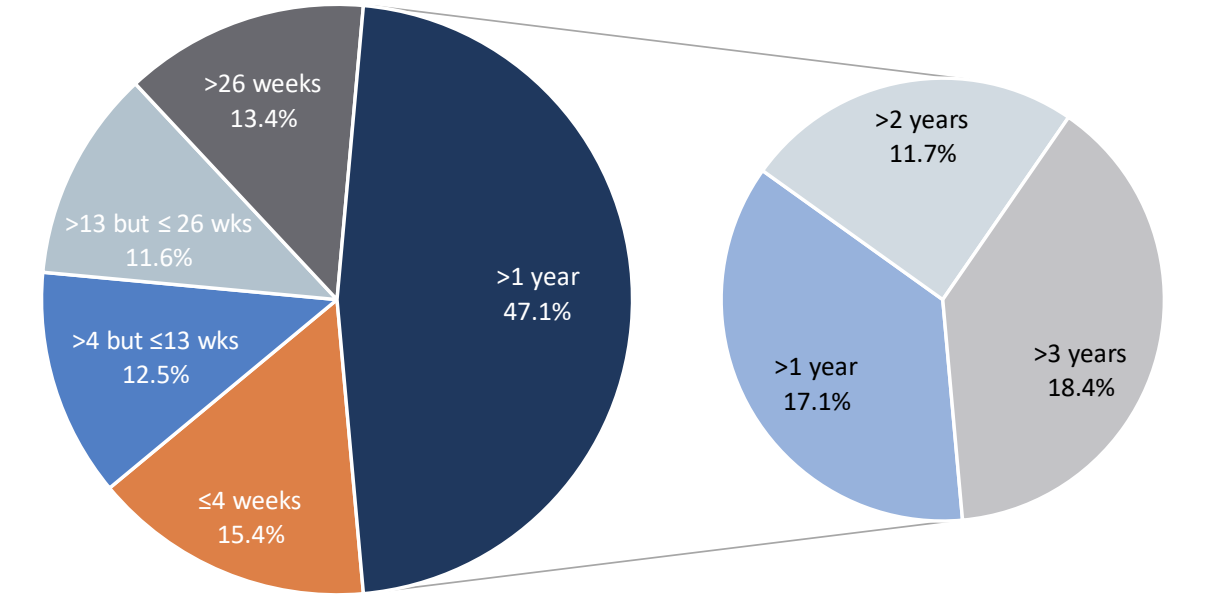
FIGURE 10 CAMHS Audit – Age-specific (5-year age group) CAMHS cases seen and cases seen per 1,000 population by sex, November 2015



Note: Rates calculated using ESRI population estimates for those aged 17 years and under, 2015.
Source: Personal communication, HSE, 14 March 2018.

Figure 11 shows that, of the 9,612 cases seen in November 2015, almost 50 per cent had been in treatment for more than one year.

