

AROC Impairment Specific Report

Brain Injury Report

INPATIENT – PATHWAY 3

July 2018 – June 2019

Anywhere Hospital



**Australasian
Faculty of
Rehabilitation
Medicine**



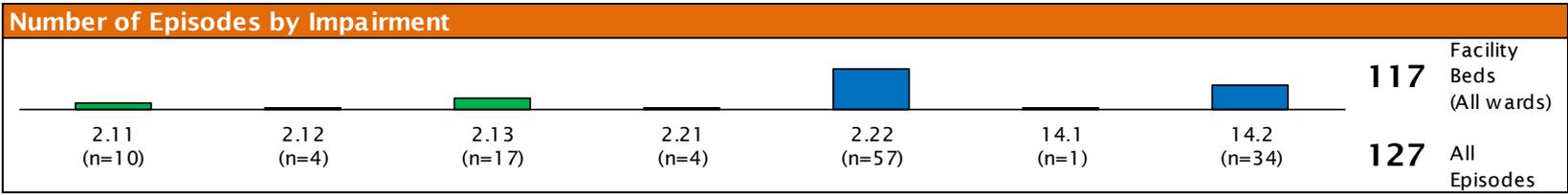
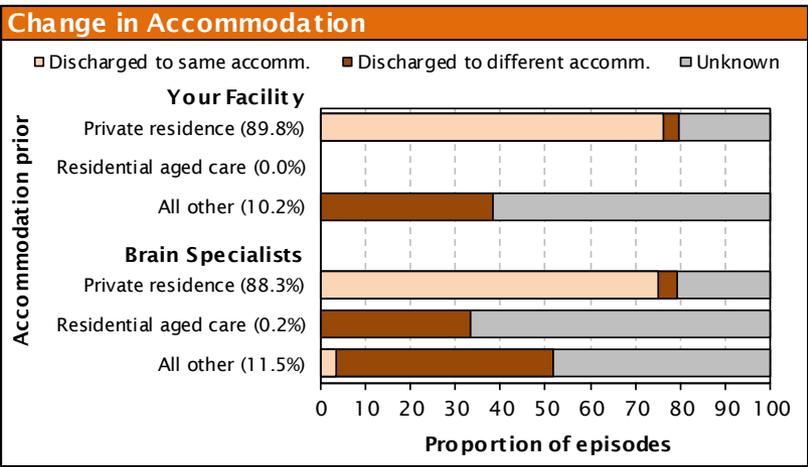
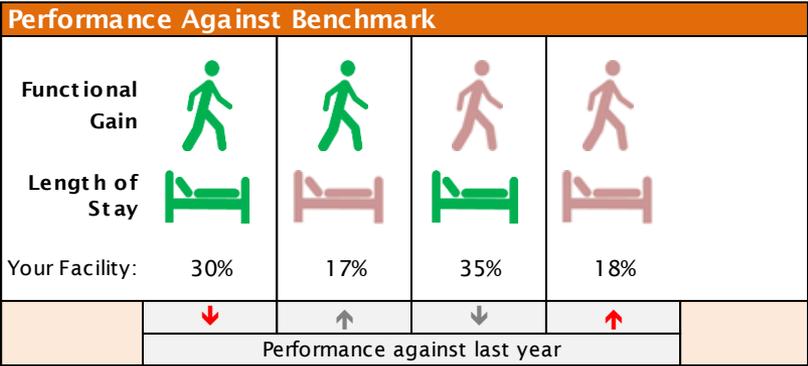
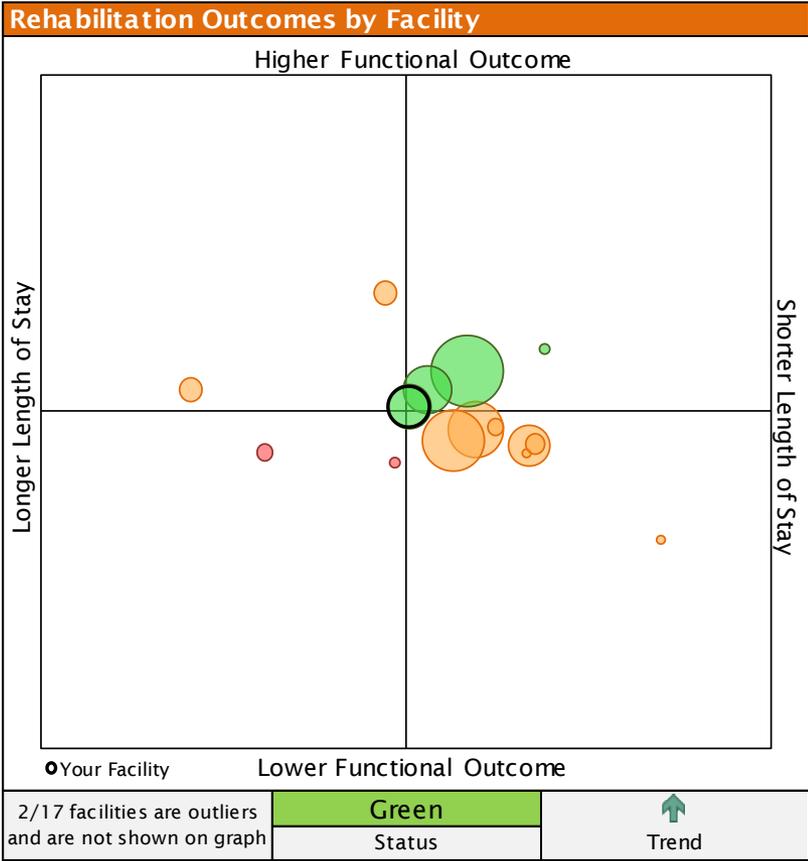
australian health services
research institute



**UNIVERSITY
OF WOLLONGONG
AUSTRALIA**

Brain injury dashboard.....	3
Data used in this report.....	5
Brain injury impairment codes.....	6
Brain injury AN-SNAP classes.....	7
The BIG picture.....	8
Review of FIM item scoring by AN-SNAP class.....	36
Outcomes analysis.....	48
Explanatory data.....	85
Brain injury specific data.....	111
Low FIM score summary report.....	122
Appendix 1: Glossary.....	132
Appendix 2: AROC impairment codes.....	140
Appendix 3: AN-SNAP classes.....	142
Acknowledgements.....	143
AROC contact details.....	144

Brain Injury Dashboard



Brain Injury Dashboard

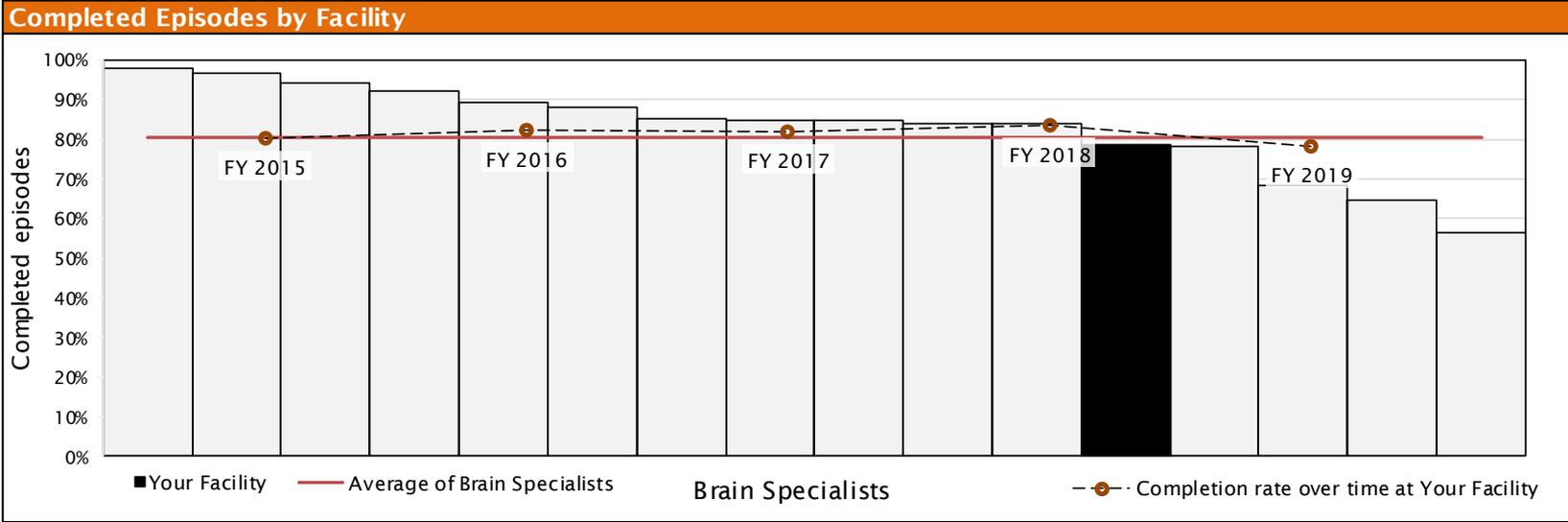


Key Indicators*	
Your Facility	Brain Specialists
Average Age: 46.7	Average Age: 46.3
Mortality Rate: 0.0%	Mortality Rate: 0.1%
% with at least one comorbidity: 29%	% with at least one comorbidity: 40%
% with at least one complication: 26%	% with at least one complication: 31%
% episodes with start delays: 22%	% episodes with start delays: 20%
Days between onset and rehab episode: 26.4	Days between onset and rehab episode: 29.5
Days between clinically rehab ready & start date: 1.7	Days between clinically rehab ready & start date: 1.7

Facility FIM Training*	
FIM Credentialed Staff per 100 Episodes	FIM Credentialed Facility Trainers
 11.7 Your Facility	3 Your Facility
 10.8 Brain Specialists (Mean)	2 AROC Suggested Minimum

* Mean value provided unless otherwise specified

* This includes all impairments from all wards



- Brain injury episodes discharged during the reporting period (July 2018 – June 2019) and time series data covering five years.
- Benchmark group is first admission episodes at SPECIALIST brain injury units in Australia and New Zealand.
- Casemix analysis uses version 4 AN-SNAP classes (Appendix 3). This has been calculated separately for traumatic and non-traumatic episodes since FY2017.
- Data is summarised for your facility, all SPECIALIST and all NON-SPECIALIST services. Where data is provided by specialist facility your facility code is ANYWHERE.
- Unit of counting is by concatenated* episode, not by patient.
- Where there are less than five episodes within a subgroup, summary data are not provided. Missing data and ungroupable AN-SNAP classes are excluded from figures, but are included in tables.

Note: Appendix 1 (Glossary) contains definitions of concepts referred to in this report. An understanding of these will help with interpretation of the data. This report should be considered in conjunction with the Outcome Benchmarks Report for your facility.

*Refer to Appendix 1 for more details about the process of data concatenation.

