

Independent Hospital Pricing Authority

# Australian Mental Health Care Classification v1.0

User Manual

May 2018



IHPA

## Australian Mental Health Care Classification v1.0 – User Manual – May 2018

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## Document Information

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### Document Location

An electronic copy of this document is stored on the network and may be obtained by the IHPA Office of the CEO.

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# Abbreviations and acronyms

<b>ABF</b>	Activity based funding
<b>AMHCC</b>	Australian Mental Health Care Classification
<b>AR-DRG</b>	Australian Refined Diagnosis Related Group
<b>ECCS</b>	Episode Clinical Complexity Score
<b>HoNOS</b>	Health of the Nation Outcome Scales
<b>HoNOS 65+</b>	Health of the Nation Outcome Scale for elderly people
<b>HoNOSCA</b>	Health of the Nation Outcome Scales for Children and Adolescents
<b>ICD-10-AM</b>	International Classification of Diseases – 10th Revision – Australian Modification
<b>IHPA</b>	Independent Hospital Pricing Authority
<b>LSP</b>	Life Skills Profile
<b>LSP-16</b>	Abbreviated Life Skills Profile
<b>MHLS</b>	Mental Health Legal Status
<b>MHCERG</b>	Mental Health Classification Expert Reference Group
<b>MHPoC</b>	Mental Health Phase of Care
<b>MHWG</b>	Mental Health Working Group
<b>NHRA</b>	National Health Reform Agreement
<b>NOCC</b>	National Outcomes and Casemix Collection

# Executive summary

The Independent Hospital Pricing Authority (IHPA) developed the Australian Mental Health Care Classification (AMHCC) as a national classification for mental health care. The AMHCC aims to improve the clinical meaningfulness of how mental health care services are classified, counted and costed. Development of the AMHCC involved defining mental health services, identifying mental health care specific cost drivers, conducting a mental health consumer level costing study, and the undertaking of data modelling methods to develop the classification.

This User Manual was designed to provide detailed information for users of the AMHCC Version 1.0 which was implemented on a best endeavours basis from 1 July 2016.

It is important to note that although the AMHCC was developed by IHPA for the purposes of classifying public hospital mental health services, the AMHCC can also be used by other mental health care services in Australia.

The information contained in this document relates to the implementation of the AMHCC. Further work is being undertaken to align the AMHCC with the existing National Outcomes and Casemix Collection (NOCC).

# 1. Introduction

## 1.1 Independent Hospital Pricing Authority

The Independent Hospital Pricing Authority (IHPA) was established as part of the implementation of the National Health Reform Agreement 2011 (NHRA). Under the NHRA, the Council of Australian Governments unanimously agreed to the establishment of activity based funding (ABF) as the primary funding methodology for public hospitals throughout Australia. The aim of a national ABF system is to improve the efficiency and transparency in the delivery and funding of Australian public hospital services. IHPA's overall functions and performance is governed by the Pricing Authority.

IHPA has a number of determinative functions as specified by the NHRA. IHPA's primary role is to determine the national efficient price and national efficient cost for public hospital services.

Other functions IHPA has responsibility for include determining adjustments to the national efficient price to reflect legitimate and unavoidable variations in the cost of delivering health services, determining data requirements and developing and specifying the classifications for services provided by public hospitals. IHPA undertakes reviews and updates of existing classifications and is also responsible for introducing new classifications.

## 1.2 Classification systems

Classification systems aim to provide the health care sector with a nationally consistent method of classifying the different types of patients/consumers of mental health services<sup>1</sup>, their treatment and associated costs. Classification systems categorise consumers on the basis of similar diagnostic, clinical and therapeutic attributes.

In other words, a classification system groups consumers who are clinically similar and have similar resource needs into groups. Classification systems enable vast amount of clinical information to be converted into manageable data categories. Classification systems enable hospital and health service provider usage, output and performance to be measured by creating a link between the consumers treated and the resources consumed during the provision of those treatments.

Classification systems are also a critical element of any ABF system. Using such a classification system can result in improved management, measurement and funding.

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<sup>1</sup> In the mental health sector patients are generally referred to as consumers of services.



### 1.3 Historical classification and pricing of public hospital mental health services

The NHRA stated that the implementation of ABF for public hospital mental health services would commence from 1 July 2013. To achieve a nationally consistent classification of mental health services, all mental health consumer activity, except non-admitted specialist mental health services, was categorised using the following established classifications:

- admitted mental health consumers using the Australian Refined Diagnosis Related Groups (AR-DRG) classification system
- admitted psychogeriatric consumers using the Australian National Subacute and Non-Acute Patient classification system, and
- mental health care provided in emergency departments using the Urgency Related Groups and Urgency Disposition Groups classification systems.

Non-admitted (also known as community) specialist mental health care services continued to be block funded in recognition of the fact that the counting and costing infrastructure for these services was less robust than for inpatient services.

### 1.4 Requirement for the AMHCC

It was widely recognised that the AR-DRG system was not the ideal classification system to use for ABF of mental health care as diagnosis is not always the most important cost driver in the sector. In 2012, the Pricing Authority determined that a new mental health classification would be developed for mental health services in Australia. Such a classification would improve cost prediction and support new models of care that are being implemented in states and territories.

The AMHCC Version 1.0 was developed to provide more accurate and consistent data about the services provided across different mental health care settings. The AMHCC is a clinically relevant classification that better explains resource consumption (cost) at the consumer level. It has the potential to support integrated service delivery by providing data across different service settings and health services. It is important to remember that the AMHCC can be applied to services not currently eligible for Commonwealth funding under the NHRA and IHPA's Pricing Framework. For example, child and adolescent community mental health services are not currently considered as in scope public hospital service under the NHRA. Services that are currently not included in the AMHCC may still be reported through the Activity Based Funding Mental Health Care National Best Endeavours Data Set so that they may be considered for inclusion in future iterations of the AMHCC.

### 1.5 Next steps

Under the *National Health Reform Act 2011*, IHPA has a legislative requirement to continue to develop health care classification systems. In line with these legislative requirements IHPA is committed to the ongoing development and refinement of the AMHCC.

As with other classification systems, this development and refinement will be supported by ongoing improvement in the quantity and quality of the data that is being collected. These improvements in data collection will only be possible with the support of clinicians and through clinical leadership.

IHPA, through its Mental Health Working Group (MHWG) and its consultations with the sector, has seen an enthusiasm for, and commitment to, a nationally consistent way of classifying all types of mental health care and associated costs. Mental health leaders are increasingly calling for better data to manage, measure, and fund health care services transparently and with greater efficiency.

IHPA however recognises that the mental health care sector is diverse. IHPA is committed to working with existing committees and advisory groups, public consultation and clinical reviews to develop and refine the AMHCC.

## 2. IHPA's approach to develop the AMHCC

### 2.1 Definition of services

In 2012, IHPA undertook the *Definition and Cost Drivers for Mental Health Services project*<sup>1</sup> to develop a definition of mental health care for ABF purposes, and to define the cost drivers associated with mental health services. The mental health care definition sets the scope of the AMHCC. It was approved by the Pricing Authority on 31 May 2013 and was further implemented as a [Health Standard](#) effective 1 July 2014.

The approved mental health care definition<sup>2</sup> is:

*Mental health care is care in which the primary clinical purpose or treatment goal is improvement in the symptoms and/or psychosocial, environmental and physical functioning related to a patient's mental disorder.*

*Mental health care:*

- *is delivered under the management of, or regularly informed by, a clinician with specialised expertise in mental health;*
- *is evidenced by an individualised formal mental health assessment and the implementation of a documented mental health plan; and*
- *may include significant psychosocial components, including family and carer support.*

It is important to note that 'assessment only' activities are considered in scope for the classification.

### 2.2 Identification of cost drivers

The *Definition and Cost Drivers for Mental Health Services project* identified possible cost drivers for further examination in the mental health classification development. The project involved a number of stages, including:

- comprehensive literature review
- wide ranging stakeholder consultation
- quantitative analysis using data obtained from Queensland, Victoria and New South Wales.

The project identified potential cost drivers as falling into the following five categories:

- consumer-related factors
- service factors
- treatment factors
- legal status, safety and emergency care
- chronic disease management.

The project concluded that mental health care costs are driven by multiple consumer factors, including (but not limited to) diagnoses, complications and comorbidities, symptoms severity and function.

