

# Appendix 1: Mental health principal diagnoses

**Table A1.1: ICD-10-AM diagnosis codes used to identify mental health principal diagnoses for this report**

<b>Diagnosis</b>	<b>ICD-10-AM codes</b>
Dementia	F00–F03
Other organic mental disorders	F04–F09
<i>Organic, including symptomatic, mental disorders</i>	F00–F09
Mental and behavioural disorders due to use of alcohol	F10
Mental and behavioural disorders due to other psychoactive substances use	F11–F19
<i>Mental and behavioural disorders due to psychoactive substance use</i>	F10–F19
Schizophrenia	F20
Other schizophrenic, schizotypal, delusional disorders	F21–F29
<i>Schizophrenia, schizotypal and delusional disorders</i>	F20–F29
Manic episode	F30
Bipolar affective disorders	F31
Depressive disorders	F32–F33
Other mood (affective) disorders	F34–F39
<i>Mood (affective) disorders</i>	F30–F39
<i>Neurotic, stress-related and somatoform disorders</i>	F40–F48
Eating disorders	F50
Other behavioural syndromes associated with physiological disturbances, physical factors	F51–F59
<i>Behavioural syndromes associated with physiological disturbances and physical factors</i>	F50–F59
<i>Disorders of adult personality and behaviour</i>	F60–F69
<i>Mental retardation</i>	F70–F79
<i>Disorders of psychological development</i>	F80–F89
<i>Disorders onset usually occurring in childhood, adolescence</i>	F90–F98
<i>Mental disorder not otherwise specified</i>	F99
<i>Observation for suspected mental and behavioural disorder</i>	Z03.2
<i>Other reasons for admission associated with mental disorders</i>	Z09.3, Z13.3, Z13.4, Z54.3, Z76.5, Z81, Z86.4, Z86.5, Z91.5

# Appendix 2: AR-DRGs Version 4.0/4.1 in Major Diagnostic Categories 19 and 20

**Table A2.1: Major Diagnostic Category 19 (Mental diseases and disorders)**

AR-DRG	Description
U40Z	Mental health treatment, same day, with electroconvulsive therapy
U60Z	Mental health treatment, same day, without electroconvulsive therapy
U61A	Schizophrenia disorders with involuntary mental health legal status
U61B	Schizophrenia disorders without involuntary mental health legal status
U62A	Paranoia & acute psychotic disorder with catastrophic or severe complications and comorbidities or with involuntary mental health legal status
U62B	Paranoia & acute psychotic disorder without catastrophic or severe complications and comorbidities without involuntary mental health legal status
U63A	Major affective disorders with catastrophic or severe complications and comorbidities or (age > 69 without catastrophic or severe complications and comorbidities)
U63B	Major affective disorders age < 70 without catastrophic or severe complications and comorbidities
U64Z	Other affective and somatoform disorders
U65Z	Anxiety disorders
U66Z	Eating and obsessive–compulsive disorders
U67Z	Personality disorders and acute reactions
U68Z	Childhood mental disorders

**Table A2.1: Major Diagnostic Category 20 (Alcohol/drug use and alcohol/drug induced organic mental disorders)**

AR-DRG	Description
V60Z	Alcohol intoxication and withdrawal
V61A	Drug intoxication and withdrawal with complications and comorbidities, same day
V61B	Drug intoxication and withdrawal without complications and comorbidities
V62A	Alcohol use disorder and dependence
V62B	Alcohol use disorder and dependence, same day
V63Z	Opioid use disorder and dependence
V64Z	Other drug use disorder and dependence

# Appendix 3: Trimming procedure for length of stay calculations

The distribution of length of stay for separations in the NMDS—Admitted Patient Mental Health Care is affected by outliers relating to the separation of long-term patients. Because of the resulting skew of the distribution, both means and medians were supplied as summary measures of length of stay. While the mean averages all items in the distribution and is therefore increased by outliers, the median represents the point of the distribution at which half the records fall above and half below. The median is therefore affected less by outliers and can be a more robust measurement.

Averages and medians were calculated using AR-DRGs as categories, since AR-DRGs are designed to group together patients with similar resource requirements and lengths of stay. Both acute care and other episode types were included in all calculations, which decreases the homogeneity of the AR-DRG grouping. Only overnight separations within the NMDS—Admitted Patient Mental Health Care collection were included in the length of stay calculations.

For Tables 3.5 to 3.8, a trimming approach was adopted in order to counter the effect of outliers. Upper and lower quartiles were calculated for each AR-DRG for each State and Territory and sector category. If the number of patient days attributed to a record was greater than the upper quartile plus 1.5 times the inter-quartile range, the number of patient days in that record was adjusted. The adjusted length of stay was equivalent to the upper quartile plus 1.5 times the inter-quartile range. Both adjusted and unadjusted records were included in average length of stay calculations.

The same procedure was followed using *Total psychiatric care days* to trim for average length of specialised psychiatric care calculations.

Table A3.1 outlines the number of overnight separations with specialised psychiatric care in MDC 19 and MDC (version 4.0/4.1) and hospital type, and Tables A3.2 and A3.3 outline the number of records in each AR-DRG that were trimmed using this procedure.

**Table A3.1: Overnight separations with specialised psychiatric care in MDC 19 and MDC 20 (Version 4.0/4.1) and hospital type, States and Territories, 1998-99**

Hospital type	AR-DRG	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public acute	U61A	2,162	3,571	2,587	324	269	138	82	0	9,133
	U61B	2,432	2,169	1,752	508	639	248	137	218	8,103
	U62A	434	496	396	123	39	20	21	5	1,534
	U62B	432	289	209	141	84	29	13	52	1,249
	U63A	745	676	632	201	144	126	5	12	2,541
	U63B	2,634	3,331	3,286	933	1,030	404	161	125	11,904
	U64Z	1,252	1,136	790	371	333	169	37	18	4,106
	U65Z	179	161	174	118	50	44	6	5	737
	U66Z	152	179	288	43	136	21	4	3	826
	U67Z	1,869	2,564	2,469	1,299	735	346	139	121	9,542
	U68Z	67	72	82	70	30	3	2	1	327
	V60Z	287	180	224	94	30	27	12	33	887
	V61A	73	66	129	16	43	2	4	9	342
	V61B	356	315	500	101	84	27	28	42	1,453
	V62A	187	166	127	22	29	15	6	6	558
	V63Z	57	80	50	14	7	3	4	1	216
	V64Z	165	138	125	33	13	12	11	16	513
	<i>Total public acute</i>		<i>13,483</i>	<i>15,589</i>	<i>13,820</i>	<i>4,411</i>	<i>3,695</i>	<i>1,634</i>	<i>672</i>	<i>667</i>
Private	U61A	0	0	22	30	188	n.a.	0	n.a.	240
	U61B	497	480	285	78	38	n.a.	1	n.a.	1,379
	U62A	0	0	4	22	41	n.a.	0	n.a.	67
	U62B	55	61	36	20	3	n.a.	1	n.a.	176
	U63A	390	599	337	97	219	n.a.	3	n.a.	1,645
	U63B	1,605	2,122	1,362	793	1,007	n.a.	16	n.a.	6,905
	U64Z	281	455	160	135	108	n.a.	9	n.a.	1,148
	U65Z	227	195	271	296	80	n.a.	0	n.a.	1,069
	U66Z	245	166	93	48	25	n.a.	4	n.a.	581
	U67Z	712	482	548	340	309	n.a.	14	n.a.	2,405
	U68Z	15	6	1	0	13	n.a.	0	n.a.	35
	V60Z	200	88	45	55	26	n.a.	0	n.a.	414
	V61A	6	3	1	7	2	n.a.	0	n.a.	19
	V61B	14	11	4	34	11	n.a.	0	n.a.	74
	V62A	681	147	84	78	190	n.a.	1	n.a.	1,181
	V63Z	314	272	19	32	33	n.a.	0	n.a.	670
V64Z	363	58	30	19	36	n.a.	0	n.a.	506	
<i>Total private</i>		<i>5,605</i>	<i>5,145</i>	<i>3,302</i>	<i>2,084</i>	<i>2,329</i>	<i>n.a.</i>	<i>49</i>	<i>n.a.</i>	<i>18,514</i>

*(continued)*

**Table A3.1 (continued): Overnight separations with specialised psychiatric care in MDC 19 and MDC 20 (Version 4.0/4.1) and hospital type, States and Territories, 1998–99**

Hospital type	AR-DRG	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public psychiatric	U61A	1,174	98	392	607	730	67	..	..	3,068
	U61B	948	0	134	226	334	58	..	..	1,700
	U62A	177	6	17	140	159	0	..	..	499
	U62B	118	0	6	22	20	0	..	..	166
	U63A	188	0	43	61	195	1	..	..	488
	U63B	1,102	17	207	426	765	41	..	..	2,558
	U64Z	234	4	47	80	49	20	..	..	434
	U65Z	43	0	10	23	24	12	..	..	112
	U66Z	33	0	18	4	8	1	..	..	64
	U67Z	1,143	6	198	531	725	44	..	..	2,647
	U68Z	40	0	26	4	1	0	..	..	71
	V60Z	426	0	20	55	76	1	..	..	578
	V61A	86	0	16		25	0	..	..	127
	V61B	253	0	35	88	75	16	..	..	467
	V62A	564	0	7	52	27	1	..	..	651
	V63Z	944	0	3	11	6	0	..	..	964
	V64Z	267	0	13	105	20	22	..	..	427
<i>Total public psychiatric</i>		<i>7,740</i>	<i>131</i>	<i>1,192</i>	<i>2,435</i>	<i>3,239</i>	<i>284</i>	<i>..</i>	<i>..</i>	<i>15,021</i>

Note: See Appendix 2 for full AR-DRG descriptions.