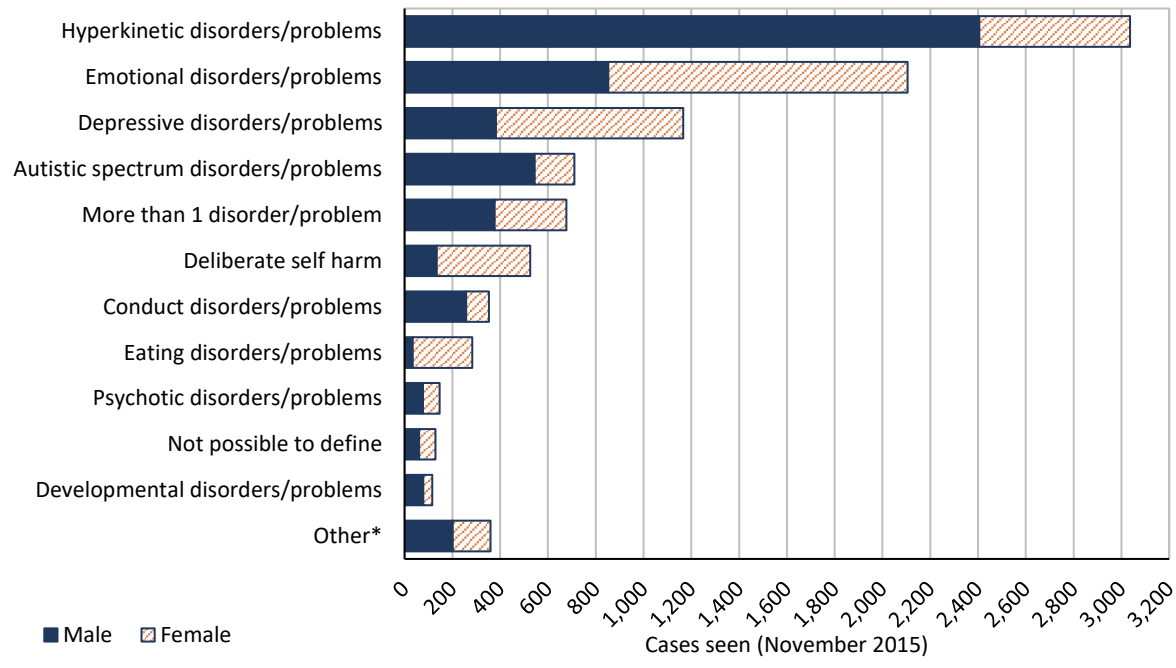
FIGURE 11 CAMHS Audit – 'Duration of treatment so far' of all cases seen, November 2015



Source: Personal communication, HSE, 14 March 2018.

The audit also provides information on the diagnoses assigned to each of the cases seen in November 2015 (Figure 12). The most frequently recorded diagnoses overall and for males were 'hyperkinetic disorders/problems', which include attention deficit hyperactivity disorder (ADHD) and other attentional disorders. This accounted for 44.5 per cent of diagnoses in males and 15.0 per cent in females. The most frequently recorded diagnoses for females were 'emotional disorders/problems' which include anxiety, phobias, somatic complaints, obsessive compulsive disorder, and post-traumatic stress disorder.

FIGURE 12 CAMHS Audit – Principal diagnosis of all cases seen by sex, November 2015



Source: Personal communication, HSE, 14 March 2018.

4.1.2 Unmet demand

The only comparable data collected in relation to waiting lists across the three services relate to the percentage of cases offered an appointment within three months and the percentage of cases offered an appointment and seen within three months. The proportions of offered appointments (and seen) within three months vary, from 79.7 (72.6) per cent for CAMHS to 97.7 (95.2) per cent for POA teams. It should be noted that the percentage of accepted referrals who were offered an appointment but did not attend ranges from 2.9 per cent for the POA teams to 22.5 per cent for the GA teams (Table 8).

TABLE 8 Community mental health teams – Waiting lists, 2018

	Child and adolescent	General adult	Psychiatry of old age
Number of referrals accepted	13,255	37,520	11,033
Number of cases offered an appointment	11,954	35,002	8,804
Seen	10,796	28,807	8,553
≤12 weeks	8,675	25,441	8,383
>12 weeks	2,121	1,683	170
Did not attend	1,158	7,878	251
≤12 weeks	857	6,858	221
>12 weeks	901	1,020	30
% of cases offered appointment within 12 weeks/3 months[a]	79.7%	92.3%	97.7%
% of cases offered appointment within 12 weeks/3 months[a] and seen	72.6%	72.7%	95.2%

Source: Author calculations. Personal communication, HSE, 17 July 2019.

Additional data collected only by the CAMHS teams show that, at the end of December 2018, 1,136 individuals had been waiting 0–3 months to be seen and a further 1,390 individuals on the waiting list had been waiting for longer than three months.[29]

From the data provided in the CAMHS audit, it is estimated that each case seen had on average 1.49 appointments, and 1.38 clinical inputs per appointment. If we use these figures as multipliers, this would imply that fulfilling the unmet demand by end December 2018 would have required an additional 2,070 appointments and 2,857 additional clinical inputs in a 'low volume scenario' of clearing the >3 month waiting list (1,390 cases) (Table 9). Clearing the entire waiting list of 2,526 cases, a 'high-volume scenario', would have required an additional 3,762 appointments and 5,191 clinical inputs by end December 2018.