In addition to the development of definitions and the identification of cost drivers, a mental health classification framework was developed by the project which formed the basis of the consumer level costing study.

## 2.3 Consumer level costing study

A key finding of the *Definition and Cost Drivers for Mental Health Services project* was that the costing data submitted to the National Hospital Cost Data Collection by jurisdictions for mental health services was not considered to be sufficient for classification development. Some variables identified as important cost drivers, for example consumer clinical ratings, were either incomplete or not collected at critical points in the overall episode of mental health care. A key recommendation of the project was that a comprehensive mental health costing study would be required.

In February 2014, IHPA undertook a mental health costing study to inform the development of the Australian Mental Health Care Classification<sup>3</sup> to generate a data set on mental health services and costs in order to inform the development of the AMHCC Version 1.0. The aim of the costing study was to produce a robust consumer level dataset that is representative of mental health services provided in Australia.

A prospective collection of activity and cost data at the consumer level was undertaken between 1 July 2014 and 31 December 2014. A total of 26 mental health services across five Australian states and territories participated in the study, including New South Wales, Victoria, Queensland, Western Australia and South Australia. The participating health services included four private hospitals.

Analysis showed that the costing study data set was broadly representative for age, sex, Indigenous status and length of stay characteristics when compared to the national minimum data sets for admitted and community services.

Due to the low number of episodes in residential mental health services in the costing study, no meaningful analysis on the residential setting could be undertaken. It is likely that the population in the residential setting in this costing study is not representative of the national population, due to a very small sample size. Further work will be undertaken by IHPA to inform development of this branch of the classification and at present, the AMHCC does not cover the residential mental health care setting.

The costing study data obtained from the admitted and community settings was representative of mental health services provided in these settings throughout Australia.

IHPA recognises that whilst the AMHCC Version 1.0 is being implemented on a best endeavours basis from 1 July 2016, some areas of the classification require further refinement. Ongoing development will be undertaken to ensure improvement of the classification to increase the alignment of the new classification to clinical practice, and to further support implementation.

## 2.4 Implementation of AMHCC Version 1.0

On 25 February 2016, the Pricing Authority approved the AMHCC Version 1.0. The AMHCC was implemented on a best endeavours basis from 1 July 2016.

The following materials are required to support implementation of AMHCC Version 1.0 and should be read in conjunction with this document:

- the Activity Based Funding Mental Health Care Data Request Specification (ABF MHC DRS) and National Best Endeavours Data Set (ABF MHC NBEDS);
- incorporation of phase of care into the National Hospital Cost Data Collection (NHCDC) Data Request Specification;
- the AMHCC User Manual and Mental Health Phase of Care Fact Sheet;
- the AMHCC grouper.

The ABF MHC DRS and NBEDS specify the activity data items required for collection and have been published on IHPA's website.

The NHCDC DRS specifies the cost data to be reported through the NHCDC. IHPA is currently finalising the DRS for Round 20, which relates to 2015-16 data and will be reported in early 2017.

IHPA has developed a grouper (a piece of software) and accompanying specification guide for the AMHCC. The AMHCC Version 1.0 grouper assigns mental health consumer presentations to the appropriate AMHCC end class by sorting episodes into medical record number, phase start date, phase end date and service contact date. The AMHCC Version 1.0 grouper package consists of a SAS grouper and an alternate grouper .exe application grouper. These have been published on the IHPA website.

For more information about the background to the development of the AMHCC, and the two public consultations conducted to date, please visit: [ihpa.gov.au/](http://ihpa.gov.au/).

# 3. AMHCC Version 1.0

## 3.1 Structure of the AMHCC Version 1.0

The AMHCC Version 1.0 is a consumer level classification that avoids the use of administrative and input oriented variables, with a simple structure which will allow flexibility for further refinement.

The classification has six major splitting variables that comprise the AMHCC and are unrelated to the clinical decision-making process. The first three variables are categorical variables, and the remaining variables are complexity variables.

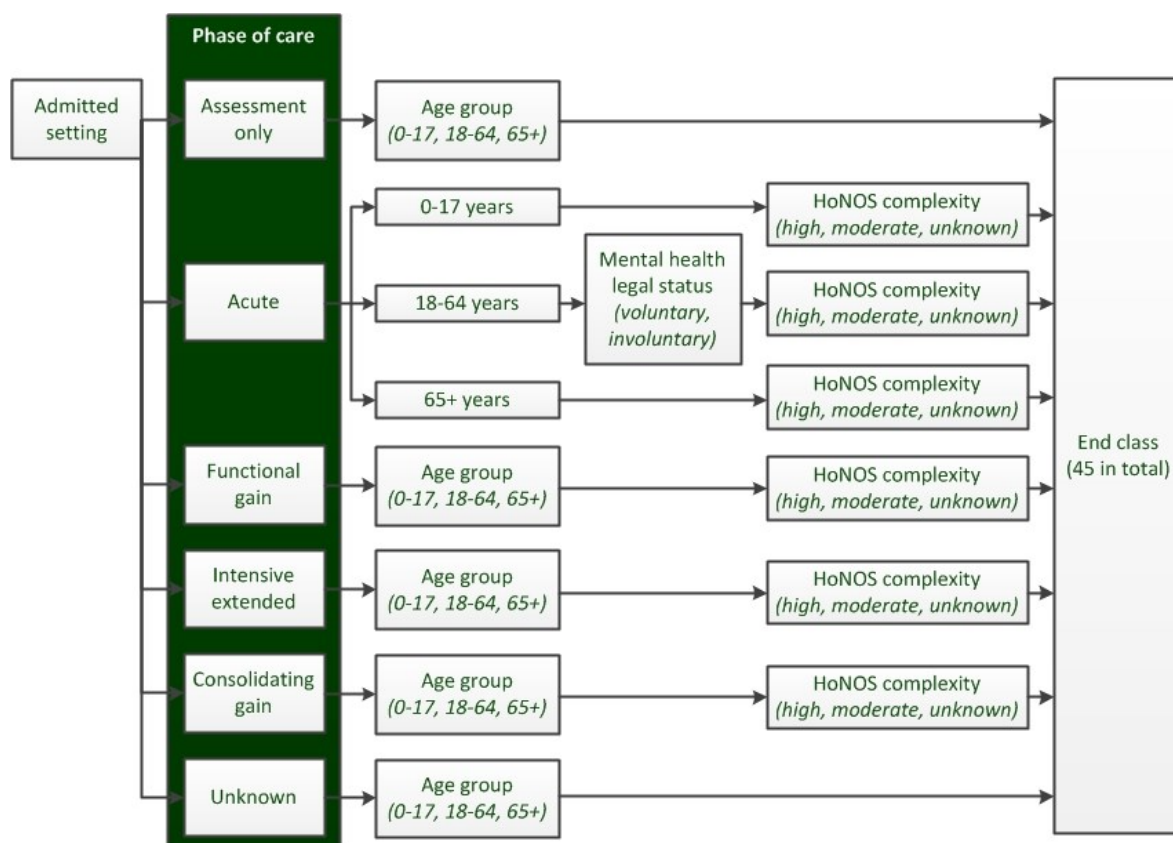
The classification is illustrated at Figures 1 and 2 and described below. It should be noted that both Figures 1 and 2 describe the major splitting variables that comprise the AMHCC and do not represent a clinical decision-making process.

## 3.2 Admitted setting structure

There are a total of 45 classes in the admitted setting, including 16 end classes resulting from unknown mental health phases of care or unknown HoNOS scores.

Figure 1 provides an overview of the structure of the admitted setting for the AMHCC Version 1.0. Appendix 1 lists all of the end classes in the admitted setting.