Brain injury episodes were identified as those with the following AROC impairment codes:

Traumatic

- 2.21 – Brain Dysfunction, Open injury
- 2.22 – Brain Dysfunction, Closed injury
- 14.1 – Major Multiple Trauma, Brain + Brain injury
- 14.2 – Major Multiple Trauma, Brain + multi fracture/amputation

Non-traumatic

- 2.11 – Brain Dysfunction, Sub-arachnoid haemorrhage
- 2.12 – Brain Dysfunction, Anoxic brain damage
- 2.13 – Brain Dysfunction, Other non-traumatic brain dysfunction

Note: A list of all impairment codes can be found in Appendix 2

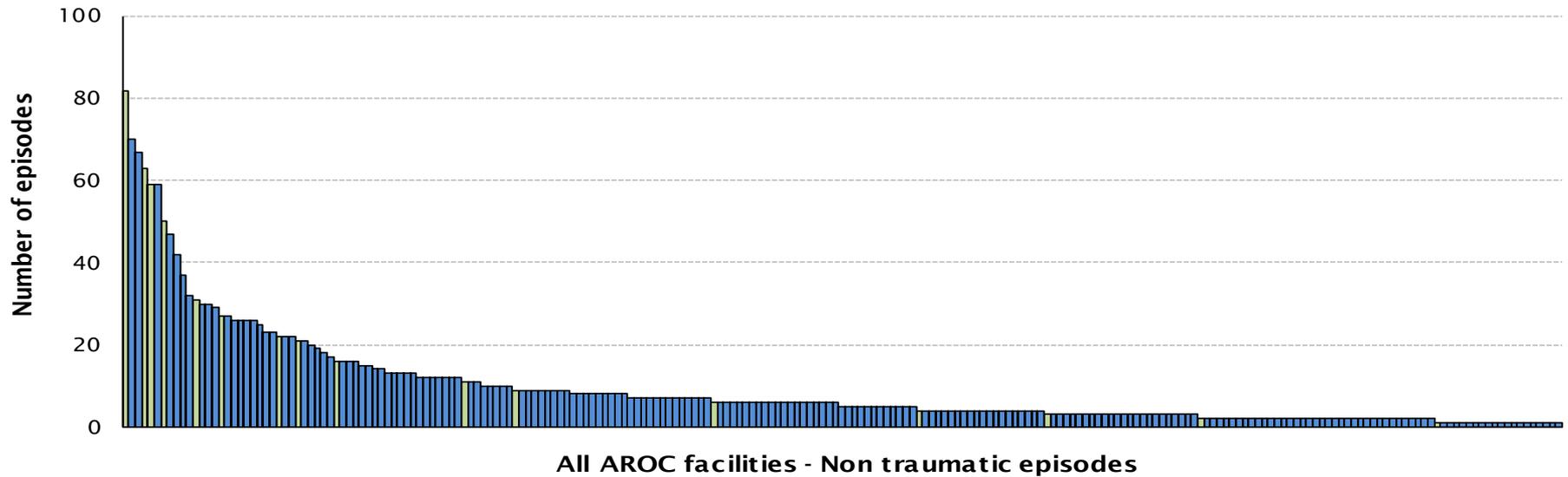
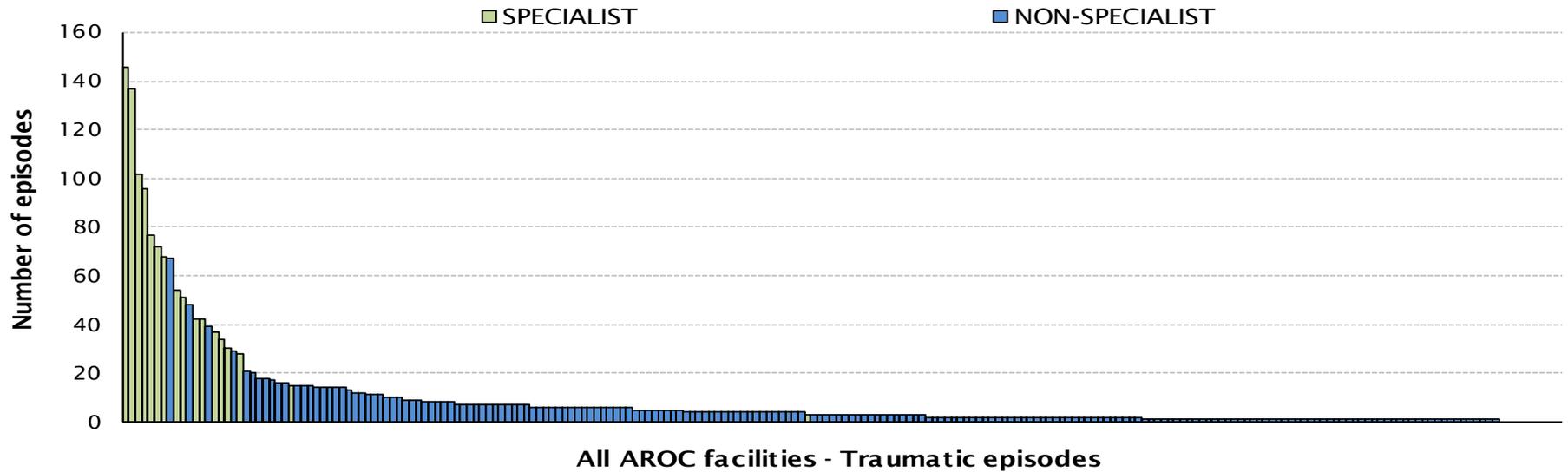
Levels of functioning for brain injury are categorised by the following version 4 AN-SNAP classes:

- 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
- 4AP1 – Major Multiple Trauma, weighted FIM motor 19-91
- 4AZ1 – Weighted FIM motor score 13-18, Brain, MMT, Age \geq 49
- 4AZ2 – Weighted FIM motor score 13-18, Brain, MMT, Age \leq 48

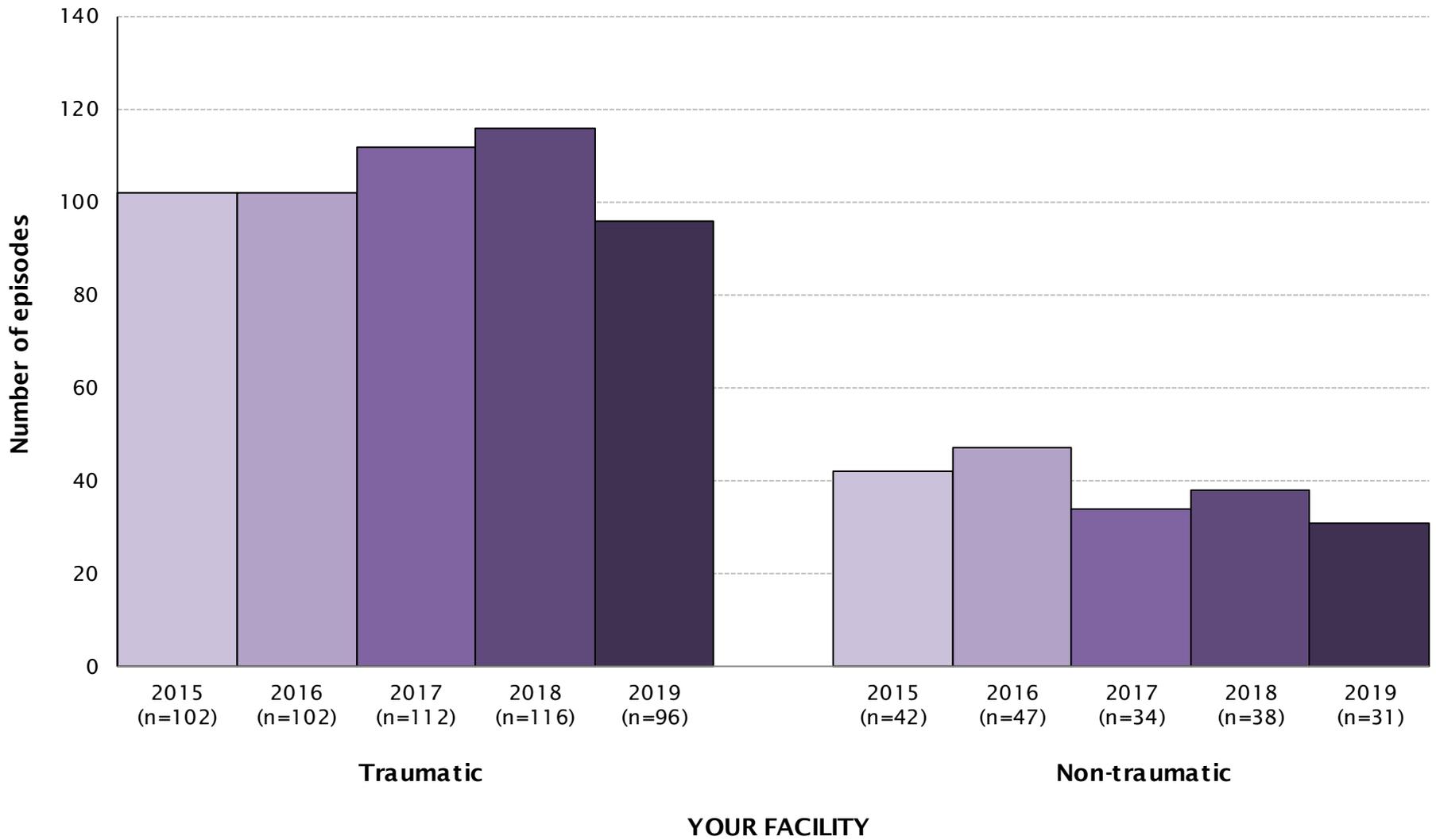
Note: A list of all AN-SNAP classes can be found in Appendix 3

The BIG picture

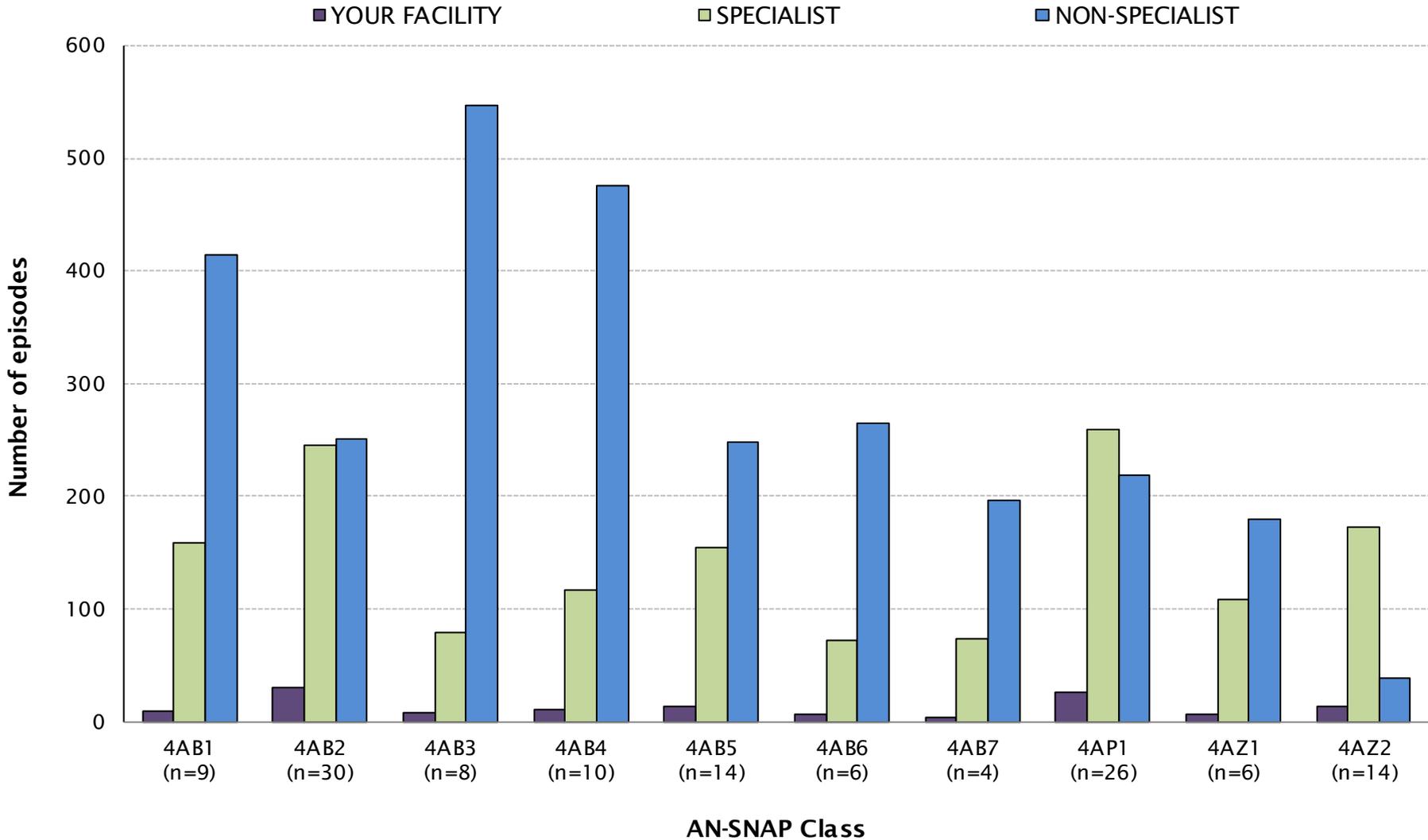
Volume of episodes by facilities treating brain injury



