

Brain Dysfunction LOS and FIM Change Benchmarks in Australia and New Zealand by AN-SNAP V5, Calendar Year 2022



AN-SNAP class	Specialist Brain Units				Non Specialist Brain Units				All AROC Facilities			
	Length of stay		FIM change	FIM gain	Length of stay		FIM change	FIM gain	Length of stay		FIM change	FIM gain
	No.	Mean (95%CI)	Mean (95%CI)	per week	No.	Mean (95%CI)	Mean (95%CI)	per week	No.	Mean (95%CI)	Mean (95%CI)	per week
Traumatic episodes												
5AZ1	16	98.4 (76.5 - 120.3)	71.0 (56.5 - 85.5)	5.0	29	61.7 (48.2 - 75.2)	32.8 (23.8 - 41.9)	3.7	45	74.7 (62.0 - 87.4)	46.4 (37.0 - 55.8)	4.3
5AZ2	55	108.6 (84.3 - 133.0)	65.0 (57.1 - 72.9)	4.2	6	53.0 (36.5 - 69.5)	44.5 (15.4 - 73.6)	5.9	61	103.1 (80.8 - 125.5)	63.0 (55.2 - 70.7)	4.3
5AB1	62	22.0 (17.2 - 26.9)	11.1 (8.8 - 13.4)	3.5	124	12.6 (11.1 - 14.1)	13.7 (12.1 - 15.3)	7.6	186	15.8 (13.7 - 17.8)	12.9 (11.5 - 14.2)	5.7
5AB2	7	39.3 (6.2 - 72.4)	39.7 (26.1 - 53.3)	7.1	84	22.0 (18.7 - 25.3)	27.6 (24.9 - 30.3)	8.8	91	23.3 (19.3 - 27.3)	28.5 (25.8 - 31.3)	8.6
5AB3	109	23.1 (19.6 - 26.6)	16.7 (14.6 - 18.7)	5.1	117	18.7 (16.3 - 21.1)	18.5 (16.6 - 20.5)	6.9	226	20.8 (18.7 - 22.9)	17.6 (16.2 - 19.1)	5.9
5AB4	14	71.3 (18.4 - 124.2)	42.5 (32.0 - 53.0)	4.2	55	30.1 (25.4 - 34.8)	31.3 (26.5 - 36.1)	7.3	69	38.5 (26.8 - 50.1)	33.6 (29.1 - 38.0)	6.1
5AB5	135	43.3 (33.9 - 52.6)	32.5 (30.0 - 35.0)	5.3	78	33.6 (26.0 - 41.2)	25.6 (21.5 - 29.7)	5.3	213	39.7 (33.1 - 46.3)	30.0 (27.8 - 32.2)	5.3
5AB6	39	73.2 (54.5 - 92.0)	59.7 (52.5 - 66.9)	5.7	37	33.4 (27.9 - 38.8)	32.2 (25.1 - 39.2)	6.8	76	53.8 (42.9 - 64.7)	46.3 (40.4 - 52.2)	6.0
5AP1	94	25.9 (22.9 - 28.9)	26.1 (23.5 - 28.6)	7.0	39	20.6 (16.3 - 24.9)	20.4 (16.9 - 23.8)	6.9	133	24.3 (21.8 - 26.9)	24.4 (22.3 - 26.5)	7.0
5AP2	51	55.4 (46.3 - 64.5)	55.5 (51.3 - 59.6)	7.0	43	38.8 (28.7 - 48.9)	41.8 (38.0 - 45.6)	7.5	94	47.8 (40.9 - 54.7)	49.2 (46.1 - 52.4)	7.2
Total episodes	582				612				1,194			
Non-Traumatic episodes												
5AZ1	10	113.9 (81.1 - 146.7)	33.7 (15.4 - 52.0)	2.1	36	58.4 (44.7 - 72.2)	33.6 (25.4 - 41.8)	4.0	46	70.5 (56.1 - 84.9)	33.6 (26.2 - 41.1)	3.3
5AZ2	12	104.3 (60.1 - 148.4)	38.2 (18.9 - 57.4)	2.6	18	77.3 (47.9 - 106.6)	46.7 (32.2 - 61.2)	4.2	30	88.1 (63.2 - 112.9)	43.3 (31.8 - 54.8)	3.4
5AB1	50	12.6 (10.6 - 14.5)	14.7 (12.2 - 17.2)	8.2	246	14.0 (12.8 - 15.1)	15.0 (13.9 - 16.0)	7.5	296	13.7 (12.7 - 14.8)	14.9 (13.9 - 15.9)	7.6
5AB2	10	27.8 (18.3 - 37.3)	27.9 (19.0 - 36.8)	7.0	150	24.1 (20.7 - 27.6)	27.7 (25.4 - 30.1)	8.1	160	24.3 (21.0 - 27.6)	27.8 (25.5 - 30.0)	8.0
5AB3	61	26.3 (21.5 - 31.2)	19.2 (16.3 - 22.2)	5.1	197	21.1 (18.4 - 23.8)	19.1 (17.6 - 20.7)	6.3	258	22.3 (20.0 - 24.7)	19.1 (17.8 - 20.5)	6.0
5AB4	10	58.9 (25.5 - 92.3)	44.7 (30.2 - 59.2)	5.3	115	33.9 (28.6 - 39.3)	33.6 (29.9 - 37.4)	6.9	125	35.9 (30.3 - 41.6)	34.5 (30.9 - 38.2)	6.7
5AB5	50	45.9 (27.0 - 64.8)	26.7 (21.5 - 32.0)	4.1	144	32.8 (26.9 - 38.8)	22.3 (19.4 - 25.2)	4.8	194	36.2 (29.6 - 42.8)	23.5 (20.9 - 26.0)	4.5
5AB6	14	57.6 (40.9 - 74.4)	52.6 (36.1 - 69.2)	6.4	67	42.4 (34.4 - 50.4)	34.4 (29.3 - 39.6)	5.7	81	45.0 (37.8 - 52.3)	37.6 (32.3 - 42.9)	5.8
Total episodes	217				973				1,190			