29 Personal communication, HSE, 17 July 1019.

TABLE 9 CAMHS Teams – Estimated number of additional appointments and clinical inputs required, 2018

	End December 2018		Unmet demand	
	0–3 mths	>3 mths	Low volume	High volume
Waiting list – cases[a]	1,136	1,390	1,390	2,526
Estimated number of additional appointments required	1,692	2,070	2,070	3,762
Estimated number of additional clinical inputs required	2,335	2,857	2,857	5,191

Source: a Author calculations. Personal communication, HSE, 17 July 2019.

4.2 Further community data and data limitations

In addition to the network of general CMHTs, public community services include other services, such as specialist CMHTs, assertive outreach teams, crisis resolution and homecare teams, day hospitals, crisis houses, respite houses, and day centres. Table 10 outlines some of the community public mental health services that were available in 2018. There are no data available on these service users.

TABLE 10 Selected other HSE specialist mental health services, 2018

Services [a]	Ratio units/ beds/ places: population	Number of units recommended[b]	Actual allocation
Community mental health teams			
CAMHS eating disorders	1 unit	1	1
GA eating disorders	1 : 1,000,000	5	
CAMHS – mental health intellectual disability	1 : 300,000	16	3
GA – mental health intellectual disability	2 : 300,000	32	16
Rehabilitation	1 : 100,000	49	19[c]
CAMHS liaison teams		7	20
GA liaison teams	1 : 300,000	16	
CAMHS – day hospitals	1 : 300,000	16	4
GA – crisis houses	1 : 300,000	16	2
24-hour staffed community residences	3 x 10 : 100,000	146	108[d]
Non-24-hour staffed community residence			216
Continuing care beds	30 beds : 300,000	16	19
Day support centres or equivalent	1 : 100,000	49	116
Adult substance misuse teams		13	5
Advocacy and information			29
Community/peer support service			56
Counselling/psychotherapy			62

Notes: a This is not an exhaustive list of services provided in the community, as it only includes those that could be confirmed with the HSE.
b The number of units recommended are calculated based on ESRI population estimates for 2018 (4,874,782).
c An MHC report stated that there were 23 in 2018, p11 (MHC, 2019).
d An MHC report stated that there were 118 in 2018, p1 (MHC, 2019).
Source: Personal communication, HSE, 03 May 2018.

In 2006, the MHC published details of a one-off study it conducted in 2004, in which it examined community activity and catchment area characteristics. This study included data on outpatient clinics, day hospitals, day centres, and community residences (Table 11) (MHC, 2006). Unfortunately, this study has not been repeated and there are no utilisation data currently available for these services. In 2004, there was an average of 882 outpatient attendances per location, 2,797 day hospital attendances per hospital and 3,904 day centre appointments per centre. While the data are out of date and may not reflect current utilisation, the reporting

of these metrics serves to illustrate the scale of activity not captured in current datasets.

TABLE 11 Community mental health services – Activity, 2004

	Number of centres	Clinics held/ places		New patients attending		Total patients attending		Total attendances	
	N	N	Rate	N	Rate	N	Rate	N	Rate
Outpatient	241 locations	14,448	477.0	13,117	433.1	81,711	2,697.7	212,644	7,020.5
Day hospital	58 hospitals	1,022	33.7	n/a	n/a	19,110	630.9	162,233	5,356.2
Day centre	106 centres	2,486	82.1	n/a	n/a	9,049	298.8	413,771	13,660.8

	Low support		Medium support		High support		Total	
Community residences	905	29.9	626	20.7	1,534	50.6	3,065	101.2

Note: Numbers with rates per 100,000 population aged 16 years and over.
Source: MHC, 2006.

In 2010, the HRB and HSE developed a web-based mental health information application called WISDOM to record information on patients using community mental health services. The application was piloted in one location and a system evaluation was undertaken (Mullarkey et al., 2010). The evaluation found that end-users were enthused by the potential of the tool and keen to participate in its development. The evaluation also drew attention to several limitations of the tool in its testing format, including network and performance issues, end-user usability issues, and project and process issues. Ultimately, the tool was not rolled out across the system. There is no evidence that any efforts are underway to revive the WISDOM project or to introduce a similar tool.