Number of traumatic and non-traumatic episodes over time at your facility



Number of episodes by AN-SNAP class

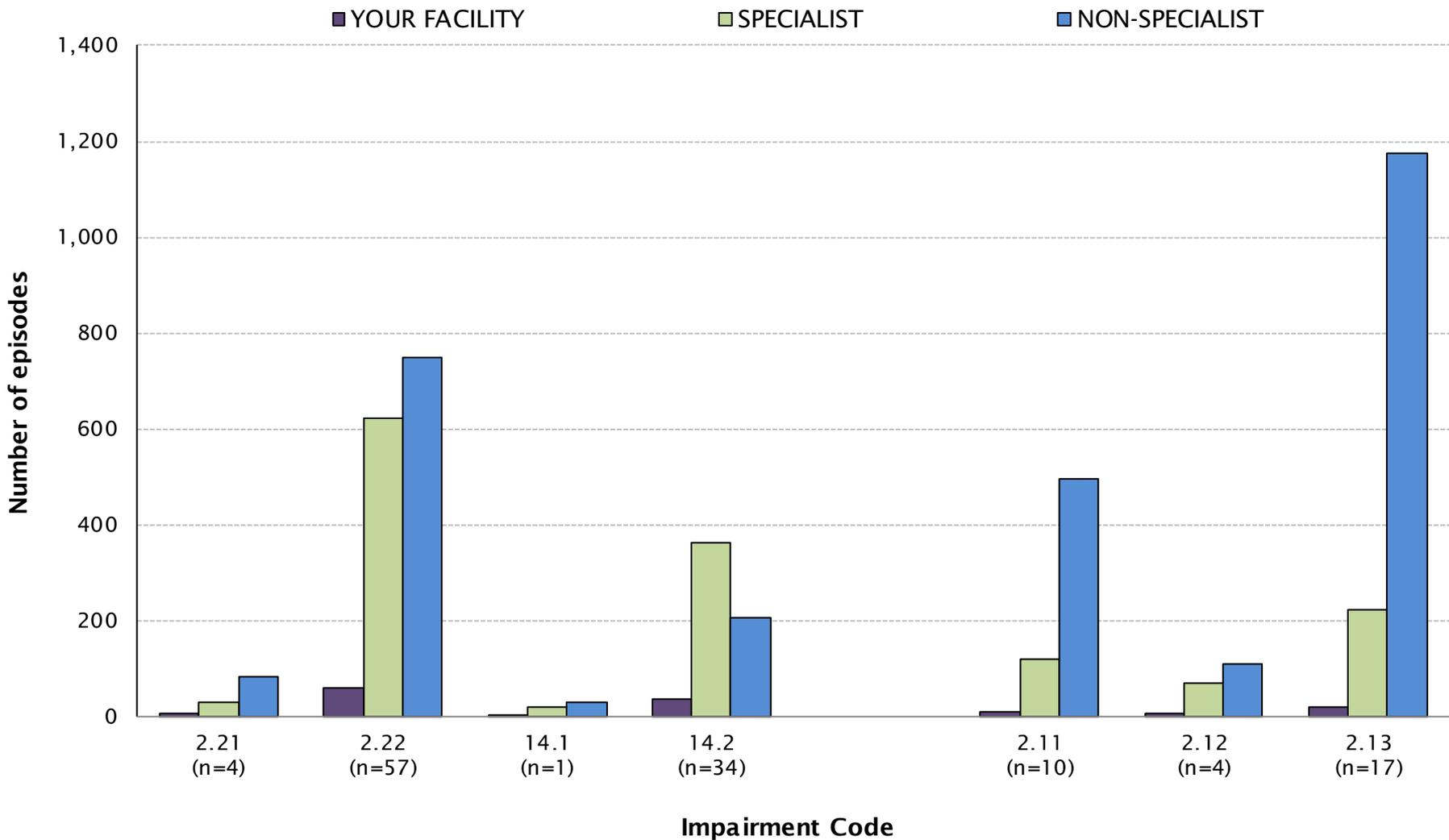


Number of episodes by AN-SNAP class

AN-SNAP class	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	No.	%	No.	%	No.	%
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	9	7.1	159	11.0	414	14.6
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	30	23.6	246	17.1	251	8.9
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	8	6.3	79	5.5	547	19.3
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	10	7.9	117	8.1	476	16.8
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	14	11.0	154	10.7	248	8.8
4AB6 (BI, weighted FIM motor 29-40)	6	4.7	72	5.0	265	9.4
4AB7 (BI, weighted FIM motor 19-28)	4	3.1	73	5.1	197	7.0
4AP1 (MMT, weighted FIM motor 19-91)	26	20.5	259	18.0	219	7.7
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	6	4.7	109	7.6	179	6.3
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	14	11.0	173	12.0	38	1.3
All Brain AN-SNAP classes	127	100.0	1,441	100.0	2,834	100.0

Note: 0 episode(s) at YOUR FACILITY, 0 episode(s) at SPECIALIST facilities and 10 episode(s) at NON-SPECIALIST facilities had an AN-SNAP class of 499A.

Number of traumatic and non-traumatic episodes by impairment

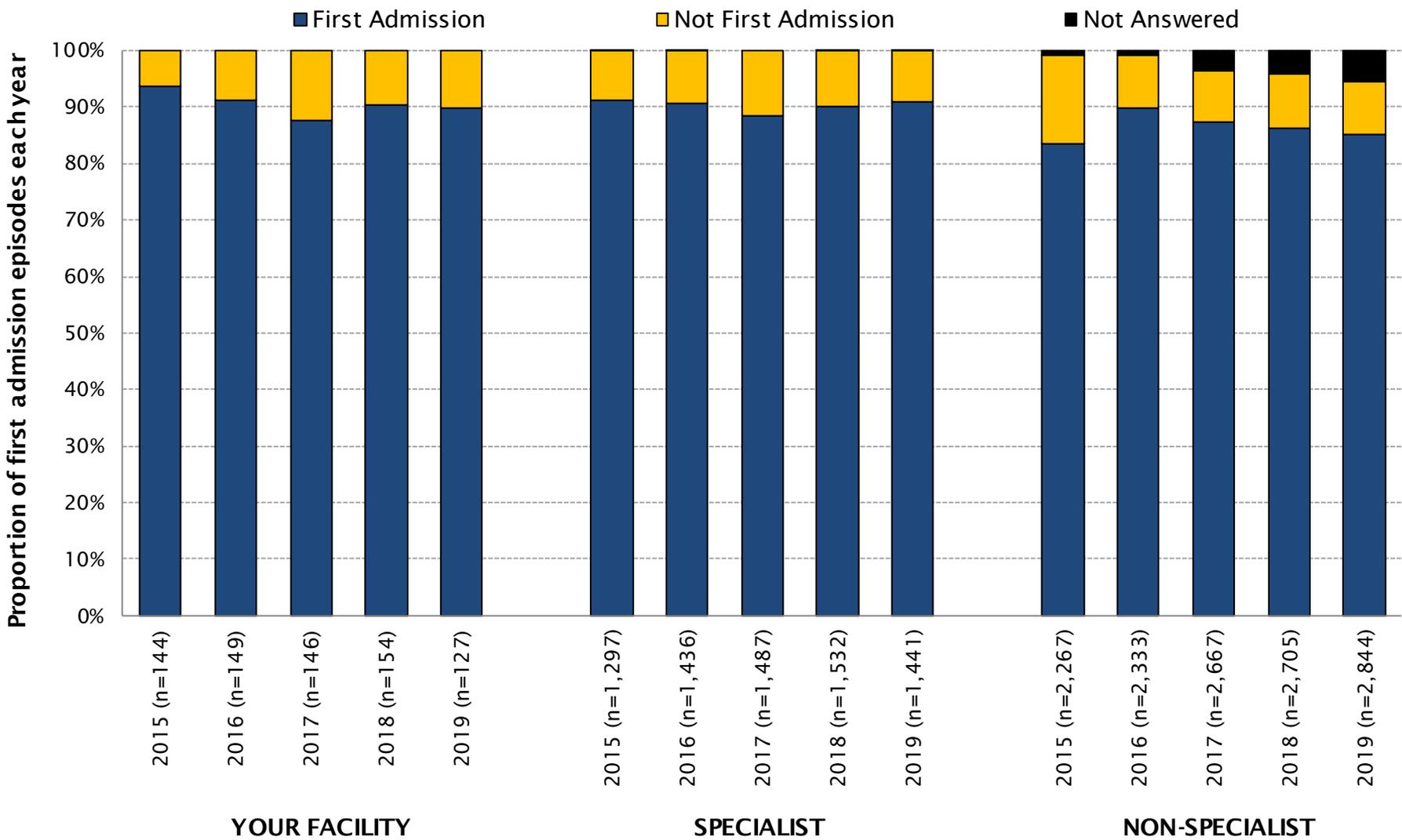


Number of traumatic and non-traumatic episodes by impairment

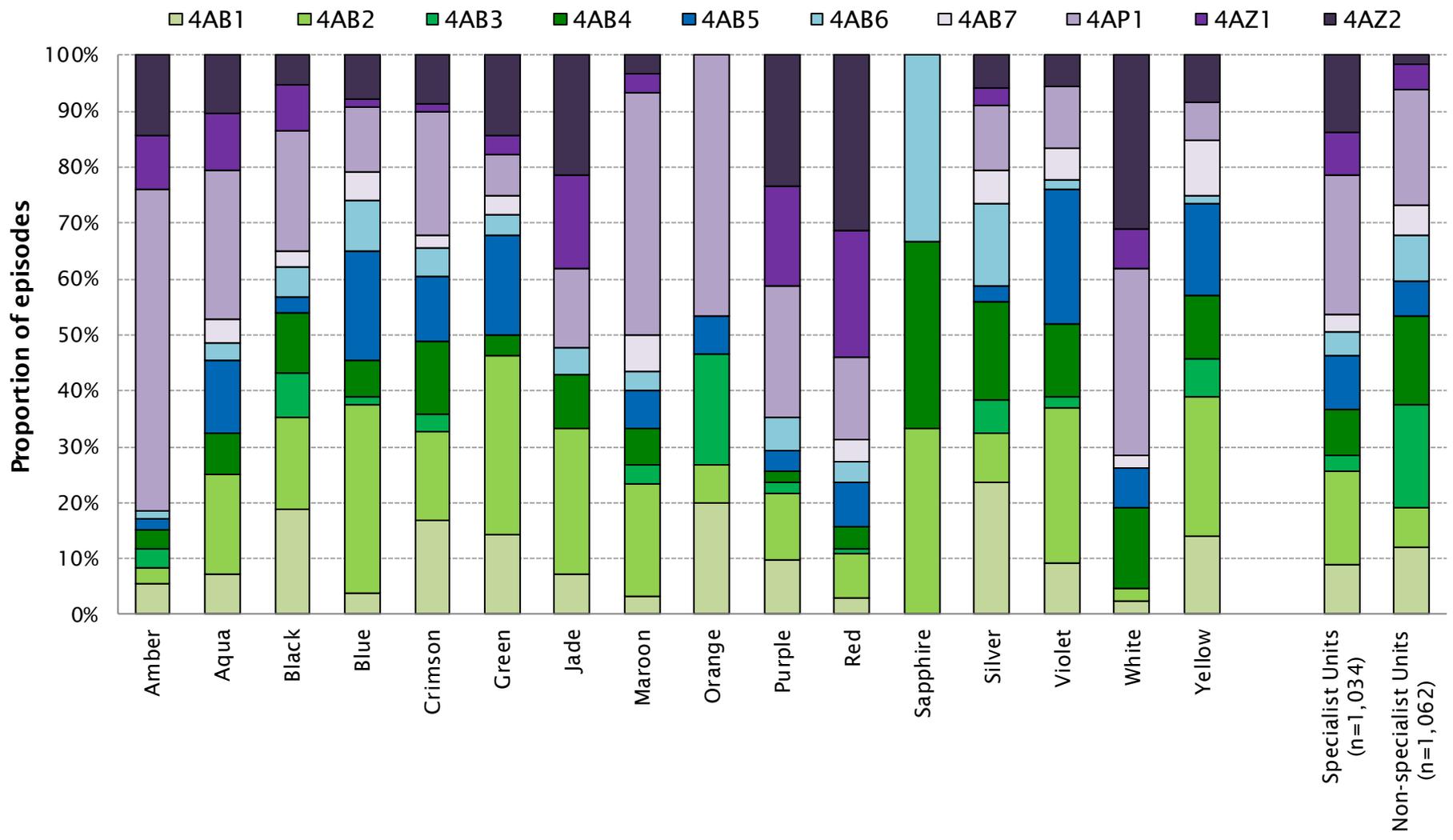


Impairment	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	No.	%	No.	%	No.	%
<u>Traumatic impairments</u>						
2.21 Open injury	4	4.2	29	2.8	82	7.7
2.22 Closed injury	57	59.4	623	60.3	748	70.2
14.1 MMT: brain+spine	1	1.0	19	1.8	29	2.7
14.2 MMT: brain+other	34	35.4	363	35.1	206	19.3
Total TBI	96	100.0	1,034	100.0	1,065	100.0
<u>Non-traumatic impairments</u>						
2.11 Sub-arachnoid haemorrhage	10	32.3	117	28.7	494	27.8
2.12 Anoxic brain damage	4	12.9	69	17.0	109	6.1
2.13 Other NTBI	17	54.8	221	54.3	1,176	66.1
Total NTBI	31	100.0	407	100.0	1,779	100.0
Total BI	127		1,441		2,844	