.. Not applicable

n.a. Not available

**Table A3.2: Number of records trimmed for average length of stay calculations, States and Territories, 1998–99**

Hospital type	AR-DRG	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public acute	U61A	171	231	192	25	8	4	4	..	635
	U61B	192	143	162	41	22	21	11	17	609
	U62A	30	17	28	8	0	2	1	1	87
	U62B	26	22	12	10	2	2	0	3	77
	U63A	19	27	24	11	5	12	0	1	99
	U63B	158	151	188	49	47	13	6	7	619
	U64Z	87	72	56	22	30	11	4	2	284
	U65Z	13	14	13	10	1	5	0	1	57
	U66Z	15	13	29	3	17	3	0	0	80
	U67Z	125	294	178	64	75	28	8	6	778
	U68Z	6	1	7	3	1	0	0	0	18
	V60Z	27	23	21	14	4	2	0	2	93
	V61A	8	4	9	1	1	0	0	0	23
	V61B	23	27	24	8	4	2	2	3	93
	V62A	17	6	12	0	3	1	0	1	40
	V63Z	3	3	1	0	0	0	0	0	7
	V64Z	14	10	4	2	0	0	1	0	31
<i>Total public acute</i>		<i>934</i>	<i>1,058</i>	<i>960</i>	<i>271</i>	<i>220</i>	<i>106</i>	<i>37</i>	<i>44</i>	<i>3,630</i>
Private	U61A	..	..	2	1	8	n.a.	..	n.a.	11
	U61B	31	26	22	2	4	n.a.	0	n.a.	85
	U62A	..	..	0	0	2	n.a.	..	n.a.	2
	U62B	4	1	4	0	0	n.a.	0	n.a.	9
	U63A	9	14	10	2	3	n.a.	0	n.a.	38
	U63B	56	85	87	52	40	n.a.	2	n.a.	322
	U64Z	12	18	15	7	0	n.a.	1	n.a.	53
	U65Z	11	9	18	18	1	n.a.	..	n.a.	57
	U66Z	16	7	4	3	1	n.a.	0	n.a.	31
	U67Z	30	31	33	30	19	n.a.	1	n.a.	144
	U68Z	1	0	0	..	0	n.a.	..	n.a.	1
	V60Z	2	3	0	4	1	n.a.	..	n.a.	10
	V61A	1	0	0	0	0	n.a.	..	n.a.	1
	V61B	0	0	0	1	1	n.a.	..	n.a.	2
	V62A	9	8	6	2	1	n.a.	0	n.a.	26
	V63Z	32	17	1	2	3	n.a.	..	n.a.	55
	V64Z	12	3	0	2	2	n.a.	..	n.a.	19
<i>Total private</i>		<i>226</i>	<i>222</i>	<i>202</i>	<i>126</i>	<i>86</i>	<i>n.a.</i>	<i>4</i>	<i>n.a.</i>	<i>866</i>

*(continued)*

**Table A3.2 (continued): Number of records trimmed for average length of stay calculations, States and Territories, 1998-99**

Hospital type	AR-DRG	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public	U61A	123	5	55	45	40	4	..	..	272
psychiatric	U61B	112	..	25	21	26	7	..	..	191
	U62A	14	1	1	15	15	..	..	..	46
	U62B	8	..	1	1	1	..	..	..	11
	U63A	9	..	7	5	13	0	..	..	34
	U63B	69	4	21	25	57	6	..	..	182
	U64Z	16	0	5	5	5	2	..	..	33
	U65Z	2	..	2	2	2	1	..	..	9
	U66Z	0	..	1	0	0	0	..	..	1
	U67Z	136	1	24	46	70	4	..	..	281
	U68Z	5	..	5	0	0	..	..	..	10
	V60Z	43	..	3	4	7	0	..	..	57
	V61A	12	..	2	..	1	..	..	..	15
	V61B	19	..	3	6	8	1	..	..	37
	V62A	62	..	1	3	1	0	..	..	67
	V63Z	86	..	0	1	1	..	..	..	88
	V64Z	10	..	1	8	2	2	..	..	23
<i>Total public psychiatric</i>		<b>726</b>	<b>11</b>	<b>157</b>	<b>187</b>	<b>249</b>	<b>27</b>	<b>..</b>	<b>..</b>	<b>1,357</b>
All hospitals	U61A	294	236	249	71	56	8	4	0	918
	U61B	335	169	209	64	52	28	11	17	885
	U62A	44	18	29	23	17	2	1	1	135
	U62B	38	23	17	11	3	2	0	3	97
	U63A	37	41	41	18	21	12	0	1	171
	U63B	283	240	296	126	144	19	8	7	1,123
	U64Z	115	90	76	34	35	13	5	2	370
	U65Z	26	23	33	30	4	6	0	1	123
	U66Z	31	20	34	6	18	3	0	0	112
	U67Z	291	326	235	140	164	32	9	6	1,203
	U68Z	12	1	12	3	1	0	0	0	29
	V60Z	72	26	24	22	12	2	0	2	160
	V61A	21	4	11	1	2	0	0	0	39
	V61B	42	27	27	15	13	3	2	3	132
	V62A	88	14	19	5	5	1	0	1	133
	V63Z	121	20	2	3	4	0	0	0	150
	V64Z	36	13	5	12	4	2	1	0	73
<b>Total</b>		<b>1,886</b>	<b>1,291</b>	<b>1,319</b>	<b>584</b>	<b>555</b>	<b>133</b>	<b>41</b>	<b>44</b>	<b>5,853</b>

.. Not applicable

n.a. Not available

**Table A3.3: Number of records trimmed for average length of specialised care calculations, States and Territories, 1998–99**

Hospital type	AR-DRG	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public acute	U61A	168	231	192	n.a.	8	4	4	..	607
	U61B	197	143	161	n.a.	22	21	11	17	572
	U62A	30	17	29	n.a.	0	2	1	1	80
	U62B	27	22	12	n.a.	2	2	0	3	68
	U63A	20	27	24	n.a.	5	12	0	2	90
	U63B	152	151	186	n.a.	47	13	6	6	561
	U64Z	108	72	55	n.a.	30	11	4	2	282
	U65Z	16	14	13	n.a.	1	5	0	1	50
	U66Z	15	13	29	n.a.	17	3	0	0	77
	U67Z	158	294	176	n.a.	75	28	8	6	745
	U68Z	6	1	7	n.a.	1	0	0	0	15
	V60Z	25	23	17	n.a.	4	2	0	2	73
	V61A	6	4	8	n.a.	1	0	0	0	19
	V61B	21	27	24	n.a.	4	2	2	3	83
	V62A	11	6	11	n.a.	3	1	0	1	33
	V63Z	3	3	0	n.a.	0	0	0	0	6
	V64Z	12	10	11	n.a.	0	0	1	0	34
<i>Total public acute</i>		975	1,058	955	n.a.	220	106	37	44	3,395
Private	U61A	..	..	2	n.a.	8	n.a.	..	n.a.	10
	U61B	32	26	22	n.a.	4	n.a.	0	n.a.	84
	U62A	..	..	0	n.a.	2	n.a.	..	n.a.	2
	U62B	4	1	4	n.a.	0	n.a.	0	n.a.	9
	U63A	8	14	13	n.a.	3	n.a.	0	n.a.	38
	U63B	54	85	84	n.a.	40	n.a.	2	n.a.	265
	U64Z	12	18	15	n.a.	0	n.a.	1	n.a.	46
	U65Z	9	9	18	n.a.	1	n.a.	..	n.a.	37
	U66Z	15	7	4	n.a.	1	n.a.	0	n.a.	27
	U67Z	27	31	33	n.a.	19	n.a.	1	n.a.	111
	U68Z	1	0	..	n.a.	0	n.a.	..	n.a.	1
	V60Z	2	3	0	n.a.	1	n.a.	..	n.a.	6
	V61A	1	0	0	n.a.	0	n.a.	..	n.a.	1
	V61B	0	0	0	n.a.	1	n.a.	..	n.a.	1
	V62A	7	8	6	n.a.	1	n.a.	0	n.a.	22
	V63Z	30	17	1	n.a.	3	n.a.	..	n.a.	51
	V64Z	11	3	0	n.a.	2	n.a.	..	n.a.	16
<i>Total private</i>		213	222	202	n.a.	86	n.a.	4	n.a.	727