NOTE 1: Where the number of episodes < 5 details are not given for reasons of privacy and accuracy.

NOTE 2: Analysis includes first admission, complete episodes only

AN-SNAP V5 classes for Brain Dysfunction

Class	Description of AN-SNAP class
5AZ1	Weighted FIM Motor score 13-18, Brain, Spine, MMT, Burns, Age >= 59
5AZ2	Weighted FIM Motor score 13-18, Brain, Spine, MMT, Burns, Age 18 - 58
5AB1	Brain dysfunction, FIM Cognition 27 - 35 Weighted FIM Motor 59 - 91
5AB2	Brain dysfunction, FIM Cognition 27 - 35 Weighted FIM Motor 19 - 58
5AB3	Brain dysfunction, FIM Cognition 19 - 26 Weighted FIM Motor 50 - 91
5AB4	Brain dysfunction, FIM Cognition 19 - 26 Weighted FIM Motor 19 - 49
5AB5	Brain dysfunction, FIM Cognition 5 - 18 Weighted FIM Motor 39 - 91
5AB6	Brain dysfunction, FIM Cognition 5 - 18 Weighted FIM Motor 19 - 38
5AP1	Major Multiple Trauma, Weighted FIM Motor 51 - 91
5AP2	Major Multiple Trauma, Weighted FIM Motor 19 - 50

All Brain Dysfunction impairment codes

Non-traumatic brain dysfunction
2.11 Sub-arachnoid haemorrhage
2.12 Anoxic brain damage
2.13 Other non-traumatic brain dysfunction
Traumatic brain dysfunction
2.21 Open injury
2.22 Closed injury
Major Multiple Trauma
14.1 Brain + spinal cord injury
14.2 Brain + multiple fracture/amputation