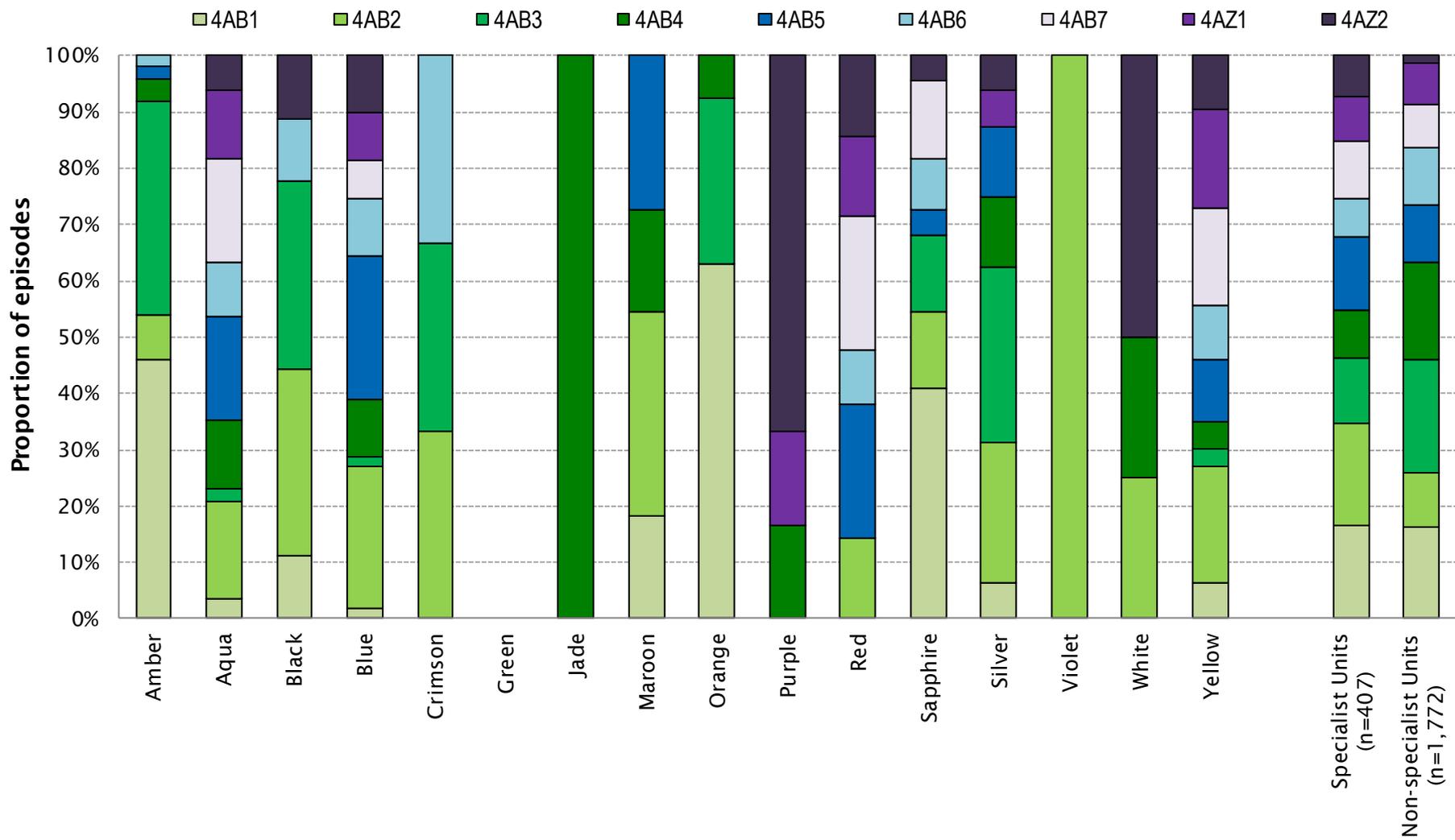
Proportion of first admission episodes over time



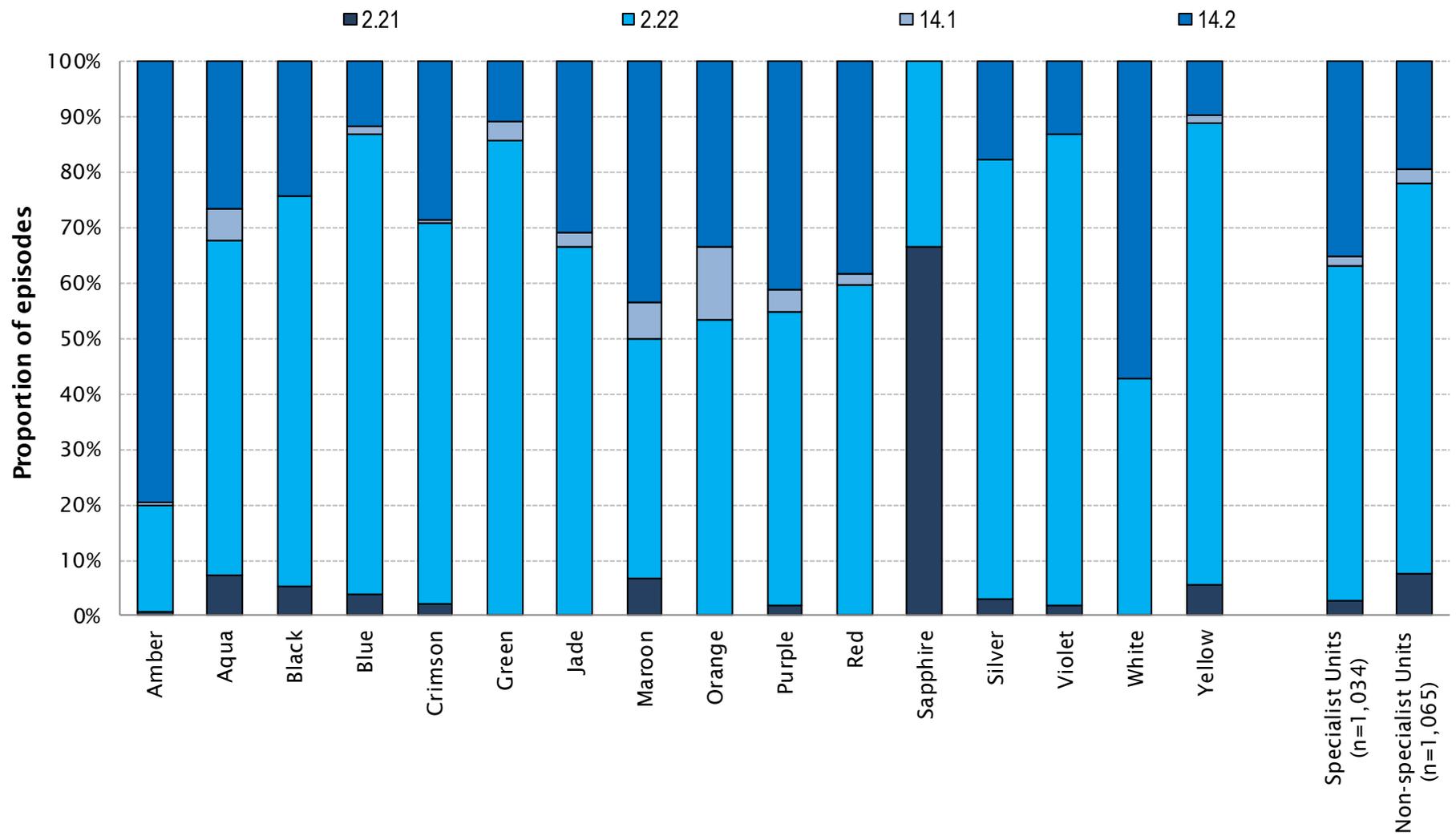
Proportion of traumatic episodes by AN-SNAP class and specialist facility



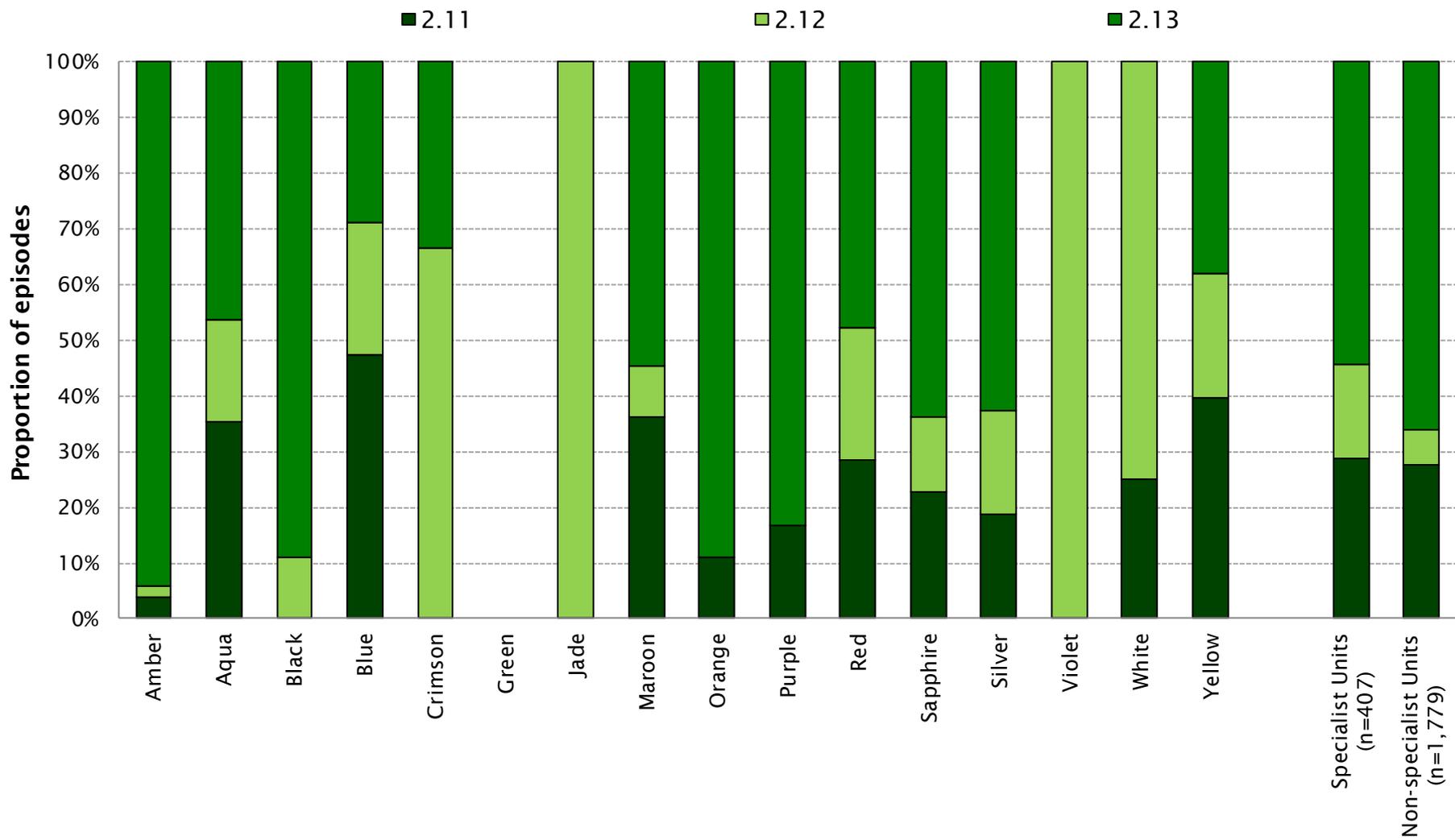
Proportion of non-traumatic episodes by AN-SNAP class and specialist facility