(continued)



**Table A3.3 (continued): Number of records trimmed for average length of specialised care calculations, States and Territories, 1998–99**

Hospital type	AR-DRG	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public psychiatric	U61A	126	5	55	45	40	4	..	..	275
	U61B	106	..	25	21	26	7	..	..	185
	U62A	14	1	1	15	15	..	..	..	46
	U62B	8	..	1	1	1	..	..	..	11
	U63A	8	..	7	5	13	0	..	..	33
	U63B	60	4	21	25	57	6	..	..	173
	U64Z	14	0	5	5	5	2	..	..	31
	U65Z	2	..	2	2	2	1	..	..	9
	U66Z	0	..	1	..	0	0	..	..	1
	U67Z	130	1	24	46	70	4	..	..	275
	U68Z	5	..	5	..	0	..	..	..	10
	V60Z	43	..	3	4	7	0	..	..	57
	V61A	8	..	2	..	1	..	..	..	11
	V61B	19	..	3	6	8	1	..	..	37
	V62A	62	..	1	3	1	0	..	..	67
	V63Z	83	..	0	1	1	..	..	..	85
	V64Z	10	..	1	8	2	2	..	..	23
	<i>Total public psychiatric</i>		<b>698</b>	<b>11</b>	<b>157</b>	<b>187</b>	<b>249</b>	<b>27</b>	<b>..</b>	<b>..</b>
All hospitals	U61A	294	236	249	45	56	8	4	0	892
	U61B	335	169	208	21	52	28	11	17	841
	U62A	44	18	30	15	17	2	1	1	128
	U62B	39	23	17	1	3	2	0	3	88
	U63A	36	41	44	5	21	12	0	2	161
	U63B	266	240	291	25	144	19	8	6	999
	U64Z	134	90	75	5	35	13	5	2	359
	U65Z	27	23	33	2	4	6	0	1	96
	U66Z	30	20	34	..	18	3	0	0	105
	U67Z	315	326	233	46	164	32	9	6	1,131
	U68Z	12	1	12	..	1	0	0	0	26
	V60Z	70	26	20	4	12	2	0	2	136
	V61A	15	4	10	..	2	0	0	0	31
	V61B	40	27	27	6	13	3	2	3	121
	V62A	80	14	18	3	5	1	0	1	122
	V63Z	116	20	1	1	4	0	0	0	142
V64Z	33	13	12	8	4	2	1	0	73	
<b>Total</b>		<b>1,886</b>	<b>1,291</b>	<b>1,314</b>	<b>187</b>	<b>555</b>	<b>133</b>	<b>41</b>	<b>44</b>	<b>5,451</b>

.. Not applicable

n.a. Not available

# Appendix 4: Population estimates and indirect age-standardisation

Table A4.1: Estimated resident population by age group and sex, States and Territories, 31 December 1998

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia <sup>(a)</sup>
<b>Males</b>									
17 and under	809,797	584,019	463,023	246,105	182,430	62,696	40,487	30,553	2,419,664
18–24	315,468	240,287	180,693	98,510	71,457	22,016	19,653	11,976	960,187
25–34	483,566	363,767	265,753	145,314	109,005	31,300	24,859	19,736	1,443,615
35–44	492,488	357,028	265,857	146,983	113,387	35,637	23,882	16,552	1,452,107
45–54	424,193	306,270	237,391	126,723	100,407	31,784	22,118	12,707	1,261,862
55–64	284,866	206,715	152,713	78,470	67,585	21,766	11,866	6,183	830,277
65 and over	354,139	257,517	176,756	86,289	92,331	27,238	10,701	3,334	1,008,347
<b>Total</b>	<b>3,164,517</b>	<b>2,315,603</b>	<b>1,742,186</b>	<b>928,394</b>	<b>736,602</b>	<b>232,437</b>	<b>153,566</b>	<b>101,041</b>	<b>9,376,059</b>
<b>Females</b>									
17 and under	770,581	556,148	439,121	232,702	173,575	59,965	38,589	28,615	2,299,838
18–24	303,770	230,903	174,294	93,490	67,837	21,290	18,082	10,559	920,310
25–34	485,352	368,036	264,926	141,006	106,684	32,703	25,387	18,057	1,442,435
35–44	490,938	362,419	268,024	145,892	114,515	36,729	25,042	14,997	1,458,856
45–54	414,090	308,155	229,118	120,370	101,550	31,437	22,410	10,480	1,237,769
55–64	281,383	207,040	145,537	75,195	68,737	21,737	11,580	4,527	815,803
65 and over	457,894	335,778	217,325	107,671	120,406	35,254	13,738	3,078	1,291,175
<b>Total</b>	<b>3,204,008</b>	<b>2,368,479</b>	<b>1,738,345</b>	<b>916,326</b>	<b>753,304</b>	<b>239,115</b>	<b>154,828</b>	<b>90,313</b>	<b>9,466,186</b>
<b>Persons</b>									
17 and under	1,580,378	1,140,167	902,144	478,807	356,005	122,661	79,076	59,168	4,719,502
18–24	619,238	471,190	354,987	192,000	139,294	43,306	37,735	22,535	1,880,497
25–34	968,918	731,803	530,679	286,320	215,689	64,003	50,246	37,793	2,886,050
35–44	983,426	719,447	533,881	292,875	227,902	72,366	48,924	31,549	2,910,963
45–54	838,283	614,425	466,509	247,093	201,957	63,221	44,528	23,187	2,499,631
55–64	566,249	413,755	298,250	153,665	136,322	43,503	23,446	10,710	1,646,080
65 and over	812,033	593,295	394,081	193,960	212,737	62,492	24,439	6,412	2,299,522
<b>Total</b>	<b>6,368,525</b>	<b>4,684,082</b>	<b>3,480,531</b>	<b>1,652,928</b>	<b>985,741</b>	<b>471,552</b>	<b>308,394</b>	<b>191,354</b>	<b>18,842,245</b>

(a) Includes other Australian territories.

Source: ABS 1999.

**Table A4.2: Projected Aboriginal and Torres Strait Islander population by age group and sex, States and Territories, 30 June 1998**

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia <sup>(a)</sup>
<b>Males</b>									
17 and under	27,298	5,315	26,194	13,521	5,267	3,803	750	12,193	94,380
18–24	6,930	1,442	7,048	3,707	1,366	976	222	3,812	25,519
25–34	8,418	1,896	8,522	4,733	1,834	1,075	287	4,704	31,489
35–44	6,336	1,403	5,940	3,363	1,347	961	224	2,889	22,478
45–54	4,046	858	3,600	1,848	739	660	86	1,710	13,557
55–64	2,136	423	1,685	956	404	261	21	930	6,823
65 and over	1,196	294	1,230	714	247	138	10	603	4,434
<b>Total</b>	<b>56,360</b>	<b>11,631</b>	<b>54,219</b>	<b>28,842</b>	<b>11,204</b>	<b>7,874</b>	<b>1,600</b>	<b>26,841</b>	<b>198,680</b>
<b>Females</b>									
17 and under	26,217	5,123	25,356	13,104	5,176	3,602	725	11,307	90,641
18–24	6,900	1,389	7,112	3,680	1,470	1,077	233	3,800	25,670
25–34	9,554	2,028	9,379	5,054	2,100	1,191	321	4,726	34,370
35–44	7,097	1,506	6,613	3,671	1,421	1,057	243	3,170	24,789
45–54	4,339	838	4,006	2,000	796	571	100	1,944	14,606
55–64	2,293	453	2,019	1,061	448	271	26	1,116	7,690
65 and over	1,651	435	1,620	909	338	198	18	783	5,958
<b>Total</b>	<b>58,051</b>	<b>11,772</b>	<b>56,105</b>	<b>29,479</b>	<b>11,749</b>	<b>7,967</b>	<b>1,666</b>	<b>26,846</b>	<b>203,724</b>
<b>Persons</b>									
17 and under	53,515	10,438	51,550	26,625	10,443	7,405	1,475	23,500	185,021
18–24	13,830	2,831	14,160	7,387	2,836	2,053	455	7,612	51,189
25–34	17,972	3,924	17,901	9,787	3,934	2,266	608	9,430	65,859
35–44	13,433	2,909	12,553	7,034	2,768	2,018	467	6,059	47,267
45–54	8,385	1,696	7,606	3,848	1,535	1,231	186	3,654	28,163
55–64	4,429	876	3,704	2,017	852	532	47	2,046	14,513
65 and over	2,847	729	2,850	1,623	585	336	28	1,386	10,392
<b>Total</b>	<b>114,411</b>	<b>23,403</b>	<b>110,324</b>	<b>58,321</b>	<b>22,953</b>	<b>15,841</b>	<b>3,266</b>	<b>53,687</b>	<b>402,404</b>

(a) Includes other Australian territories.

Source: ABS 1998a.