As discussed in Section 3.5, classification systems in use in other jurisdictions could provide a basis for classifying Irish mental health service activity in the future.

4.3 Summary: community mental health services and the Hippocrates model

Until the data environment improves it will not be possible to include community mental health services in the Hippocrates model. The situation will remain under review for future iterations of the model.

5 CONCLUSION

Available data on in-patient psychiatric episodes are sufficiently detailed to be included in the Hippocrates model. Data are available at an individual level by age and sex. Our utilisation metric for in-patients is the number of in-patient bed days used in 2018. There are currently no data available on unmet demand for in-patient services.

The data currently available on utilisation of specialist community mental health services in Ireland are currently inadequate to inform useful projections of future demand across the full service. This will remain under review for future iterations of Hippocrates.

To understand how demand for services can be expected to change over the coming years, it is necessary that basic information on current utilisation and demand for services be consistently collected and reported by the HSE. In addition, all services provided in the community should be catalogued according to national-level definitions to ensure consensus and clarity. Currently, services are not consistently classified, which makes comparisons difficult; for example, the categories of day centre and day hospital seem to be used interchangeably. Most importantly, there is no national IT system to enable the collection of community data. An attempt to set this up in 2010 was not progressed beyond the pilot phase. It is essential that a new data collection and classification system, based on international best practice, be implemented across the community services to enable evidence-based policymaking into the future. Development of enhanced ICT infrastructure has been identified as a priority in the recently published *Sharing the vision* (Department of Health, 2020).

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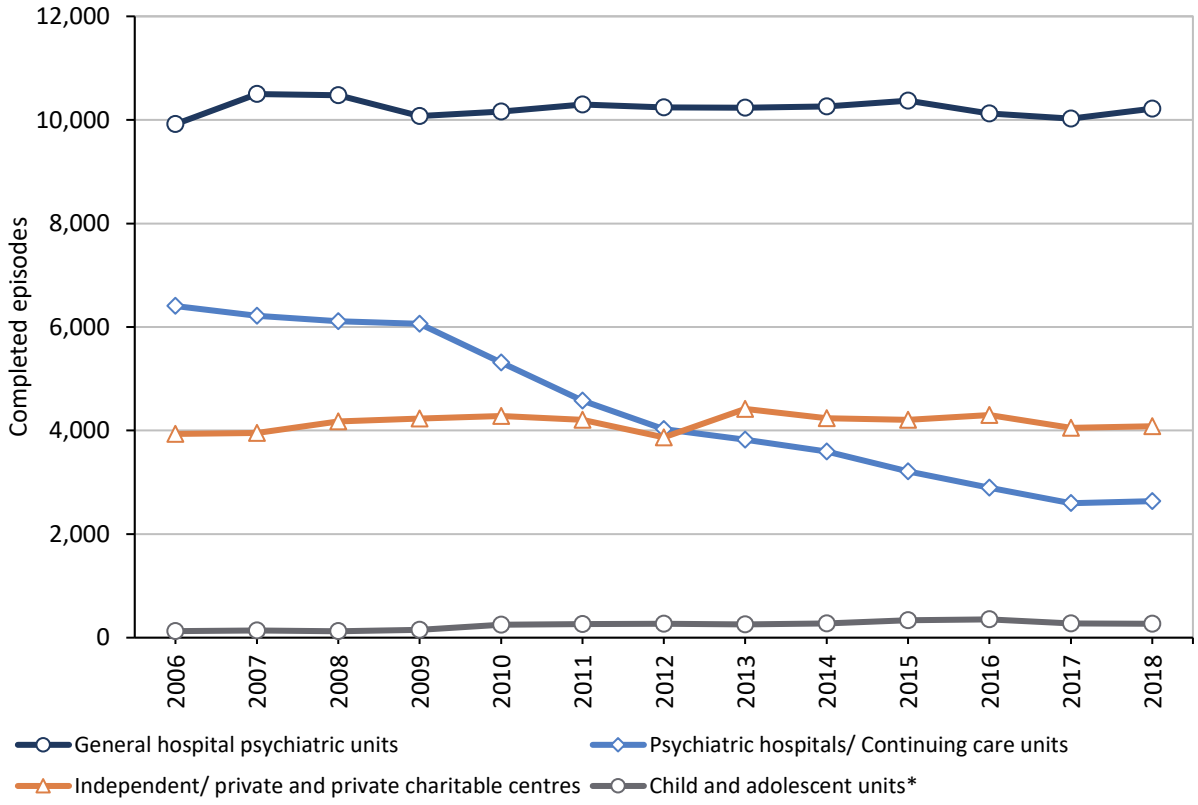
APPENDIX 1 – TRENDS IN COMPLETED EPISODES, 2006–2018