**Figure 1 - AMHCC Version 1.0 admitted setting structure**

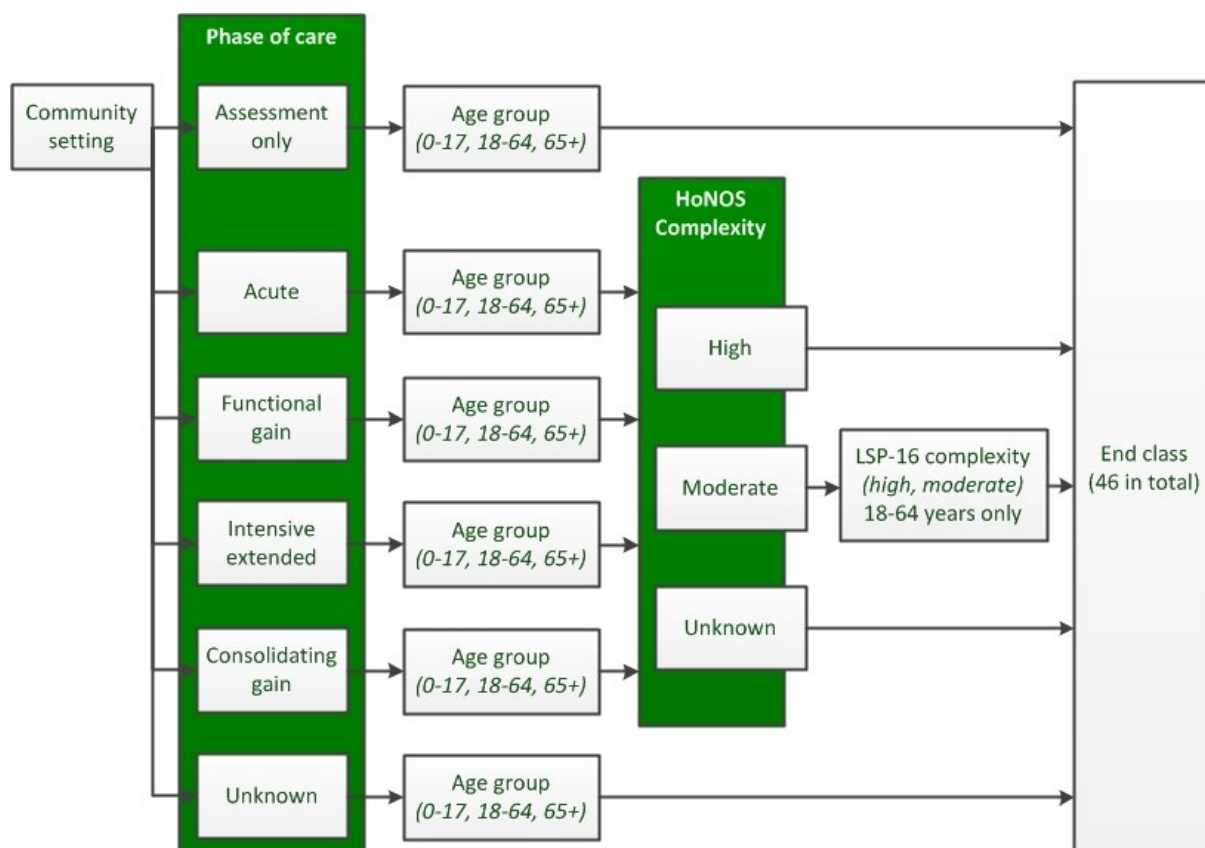


### 3.3 Community setting structure

There are a total of 46 classes in the community setting, including 15 end classes resulting from unknown mental health phase of care or unknown HoNOS scores.

Figure 2 provides an overview of the structure of the community setting for the AMHCC Version 1.0. Appendix 1 lists all of the end classes in the community setting.

**Figure 2 - AMHCC Version 1.0 community setting structure**



NB: The classification currently groups Unknown LSP-16 scores with Moderate LSP-16 scores.

## 4. Data items of the AMHCC Version 1.0

### 4.1 Settings of mental health care

There is a need for further development of the AMHCC in the areas of clinical complexity, comorbidities, consultation-liaison, residential mental health care, and child and adolescent mental health care due to the previously cited lack of quality data in these branches of mental health service delivery. A clinical reference group has been formed to provide the child and adolescent mental health sector with the opportunity to assist in the refinement of future iterations of the AMHCC and its supporting material, as well as to promote the functions of a patient-level classification. Data is strongly encouraged to be provided for these specialist services, so that future refinements to the classification can potentially include these sub-groups at a later date.

#### 4.1.1 Admitted setting

The admitted setting includes consumers who complete a hospital's formal admission process and therefore are admitted for mental health care treatment. The consumer may be admitted to a general ward or a designated psychiatric unit in a general hospital or a psychiatric hospital. All activity reported will have a mental health care type for the admitted consumer episode, regardless of the mental health specialisation status of the provider.

#### 4.1.2 Community setting

The community setting (also known as ambulatory) includes mental health care services delivered to consumers who are not admitted to an inpatient facility or reside in a residential mental health care facility and who meet the mental health care type definition.

### 4.2 Mental health phases of care

The approved definition of a mental health phase of care<sup>4</sup> is:

*The prospective primary goal of treatment within an episode of care in terms of the recognised phases of mental health care. Whilst it is recognised that there may be aspects of each mental health phase of care represented in the consumer's mental health plan, the mental health phase of care is intended to identify the main goal or aim that will underpin the next period of care.*

*The mental health phase of care is independent of both the treatment setting and the designation of the treating service, and does not reflect service unit type.*

*The five mental health phases of care are:*

- 1 Acute
- 2 Functional gain
- 3 Intensive extended
- 4 Consolidating gain
- 5 Assessment only.



The mental health phase of care is assessed by a healthcare professional directly involved in a consumer's care. It is the primary goal of care that is reflected in the consumer's mental health treatment plan. The mental health phase of care reflects a prospective assessment of the primary goal of care at the time of collection, rather than a retrospective assessment.

A new phase of mental health care begins either when a consumer commences an episode of care or when the consumer's primary goal of care changes in an existing episode of care. The episode of care is defined as the period between the commencement and completion of care characterised by the mental health care type<sup>5</sup>. An episode of care may have multiple mental health phases of care. The consumer's mental health care needs may change as they move between different phases of an episode and accordingly, the goal of care and the need for resources may change. There are currently five phases of mental health care, including acute, functional gain, intensive extended, consolidating gain and assessment only. The classification also provides for 'unknown phase' which should only be used when a phase is unable to be reported to the primary data collection. Where missing or incomplete data (e.g. phase or HoNOS) is submitted, this will result in an Unknown end class.

In 2016, IHPA undertook an inter-rater reliability study of the mental health phase of care concept to refine the definitions and associated guiding principles. The mental health phase of care concept is an attempt to bring together two related concepts of the "consumer's needs" and "goal of care". Each phase of care involves the provision of resources aimed at meeting individual consumer need. The mental health phase of care is a simple tool designed to qualify a complex concept. Consumers may move between any of the phases of care in any particular order. Identification of the mental health phase of care is aligned to the contemporary recovery-orientated mental health practice where the goals of care are collaboratively generated and are responsive to the particular needs of the consumer at the time.

The approved definition of each mental health phase of care<sup>6</sup> is provided below.

### **Acute**

The primary goal of care is the short term reduction in severity of symptoms and/or personal distress associated with the recent onset or exacerbation of a psychiatric disorder.

### **Functional gain**

The primary goal of care is to improve personal, social or occupational functioning or promote psychosocial adaptation in a patient with impairment arising from a psychiatric disorder.

### **Intensive extended**

The primary goal of care is prevention or minimisation of further deterioration, and reduction of risk of harm in a patient who has a stable pattern of severe symptoms, frequent relapses or severe inability to function independently and is judged to require care over an indefinite period.

### **Consolidating gain**

The primary goal of care is to maintain the level of functioning, or improving functioning during a period of recovery, minimise deterioration or prevent relapse where the patient has stabilised and functions relatively independently. Consolidating gain may also be known as maintenance.

### **Assessment only**

The primary goal of care is to obtain information, including collateral information where possible, in order to determine the intervention/treatment needs and to arrange for this to occur (includes brief history, risk assessment, referral to treating team or other service).

## 4.3 Age group

Consumer age groups within the AMHCC Version 1.0 include children and adolescents, adults, and older persons.

Generally, children and adolescents are defined as persons under the age of 18 years, adults are defined as persons between the age of 18 and 64 years inclusive, and older persons are defined as persons aged 65 years and older.

## 4.4 Clinical measures

### 4.4.1 Health of the Nation Outcomes Scale (HoNOS)

The HoNOS is a 12 item instrument that was developed by the Royal College of Psychiatrists in 1998 to measure progress towards a 'health of the nation' target set by the United Kingdom's Department of Health. The primary goal of the HoNOS is to measure the health and social functioning of mentally ill people for the 18-64 years age group.