**Table A4.3: Population by age group, sex and RRMA, States and Territories, 30 June 1998**

<b>RRMA and age group</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Australia<sup>(a)</sup></b>
<b>Males</b>									
<i>Metropolitan</i>									
14 and under	492,703	353,418	212,727	141,312	105,644	20,641	33,429	10,657	1,370,531
15–24	350,591	262,009	161,711	147,693	108,640	14,467	35,377	9,973	1,007,243
25–34	388,891	290,802	162,001	155,141	114,331	13,188	38,305	10,561	1,075,418
35–44	372,747	268,911	151,996	160,057	120,420	14,599	40,094	12,130	1,025,150
45–54	315,921	226,462	137,568	158,529	123,024	12,917	39,212	13,148	885,400
55–64	203,164	150,421	83,037	157,220	124,113	8,186	37,230	13,378	562,086
65 and over	249,031	182,723	99,091	153,993	121,456	10,852	35,797	11,951	682,365
<i>Total</i>	<i>2,373,048</i>	<i>1,734,746</i>	<i>1,008,131</i>	<i>1,073,945</i>	<i>817,628</i>	<i>94,850</i>	<i>259,444</i>	<i>81,798</i>	<i>6,608,193</i>
<i>Rural</i>									
14 and under	174,121	131,063	143,224	38,390	41,795	31,152	36	2,132	561,913
15–24	95,399	74,478	84,518	37,689	41,015	18,429	38	2,023	315,960
25–34	89,291	70,444	85,899	33,445	36,204	18,398	35	2,017	310,822
35–44	112,259	84,692	94,849	30,043	33,263	20,919	55	2,147	367,961
45–54	99,376	74,990	82,826	29,701	33,895	18,378	52	2,341	322,259
55–64	73,652	52,464	57,377	33,406	38,768	13,100	53	2,466	229,724
65 and over	99,383	71,240	68,104	35,745	41,326	15,922	35	2,554	297,042
<i>Total</i>	<i>743,481</i>	<i>559,371</i>	<i>616,797</i>	<i>238,419</i>	<i>266,266</i>	<i>136,298</i>	<i>304</i>	<i>15,680</i>	<i>2,405,681</i>
<i>Remote</i>									
14 and under	7,116	1,467	25,962	23,958	4,581	341	0	13,246	76,671
15–24	3,515	763	13,740	21,341	4,231	153	0	12,356	42,296
25–34	4,361	778	17,079	20,974	3,888	186	0	11,849	53,917
35–44	4,737	1,105	16,972	23,957	3,961	227	0	12,575	50,389
45–54	3,931	1,033	13,799	27,640	4,381	218	0	13,125	38,174
55–64	3,107	782	8,648	28,886	4,788	162	0	12,618	23,114
65 and over	3,049	984	7,820	26,545	4,823	169	0	11,125	19,755
<i>Total</i>	<i>29,816</i>	<i>6,912</i>	<i>104,020</i>	<i>173,301</i>	<i>30,653</i>	<i>1,456</i>	<i>0</i>	<i>86,894</i>	<i>304,316</i>
<b>Total males</b>	<b>3,146,345</b>	<b>2,301,029</b>	<b>1,728,948</b>	<b>1,485,665</b>	<b>1,114,547</b>	<b>232,604</b>	<b>259,748</b>	<b>184,372</b>	<b>9,318,190</b>

(continued)

**Table A4.3 (continued): Population by age group, sex and RRMA, States and Territories, 30 June 1998**

<b>RRMA and age group</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Australia<sup>(a)</sup></b>
<b>Females</b>									
<i>Metropolitan</i>									
14 and under	468,373	336,739	203,186	133,757	100,590	20,010	32,077	9,914	1,304,646
15–24	338,848	254,956	158,150	141,228	104,032	14,201	33,340	9,403	975,892
25–34	388,628	294,937	162,415	149,398	110,033	13,783	35,784	9,756	1,078,012
35–44	371,447	273,447	156,270	155,496	116,630	15,570	38,205	11,176	1,039,501
45–54	310,899	231,297	136,409	155,930	120,392	13,052	38,743	12,020	884,296
55–64	200,690	151,208	80,940	157,044	123,747	8,501	38,296	12,186	558,759
65 and over	333,292	243,627	129,707	157,192	123,760	14,929	37,333	10,961	909,240
<i>Total</i>	<i>2,412,177</i>	<i>1,786,211</i>	<i>1,027,077</i>	<i>1,050,045</i>	<i>799,184</i>	<i>100,046</i>	<i>253,778</i>	<i>75,416</i>	<i>6,750,346</i>
<i>Rural</i>									
14 and under	166,451	124,176	134,411	36,129	39,140	29,555	33	1,937	531,832
15–24	89,453	67,955	79,249	35,317	38,137	17,526	32	1,691	293,333
25–34	91,512	70,933	86,507	31,023	33,597	19,098	26	1,509	314,136
35–44	113,461	85,994	95,056	28,461	31,096	21,032	34	1,474	369,717
45–54	94,745	71,678	77,659	29,342	32,307	17,828	37	1,687	305,361
55–64	73,760	52,008	54,517	34,142	38,151	12,765	42	2,122	225,106
65 and over	119,340	88,675	78,631	35,900	40,167	19,947	37	2,241	354,278
<i>Total</i>	<i>748,722</i>	<i>561,419</i>	<i>606,030</i>	<i>230,314</i>	<i>252,595</i>	<i>137,751</i>	<i>241</i>	<i>12,661</i>	<i>2,393,763</i>
<i>Remote</i>									
14 and under	6,664	1,406	24,964	22,872	4,475	298	0	12,543	73,222
15–24	2,992	608	11,624	19,482	3,892	114	0	11,502	35,613
25–34	3,983	701	15,553	17,833	3,359	186	0	11,044	47,636
35–44	3,939	1,050	14,385	19,226	3,376	223	0	11,622	42,022
45–54	3,187	832	11,111	22,515	3,846	169	0	12,200	30,017
55–64	2,414	713	6,591	23,479	4,312	138	0	11,582	17,381
65 and over	3,092	968	7,194	21,294	4,231	171	0	10,164	18,996
<i>Total</i>	<i>26,271</i>	<i>6,278</i>	<i>91,422</i>	<i>146,701</i>	<i>27,491</i>	<i>1,299</i>	<i>0</i>	<i>80,657</i>	<i>264,887</i>
<b>Total females</b>	<b>3,187,170</b>	<b>2,353,908</b>	<b>1,724,529</b>	<b>1,427,060</b>	<b>1,079,270</b>	<b>239,096</b>	<b>254,019</b>	<b>168,734</b>	<b>9,408,996</b>

(a) Includes other Australian territories.

Source: ABS 1999.

## Indirect age-standardisation

Indirect age-standardisation is the process of applying a set of age-specific rates from a standard population to the population being studied. This publication used indirect age-standardisation throughout (except where crude rates are indicated) in order to make rates comparable within the publication and to provide a measure that is robust with small cell sizes.

The standard population used for calculation of age-specific rates in this publication was the estimated resident population of Australia for December 1998. Standard rates were derived using the separations, patient days or psychiatric care days of the 1998–99 financial year. Sex was not used as a contributing factor, and the age groups were defined as set out in Table A4.1. The example below outlines the calculation of the indirectly age-standardised overnight separation rates per 1,000 population for each jurisdiction:

### Calculations for indirectly age-standardised rate of overnight separations per 1,000 population

Age-specific separation rates for the standard population are calculated by dividing the number of overnight separations for each age group for Australia by the Australian population for that age category and multiplying by 1,000,

e.g. for 0–17 age category the age-specific standard separation rate would be  
 $(5,267/4,719,502) * 1,000 = 1.12$  per 1,000 population

**Table A4.4: Overnight separations by age group, Australia, 1998–99**

Age category	Overnight separations								Australian total separation	Australian population	Age-specific separation rate
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT			
0–17	1,320	1,230	1,231	798	596	44	25	24	5,267	4,719,502	1.12
17–24	4,672	3,428	3,184	1,566	1,442	288	167	179	14,926	1,880,497	7.94
25–34	7,761	5,786	5,157	2,709	2,335	651	245	235	24,879	2,886,050	8.62
35–44	6,351	4,531	4,365	2,082	2,128	481	186	173	20,297	2,910,963	6.97
45–54	4,338	3,390	3,093	1,239	1,591	310	105	83	14,149	2,499,631	5.66
55–64	2,077	1,533	1,459	579	686	267	39	23	6,663	1,646,080	4.05
65 and over	2,908	3,174	1,891	1,329	1,223	328	24	7	10,884	2,299,522	4.73
<b>Total</b>	<b>29,427</b>	<b>23,072</b>	<b>20,380</b>	<b>10,302</b>	<b>10,001</b>	<b>2,369</b>	<b>791</b>	<b>724</b>	<b>97,065</b>	<b>18,842,245</b>	<b>5.15</b>

These rates are then applied to the specific population (e.g. NSW 0–17 years age group) to give the expected number of separations for that age and jurisdiction category.