In 2018, 17,274 in-patients were discharged from or died in 67 psychiatric in-patient units in Ireland (HRB, 2019).[30] Of these, 16,935 (98.0 per cent) were discharged from adult units and 339 from child and adolescent units. While the proportion of discharges from general hospital psychiatric units has remained relatively constant since 2006, the proportion discharged from psychiatric hospitals/continuing care units has fallen by 61 per cent since 2006 (Figure A1).

FIGURE A1 NPIRS – Completed episodes by hospital type, 2006–2018



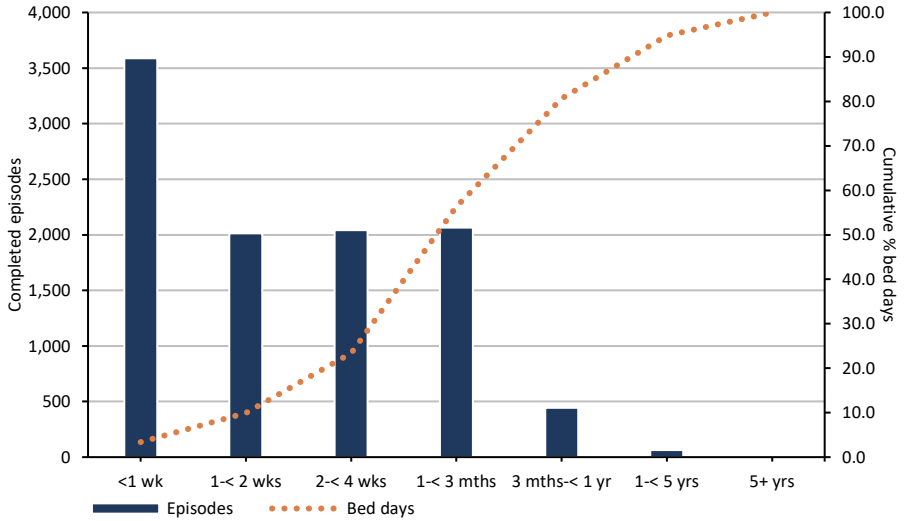
Notes: In 2012, one private centre closed and was replaced by a centre with more registered beds.
* For child and adolescent units, only in-patients admitted and discharged within a single year are included.
Source: NPIRS, various years.

[30] A total of 137 of the discharges had died, the majority of whom were 65 years and over (82 per cent) (HRB, 2019).