The HoNOS can be regarded as a general measure of severity of symptoms for this group. Each item is rated on a five-point scale (Appendix 2):

- 0 - no problem
- 1 - minor problem requiring no action
- 2 - mild problem but definitely present
- 3 - moderately severe problem
- 4 - severe to very severe problem.<sup>7</sup>

This results in individual item scores, subscale scores and a total score. In assigning ratings, the clinician makes use of a glossary which details the meaning of each point on the item being rated.

The HoNOS is simple to use and measures clinical problems and social functioning. The Royal College of Psychiatrists found the HoNOS to have good reliability, sensitivity to change and wide acceptability by clinicians.<sup>8</sup>

The classification uses a HoNOS complexity split (high or moderate). The split is based on the weighted sum of each mental health phase of care's HoNOS scores. The weighted HoNOS scores are assessed against a threshold and classified as 'high' if greater than or equal to the threshold, and 'moderate' if less than the threshold. The weightings are further described within section 5: *Technical aspects of the AMHCC Version 1.0*. The HoNOS subscale can be seen at Appendix 2.

The ABF MHC DRS for 2016-17 includes the option for reporting a value of 9 when a score is not known. This reflects the original HoNOS score sheet. The NOCC specifications for HoNOS allow values of 7 (not stated/missing) and 9 (unable to rate/not applicable for consumer). These are reporting protocols specific to NOCC reporting and should be mapped to the value of 9 when reporting to the ABF MHC DRS 2016-17. The ABF MHC NBEDS and supporting material will be updated with the value of 9 for 2017-18 and ongoing consultation will confirm whether additional changes are required to future iterations of the technical specifications.

#### **4.4.2 Health of the Nation Outcome Scales for Children and Adolescents (HoNOSCA)**

The HoNOSCA is a 15 item instrument developed by the Royal College of Psychiatrists in 1999 to measure the outcomes of emotional and behavioural disorders in children and adolescents. The primary goal of the HoNOSCA is to measure the symptom severity and social functioning of the consumer over the preceding two weeks. The HoNOSCA was modelled on the HoNOS.<sup>9</sup>

It is important to note that only the first 13 items of the HoNOSCA are used in the AMHCC Version 1.0.

The HoNOSCA subscale can be seen at Appendix 2. The HoNOSCA items are rated by the same severity measure format as the HoNOS.<sup>10</sup>

#### **4.4.3 Health of the Nation Outcome Scale for elderly people (HoNOS 65+)**

The HoNOS 65+ is a 12 item instrument developed by the Royal College of Psychiatrists in 1999 to measure particular physical and cognitive problems affecting older people. The primary goal of the HoNOS 65+ is to measure specific mental health issues that occur in older people such as agitation and restlessness, delusions occurring in the presence of dementia, the phenomenology of depression and incontinence. The Royal College of Psychiatrists found that the HoNOS 65+ was able to discriminate between people suffering from organic and functional illnesses.<sup>11</sup>

The HoNOS 65+ subscale can be seen at Appendix 2. The 12 items are rated by the same severity measure format as the HoNOS.<sup>12</sup>

#### **4.4.4 Abbreviated Life Skills Profile (LSP-16)**

The Life Skills Profile (LSP) is a 39 item clinical outcomes instrument that measures the life skills of how successfully people with schizophrenia or with a chronic mental illness live in the community (Appendix 2). The instrument aims to assess constructs relevant to the survival, function and adaptation of consumers with schizophrenia, using specific and jargon free items to assess distinct behaviours.<sup>13</sup>

Work undertaken as part of the *Australian Mental Health Classification and Service Costs (MH-CASC) study*<sup>14</sup> saw the 39 items of the LSP reduced to 16 items. The reduction in item numbers aimed to minimise the rating burden on clinicians when the measure is used in conjunction with the HoNOS. Each item is rated on a four-point scale ranging from 0 to 3 with high scores indicating higher disability, resulting in individual item scores, subscale scores and a total score. The LSP-16 thresholds are listed in Table 1 and Table 3 at section 5.

The classification utilises LSP-16 in application to the community setting, 18-64 years age group and moderate HoNOS complexity. Although there are no dedicated end classes for phases with unknown HoNOS and known LSP-16, these phases are identifiable within the unknown HoNOS end classes.

In the community setting, consumers aged 18-64 years with a moderate HoNOS complexity are also classified by assessing the sum of their LSP-16 question scores against a threshold, which classifies the score as high or moderate accordingly. The classification currently groups unknown LSP-16 scores with moderate LSP-16 scores.

The LSP-16 has no training requirements and may be administered by clinicians of any discipline, providing they have had moderate contact with the consumer. Clinicians who are familiar with the instrument can typically administer it in five minutes or less.

#### **4.4.5 Family and Carer Variables**

Family and carer variables are not included in the first version of the AMHCC due to lack of collectable data available to help identify carer involvement as a cost driver. Further investigation of the impact of carers on the cost of delivering care is needed and will be undertaken within the evaluation of the implementation of the AMHCC.

### **4.5 Mental health legal status**

In the admitted, acute and 18-64 years age group only, there is a split based on the mental health legal status (MHLS) of the consumer (involuntary or voluntary). MHLS is an indicator of whether mental health care is being provided under the state or territory mental health legislation. An involuntary patient may be detained in hospital under mental health legislation for the purpose of assessment or provision of appropriate treatment or care.

### **4.6 Number of end classes**

The final AMHCC has 91 end classes, of which 60 are completely classified and 31 are a result of unknown mental health phase of care or HoNOS. In the admitted setting, there are 45 end classes in total, of which 29 are completely classified and 16 are a result of unknown mental health phase of care or HoNOS. In the community setting, there are 46 end classes in total, of which 31 are completely classified and 15 are a result of unknown mental health phase of care or HoNOS. It is anticipated that the unknown mental health phase of care and HoNOS classes will be eliminated over time as reporting improves.

# 5. Technical aspects of the AMHCC Version 1.0

## 5.1 Weighting of the HoNOS, HoNOSCA and HoNOS 65+

AMHCC Version 1.0 includes moderate and high HoNOS complexity splits, which are based on ratings from HoNOS, HoNOSCA and HoNOS 65+ questionnaire instruments. The HoNOS, HoNOSCA and HoNOS 65+ instruments comprise items (i.e. questions) that can each receive a rating of 0, 1, 2, 3 or 4 based on the clinician's assessment of the consumer. AMHCC Version 1.0 incorporates ratings from HoNOS and HoNOS 65+ items 1 to 12 and HoNOSCA items 1 to 13.

To calculate HoNOS complexity, the consumer's item ratings are individually weighted, then added together, and the resulting weighted total is rescaled. The rescaled weighted total of the item ratings is compared against a threshold, with any value greater than or equal to the threshold classified as high complexity and any value less than the threshold classified as moderate complexity.

The weights applied to individual item ratings control the relative contribution of the ratings towards the measurement of HoNOS complexity. Specifically, items with relatively high weight have a greater influence on HoNOS complexity compared to items with relatively low weight.

The rescaling factor applied to the weighted total of the item ratings ensures consistency in HoNOS complexity measurement across the branches of the classification, with all rescaled weighted totals ranging between 0 and 48 for HoNOS and HoNOS 65+ branches, and ranging between 0 and 52 for HoNOSCA branches. Note that these ranges align with the ranges of unweighted item totals.

Finally, the threshold sets the level at which high complexity is defined for each setting, mental health phase of care and age group.

For the purposes of the AMHCC Version 1.0, the HoNOS complexity item weights, rescaling factors and thresholds vary across the branches of the classification, and their values are specified in Table 1.

An example illustrating how HoNOS complexity is calculated in AMHCC Version 1.0 is at Appendix 3.

LSP complexity is derived in a similar way to HoNOS complexity; however, there is no weighting of individual item ratings and consequently no rescaling factor. Table 1 contains the LSP thresholds used to determine LSP complexity splits.

The item weights and score thresholds used to assign HoNOS complexity and LSP complexity were derived from the mental health costing study.

Comparative testing of weighted and unweighted HoNOS (including HoNOSCA and HoNOS 65+) scales revealed that weighting of the HoNOS scales made an evident improvement on the classification's performance overall and also showed sensible results when evaluated at the level of age group within each mental health phase of care.