**Table A4.5: Expected number of separations**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
14 and under	1,764.05	1,272.68	1,006.99	534.45	397.38	136.92	88.27	66.04	5,268.00
15–24	4,915.06	3,739.96	2,817.63	1,523.95	1,105.61	343.73	299.51	178.87	14,926.00
25–34	8,352.49	6,308.46	4,574.68	2,468.20	1,859.33	551.73	433.14	325.79	24,879.00
35–44	6,857.04	5,016.42	3,722.54	2,042.10	1,589.07	504.58	341.13	219.98	20,297.00
45–54	4,745.05	3,477.91	2,640.64	1,398.65	1,143.16	357.86	252.05	131.25	14,149.00
55–64	2,292.06	1,674.80	1,207.26	622.00	551.80	176.09	94.90	43.35	6,663.00
65 and over	3,843.48	2,808.16	1,865.25	918.04	1,006.92	295.78	115.67	30.35	10,884.00
<b>Total expected separations</b>	<b>32,769.23</b>	<b>24,298.38</b>	<b>17,834.99</b>	<b>9,507.41</b>	<b>7,653.28</b>	<b>2,366.70</b>	<b>1,624.68</b>	<b>995.63</b>	<b>97,066.00</b>

These expected numbers of separations are summed over age categories to give an expected number of separations for each jurisdiction.

Finally, the indirectly age-standardised rate for each jurisdiction is given by dividing the actual number of separations by the expected number of separations and multiplying by the crude separation rate of the standard population,

$$\begin{aligned} \text{e.g. for NSW rate} &= (29,427/32,769.23) * 5.15 \\ &= 4.63 \text{ per 1,000 population} \end{aligned}$$

**Table A4.6: Indirectly age-standardised rates of overnight separations per 1,000 population**

NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
4.63	4.89	5.89	5.58	6.73	5.16	2.51	3.75	5.15

# Appendix 5: The introduction of ICD-10-AM and AR-DRG Version 4

The ICD-10-AM classification was developed in Australia by the National Centre for Classification in Health (NCCH), with the disease and external cause classifications based on the World Health Organization's (WHO) ICD-10, and the procedure classification based on the procedure lists of the Medicare Benefits Schedule (MBS). Assistance provided by Australian clinicians and coders in this development ensured that the classification was current and appropriate for Australian clinical practice. It has been used by New South Wales, Victoria, the Australian Capital Territory and the Northern Territory since July 1998, and by the other States from July 1999.

This staggered implementation of ICD-10-AM resulted in the provision of 1998–99 data to AIHW's National Hospital Morbidity Database in ICD-9-CM by four jurisdictions and in ICD-10-AM by the remaining four jurisdictions. For *Australian Hospital Statistics 1998–99* (AIHW 2000) and other uses of the database, including this report, AIHW mapped the data reported in ICD-9-CM to ICD-10-AM (see below) so that national data could be presented in a single classification. Data for 1999–2000 will be provided by all States and Territories using ICD-10-AM. The second edition of the classification was endorsed by the National Health Information Management Group (NHIMG) for implementation nationwide on 1 July 2000.

## The ICD-10-AM classification

ICD-10-AM consists of:

- a disease classification based on WHO's publication of ICD-10
- a new Australian classification of procedures based on the MBS, sometimes referred to as MBS-Extended, or MBS-E
- Australian Coding Standards for the selection of disease and procedure codes.

Readers should refer to the published classification (NCCH 1998) and its Implementation Kit (NCCH 1997) (which is the source of some of the information in this appendix) for detailed information about ICD-10-AM and its relationship with its predecessor, ICD-9-CM.

## The disease classification

ICD-10-AM uses an alphanumeric coding scheme for diseases, comprising one alphabetic character generally followed by two, three or four numerals. The disease categories are grouped into 19 chapters and the supplementary classifications in ICD-9-CM (for external causes and morbidity and mortality and of factors influencing health status and contact with health services) also have chapter status in ICD-10-AM. The ICD-10-AM chapters generally have the same subject matter as in the chapters of ICD-9-CM. However, the order of the chapters was changed slightly and the ICD-9-CM chapter on *Diseases of the nervous system and sense organs* was split into chapters on *Diseases of the nervous system*, *Diseases of the eye and the adnexa*, and *Diseases of the ear and mastoid processes*. In addition, there has been some relocation of diseases and conditions, the most relevant for this publication being the movement of postpartum depression from the *Disorders of Pregnancy, childbirth and the*



*puerperium* chapter in ICD-9-CM to the *Mental and behavioural disorders* chapter in ICD-10-AM.

## Mapping between ICD-9-CM and ICD-10-AM

'Mapping' refers to the process of finding an 'equivalent' code between two classifications to enable data users to interpret data partly classified in one classification and partly classified in another. Mapping is therefore important for use of the 1998–99 data in the National Hospital Morbidity Database and for time series analysis of morbidity data. Mapping is also important for grouping data into Australian Refined Diagnosis Related Groups (AR-DRGs) as each version is developed to use a particular set of disease and procedure codes. To suit these purposes, the NCCH developed four types of maps between ICD-9-CM and ICD-10-AM:

- 'forward historical', to convert ICD-9-CM to ICD-10-AM, so that the ICD-9-CM coded data could be described in ICD-10-AM terms, for example when used with ICD-10-AM coded data (as in this report)
- 'backward historical', to convert ICD-10-AM to ICD-9-CM, so that the ICD-10-AM coded data could be described in ICD-9-CM terms, for example when used with ICD-9-CM coded data (for example in time series analyses with older data coded in ICD-9-CM)
- 'forward logical', to convert ICD-9-CM to ICD-10-AM, for AR-DRG grouping purposes
- 'backward logical', to convert ICD-10-AM to ICD-9-CM, for AR-DRG grouping purposes.

These maps are available on the NCCH web site at [www.cchs.usyd.edu.au/ncch/](http://www.cchs.usyd.edu.au/ncch/).

The majority of the code maps in each of these groups are one-to-one maps, meaning that a code in one classification has been mapped to one code only in the other classification. Others are one-to-many maps or many-to-one maps, where one code in one classification is equivalent to two, three or more codes in the other classification. Some are conditional maps, for example mapping a code that is not sex-specific in one classification (for example, a procedure on genital skin) to a female-specific code for data for a female patient, and to male-specific code for a male patient.

### Forward historical mapping used for the National Hospital Morbidity Database

The forward historical mapping were initially developed by NCCH in 1997 as one-to-one maps (i.e. a principal ICD-10-AM map), with listings of codes associated with the principal map. In 2000, when the final version of the ICD-10-AM publication became available, and following input from the South Australian Department of Human Services and AIHW (which had both been using the maps to forward-map ICD-9-CM data in large databases), revisions were made to incorporate a range of one-to-many, many-to-one and conditional maps. The revised maps (which are available from AIHW) have been used by AIHW to forward-map the ICD-9-CM codes provided for the National Hospital Morbidity Database for 1998–99 by Queensland, South Australia, Western Australia and Tasmania. This mapping has enabled the national 1998–99 diagnosis and procedure data to be presented in ICD-10-AM in this report.

## Comparison of mapped and unmapped data

The suite of maps described above has allowed AIHW to collate data partly provided in ICD-9-CM and partly provided in ICD-10-AM into one data set and to present them as national data. However, it is important to note that none of the mappings is perfect. Meaning is lost when the codes of one classification are more precise or less precise than those of the other. Data mapped from ICD-9-CM to ICD-10-AM is therefore not exactly equivalent to data originally classified and reported in ICD-10-AM. Caution should therefore be exercised when interpreting national data (which are a mix of mapped and unmapped data) and when comparing data from jurisdictions that reported in ICD-10-AM (New South Wales, Victoria, the Australian Capital Territory and the Northern Territory) with data from the States that reported in ICD-9-CM (Queensland, Western Australia, South Australia and Tasmania). Reference should be made to the classifications and the maps for precise interpretation.

## Introduction of Version 4.0/4.1 AR-DRGs

The *Institutional Mental Health Services in Australia 1997–98* presented information on Diagnosis Related Groups using AN-DRGs Version 3.0 or Version 3.1. This report uses AR-DRGs Version 4.0/4.1.

AR-DRG Version 4.0/4.1 was developed by the Department of Health and Aged Care to update the Australian DRG system in line with changes to medical, surgical and ICD coding practices (DHAC 1998). Version 4.0 was developed first, using ICD-9-CM codes. Once the logic and the DRG definitions had been changed, the diagnosis and procedure codes were logically forward-mapped to ICD-10-AM codes, forming Version 4.1. Versions 4.0 and 4.1 are therefore based on the same logic (with a few minor exceptions), despite requiring ICD-9-CM and ICD-10-AM codes, respectively, as input.