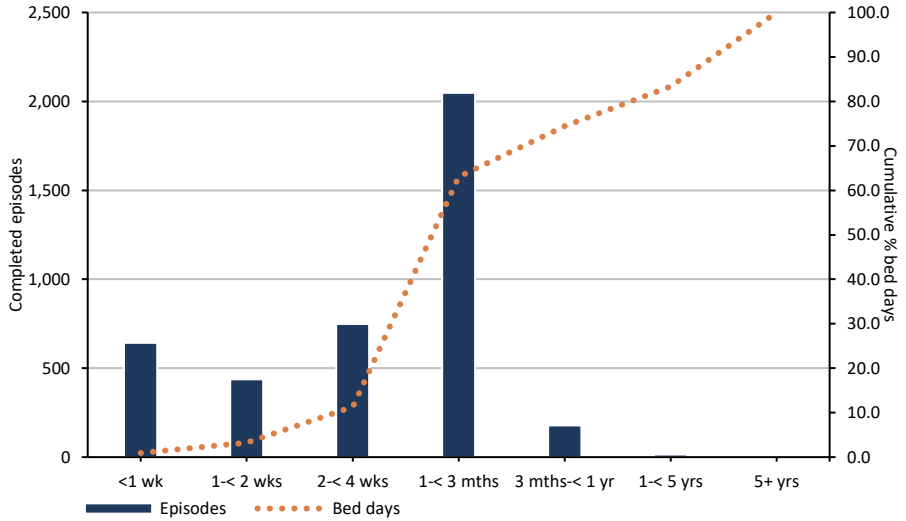
APPENDIX 2 – LENGTH OF STAY DISTRIBUTION BY HOSPITAL TYPE

FIGURE A2 NPIRS – Completed episodes and cumulative bed days by total length of stay from admission to discharge and hospital type

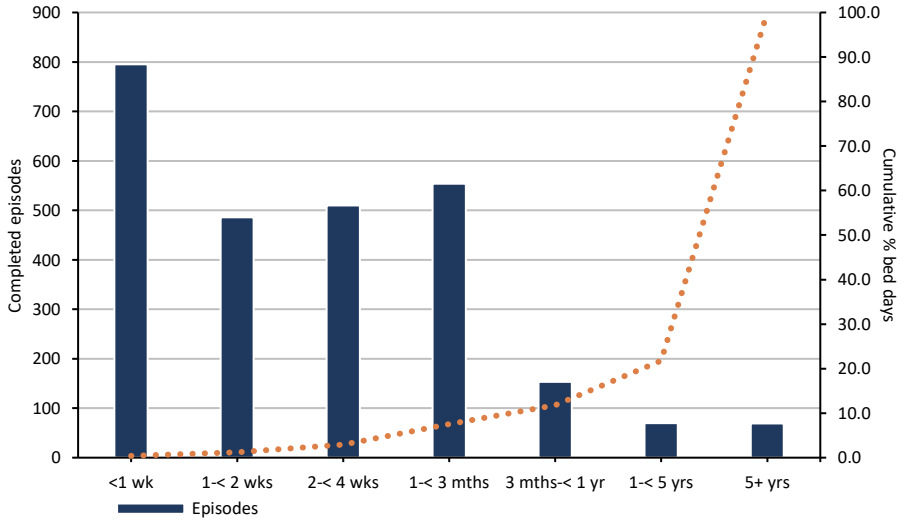
General hospital psychiatric units (episodes n=10,217; bed days n=297,566)



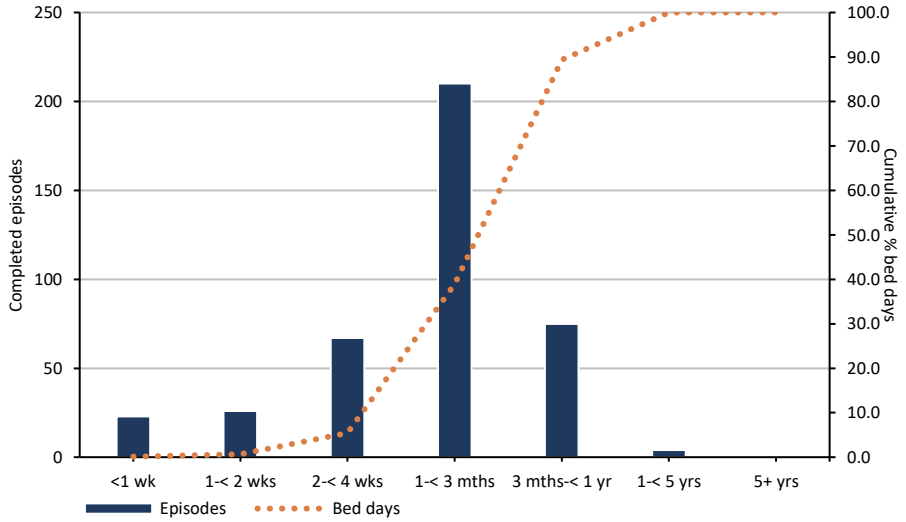
Psychiatric hospitals/continuing care units (episodes n=2,637; bed days n=578,786)