Proportion of traumatic episodes by impairment and specialist facility



Proportion of non-traumatic episodes by impairment and specialist facility



Traumatic and non-traumatic episodes by impairment and AN-SNAP class

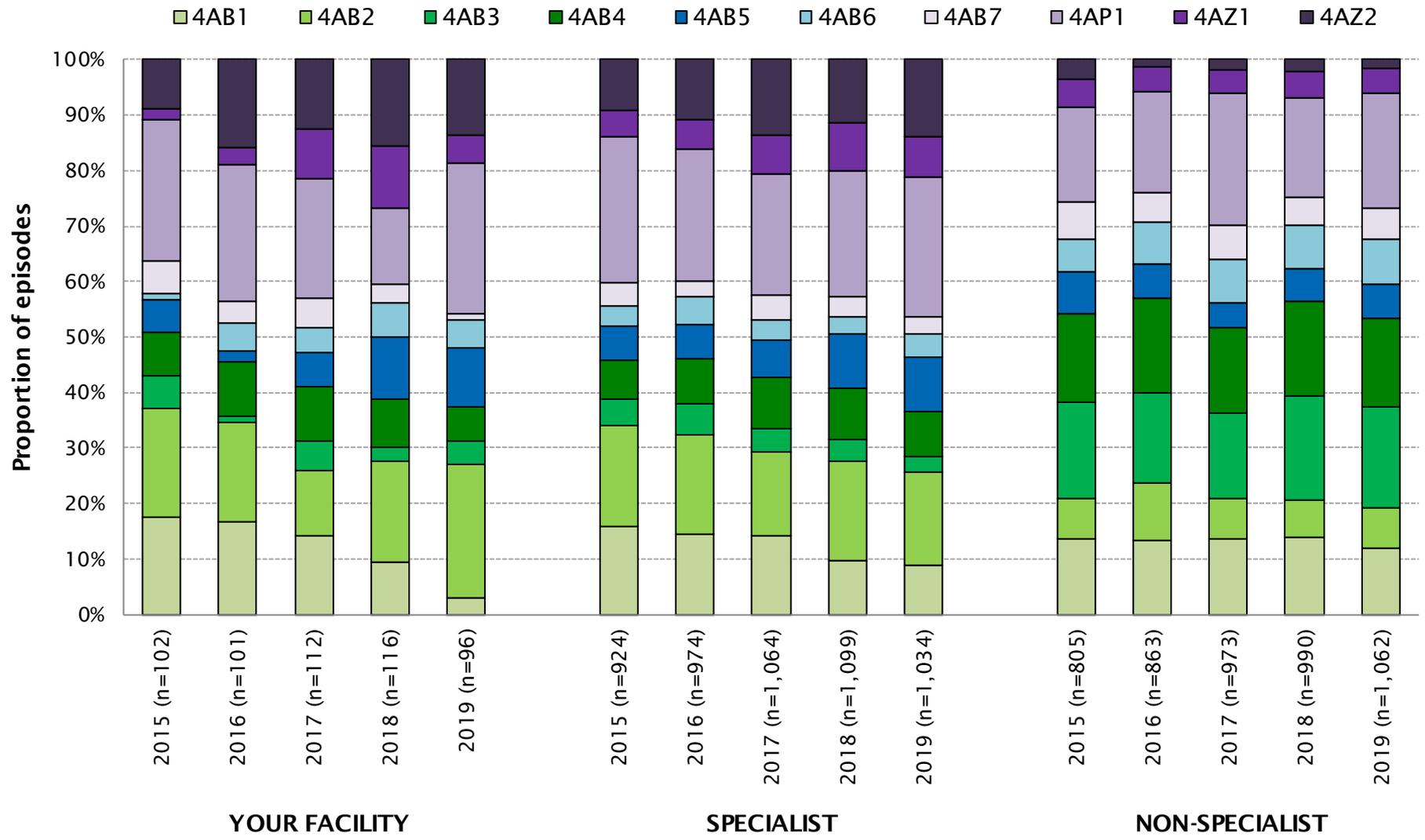


Traumatic Impairment	YOUR FACILITY										Total	SPECIALIST	NON-SPECIALIST	
	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AP1	4AZ1	4AZ2				
2.21 Open injury	0	2	0	0	1	0	0	0	0	0	1	4	29	82
2.22 Closed injury	3	21	4	6	9	5	1	0	2	6	57	623	745	
14.1 MMT: brain+spine	0	0	0	0	0	0	0	1	0	0	1	19	29	
14.2 MMT: brain+other	0	0	0	0	0	0	0	25	3	6	34	363	206	
Total	3	23	4	6	10	5	1	26	5	13	96	1,034	1,062	
SPECIALIST	92	172	31	83	101	44	32	259	77	143	1,034			
NON-SPECIALIST	128	76	193	170	65	87	59	219	49	16	1,062			

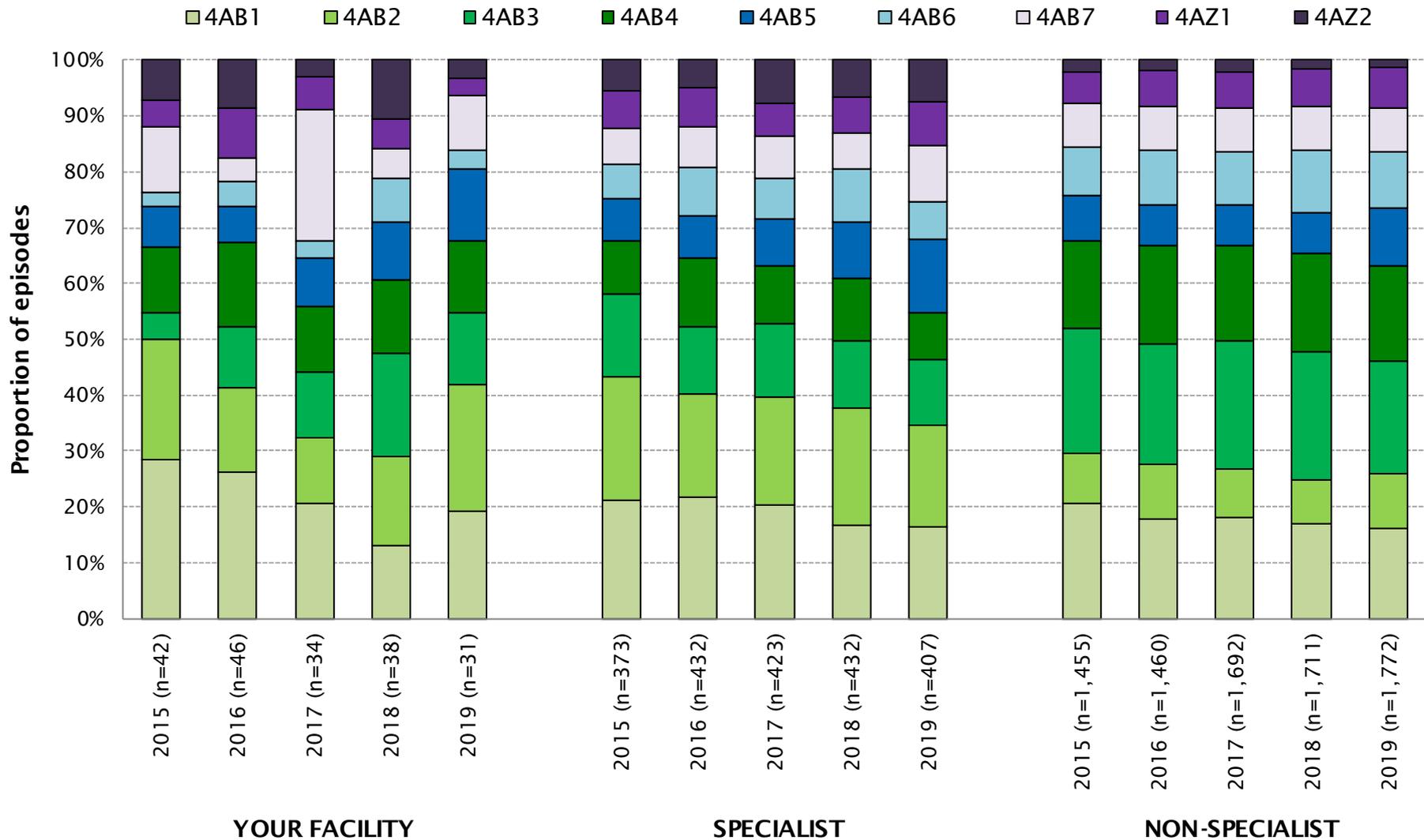
Non-traumatic Impairment	YOUR FACILITY										Total	SPECIALIST	NON-SPECIALIST
	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AZ1	4AZ2				
2.11 Sub-arachnoid haemorrhage	1	1	3	1	1	0	2	1	0	0	10	117	490
2.12 Anoxic brain damage	0	2	0	0	1	0	1	0	0	0	4	69	109
2.13 Other NTBI	5	4	1	3	2	1	0	0	1	1	17	221	1,173
Total	6	7	4	4	4	1	3	1	1	1	31	407	1,772
SPECIALIST	67	74	48	34	53	28	41	32	30	407			
NON-SPECIALIST	286	175	354	306	183	178	138	130	22	1,772			

Note: 0 episode(s) at YOUR FACILITY, 0 episode(s) at SPECIALIST facilities and 10 episode(s) at NON-SPECIALIST facilities had an AN-SNAP class of 499A.