Brain Dysfunction LOS and FIM Change Benchmarks in Australia and New Zealand by AN-SNAP V4, Calendar Year 2022



AN-SNAP class	Specialist Brain Units				Non Specialist Brain Units				All AROC Facilities			
	Length of stay		FIM change	FIM gain per week	Length of stay		FIM change	FIM gain per week	Length of stay		FIM change	FIM gain per week
	No.	Mean (95%CI)	Mean (95%CI)		No.	Mean (95%CI)	Mean (95%CI)		No.	Mean (95%CI)	Mean (95%CI)	
Traumatic episodes												
4AZ1	27	109.4 (79.4 - 139.4)	69.7 (58.7 - 80.6)	4.5	29	59.3 (47.0 - 71.7)	31.9 (23.0 - 40.8)	3.8	56	83.5 (66.5 - 100.5)	50.1 (41.5 - 58.6)	4.2
4AZ2	42	105.1 (78.3 - 131.8)	63.7 (54.4 - 73.0)	4.2	4	n.a n.a	n.a n.a	n.a	46	101.9 (77.3 - 126.5)	64.4 (55.9 - 73.0)	4.4
4AB1	62	20.8 (16.1 - 25.6)	8.4 (6.6 - 10.2)	2.8	76	11.7 (9.5 - 14.0)	9.4 (7.8 - 11.0)	5.6	138	15.8 (13.2 - 18.4)	9.0 (7.8 - 10.2)	4.0
4AB2	124	26.1 (22.7 - 29.5)	16.3 (14.8 - 17.7)	4.4	49	23.2 (17.2 - 29.2)	13.5 (11.0 - 16.1)	4.1	173	25.3 (22.3 - 28.2)	15.5 (14.2 - 16.8)	4.3
4AB3	22	26.6 (20.0 - 33.1)	26.5 (21.4 - 31.6)	7.0	148	17.4 (15.4 - 19.3)	22.8 (21.1 - 24.4)	9.2	170	18.6 (16.6 - 20.5)	23.2 (21.6 - 24.8)	8.8
4AB4	38	45.0 (24.1 - 66.0)	33.2 (29.5 - 36.9)	5.2	107	23.3 (19.6 - 27.1)	25.0 (22.6 - 27.4)	7.5	145	29.0 (22.7 - 35.3)	27.1 (25.0 - 29.3)	6.6
4AB5	74	51.1 (34.8 - 67.4)	41.7 (38.7 - 44.7)	5.7	41	37.1 (26.1 - 48.1)	30.0 (23.7 - 36.3)	5.7	115	46.1 (34.8 - 57.4)	37.5 (34.4 - 40.7)	5.7
4AB6	30	51.5 (41.2 - 61.9)	57.1 (49.2 - 65.1)	7.8	44	31.4 (26.6 - 36.2)	30.9 (24.5 - 37.2)	6.9	74	39.6 (34.1 - 45.1)	41.5 (35.8 - 47.3)	7.3
4AB7	18	104.4 (70.6 - 138.2)	59.2 (47.4 - 71.1)	4.0	33	39.8 (30.9 - 48.6)	35.5 (27.7 - 43.4)	6.3	51	62.6 (47.0 - 78.1)	43.9 (36.7 - 51.1)	4.9
4API	145	36.3 (31.9 - 40.7)	36.4 (33.2 - 39.6)	7.0	81	29.4 (23.5 - 35.4)	31.1 (27.7 - 34.5)	7.4	226	33.8 (30.3 - 37.4)	34.5 (32.1 - 36.9)	7.1
Total episodes	582				612				1,194			
Non-Traumatic episodes												
4AZ1	10	123.7 (95.5 - 151.9)	26.7 (10.7 - 42.7)	1.5	38	67.8 (51.9 - 83.7)	35.0 (26.3 - 43.7)	3.6	48	79.5 (64.1 - 94.8)	33.3 (25.5 - 41.0)	2.9
4AZ2	10	106.7 (54.8 - 158.6)	43.4 (21.7 - 65.1)	2.8	8	71.4 (23.6 - 119.2)	54.1 (35.2 - 73.0)	5.3	18	91.0 (54.7 - 127.3)	48.2 (33.4 - 62.9)	3.7
4AB1	38	16.4 (10.9 - 21.9)	10.6 (8.5 - 12.7)	4.5	147	12.4 (10.9 - 13.8)	10.9 (9.7 - 12.0)	6.2	185	13.2 (11.6 - 14.8)	10.8 (9.8 - 11.8)	5.7
4AB2	50	27.7 (21.9 - 33.5)	14.7 (12.3 - 17.2)	3.7	80	23.4 (18.7 - 28.0)	11.9 (9.6 - 14.2)	3.6	130	25.0 (21.4 - 28.7)	13.0 (11.3 - 14.7)	3.6
4AB3	25	16.2 (12.4 - 20.1)	23.1 (19.2 - 27.0)	9.9	258	19.7 (17.4 - 21.9)	23.1 (21.8 - 24.4)	8.2	283	19.4 (17.3 - 21.4)	23.1 (21.8 - 24.3)	8.3
4AB4	29	27.3 (21.4 - 33.2)	27.7 (24.0 - 31.3)	7.1	194	24.9 (22.0 - 27.8)	25.6 (23.7 - 27.5)	7.2	223	25.2 (22.5 - 27.8)	25.9 (24.2 - 27.6)	7.2
4AB5	28	55.4 (22.6 - 88.2)	34.9 (26.6 - 43.1)	4.4	79	37.0 (27.0 - 47.0)	23.7 (19.4 - 28.0)	4.5	107	41.8 (30.4 - 53.2)	26.6 (22.7 - 30.5)	4.5
4AB6	15	48.3 (32.6 - 63.9)	44.3 (32.7 - 55.9)	6.4	94	32.2 (27.9 - 36.6)	35.5 (31.5 - 39.6)	7.7	109	34.4 (30.0 - 38.9)	36.7 (32.9 - 40.6)	7.5
4AB7	12	67.6 (41.4 - 93.8)	53.8 (35.8 - 71.7)	5.6	75	46.5 (38.1 - 54.9)	34.7 (29.3 - 40.2)	5.2	87	49.4 (41.2 - 57.7)	37.3 (31.8 - 42.8)	5.3
Total episodes	217				973				1,190			