Differences in the structure of the classification (e.g. other classification variables used above or below each complexity split), together with differences in item weights and trends exhibited within the mental health costing study data, are all factors that contributed to the variation of complexity thresholds by setting, mental health phase of care and age group.

It is important to note that as a result of the small sample size in the mental health costing study for the 0-17 year old age group, it was not possible to derive accurate HoNOSCA weights. Consequently, all HoNOSCA items receive equal weighting.

**Table 1 – Weighting of HoNOS, HoNOSCA and HoNOS 65+ scores for AMHCC Version 1.0**

Setting	Phase	Age group	HoNOS weights													Weighted HoNOS rescaling factor	Weighted HoNOS threshold	LSP threshold
			W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13			
Admitted	Acute	0-17	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0000	17	-
		18-64	1.6	0.6	0.6	0.8	0.8	1.6	0.4	0.4	0.6	0.6	0.6	0.6		1.3043	14	-
		65+	1.2	0.8	0.8	1.2	1.2	1.2	0.8	0.8	1	1	1	1		1.0000	15	-
	Functional gain	0-17	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0000	12	-
		18-64	1.4	1.2	1.2	1.4	1.4	1.4	0.6	0.6	0.6	0.6	0.6	0.6		1.0345	10	-
		65+	1.2	0.8	0.8	1.2	1.2	1.2	0.8	0.8	1	1	1	1		1.0000	11	-
	Intensive extended	0-17	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0000	12	-
		18-64	1.2	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2		0.8571	11	-
		65+	1.2	0.8	0.8	1.2	1.2	1.2	0.8	0.8	1	1	1	1		1.0000	11	-
	Consolidating gain	0-17	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0000	9	-
		18-64	1	0.6	0.6	1.4	1.4	1	0.8	0.8	1.4	1.4	0.6	0.6		1.0345	8	-
		65+	1.2	0.8	0.8	1.2	1.2	1.2	0.8	0.8	1	1	1	1		1.0000	8	-
Community	Acute	0-17	1.2	1	1	1	1	1	1.2	0.8	0.8	1	1	0.8	0.8	1.0317	26	-
		18-64	1.6	0.6	0.6	0.6	0.6	1.6	1.2	1.2	0.6	0.6	0.6	0.6		1.1538	20	15
		65+	0.8	1	1	1.2	1.2	0.8	1.2	1.2	0.8	0.8	1	1		1.0000	19	-
	Functional gain	0-17	1.2	1	1	1	1	1	1.2	0.8	0.8	1	1	0.8	0.8	1.0317	23	-
		18-64	0.8	0.8	0.8	1.2	1.2	0.8	0.8	0.8	1	1	1	1		1.0714	18	12
		65+	0.8	1	1	1.2	1.2	0.8	1.2	1.2	0.8	0.8	1	1		1.0000	15	-
	Intensive extended	0-17	1.2	1	1	1	1	1	1.2	0.8	0.8	1	1	0.8	0.8	1.0317	26	-
		18-64	1.4	1.2	1.2	1	1	1.4	0.6	0.6	0.6	0.6	0.6	0.6		1.1111	18	15
		65+	0.8	1	1	1.2	1.2	0.8	1.2	1.2	0.8	0.8	1	1		1.0000	15	-
	Consolidating gain	0-17	1.2	1	1	1	1	1	1.2	0.8	0.8	1	1	0.8	0.8	1.0317	22	-
		18-64	0.6	1.2	1.2	0.6	0.6	0.6	1.4	1.4	0.6	0.6	0.6	0.6		1.2000	16	13
		65+	0.8	1	1	1.2	1.2	0.8	1.2	1.2	0.8	0.8	1	1		1.0000	18	-

The HoNOS, HoNOSCA and HoNOS 65+ thresholds for 'high complexity' in AMHCC Version 1.0 are shown in Table 2. Any score below the threshold is considered 'medium complexity'.

**Table 2 – HoNOS, HoNOSCA and HoNOS 65+ thresholds for 'high complexity'**

Setting	Phase	Age group	Weighted HoNOS score threshold for 'high complexity'
Admitted	Acute	0-17 years	17
		18-64 years	14
		65+ years	15
	Functional gain	0-17 years	12
		18-64 years	10
		65+ years	11
	Intensive extended	0-17 years	12
		18-64 years	11
		65+ years	11
	Consolidating gain	0-17 years	9
		18-64 years	8
		65+ years	8
Community	Acute	0-17 years	26
		18-64 years	20
		65+ years	19
	Functional gain	0-17 years	23
		18-64 years	18
		65+ years	15
	Intensive extended	0-17 years	26
		18-64 years	18
		65+ years	15
	Consolidating gain	0-17 years	22
		18-64 years	16
		65+ years	18



## 5.2 Abbreviated Life Skills Profile

For the purposes of AMHCC Version 1.0, the LSP-16 thresholds for 'high complexity' are referred to in Table 3. Any score below the threshold is considered 'medium complexity'.

**Table 3 – LSP-16 thresholds for 'high complexity'**

Setting	Phase	Age group	Weighted LSP-16 score threshold for 'high complexity'
Community	Acute	18-64 years	15
	Functional gain	18-64 years	12
	Intensive extended	18-64 years	15
	Consolidating gain	18-64 years	13

## 5.3 Class numbering system

### 5.3.1 Alpha-numeric class characters

The class format of the AMHCC Version 1.0 reflects the structure of the classification. Specifically, there are five alpha-numeric characters that specify each class.

The first (left-most) character specifies the setting as:

- 1 – admitted
- 2 – community

The second character specifies the mental health phase of care as:

- 0 – assessment only
- 1 – acute
- 2 – functional gain
- 3 – intensive extended
- 4 – consolidating gain
- 9 – unknown.

The third character specifies age group as:

- 1 – 0-17 years
- 2 – 18-64 years
- 3 – 65+ years.

The fourth character specifies:

- 1 – mental health legal status is involuntary
- 2 – mental health legal status is voluntary
- A – high HoNOS complexity
- B – moderate HoNOS complexity
- Z – used as the fourth character for assessment only classes, or classes with unknown mental health phase of care or unknown HoNOS score.

The fifth character specifies:

- A – high HoNOS complexity
- B – moderate HoNOS complexity
- 1 – high LSP-16 complexity
- 2 – moderate LSP-16 complexity
- Z – used as the fifth character for classes with unknown HoNOS score.

It is important to note that the fifth character also includes phases with unknown clinical or LSP-based complexity.

### 5.3.2 Examples of the class numbering system

The following examples illustrate how the class format is interpreted.

#### 132B

- 1 – admitted setting
- 3 – intensive extended phase of care
- 2 – 18-64 years age group
- B – moderate HoNOS complexity

#### 212B1

- 2 – community setting
- 1 – acute phase of care
- 2 – 18-64 years age group
- B – moderate HoNOS complexity
- 1 – high LSP complexity

#### 111A

- 1 – admitted setting
- 1 – acute phase of care
- 1 – 0-17 years age group
- A – high HoNOS complexity

#### 1121B

- 1 – admitted setting
- 1 – acute phase of care
- 2 – 18-64 years age group
- 1 – involuntary mental health legal status
- B – moderate HoNOS complexity

#### 203Z

- 2 – community setting
- 0 – assessment only phase of care
- 3 – 65+ years age group
- Z – interpreted as no HoNOS complexity split due to assessment only phase of care specification

#### 291Z

- 2 – community setting
- 9 – unknown phase of care
- 1 – 0-17 years age group
- Z – interpreted as a missing information class due to unknown mental health phase of care

## **213Z**

- 2 – community setting
- 1 – acute phase of care
- 3 – 65+ years age group
- Z – interpreted as a missing information class due to unknown HoNOS score.