Proportion of traumatic episodes by AN-SNAP class over time



Proportion of non-traumatic episodes by AN-SNAP class over time

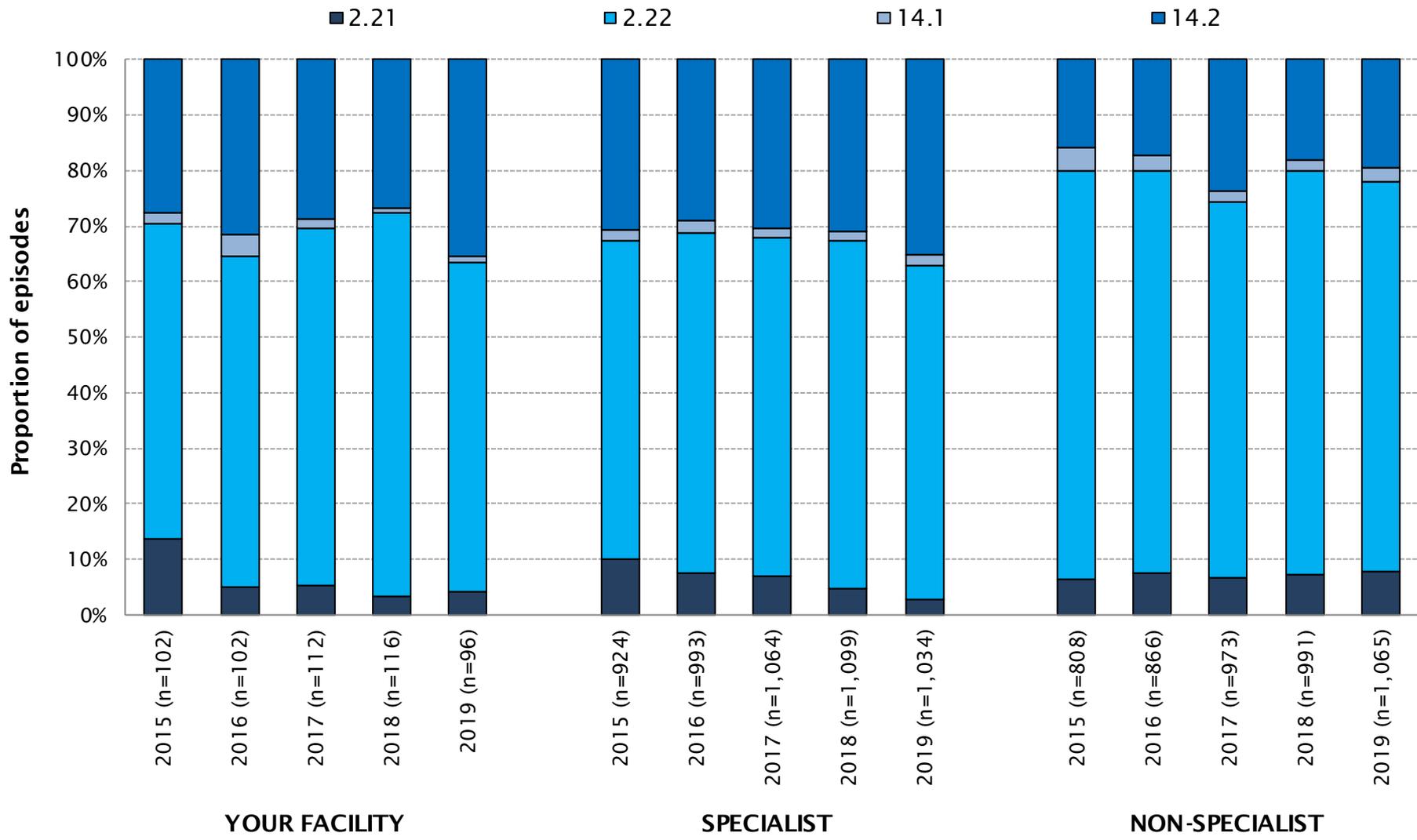


Traumatic and non-traumatic episodes by AN-SNAP class over time

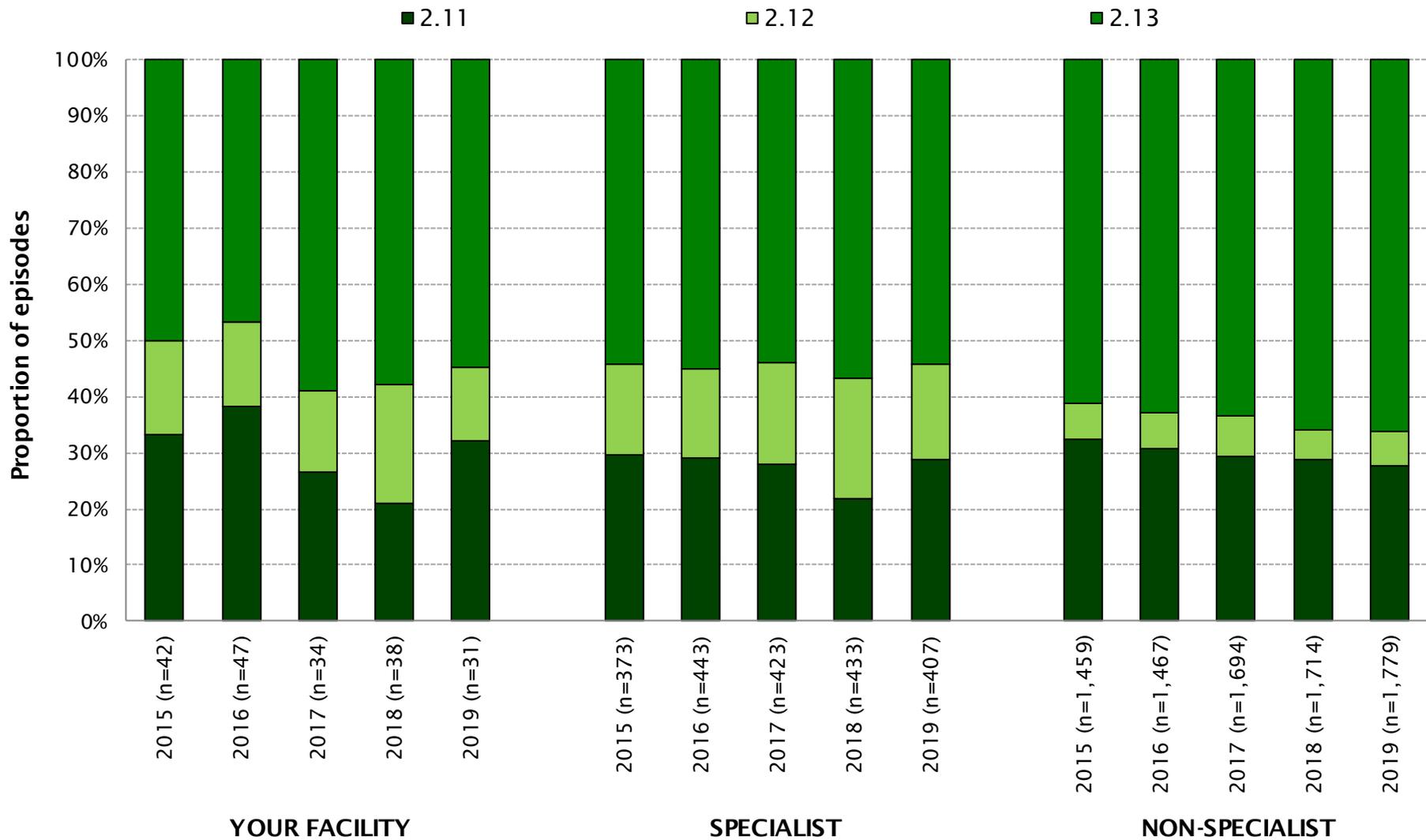
Traumatic AN-SNAP class	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	18	17	16	11	3	146	142	151	106	92	109	116	133	138	128
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	20	18	13	21	23	169	174	160	198	172	59	89	71	65	76
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	6	1	6	3	4	44	54	45	42	31	140	140	148	188	193
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	8	10	11	10	6	64	79	99	103	83	128	147	151	168	170
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	6	2	7	13	10	58	60	72	108	101	61	52	43	57	65
4AB6 (BI, weighted FIM motor 29-40)	1	5	5	7	5	32	48	37	33	44	48	67	76	79	87
4AB7 (BI, weighted FIM motor 19-28)	6	4	6	4	1	39	28	50	39	32	53	45	62	49	59
4AP1 (MMT, weighted FIM motor 19-91)	26	25	24	16	26	244	231	232	251	259	139	158	229	177	219
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	2	3	10	13	5	45	53	73	94	77	40	37	43	49	49
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	9	16	14	18	13	83	105	145	125	143	28	12	17	20	16
All Brain AN-SNAP classes	102	101	112	116	96	924	974	1,064	1,099	1,034	805	863	973	990	1,062

Non-traumatic AN-SNAP class	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	12	12	7	5	6	79	94	86	72	67	300	261	306	292	286
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	9	7	4	6	7	82	80	82	91	74	129	143	149	134	175
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	2	5	4	7	4	56	52	55	52	48	326	315	387	393	354
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	5	7	4	5	4	35	53	44	48	34	228	255	288	301	306
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	3	3	3	4	4	29	32	36	44	53	119	106	125	122	183
4AB6 (BI, weighted FIM motor 29-40)	1	2	1	3	1	23	38	30	41	28	127	146	158	193	178
4AB7 (BI, weighted FIM motor 19-28)	5	2	8	2	3	24	32	33	28	41	113	112	135	134	138
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	2	4	2	2	1	25	30	24	28	32	81	96	107	114	130
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	3	4	1	4	1	20	21	33	28	30	32	26	37	28	22
All Brain AN-SNAP classes	42	46	34	38	31	373	432	423	432	407	1,455	1,460	1,692	1,711	1,772

Proportion of traumatic episodes by impairment over time



Proportion of non-traumatic episodes by impairment over time

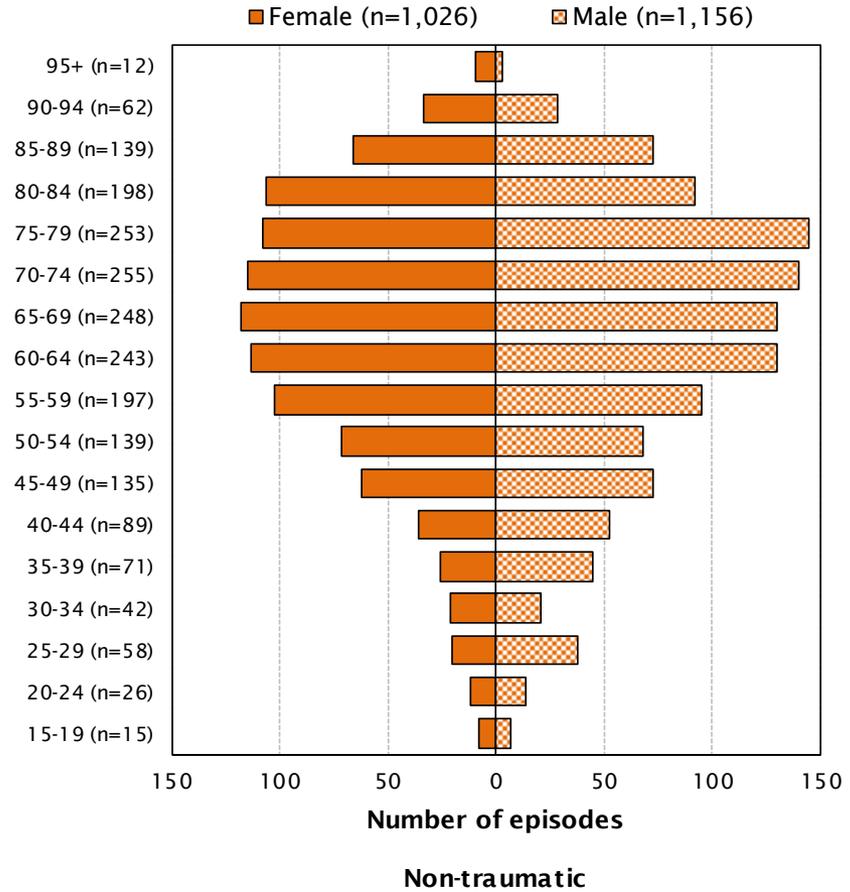
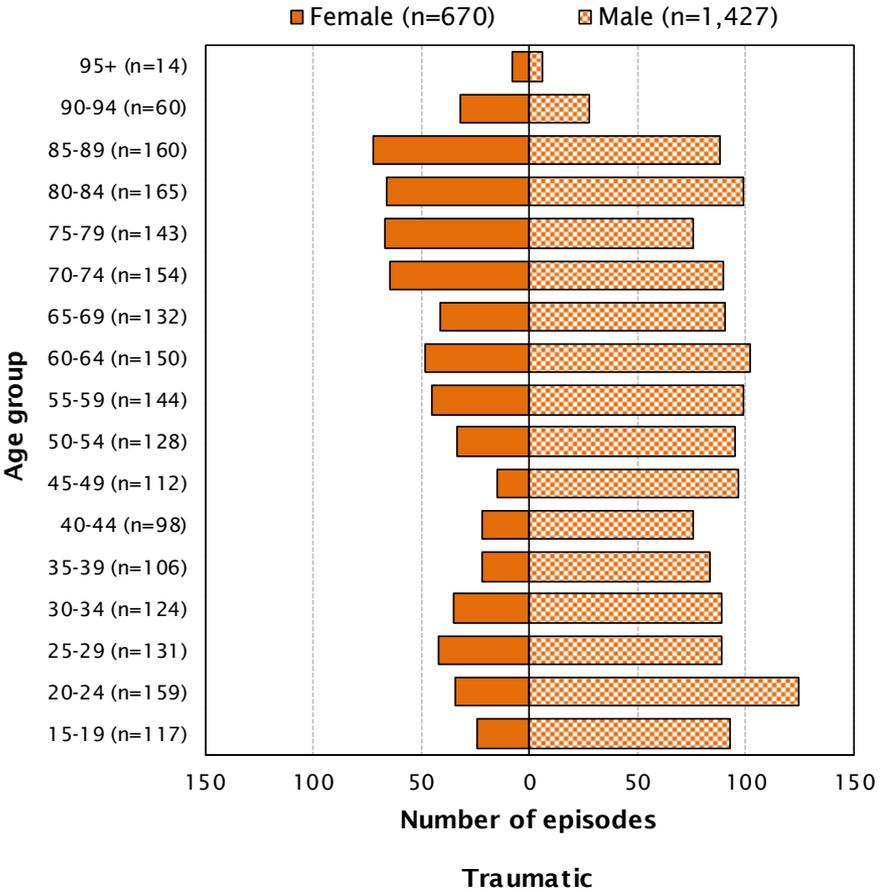