For the AIHW NHMD and this report, data provided in ICD-9-CM codes have been grouped to AR-DRG Version 4.0, and data provided in ICD-10-AM codes have been grouped to AR-DRG Version 4.1. The Version 4.0 and Version 4.1 data are essentially equivalent, but it is possible that the logical mapping that underlies Version 4.1 means that there are slight differences between the data in each version. Caution should therefore be exercised in interpreting the national AR-DRG data (which are a mix of Version 4.0 data and Version 4.1 data) and when comparing data from jurisdictions that reported in ICD-10-AM with data from the States that reported in ICD-9-CM.

## Features of AR-DRG Version 4.0/4.1

The MDC structure of the classification is essentially the same as the MDC structure for AN-DRGs, and the AR-DRGs are similarly based on hierarchies of diagnoses and procedures distributed between surgical, medical and other partitions. However, the AR-DRG classification represents a major overhaul of the DRG classification. Some of the changes relevant to this publication are:

- The numbering system was changed to alphanumeric, showing the broad group to which the DRG belongs (usually the MDC), the adjacent DRG, and the existence and/or nature of splits based on resource consumption.
- The treatment of severity was changed markedly. In AN-DRG Version 3.1, the single most severe complication or comorbidity was used as an indicator of the severity of a

patient's illness. In AR-DRG Version 4.0/4.1, an algorithm has been developed to take account of the cumulative effect of multiple significant complications and/or comorbidities in the patient record.

- New DRGs were created and other DRGs were merged.
- The data requirements for grouping were changed. Actual same day stay status is now required rather than intended length of stay, and mental health legal status has been added for severity splits in MDC 19 *Mental diseases and disorders*.

Overall, there are 23 MDCs (as for AN-DRGs Version 3.1), but the number of DRGs has been reduced from the 667 in AN-DRG Version 3.1 to 661 in AR-DRG Version 4.0/4.1. Further information about the AR-DRG classification system is available in *Australian Refined Diagnosis Related Groups Version 4.1 Definitions Manual* (DHAC 1998).

# Appendix 6: Comparison with the National Survey of Mental Health Services data

## Background

The NSMHS has been used for the annual performance monitoring for the National Mental Health Strategy over the last 6 years. The NSMHS is an annual collection by the National Mental Health Working Group (NMHWG) of establishment-level data from publicly-funded hospital and community mental health care services across all States and Territories. The survey does not collect patient-level data. A basic summary of the NSMHS and how it compares with the NMDs – Mental Health Care is presented below. For more detailed information on NSMHS, refer to the *National Mental Health Report 2000* (DHAC 2000).

NSMHS data are collected from three separate levels: the State or Territory health authority as a whole; the regional, area and district administrative unit; and the mental health service delivery organisation (which may manage one or more individual service units). The data items collected at each level vary.

At the State or Territory level, the survey collects the jurisdiction's budget allocation for specialised mental health services, expenditure on central administration, centrally funded programs to non-government organisations, revenue and sources of funds, accounting practices, and procedures for annual reporting.

The regional level is somewhat similar with the survey collecting expenditure on regional administration, regional funding for programs to non-government organisations, revenue and sources of funds, accounting practices, and procedures for annual reporting. The organisation-level collection also includes expenditure on organisational administration, revenue and sources of funds, and accounting practices. In addition, the organisational-level includes services provided to non-mental health agencies, workforce profiles and consumer participation, as well as apportioned indirect costs from the central or regional level.

## Comparison with NPHEd data

A fundamental difference between the hospital data collected by the NSMHS and the NPHEd is the difference in the establishment identification taxonomy. As mentioned above, the NSMHS collects hospital data at three separate levels: the State or Territory health department as a whole; the health region, area or district; and the individual mental health service. The NPHEd records at a single establishment level but could be rolled up to health region and State and Territory level, if desired for some data elements. There is no consistent pattern of establishment identification between the two data sets which makes comparison problematic. In several cases, establishments reported to NSMHS are out of the scope of the NPHEd.

Data reported to NPHEd are recorded according to agreed definitions published in the *National Health Data Dictionary*. Although data reported to the NSMHS are broadly based on these definitions, a number of counting rules and inclusions/exclusions result in substantially different data in the two collections.

## Comparison with NCMHED data

This appendix has used NSMHS data, supplied by Buckingham & Associates on behalf of the Commonwealth Department of Health and Aged Care (DHAC), as a point of comparison for the NCMHED data. Note that the NSMHS data used were preliminary unvalidated data and are still subject to final sign-off by States and Territories. For this reason, the extent of the comparative analysis was limited.

Unlike the NPHEd data, the scope of the NCMHED was initially defined by the NSMHS and there is a similarity in the establishment taxonomies for the two collections. Note that the scope of the two collections for 1998–99 was not identical. The main difference in scope was data for Confused and Disturbed Elderly (CADE) units in New South Wales. The data supplied to the NCMHED exclude data for all CADE units except those in the New England Health Service. The NSMHS data includes data from all CADE units.

Overall, the establishments reported to the NCMHED by States and Territories corresponded with those reported to the NSMHS. Overall, 208 establishments were reported to the NCMHED, compared with 193 reported to the NSMHS. Victoria, Western Australia, South Australia, the Australian Capital Territory and Northern Territory used the NSMHS organisation-level establishment identification for their NCMHED data. In this group there were only minor variations from this close correspondence in establishment taxonomies. These involved a difference in the level of aggregation affecting five establishments in Western Australia and South Australia. Queensland and Tasmania used the NSMHS individual service unit level to identify their community mental health establishments. For the NCMHED, New South Wales identified Area Health Services as establishments, which was equivalent to their NSMHS region-level grouping.

The NCMHED contains five data elements, which closely resemble NSMHS items and can be used for comparison. These data elements are *Number of available beds*, *Separations*, *Total full-time-equivalent staff*, *Total salaries and wages* and *Total non-salary operating costs*. The extent of the definitional match varies among these five data elements. The NSMHS has a *Number of available beds* item, which is based on the number of available beds at 30 June in the reference year. The equivalent NCMHED data element relates to the average number of available beds in the reference year or, if that figure is not available, the number of available beds at 30 June in the reference year.

The *Total salaries and wages* and the *Total non-salary operating costs* data elements in the NCMHED are defined in the same manner as the NSMHS data items. The *Total full-time-equivalent staff* data element in the NCMHED is collected in a different manner from the NSMHS *Total full-time-equivalent staff* data item. The NSMHS collects FTE staff numbers only at an organisational-level, which may be an aggregate of several community mental health establishments depending on the jurisdiction. Both attempt to collect average FTE staffing figures in preference to 30 June figures.

1,653 separations and 1,301 available beds were reported to the NCMHED for 1998–99 (Table 4.8). The 1,796 separations and 1,391 available bed data reported to the NSMHS were 8.7% and 6.9% above NCMHED data. New South Wales was the jurisdiction where the

difference in NSMHS and NCMHED separations and number of available beds data was greatest (126 separations and 96 beds). Tasmania and Western Australia also reported small differences in residential care separation and available bed data for the two collections.

The data from the two collections on *Total full-time-equivalent staff* and *Total salaries and wages* expenditure were comparable. According to the NCMHED, an average of 8,679 FTE staff were employed in Australian community mental health care establishments in 1998-99 (Table 4.9). The 8,595 FTE staff reported to the NSMHS was 1% below the FTE staff data reported to the NCMHED for the same period. The *Total salaries and wages* data reported to the NCMHED was \$421.2 million, compared with \$431.6 million reported to the NSMHS (a 2.5% difference). A total non-salary expenditure of \$166.4 million was reported to the NCMHED for 1998-99 where as the total non-salary expenditure reported to the NSMHS was \$137.0 million (a 17.6% difference).

Expenditure data from the NCMHED indicated that the total recurrent expenditure for community mental health care establishments was \$588.0 million (Table 4.10). The direct expenditure reported to the NSMHS (\$568.6 million) was 3.3% less than the NCMHED data. The recurrent expenditure including indirect expenditure reported to the NSMHS (\$626.1 million) was 6.5% greater than the NCMHED data. This may indicate that some expenditure data supplied to the NCMHED include components of indirect expenditure. This requires further investigation once the NSMHS data are validated.

# Glossary

For further information on the terms used in this report, refer to the definitions in use in 1998–99 in the *National Health Data Dictionary* Version 7.0.