## 5.4 The AMHCC Version 1.0 classes - Admitted setting

**Table 4 – Admitted branch of the AMHCC Version 1.0**

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
Assessment only	0-17 years	-	-	-	-	-	-	101Z	Admitted, Assessment only, 0-17 years
	18-64 years	-	-	-	-	-	-	102Z	Admitted, Assessment only, 18-64 years
	65+ years	-	-	-	-	-	-	103Z	Admitted, Assessment only, 65+ years
Acute	0-17 years	-	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	1	17	High	-	111A	Admitted, Acute, 0-17 years, High HoNOS complexity
						Moderate	-	111B	Admitted, Acute, 0-17 years, Moderate HoNOS complexity
						Unknown	-	111Z	Admitted, Acute, 0-17 years, Unknown HoNOS
	18-64 years	Involuntary	1.6, 0.6, 0.6, 0.8, 0.8, 1.6, 0.4, 0.4, 0.6, 0.6, 0.6, 0.6	1.3043	14	High	-	1121A	Admitted, Acute, 18-64 years, Involuntary, High HoNOS complexity
						Moderate	-	1121B	Admitted, Acute, 18-64 years, Involuntary, Moderate HoNOS complexity
						Unknown	-	1121Z	Admitted, Acute, 18-64 years, Involuntary, Unknown HoNOS
		Voluntary	1.6, 0.6, 0.6, 0.8, 0.8, 1.6, 0.4, 0.4, 0.6, 0.6, 0.6, 0.6	1.3043	14	High	-	1122A	Admitted, Acute, 18-64 years, Voluntary, High HoNOS complexity
						Moderate	-	1122B	Admitted, Acute, 18-64 years, Voluntary, Moderate HoNOS complexity

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
	65+ years	-	1.2, 0.8, 0.8, 1.2, 1.2, 1.2, 0.8, 0.8, 1, 1, 1, 1	1	15	Unknown	-	1122Z	Admitted, Acute, 18-64 years, Voluntary, Unknown HoNOS
						High	-	113A	Admitted, Acute, 65+ years, High HoNOS complexity
						Moderate	-	113B	Admitted, Acute, 65+ years, Moderate HoNOS complexity
						Unknown	-	113Z	Admitted, Acute, 65+ years, Unknown HoNOS
Functional gain	0-17 years	-	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	1	12	High	-	121A	Admitted, Functional gain, 0-17 years, High HoNOS complexity
						Moderate	-	121B	Admitted, Functional gain, 0-17 years, Moderate HoNOS complexity
						Unknown	-	121Z	Admitted, Functional gain, 0-17 years, Unknown HoNOS
	18-64 years	-	1.4, 1.2, 1.2, 1.4, 1.4, 1.4, 0.6, 0.6, 0.6, 0.6, 0.6, 0.6	1.0345	10	High	-	122A	Admitted, Functional gain, 18-64 years, High HoNOS complexity
						Moderate	-	122B	Admitted, Functional gain, 18-64 years, Moderate HoNOS complexity
						Unknown	-	122Z	Admitted, Functional gain, 18-64 years, Unknown HoNOS
	65+ years	-	1.2, 0.8, 0.8, 1.2, 1.2, 1.2, 0.8, 0.8, 1, 1, 1, 1	1	11	High	-	123A	Admitted, Functional gain, 65+ years, High HoNOS complexity
						Moderate	-	123B	Admitted, Functional gain, 65+ years, Moderate HoNOS complexity
						Unknown	-	123Z	Admitted, Functional gain, 65+ years, Unknown HoNOS

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
Intensive extended	0-17 years	-	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	1	12	High	-	131A	Admitted, Intensive extended, 0-17 years, High HoNOS complexity
						Moderate	-	131B	Admitted, Intensive extended, 0-17 years, Moderate HoNOS complexity
						Unknown	-	131Z	Admitted, Intensive extended, 0-17 years, Unknown HoNOS
	18-64 years	-	1.2, 1, 1, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2	0.8571	11	High	-	132A	Admitted, Intensive extended, 18-64 years, High HoNOS complexity
						Moderate	-	132B	Admitted, Intensive extended, 18-64 years, Moderate HoNOS complexity
						Unknown	-	132Z	Admitted, Intensive extended, 18-64 years, Unknown HoNOS
	65+ years	-	1.2, 0.8, 0.8, 1.2, 1.2, 1.2, 0.8, 0.8, 1, 1, 1, 1	1	11	High	-	133A	Admitted, Intensive extended, 65+ years, High HoNOS complexity
						Moderate	-	133B	Admitted, Intensive extended, 65+ years, Moderate HoNOS complexity
						Unknown	-	133Z	Admitted, Intensive extended, 65+ years, Unknown HoNOS
Consolidating gain	0-17 years	-	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	1	9	High	-	141A	Admitted, Consolidating gain, 0-17 years, High HoNOS complexity
						Moderate	-	141B	Admitted, Consolidating gain, 0-17 years, Moderate HoNOS complexity

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
						Unknown	-	141Z	Admitted, Consolidating gain, 0-17 years, Unknown HoNOS
	18-64 years	-	1, 0.6, 0.6, 1.4, 1.4, 1, 0.8, 0.8, 1.4, 1.4, 0.6, 0.6	1.0345	8	High	-	142A	Admitted, Consolidating gain, 18-64 years, High HoNOS complexity
						Moderate	-	142B	Admitted, Consolidating gain, 18-64 years, Moderate HoNOS complexity
						Unknown	-	142Z	Admitted, Consolidating gain, 18-64 years, Unknown HoNOS
	65+ years	-	1.2, 0.8, 0.8, 1.2, 1.2, 1.2, 0.8, 0.8, 1, 1, 1, 1	1	8	High	-	143A	Admitted, Consolidating gain, 65+ years, High HoNOS complexity
						Moderate	-	143B	Admitted, Consolidating gain, 65+ years, Moderate HoNOS complexity
						Unknown	-	143Z	Admitted, Consolidating gain, 65+ years, Unknown HoNOS
Unknown	0-17 years	-	-	-	-	-	-	191Z	Admitted, Unknown phase, 0-17 years
	18-64 years	-	-	-	-	-	-	192Z	Admitted, Unknown phase, 18-64 years
	65+ years	-	-	-	-	-	-	193Z	Admitted, Unknown phase, 65+ years

## 5.5 The AMHCC Version 1.0 classes - Community setting

**Table 5 – Community branch of the AMHCC Version 1.0**

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
Assessment only	0-17 years	-	-	-	-	-	-	201Z	Community, Assessment only, 0-17 years
	18-64 years	-	-	-	-	-	-	202Z	Community, Assessment only, 18-64 years
	65+ years	-	-	-	-	-	-	203Z	Community, Assessment only, 65+ years
Acute	0-17 years	-	1.2, 1, 1, 1, 1, 1, 1.2, 0.8, 0.8, 1, 1, 0.8, 0.8	1.0317	26	High	-	211A	Community, Acute, 0-17 years, High HoNOS complexity
						Moderate	-	211B	Community, Acute, 0-17 years, Moderate HoNOS complexity
						Unknown	-	211Z	Community, Acute, 0-17 years, Unknown HoNOS
	18-64 years	-	1.6, 0.6, 0.6, 0.6, 0.6, 1.6, 1.2, 1.2, 0.6, 0.6, 0.6, 0.6	1.1538	20	High	-	212A	Community, Acute, 18-64 years, High HoNOS complexity
						Moderate	High	212B1	Community, Acute, 18-64 years, Moderate HoNOS complexity with High LSP complexity
							Moderate	212B2	Community, Acute, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
						Unknown	-	212Z	Community, Acute, 18-64 years, Unknown HoNOS



Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
Functional gain	65+ years	-	0.8, 1, 1, 1.2, 1.2, 0.8, 1.2, 1.2, 0.8, 0.8, 1, 1	1	19	High	-	213A	Community, Acute, 65+ years, High HoNOS complexity
						Moderate	-	213B	Community, Acute, 65+ years, Moderate HoNOS complexity
						Unknown	-	213Z	Community, Acute, 65+ years, Unknown HoNOS
	0-17 years	-	1.2, 1, 1, 1, 1, 1, 1.2, 0.8, 0.8, 1, 1, 0.8, 0.8	1.0317	23	High	-	221A	Community, Functional gain, 0-17 years, High HoNOS complexity
						Moderate	-	221B	Community, Functional gain, 0-17 years, Moderate HoNOS complexity
						Unknown	-	221Z	Community, Functional gain, 0-17 years, Unknown HoNOS
	18-64 years	-	0.8, 0.8, 0.8, 1.2, 1.2, 0.8, 0.8, 0.8, 1, 1, 1, 1	1.0714	18	High	-	222A	Community, Functional gain, 18-64 years, High HoNOS complexity
						Moderate	High	222B1	Community, Functional gain, 18-64 years, Moderate HoNOS complexity with High LSP complexity
							Moderate	222B2	Community, Functional gain, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
						Unknown	-	222Z	Community, Functional gain, 18-64 years, Unknown HoNOS