Traumatic and non-traumatic episodes by impairment over time

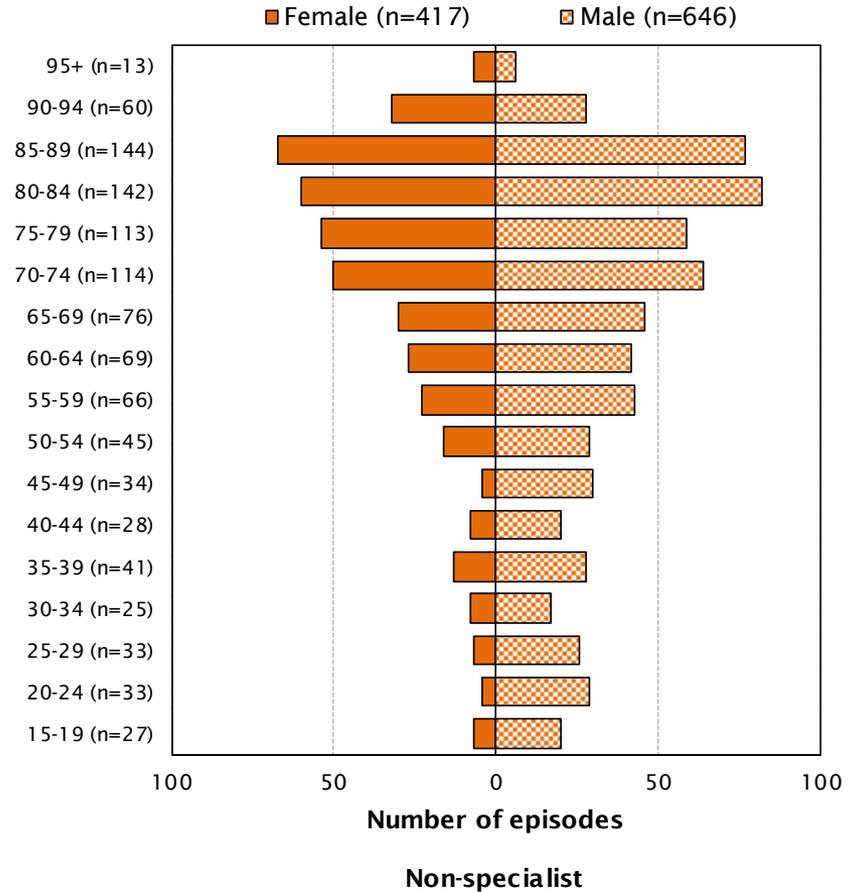
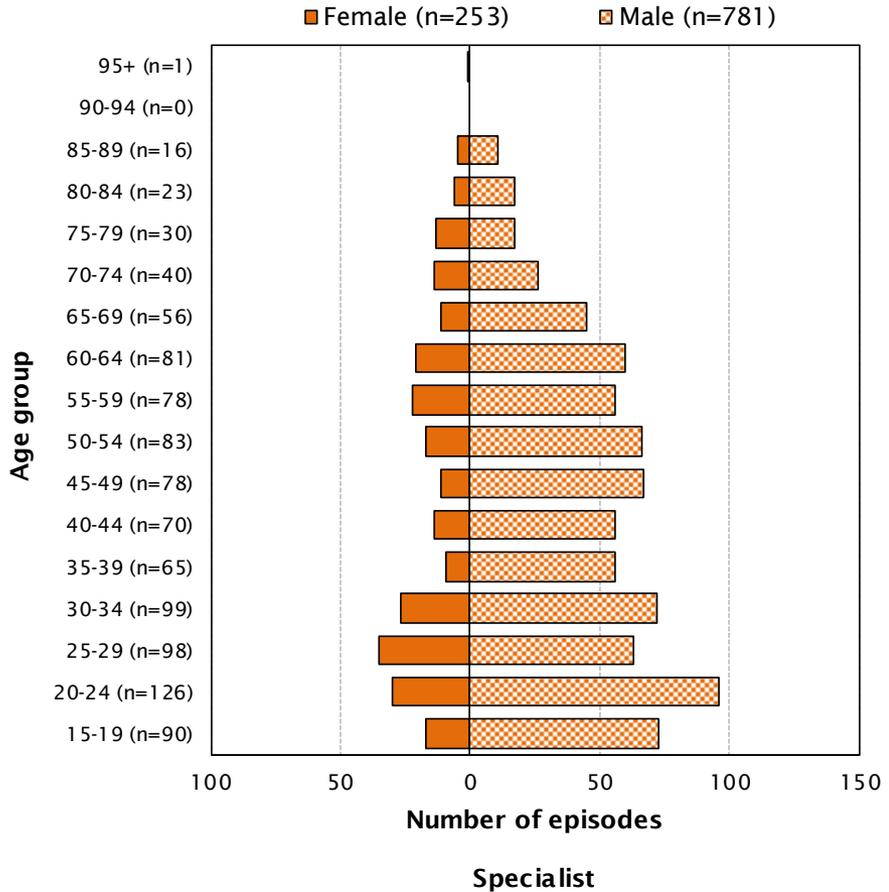


Impairment	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
<u>Traumatic impairments</u>															
2.21 Open injury	14	5	6	4	4	93	74	74	52	29	52	66	64	71	82
2.22 Closed injury	58	61	72	80	57	530	609	650	689	623	595	627	661	722	748
14.1 MMT: brain+spine	2	4	2	1	1	19	22	17	18	19	33	23	19	19	29
14.2 MMT: brain+other	28	32	32	31	34	282	288	323	340	363	128	150	229	179	206
Total TBI	102	102	112	116	96	924	993	1,064	1,099	1,034	808	866	973	991	1,065
<u>Non-traumatic impairments</u>															
2.11 Sub-arachnoid haemorrhage	14	18	9	8	10	110	129	118	95	117	474	451	499	491	494
2.12 Anoxic brain damage	7	7	5	8	4	61	70	77	92	69	92	92	123	93	109
2.13 Other NTBI	21	22	20	22	17	202	244	228	246	221	893	924	1,072	1,130	1,176
Total NTBI	42	47	34	38	31	373	443	423	433	407	1,459	1,467	1,694	1,714	1,779
Total BI	144	149	146	154	127	1,297	1,436	1,487	1,532	1,441	2,267	2,333	2,667	2,705	2,844

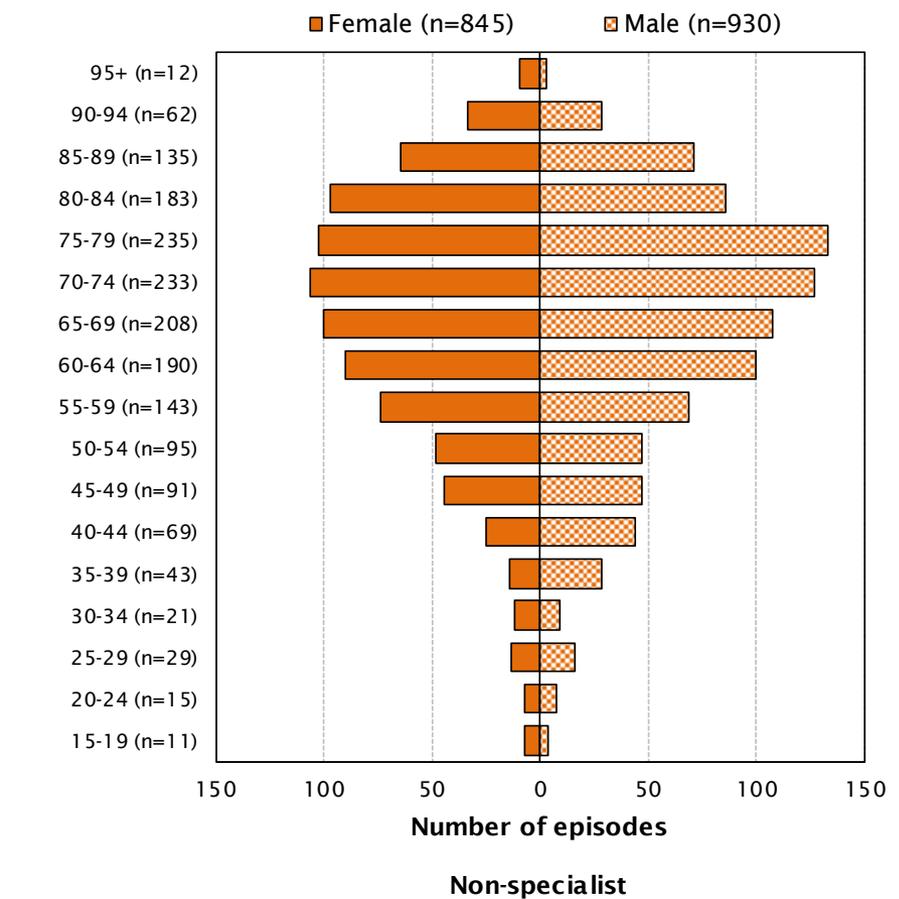
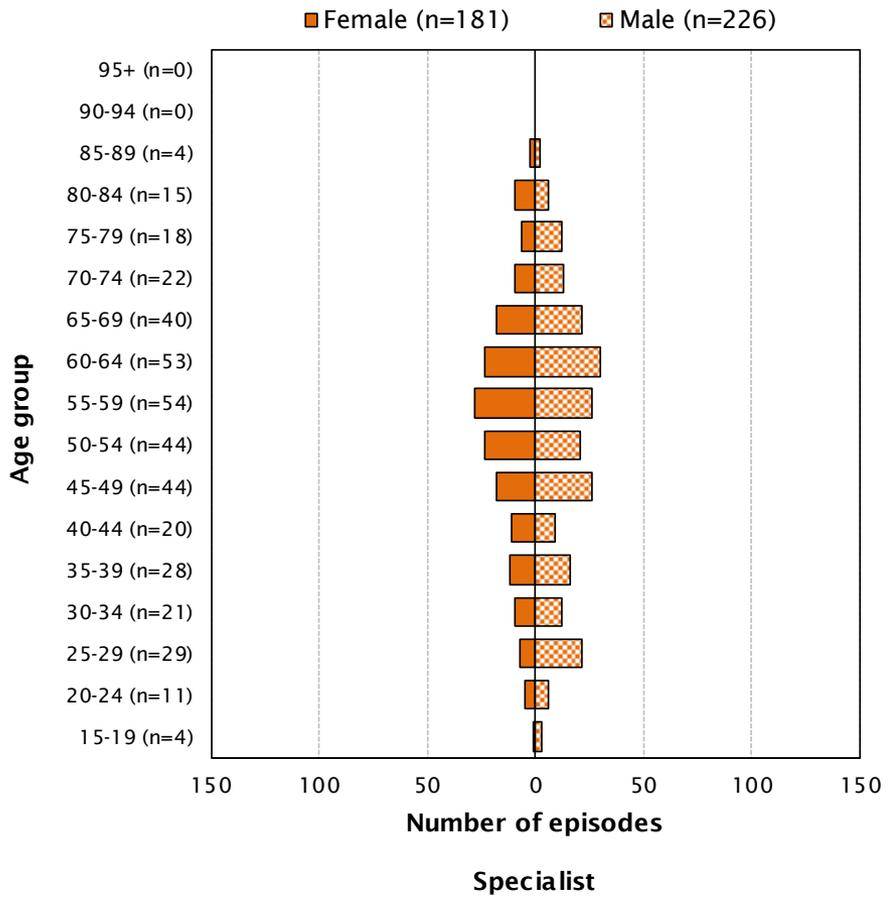
Number of episodes by age group and sex – TBI and NTBI