NOTE 1: Where the number of episodes < 5 details are not given for reasons of privacy and accuracy.

NOTE 2: Analysis includes first admission, complete episodes only

AN-SNAP V4 classes for Brain Dysfunction

Class	Description of AN-SNAP class
4AZ1	Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≥ 49
4AZ2	Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≤ 48
4AB1	Brain dysfunction, weighted FIM motor 71-91, FIM cognition 26-35
4AB2	Brain dysfunction, weighted FIM motor 71-91, FIM cognition 5-25
4AB3	Brain dysfunction, weighted FIM motor 41-70, FIM cognition 26-35
4AB4	Brain dysfunction, weighted FIM motor 41-70, FIM cognition 17-25
4AB5	Brain dysfunction, weighted FIM motor 41-70, FIM cognition 5-16
4AB6	Brain dysfunction, weighted FIM motor 29-40
4AB7	Brain dysfunction, weighted FIM motor 19-28
4API	Major Multiple Trauma, weighted FIM motor 19-91

All Brain Dysfunction impairment codes

Non-traumatic brain dysfunction

- 2.11 Sub-arachnoid haemorrhage
- 2.12 Anoxic brain damage
- 2.13 Other non-traumatic brain dysfunction

Traumatic brain dysfunction

- 2.21 Open injury
- 2.22 Closed injury

Major Multiple Trauma

- 14.1 Brain + spinal cord injury
- 14.2 Brain + multiple fracture/amputation

Brain Dysfunction LOS and FIM Change Benchmarks in Australia and New Zealand by AN-SNAP V3, Calendar Year 2022



AN-SNAP class	Specialist Brain Units				Non Specialist Brain Units				All AROC Facilities			
	Length of stay		FIM change	FIM gain per week	Length of stay		FIM change	FIM gain per week	Length of stay		FIM change	FIM gain per week
	No.	Mean (95%CI)	Mean (95%CI)		No.	Mean (95%CI)	Mean (95%CI)		No.	Mean (95%CI)	Mean (95%CI)	
Traumatic episodes												
3-202	43	110.9 (83.3 - 138.5)	63.1 (53.1 - 73.1)	4.0	14	67.6 (47.7 - 87.5)	40.3 (24.8 - 55.8)	4.2	57	100.3 (78.2 - 122.4)	57.5 (48.7 - 66.3)	4.0
3-210	12	15.5 (10.0 - 21.0)	11.8 (6.2 - 17.3)	5.3	56	12.9 (10.2 - 15.6)	14.8 (12.4 - 17.3)	8.1	68	13.3 (10.9 - 15.8)	14.3 (12.0 - 16.5)	7.5
3-211	90	21.9 (18.4 - 25.4)	12.5 (10.4 - 14.5)	4.0	132	13.3 (12.1 - 14.6)	15.0 (13.4 - 16.5)	7.8	222	16.8 (15.1 - 18.5)	14.0 (12.7 - 15.2)	5.8