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
	65+ years	-	0.8, 1, 1, 1.2, 1.2, 0.8, 1.2, 1.2, 0.8, 0.8, 1, 1	1	15	High	-	223A	Community, Functional gain, 65+ years, High HoNOS complexity
						Moderate	-	223B	Community, Functional gain, 65+ years, Moderate HoNOS complexity
						Unknown	-	223Z	Community, Functional gain, 65+ years, Unknown HoNOS
Intensive extended	0-17 years	-	1.2, 1, 1, 1, 1, 1, 1.2, 0.8, 0.8, 1, 1, 0.8, 0.8	1.0317	26	High	-	231A	Community, Intensive extended, 0-17 years, High HoNOS complexity
						Moderate	-	231B	Community, Intensive extended, 0-17 years, Moderate HoNOS complexity
						Unknown	-	231Z	Community, Intensive extended, 0-17 years, Unknown HoNOS
	18-64 years	-	1.4, 1.2, 1.2, 1, 1, 1.4, 0.6, 0.6, 0.6, 0.6, 0.6	1.1111	18	High	-	232A	Community, Intensive extended, 18-64 years, High HoNOS complexity
						Moderate	High	232B1	Community, Intensive extended, 18-64 years, Moderate HoNOS complexity with High LSP complexity
							Moderate	232B2	Community, Intensive extended, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
						Unknown	-	232Z	Community, Intensive extended, 18-64 years, Unknown HoNOS

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
	65+ years	-	0.8, 1, 1, 1.2, 1.2, 0.8, 1.2, 1.2, 0.8, 0.8, 1, 1	1	15	High	-	233A	Community, Intensive extended, 65+ years, High HoNOS complexity
						Moderate	-	233B	Community, Intensive extended, 65+ years, Moderate HoNOS complexity
						Unknown	-	233Z	Community, Intensive extended, 65+ years, Unknown HoNOS
Consolidating gain	0-17 years	-	1.2, 1, 1, 1, 1, 1, 1.2, 0.8, 0.8, 1, 1, 0.8, 0.8	1.0317	22	High	-	241A	Community, Consolidating gain, 0-17 years, High HoNOS complexity
						Moderate	-	241B	Community, Consolidating gain, 0-17 years, Moderate HoNOS complexity
						Unknown	-	241Z	Community, Consolidating gain, 0-17 years, Unknown HoNOS
	18-64 years	-	0.6, 1.2, 1.2, 0.6, 0.6, 0.6, 1.4, 1.4, 0.6, 0.6, 0.6, 0.6	1.2	16	High	-	242A	Community, Consolidating gain, 18-64 years, High HoNOS complexity
						Moderate	High	242B1	Community, Consolidating gain, 18-64 years, Moderate HoNOS complexity with High LSP complexity
							Moderate	242B2	Community, Consolidating gain, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
						Unknown	-	242Z	Community, Consolidating gain, 18-64 years, Unknown HoNOS

Phase	Age Group	Mental health legal status	HoNOS Complexity Weights	HoNOS Complexity Re-Scaling Factor	HoNOS Complexity Threshold	HoNOS Complexity	LSP Complexity	Class Code	Class Description
	65+ years	-	0.8, 1, 1, 1.2, 1.2, 0.8, 1.2, 1.2, 0.8, 0.8, 1, 1	1	18	High	-	243A	Community, Consolidating gain, 65+ years, High HoNOS complexity
						Moderate	-	243B	Community, Consolidating gain, 65+ years, Moderate HoNOS complexity
						Unknown	-	243Z	Community, Consolidating gain, 65+ years, Unknown HoNOS
Unknown	0-17 years	-	-	-	-	-	-	291Z	Community, Unknown phase, 0-17 years
	18-64 years	-	-	-	-	-	-	292Z	Community, Unknown phase, 18-64 years
	65+ years	-	-	-	-	-	-	293Z	Community, Unknown phase, 65+ years

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# Appendix 1: AMHCC Version 1.0 end class list

Setting	AMHCC V1.0 end class	AMHCC V1.0 description
Admitted	101Z	Admitted, Assessment only, 0-17 years
	102Z	Admitted, Assessment only, 18-64 years
	103Z	Admitted, Assessment only, 65+ years
	111A	Admitted, Acute, 0-17 years, High HoNOS complexity
	111B	Admitted, Acute, 0-17 years, Moderate HoNOS complexity
	111Z	Admitted, Acute, 0-17 years, Unknown HoNOS
	1121A	Admitted, Acute, 18-64 years, Involuntary, High HoNOS complexity
	1121B	Admitted, Acute, 18-64 years, Involuntary, Moderate HoNOS complexity
	1121Z	Admitted, Acute, 18-64 years, Involuntary, Unknown HoNOS
	1122A	Admitted, Acute, 18-64 years, Voluntary, High HoNOS complexity
	1122B	Admitted, Acute, 18-64 years, Voluntary, Moderate HoNOS complexity
	1122Z	Admitted, Acute, 18-64 years, Voluntary, Unknown HoNOS
	113A	Admitted, Acute, 65+ years, High HoNOS complexity
	113B	Admitted, Acute, 65+ years, Moderate HoNOS complexity
	113Z	Admitted, Acute, 65+ years, Unknown HoNOS
	121A	Admitted, Functional gain, 0-17 years, High HoNOS complexity
	121B	Admitted, Functional gain, 0-17 years, Moderate HoNOS complexity
	121Z	Admitted, Functional gain, 0-17 years, Unknown HoNOS
	122A	Admitted, Functional gain, 18-64 years, High HoNOS complexity
	122B	Admitted, Functional gain, 18-64 years, Moderate HoNOS complexity
	122Z	Admitted, Functional gain, 18-64 years, Unknown HoNOS
	123A	Admitted, Functional gain, 65+ years, High HoNOS complexity
	123B	Admitted, Functional gain, 65+ years, Moderate HoNOS complexity
	123Z	Admitted, Functional gain, 65+ years, Unknown HoNOS
	131A	Admitted, Intensive extended, 0-17 years, High HoNOS complexity
	131B	Admitted, Intensive extended, 0-17 years, Moderate HoNOS complexity
	131Z	Admitted, Intensive extended, 0-17 years, Unknown HoNOS
	132A	Admitted, Intensive extended, 18-64 years, High HoNOS complexity
	132B	Admitted, Intensive extended, 18-64 years, Moderate HoNOS complexity
	132Z	Admitted, Intensive extended, 18-64 years, Unknown HoNOS
	133A	Admitted, Intensive extended, 65+ years, High HoNOS complexity
	133B	Admitted, Intensive extended, 65+ years, Moderate HoNOS complexity
	133Z	Admitted, Intensive extended, 65+ years, Unknown HoNOS
	141A	Admitted, Consolidating gain, 0-17 years, High HoNOS complexity
	141B	Admitted, Consolidating gain, 0-17 years, Moderate HoNOS complexity