<i>Aboriginal and Torres Strait Islander status</i>	<p>Aboriginal or Torres Strait Islander status of the person according to the following definition:</p> <p>An Aboriginal or Torres Strait Islander person is a person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander and is accepted as such by the community in which he or she lives.</p>
<i>Acute</i>	Having a short and relatively severe course.
<i>Acute hospitals</i>	<p>Establishments which provide at least minimal medical, surgical or obstetric services for admitted patient treatment and/or care, and which provide round-the-clock comprehensive qualified nursing service as well as other necessary professional services. They must be licensed by the State or Territory health department, or controlled by government departments. Most of the patients have acute conditions or temporary ailments and the average stay per admission is relatively short.</p> <p>Public acute hospitals are funded by the State or Territory health authority and include both recognised and non-recognised hospitals. Recognised hospitals are those nominated by States and Territories and accepted by the Commonwealth and appear in schedules to each State/Territory Medicare Agreement (Schedule B in the 1993–98 Medicare Agreements).</p>
<i>Administrative and clerical staff</i>	Staff engaged in administrative and clerical duties. Civil engineers and computing staff are included in this category. Medical staff and nursing staff, diagnostic and health professionals and any domestic staff primarily or partly engaged in administrative and clerical duties are excluded.
<i>Administrative expenditure</i>	All expenditure incurred by establishments (but not central administrations) of a management expenses/administrative support nature such as any rates and taxes, printing, telephone, stationery and insurance expenses (including workers compensation).
<i>Admitted patient</i>	A patient who undergoes a hospital's formal admission process.
<i>Area of usual residence</i>	The geographic location of the patient's usual residence. The location is included in the National Hospital Morbidity Database in Statistical Local Area (SLA) format but aggregated to RRMA categories for this report.

<i>Australian Bureau of Statistics Private Health Establishments Collection</i>	This collection includes data from all private acute and psychiatric hospitals licensed by State and Territory health authorities and all free-standing day hospital facilities approved by the Commonwealth Department of Health and Aged Care. The data items and definitions are based on the <i>National Health Data Dictionary</i> published by AIHW. Information is collected for items such as bed supply, usage, occupancy and length of stay, type of patients, staff, and expenditure.
<i>Australian Refined Diagnosis Related Groups (AR-DRGs)</i>	An Australian system of Diagnosis Related Groups (DRGs). DRGs are a means of classifying hospital patients to provide a common basis for comparing factors such as cost-effectiveness and quality of care across hospitals. Each AR-DRG represents a class of patients with similar clinical conditions requiring similar hospital services.
<i>Available beds</i>	Beds immediately available for use by admitted patients as required.
<i>Average length of stay</i>	The average number of patient days for admitted patient overnight separations with specialised psychiatric care, after trimming outliers (Appendix 3). Patients admitted and separated on the same day are also exclude from the calculation of average length of stay. Averages were calculated using AR-DRGs as categories. Both acute care and other episode types were included in all calculations.
<i>Country of Birth</i>	The country in which the patient was born. The category 'Other English-speaking country' includes United Kingdom, Ireland, New Zealand and North America. All other countries, apart from Australia, were included in the 'Non-English-speaking, category.
<i>Diagnostic and allied health professionals</i>	Qualified staff (other than qualified medical and nursing staff) engaged in duties of a diagnostic, professional or technical nature (but also including diagnostic and health professionals whose duties are primarily or partly of an administrative nature). This category includes all allied health professionals and laboratory technicians but excludes civil engineers and computing staff.
<i>Domestic and other staff</i>	Staff engaged in the provision of food and cleaning services. They include domestic staff, such as food services managers, primarily engaged mainly in administrative duties. This category also includes all staff not elsewhere included (mainly maintenance staff, tradespersons and gardening staff).
<i>Domestic services expenditure</i>	The costs of all domestic services including electricity, other fuel and power, domestic services for staff, accommodation and kitchen expenses but not including salaries and wages, food costs or equipment replacement and repair costs.
<i>Drug supplies expenditure</i>	The cost of all drugs including the cost of containers.
<i>Enrolled nurses</i>	Second-level nurses who are enrolled in all States and Territories except Victoria where they are registered by the State registration board to practise in this capacity. Includes general enrolled nurses and specialist enrolled nurses (e.g. mothercraft nurses in some States and Territories).



<i>Episode of care</i>	An episode of care is a phase of treatment for an admitted patient. It may correspond to a patient's entire hospital stay, or the hospital stay may be divided into separate episodes of care of different types. See <i>Separation</i> .
<i>First admission to psychiatric treatment</i>	The status of an episode in terms of whether it is the first or subsequent admission for psychiatric treatment, whether in an acute or psychiatric hospital.
<i>Food supplies expenditure</i>	The cost of all food and beverages but not including kitchen expenses such as utensils, cleaning materials, cutlery and crockery.
<i>Full-time-equivalent staff</i>	Full-time-equivalent units are on-job hours worked and hours of paid leave (sick, recreation, long-service, workers compensation) by/for a staff member (or contract employee where applicable) divided by the number of hours normally worked by a full-time staff member when on the job (or contract employee where applicable) under the relevant award or agreement.
<i>Involuntary mental health legal status</i>	An indication that a person was treated on an involuntary basis under the relevant State or Territory mental health legislation, at some point during the hospital stay. Involuntary patients are people who are detained under mental health legislation for the purpose of assessment or provision of appropriate treatment or care. Mental health legal status applies only to patients with some specialised psychiatric care.
<i>Length of stay</i>	The length of stay of a patient is calculated by subtracting the date the patient is admitted from the date of separation. All leave days, including the day the patient went on leave, are excluded. A same day patient is allocated a length of stay of one day.
<i>Marital status</i>	The current marital status of the patient.
<i>Medical and surgical supplies expenditure</i>	The cost of all consumables of a medical or surgical nature (excluding drug supplies) but not including expenditure on equipment repairs.
<i>Mental Health Legal Status</i>	An indication that a person was treated on an involuntary basis under the relevant State or Territory mental health legislation, at some point during the hospital stay. Involuntary patients are persons who are detained under mental health legislation for the purpose of assessment or provision of appropriate treatment or care. Mental health legal status applies only to records with some specialised psychiatric care.
<i>Mental health principal diagnosis</i>	A separation is defined as having a mental health principal diagnosis if the principal diagnosis falls within the range listed in Appendix 1. These inclusions are drawn from the National Health Priority Areas tables, Chapter 7, <i>Australian Hospital Statistics, 1998-99</i> (AIHW 2000).

<i>Mode of separation</i>	The status of the person at separation (discharge, transfer or death) and, if applicable, place to which the person is discharged.
<i>National Hospital Morbidity Database</i>	The National Hospital Morbidity Database is a compilation of electronic summary records collected in admitted patient morbidity data collection systems in Australian hospitals. Data relating to admitted patients in almost all hospitals are included: public acute hospitals, public psychiatric hospitals, private acute hospitals, private psychiatric hospitals and private free-standing day hospital facilities. The data supplied for the database were based on the patient-level data items of the National Minimum Data Set – Admitted Patient Health Care and the National Minimum Data Set – Admitted Patient Mental Health Care. They include demographic, administrative and length of stay data, and data on the diagnoses of the patient, the procedures the patient underwent in hospital, and external causes of injury and poisoning.
<i>National Public Hospital Establishments Database</i>	The National Public Hospital Establishments Database holds a record for each public hospital in Australia. It is collated from the routine administrative collections of public acute hospitals, psychiatric hospitals, drug and alcohol hospitals and dental hospitals in all States and Territories. Exceptions within the public sector are hospitals not within the jurisdiction of the State and Territory health authorities (e.g. hospitals run by correctional authorities in some jurisdictions and those in off-shore territories). Information is included on hospital resources, recurrent expenditure, non-appropriation revenue and services to admitted and non-admitted patients. Data on capital expenditure and depreciation are also collected for each jurisdiction. The collection is based on the establishment-level activity and resource data elements, and the system-level data elements, of the National Minimum Data Set for Institutional Health Care.
<i>National Survey of Mental Health and Wellbeing of Adults</i>	The survey was conducted throughout Australia, from May to August 1997, by the Australian Bureau of Statistics. The survey was an initiative of, and funded by, the Mental Health Branch of the Commonwealth Department of Health and Aged Care as part of the National Mental Health Strategy. The survey was designed to provide information on the prevalence of a range of mental disorders, the level of disability associated with these disorders, and health services used as a consequence of a mental health problem. The survey consisted of a representative sample of residents (18 years and over) of private dwellings in all States and Territories across both urban and rural areas. Sample excluded special dwellings (such as hospitals, nursing homes, hotels and hostels) and dwellings in remote and sparsely settled parts of Australia.
<i>Non-admitted patients</i>	Patients who receive care from a recognised non-admitted patient service/clinic of a hospital.
<i>Not published (n.p.)</i>	Not available for separate publication but included in the totals where applicable.