Independent/private and private charitable centres (episodes n=4,081; bed days n=189,232)



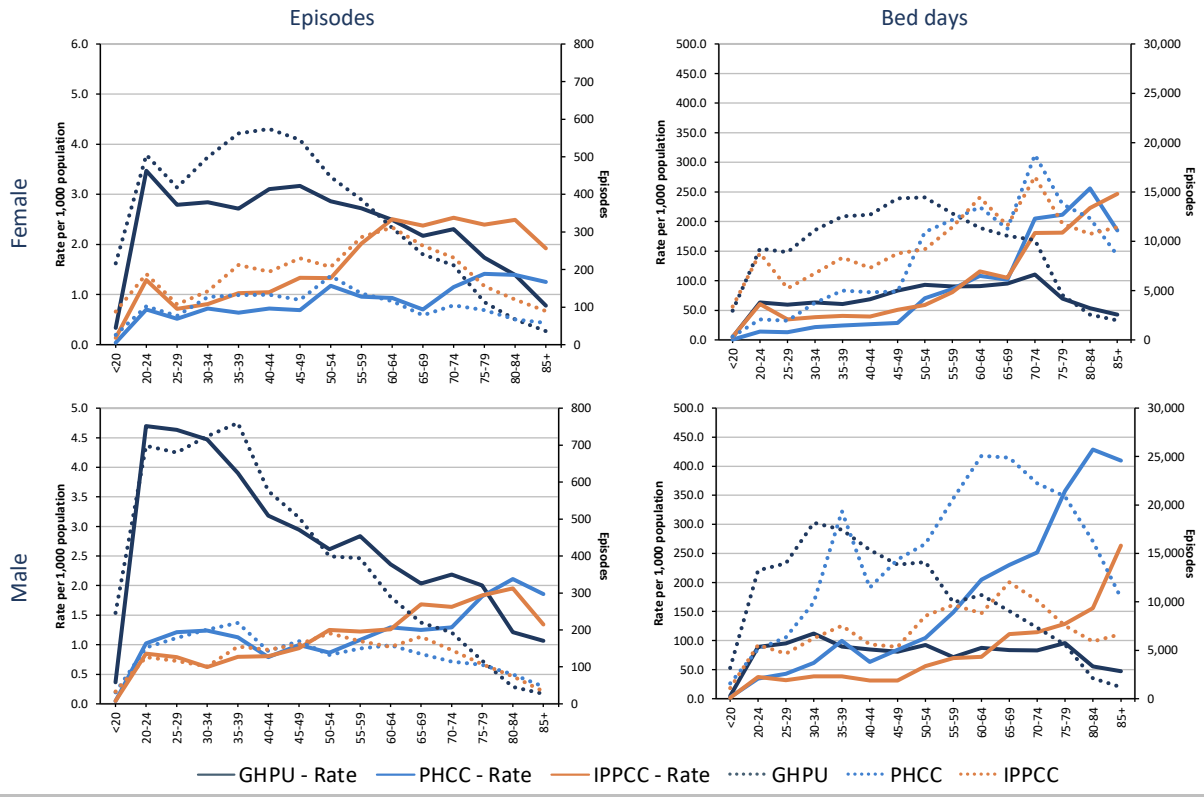
Child and adolescent units (episodes n=339, bed days n=26,090)



Source: NPIRS, 2018.

APPENDIX 3 – IN-PATIENT BED DAY RATE

FIGURE A3 NPIRS – Age-specific (5-year age group) episodes/bed days and rates per 1,000 population by adult hospital type and sex, 2018



Notes: GHPU – General hospital psychiatric units.
PHCC – Psychiatric hospitals/continuing care units.
IPPCC – Independent/private and private charitable centres.

Source: NPIRS, 2018.

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