Setting	AMHCC V1.0 end class	AMHCC V1.0 description
	141Z	Admitted, Consolidating gain, 0-17 years, Unknown HoNOS
	142A	Admitted, Consolidating gain, 18-64 years, High HoNOS complexity
	142B	Admitted, Consolidating gain, 18-64 years, Moderate HoNOS complexity
	142Z	Admitted, Consolidating gain, 18-64 years, Unknown HoNOS
	143A	Admitted, Consolidating gain, 65+ years, High HoNOS complexity
	143B	Admitted, Consolidating gain, 65+ years, Moderate HoNOS complexity
	143Z	Admitted, Consolidating gain, 65+ years, Unknown HoNOS
	191Z	Admitted, Unknown phase, 0-17 years
	192Z	Admitted, Unknown phase, 18-64 years
	193Z	Admitted, Unknown phase, 65+ years
Community	201Z	Community, Assessment only, 0-17 years
	202Z	Community, Assessment only, 18-64 years
	203Z	Community, Assessment only, 65+ years
	211A	Community, Acute, 0-17 years, High HoNOS complexity
	211B	Community, Acute, 0-17 years, Moderate HoNOS complexity
	211Z	Community, Acute, 0-17 years, Unknown HoNOS
	212A	Community, Acute, 18-64 years, High HoNOS complexity
	212B1	Community, Acute, 18-64 years, Moderate HoNOS complexity with High LSP complexity
	212B2	Community, Acute, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
	212Z	Community, Acute, 18-64 years, Unknown HoNOS
	213A	Community, Acute, 65+ years, High HoNOS complexity
	213B	Community, Acute, 65+ years, Moderate HoNOS complexity
	213Z	Community, Acute, 65+ years, Unknown HoNOS
	221A	Community, Functional gain, 0-17 years, High HoNOS complexity
	221B	Community, Functional gain, 0-17 years, Moderate HoNOS complexity
	221Z	Community, Functional gain, 0-17 years, Unknown HoNOS
	222A	Community, Functional gain, 18-64 years, High HoNOS complexity
	222B1	Community, Functional gain, 18-64 years, Moderate HoNOS complexity with High LSP complexity
	222B2	Community, Functional gain, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
	222Z	Community, Functional gain, 18-64 years, Unknown HoNOS
	223A	Community, Functional gain, 65+ years, High HoNOS complexity
	223B	Community, Functional gain, 65+ years, Moderate HoNOS complexity
	223Z	Community, Functional gain, 65+ years, Unknown HoNOS
	231A	Community, Intensive extended, 0-17 years, High HoNOS complexity
	231B	Community, Intensive extended, 0-17 years, Moderate HoNOS complexity
	231Z	Community, Intensive extended, 0-17 years, Unknown HoNOS
	232A	Community, Intensive extended, 18-64 years, High HoNOS complexity



Setting	AMHCC V1.0 end class	AMHCC V1.0 description
	232B1	Community, Intensive extended, 18-64 years, Moderate HoNOS complexity with High LSP complexity
	232B2	Community, Intensive extended, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
	232Z	Community, Intensive extended, 18-64 years, Unknown HoNOS
	233A	Community, Intensive extended, 65+ years, High HoNOS complexity
	233B	Community, Intensive extended, 65+ years, Moderate HoNOS complexity
	233Z	Community, Intensive extended, 65+ years, Unknown HoNOS
	241A	Community, Consolidating gain, 0-17 years, High HoNOS complexity
	241B	Community, Consolidating gain, 0-17 years, Moderate HoNOS complexity
	241Z	Community, Consolidating gain, 0-17 years, Unknown HoNOS
	242A	Community, Consolidating gain, 18-64 years, High HoNOS complexity
	242B1	Community, Consolidating gain, 18-64 years, Moderate HoNOS complexity with High LSP complexity
	242B2	Community, Consolidating gain, 18-64 years, Moderate HoNOS complexity with Moderate LSP complexity
	242Z	Community, Consolidating gain, 18-64 years, Unknown HoNOS
	243A	Community, Consolidating gain, 65+ years, High HoNOS complexity
	243B	Community, Consolidating gain, 65+ years, Moderate HoNOS complexity
	243Z	Community, Consolidating gain, 65+ years, Unknown HoNOS
	291Z	Community, Unknown phase, 0-17 years
	292Z	Community, Unknown phase, 18-64 years
	293Z	Community, Unknown phase, 65+ years

# Appendix 2: Clinical assessment tool items

## HoNOSCA items

1. Problems with disruptive, antisocial or aggressive behaviour
2. Problems with overactivity, attention or concentration
3. Non-accidental self-injury
4. Problems with alcohol, substance/solvent misuse
5. Problems with scholastic or language skills
6. Physical illness or disability problems
7. Problems associated with hallucinations, delusions or abnormal perceptions
8. Problems with non-organic somatic symptoms
9. Problems with emotional and related symptoms
10. Problems with peer relationships
11. Problems with self-care and independence
12. Problems with family life and relationships
13. Poor school attendance

***Please note that the following items 14 and 15 are not used in the AMHCC Version 1.0:***

14. Problems with knowledge or understanding about the nature of the child's / adolescent's difficulties (in the previous two weeks)
15. Problems with lack of information about services or management of the child's / adolescents difficulties

## HoNOS items

1. Behavioural disturbance (e.g. overactive, aggressive, disruptive or agitated behaviour)
2. Non-accidental self-injury
3. Problem drinking or drug-taking
4. Cognitive problems
5. Physical illness or disability problems
6. Problems associated with hallucinations and delusions
7. Problems with depressed mood
8. Other mental and behavioural problems
9. Problems with relationships
10. Problems with activities of daily living
11. Problems with living conditions
12. Problems with occupation and activities

## HoNOS 65+ items

1. Behavioural disturbance (e.g. overactive, aggressive, disruptive or agitated behaviour, uncooperative or resistive behaviour)
2. Non-accidental self-injury
3. Problem drinking or drug-taking
4. Cognitive problems
5. Physical illness or disability problems
6. Problems associated with hallucinations and delusions
7. Problems with depressive symptoms
8. Other mental and behavioural problems
9. Problems with relationships
10. Problems with activities of daily living
11. Problems with living conditions
12. Problems with occupation and activities

## **LSP-16 items**

1. Does this person generally have any difficulty with initiating and responding to conversation?
2. Does this person generally withdraw from social contact?
3. Does this person generally show warmth to others?
4. Is this person generally well groomed (e.g. neatly dressed, hair combed)?
5. Does this person wear clean clothes generally, or ensure that they are cleaned if dirty?
6. Does this person generally neglect her or his physical health?
7. Is this person violent to others?
8. Does this person generally make and/or keep up friendships?
9. Does this person generally maintain an adequate diet?
10. Does this person generally look after and take her or his own prescribed medication (or attend for prescribed injections on time) without reminding?
11. Is this person willing to take psychiatric medication when prescribed by a doctor?
12. Does this person co-operate with health services (e.g., doctors and/or other health workers)?
13. Does this person generally have problems (e.g., friction, avoidance) living with others in the household?
14. Does this person behave offensively (includes sexual behaviour)?
15. Does this person behave irresponsibly?
16. What sort of work is this person generally capable of (even if unemployed, retired or doing unpaid domestic duties)?

## Appendix 3: Illustration outlining the process of classifying a mental health phase of care as moderate or high HoNOS complexity

For the purposes of the AMHCC Version 1.0, HoNOS, HoNOSCA and HoNOS 65+ scores have been weighted as per Table 1 in section 5.

The following example illustrates the process that is undertaken to assign level of complexity for the AMHCC Version 1.0 with reference to item-specific weights applied to ratings, the rescaling factor applied to weighted totals, and the thresholds against which the resulting scores are compared.

### Example:

#### **Recorded information:**

- Admitted setting
- Acute phase of care
- Aged 31 years
- HoNOS ratings for items 1 to 12: 1, 0, 1, 1, 3, 2, 1, 1, 1, 0, 0, 2

#### **Relevant information from Table 1 and 2 from *Technical aspects of the AMHCC Version 1.0* section 5 of the *AMHCC v1.0 User Manual*:**

HoNOS item weights, rescaling factor and threshold for Admitted setting, Acute phase of care, 18-64 years age group:

- Item weights: 1.6, 0.6, 0.6, 0.8, 0.8, 1.6, 0.4, 0.4, 0.6, 0.6, 0.6, 0.6
- Rescaling factor: 1.3043
- Threshold: 14

#### **Steps undertaken to determine HoNOS complexity:**

**Step 1:** Scale ratings by item weights:

$$1.6 = 1 \times 1.6, 0 = 0 \times 0.6, 0.6 = 1 \times 0.6, 0.8 = 1 \times 0.8, 2.4 = 3 \times 0.8, 3.2 = 2 \times 1.6, \\ 0.4 = 1 \times 0.4, 0.4 = 1 \times 0.4, 0.6 = 1 \times 0.6, 0 = 0 \times 0.6, 0 = 0 \times 0.6, 1.2 = 2 \times 0.6$$

**Step 2:** Total the weighted ratings:

$$11.2 = 1.6 + 0 + 0.6 + 0.8 + 2.4 + 3.2 + 0.4 + 0.4 + 0.6 + 0 + 0 + 1.2$$

**Step 3:** Rescale the weighted total:

$$14.60816 = 11.2 \times 1.3043$$

**Step 4:** Compare resulting score (weighted HoNOS) against threshold and conclude HoNOS complexity  $14.60816 \geq 14$

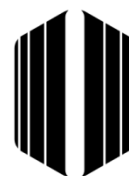
**Therefore, high HoNOS complexity is assigned.**

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