3-212	51	22.7 (16.8 - 28.6)	16.4 (13.6 - 19.1)	5.0	32	21.3 (15.9 - 26.7)	16.0 (12.4 - 19.6)	5.3	83	22.2 (18.0 - 26.3)	16.2 (14.0 - 18.4)	5.1
3-213	110	37.1 (28.8 - 45.4)	25.7 (23.7 - 27.8)	4.9	45	34.0 (22.4 - 45.6)	17.9 (14.5 - 21.3)	3.7	155	36.2 (29.4 - 43.0)	23.5 (21.6 - 25.3)	4.5
3-214	92	58.2 (44.1 - 72.3)	50.1 (46.2 - 54.0)	6.0	208	27.0 (24.4 - 29.5)	29.8 (27.5 - 32.0)	7.7	300	36.5 (31.6 - 41.5)	36.0 (33.8 - 38.2)	6.9
3-215	25	102.3 (76.8 - 127.7)	60.6 (49.7 - 71.4)	4.1	38	42.8 (34.6 - 50.9)	31.3 (23.9 - 38.6)	5.1	63	66.4 (53.0 - 79.7)	42.9 (35.8 - 50.0)	4.5
3-238	23	20.6 (13.6 - 27.6)	10.4 (7.9 - 12.8)	3.5	5	16.6 (12.0 - 21.2)	10.6 (4.3 - 16.9)	4.5	28	19.9 (14.1 - 25.7)	10.4 (8.2 - 12.7)	3.7
3-239	64	28.1 (24.3 - 31.9)	30.1 (28.0 - 32.3)	7.5	45	21.1 (16.7 - 25.6)	25.6 (22.1 - 29.1)	8.5	109	25.2 (22.3 - 28.2)	28.3 (26.3 - 30.2)	7.8
3-240	48	51.0 (41.2 - 60.9)	49.4 (45.7 - 53.0)	6.8	30	45.3 (32.7 - 57.9)	42.7 (37.8 - 47.7)	6.6	78	48.8 (41.1 - 56.6)	46.8 (43.8 - 49.8)	6.7
3-241	24	77.5 (55.5 - 99.5)	74.3 (68.7 - 79.9)	6.7	7	59.7 (29.9 - 89.5)	51.3 (32.7 - 69.9)	6.0	31	73.5 (55.4 - 91.6)	69.1 (62.4 - 75.8)	6.6
Total episodes	582				612				1,194			
Non-Traumatic episodes												
3-202	17	115.8 (81.5 - 150.0)	29.7 (15.1 - 44.3)	1.8	24	61.6 (43.4 - 79.7)	38.6 (25.5 - 51.8)	4.4	41	84.0 (64.8 - 103.3)	34.9 (25.2 - 44.7)	2.9
3-210	28	11.9 (9.7 - 14.1)	14.0 (10.9 - 17.1)	8.2	138	13.4 (11.9 - 15.0)	14.1 (12.7 - 15.6)	7.4	166	13.2 (11.9 - 14.5)	14.1 (12.8 - 15.4)	7.5
3-211	45	19.5 (14.4 - 24.5)	15.2 (12.0 - 18.5)	5.5	207	16.3 (14.7 - 17.8)	17.6 (16.3 - 18.8)	7.6	252	16.8 (15.3 - 18.4)	17.1 (16.0 - 18.3)	7.1
3-212	32	28.8 (22.3 - 35.3)	20.8 (17.3 - 24.2)	5.0	67	22.9 (16.8 - 29.0)	16.6 (14.1 - 19.0)	5.1	99	24.8 (20.1 - 29.5)	17.9 (15.9 - 19.9)	5.1
3-213	42	44.0 (21.5 - 66.6)	20.3 (15.4 - 25.2)	3.2	84	35.0 (25.4 - 44.6)	16.3 (13.0 - 19.6)	3.3	126	38.0 (28.1 - 47.9)	17.6 (14.9 - 20.4)	3.2
3-214	40	39.3 (31.6 - 47.1)	41.3 (35.0 - 47.5)	7.3	376	28.4 (26.1 - 30.6)	30.2 (28.4 - 31.9)	7.4	416	29.4 (27.2 - 31.6)	31.2 (29.5 - 32.9)	7.4
3-215	13	82.3 (56.2 - 108.4)	57.8 (42.3 - 73.4)	4.9	77	56.2 (45.4 - 66.9)	35.3 (29.8 - 40.8)	4.4	90	59.9 (49.9 - 70.0)	38.6 (33.2 - 44.0)	4.5
Total episodes	217				973				1,190			