<i>Other personal care staff</i>	This category includes attendants, assistants or home assistants, home companions, family aides, ward helpers, wardspersons, orderlies, ward assistants and nursing assistants engaged primarily in the provision of personal care to patients or residents, who are not formally qualified or undergoing training in nursing or allied health professions.
<i>Other recurrent expenditure</i>	Recurrent expenditure not included elsewhere in any of the recurrent expenditure categories.
<i>Other revenue</i>	All other revenue received by the establishment that is not included under patient revenue or recoveries (but not including revenue payments received from State or Territory governments). This includes revenue such as investment income from temporarily surplus funds and income from charities, bequests and accommodation provided to visitors.
<i>Overnight separation</i>	The term used to refer to separations where the patient separates from hospital one or more nights after admission (i.e. who is admitted to and separated from the hospital on different dates). The length of an overnight separation is calculated by subtracting the date the patient is admitted from the date of the separation and deducting total leave days.
<i>Patient days</i>	The number of full or partial days stay for patients who were admitted for an episode of care and who underwent separation during the reporting period. A patient who is admitted and separated on the same day is allocated one patient day.
<i>Patient transport expenditure</i>	The direct cost of transporting patients excluding salaries and wages of transport staff.
<i>Payments to visiting medical officers</i>	All payments made to visiting medical officers for medical services provided to hospital (public) patients on a sessionally paid or fee-for-service basis.
<i>Previous specialised treatment</i>	Whether the patient has had a previous admission or service contact for specialised care.
<i>Principal diagnosis</i>	The diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital.
<i>Principal procedure</i>	The most significant procedure that was performed for treatment of the principal diagnosis. If no procedure is performed for treatment of the principal diagnosis, other procedures can be reported as the principal procedure. In order, these are a procedure performed for treatment of an additional diagnosis, a diagnostic/exploratory procedure related to the principal diagnosis or a diagnostic/exploratory procedure related to an additional diagnosis.
<i>Private hospital</i>	Privately owned and operated institution, catering for patients who are treated by a doctor of their own choice. Patients are charged fees for accommodation and other services provided by the hospital and relevant medical and paramedical practitioners. Acute and psychiatric hospitals are included.
<i>Psychiatric hospitals</i>	Institutions which provide treatment and care for patients with psychiatric, mental or behavioural disorders.

<i>Recoveries</i>	<p>All revenue received that is in the nature of a recovery of expenditure incurred. This includes:</p> <ul style="list-style-type: none"> <li>• income received from the use of hospital facilities by salaried medical officers exercising their rights of private practice and by private practitioners treating private patients in hospital</li> <li>• other recoveries such as those relating to inter-hospital services where the revenue relates to a range of different costs and cannot be clearly offset against any particular cost.</li> </ul>
<i>Recurrent expenditure</i>	Expenditure which recurs continually or frequently (e.g. salaries). It is contrasted with capital expenditure, such as the cost of hospital buildings and diagnostic equipment, for which expenditure is made infrequently.
<i>Referral to further care (psychiatric patients)</i>	Referral to further care by health service agencies/ facilities.
<i>RRMA Region</i>	<ul style="list-style-type: none"> <li>• <b>Capital cities</b> statistical division</li> <li>• <b>Other metropolitan centres:</b> urban centres with a population of 100,000 or more</li> <li>• <b>Large rural centres</b> (index of remoteness &lt; 10.5): urban centres with a population between 25,000 and 99,999</li> <li>• <b>Small rural centres</b> (index of remoteness &lt; 10.5): urban centres with a population between 10,000 and 24,999</li> <li>• <b>Other rural areas</b> (index of remoteness &lt; 10.5): urban centres with a population less than 10,000</li> <li>• <b>Remote centres</b> (index of remoteness &gt; 10.5): urban centres with a population greater than 4,999</li> <li>• <b>Other remote areas</b> (index of remoteness &gt; 10.5): urban centres with a population less than 5,000.</li> </ul> <p>For more information see <i>Rural, Remote and Metropolitan Areas Classification, 1991 Census Edition</i> (DPIE &amp; DSHS 1994).</p>
<i>Registered nurses</i>	Nurses with at least a 3-year training certificate and nurses holding postgraduate qualifications. Registered nurses must be registered with a State or Territory registration board.
<i>Repairs and maintenance expenditure</i>	The costs incurred in maintaining, repairing, replacing and providing additional equipment, maintaining and renovating buildings and minor additional works.
<i>Salaried medical officers</i>	Medical officers engaged by the hospital on a full-time or part-time salaried basis.
<i>Same day patients</i>	Same day patients are admitted patients who are admitted and separate on the same date.

<i>Separation</i>	The term used to refer to the episode of care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). 'Separation' also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care. When the term is used in the context of the community residential mental health care, the term refers to periods of non-admitted patient mental health care.
<i>Source of referral to public psychiatric hospital</i>	Source from which the person was transferred/referred to the public psychiatric hospital
<i>Specialised psychiatric service</i>	A facility or unit dedicated to the treatment or care of patients with psychiatric conditions.
<i>Specialised care separation</i>	Separation in which at least one day of specialised psychiatric care was received.
<i>Student nurses</i>	Nurses employed by the establishment currently studying in years 1 to 3 of a 3-year certificate course. This includes any person commencing or undertaking a 3-year course of training leading to registration as a nurse by the State or Territory registration board. This includes full-time general student nurses and specialist student nurses, such as mental deficiency nurses, but excludes practising nurses enrolled in post-basic training courses.
<i>Superannuation payments</i>	Contributions paid or (for an emerging cost scheme) that should be paid (as determined by an actuary) on behalf of establishment employees either by the establishment or a central administration such as a State or Territory health authority, to a superannuation fund providing retirement and related benefits to establishment employees.
<i>Total psychiatric care days</i>	Total psychiatric care days are the number of days or part-days a patient spent in a specialised psychiatric unit or ward. All leave days, including the day the patient went on leave, are excluded.
<i>Type of episode of care</i>	A classification of admitted patient episodes into broad groups based on principal diagnosis, principal procedure or status as a nursing home or rehabilitation patient.
<i>Trainee/pupil nurses</i>	Nurses who are commencing or undertaking a 1-year course of training leading to registration as an enrolled nurse on the State or Territory registration board (includes all trainee nurses).
<i>Visiting medical officer</i>	A medical practitioner appointed by the hospital board to provide medical services for hospital (public) patients on an honorary, sessionally paid, or fee-for-service basis.

# References

- Australian Bureau of Statistics (ABS) 1998a. Experimental projections of Aboriginal and Torres Strait Islander population, 30 June 1996 to 30 June 2006. ABS Cat. No. 3231.0 Canberra: ABS.
- Australian Bureau of Statistics (ABS) 1998b. Mental health and wellbeing, profile of adults, Australia, 1997. ABS Cat. No. 4326.0. Canberra: ABS.
- Australian Bureau of Statistics (ABS) 1999. Australian demographic statistics. ABS Cat. No. 3101.0 Canberra: ABS.
- Australian Bureau of Statistics (ABS) 2000. Private hospitals, Australia, 1998–99. ABS Cat. No. 4390.0. Canberra: ABS.
- Australian Health Ministers 1992. National mental health policy. Canberra: AGPS.
- Australian Institute of Health and Welfare (AIHW) 1999. Australian hospital statistics 1997–98. Canberra: AIHW.
- Australian Institute of Health and Welfare (AIHW) 2000. Australian hospital statistics 1998–99. Canberra: AIHW.
- Australian Institute of Health and Welfare (AIHW): Mathers C, Vos T & Stevenson C 1999. The burden of disease and injury in Australia. Canberra: AIHW.
- Australian Institute of Health and Welfare (AIHW): Moore M, Shaw J, Grant B & Braddock D 2000. Institutional mental health services in Australia 1997–98. Canberra: AIHW.
- Buckingham W, Burgess P, Solomon S, Pirkis J & Eagar K 1998. Developing a casemix classification for mental health services. Canberra: Commonwealth Department of Health and Family Services.
- Department of Health and Aged Care (DHAC) 1998. Australian Refined Diagnosis Related Groups, version 4.1 Definitions Manual. Canberra: Department of Health and Aged Care.
- Department of Health and Aged Care (DHAC) 1999. Mental health information development: national information priorities and strategies under the second national mental health plan 1998–2003. Canberra: Commonwealth of Australia.
- Department of Health and Aged Care (DHAC) 2000. National mental health report 2000. Canberra: AGPS.
- Department of Primary Industries and Energy (DPIE) & Department of Human Services and Health (DHSH) 1994. Rural, remote and metropolitan areas classification, 1991 Census edition. Canberra: AGPS.
- Murray CJL & Lopez AD 1996. The global burden of disease: a comprehensive assessment of mortality and disability from disease, injuries and risk factors in 1990 and projected to 2020. Harvard: Harvard School of Public Health.
- National Centre for Classification in Health (NCCH) 1997. ICD-10-AM implementation kit. Sydney: University of Sydney.
- National Centre for Classification in Health (NCCH) 1998. The international statistical classification of diseases and related health problems, 10th revision, Australian modification (ICD-10-AM), 1st edn. Sydney: University of Sydney.
- National Coding Centre 1996. The Australian version of the international classification of diseases, 9th edn, clinical modification (ICD-9-CM), 2nd edn. Sydney: University of Sydney.

National Health Data Committee (NHDC) 1998. National health data dictionary, Version 7.0. Canberra: AIHW.

National Health Data Committee (NHDC) 2001. National health data dictionary, Version 10.0. Canberra: AIHW.

Richmond D 1983. Inquiry into health services for the psychiatrically ill and developmentally disabled. Sydney: NSW Department of Health.

World Health Organization (WHO) 1992. ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: WHO.

World Health Organization (WHO) 1993. ICD-10 classification of mental and behavioural disorders: diagnostic criteria for research. Geneva: WHO.