NOTE 1: Where the number of episodes < 5 details are not given for reasons of privacy and accuracy.

NOTE 2: Analysis includes first admission, complete episodes only

AN-SNAP V3 classes for Brain Dysfunction

Class	Description of AN-SNAP class
3-202	Brain, Neurological, Spinal & Major Multiple Trauma, FIM 13
3-210	Brain Dysfunction, FIM motor 56-91, FIM cognition 32-35
3-211	Brain Dysfunction, FIM motor 56-91, FIM cognition 24-31
3-212	Brain Dysfunction, FIM motor 56-91, FIM cognition 20-23
3-213	Brain Dysfunction, FIM motor 56-91, FIM cognition 5-19
3-214	Brain Dysfunction, FIM motor 24-55
3-215	Brain Dysfunction, FIM motor 14-23
3-238	Major Multiple Trauma, FIM total 101-126
3-239	Major Multiple Trauma, FIM total 74-100 or Burns
3-240	Major Multiple Trauma, FIM total 44-73
3-241	Major Multiple Trauma, FIM total 19-43

All Brain Dysfunction impairment codes

Non-traumatic brain dysfunction

- 2.11 Sub-arachnoid haemorrhage
- 2.12 Anoxic brain damage
- 2.13 Other non-traumatic brain dysfunction

Traumatic brain dysfunction

- 2.21 Open injury
- 2.22 Closed injury

Major Multiple Trauma

- 14.1 Brain + spinal cord injury
- 14.2 Brain + multiple fracture/amputation