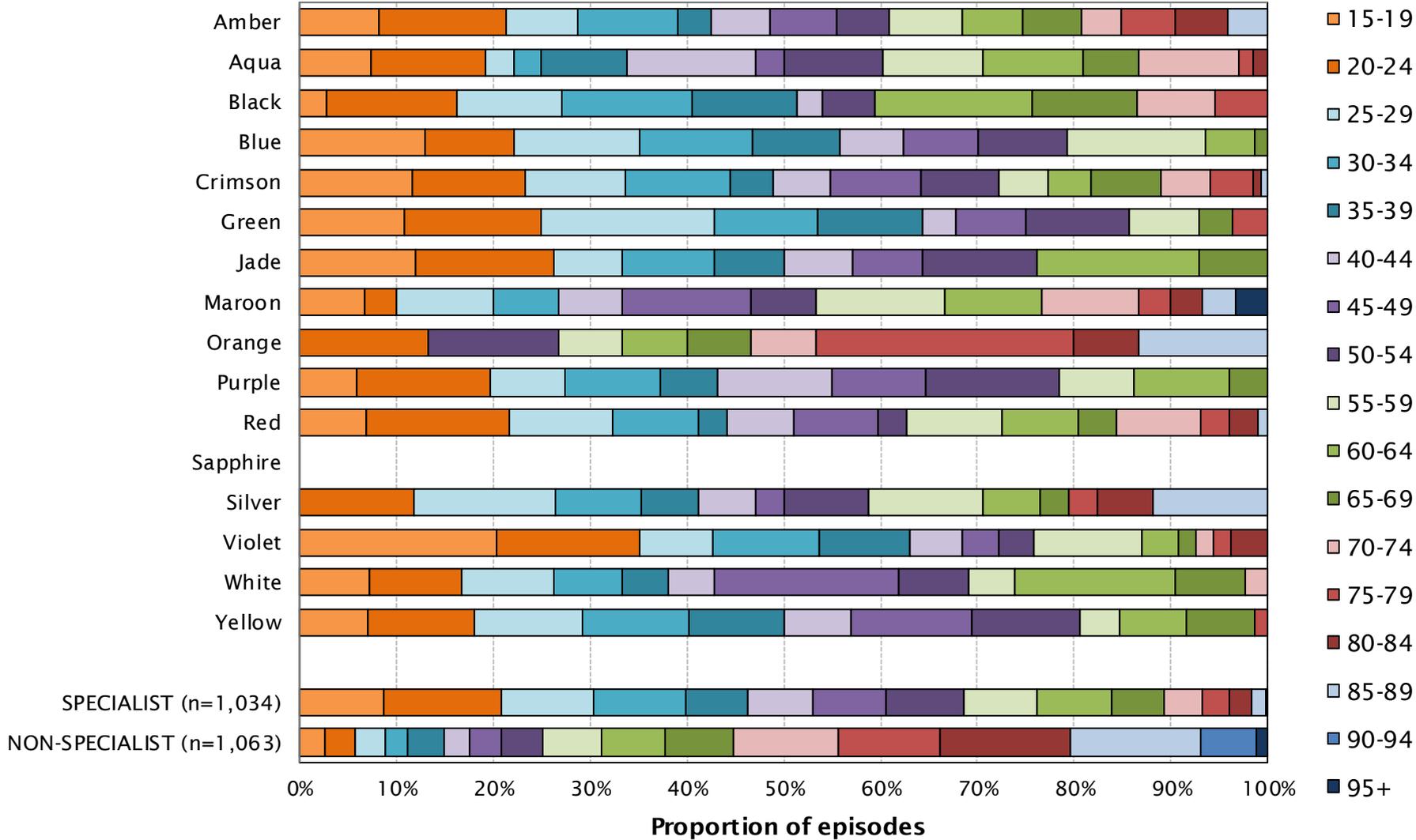
Number of TBI episodes by age group and sex – specialist and non-specialist



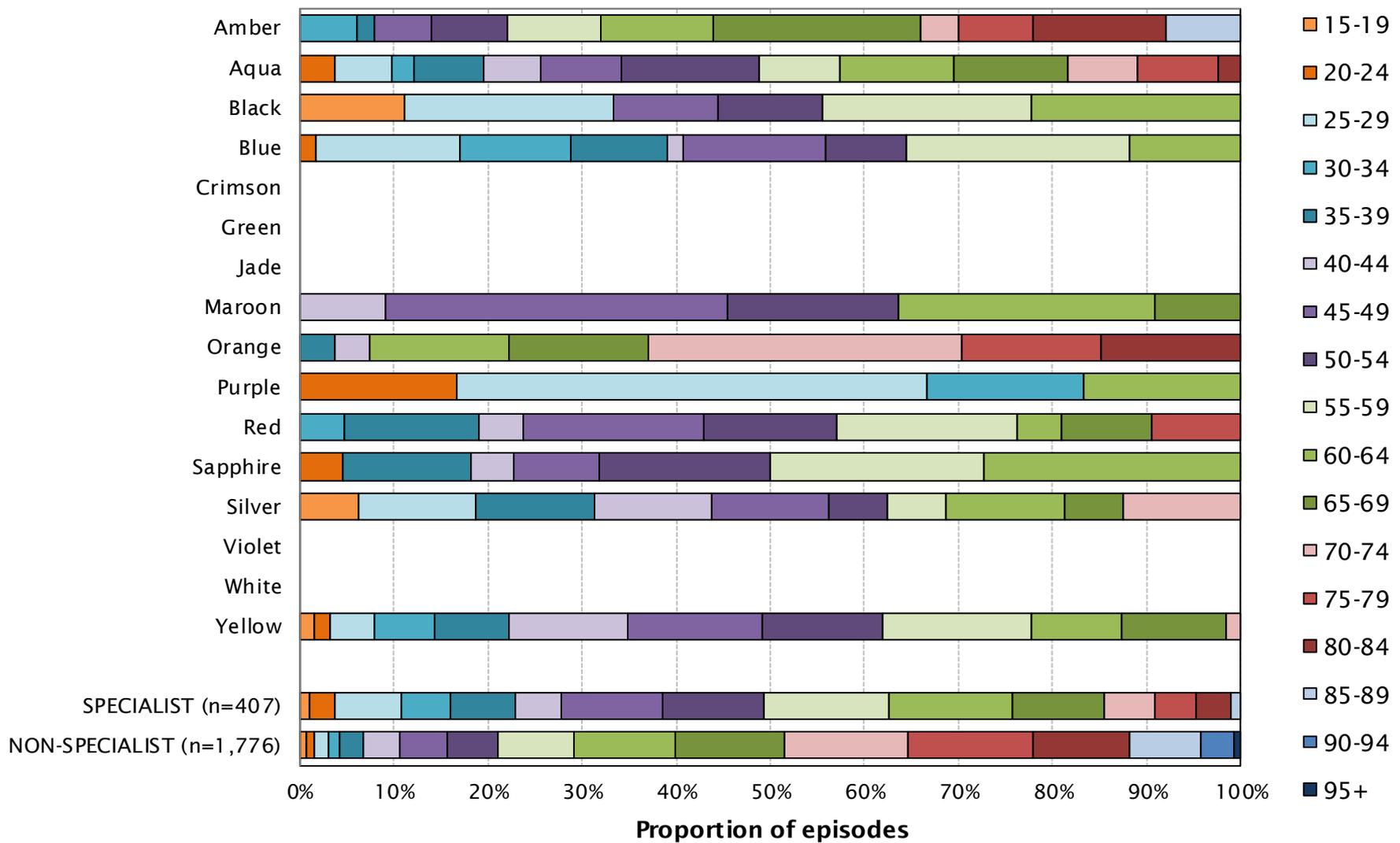
Number of NTBI episodes by age group and sex – specialist and non-specialist



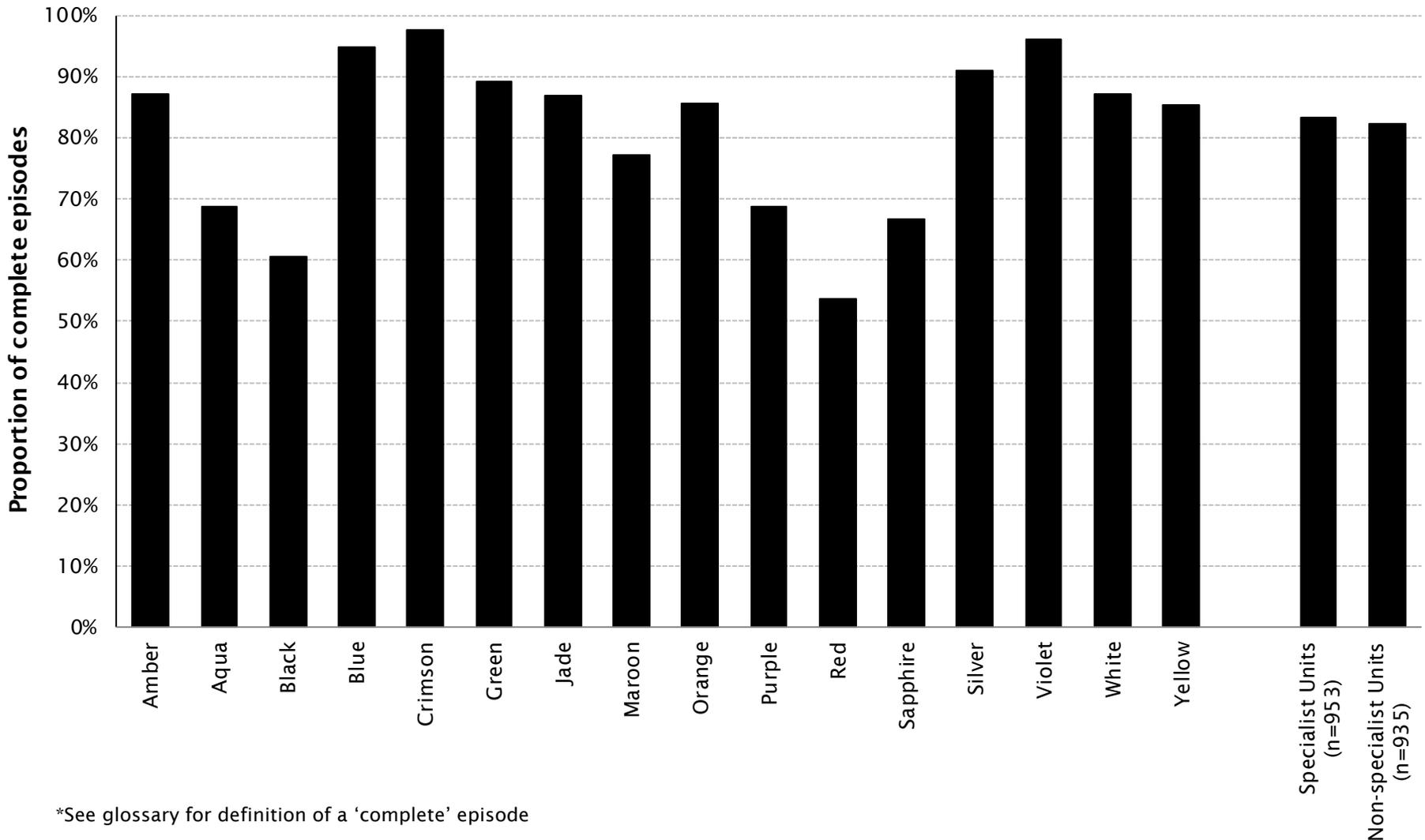
Traumatic episodes by age group and specialist facility



Non-traumatic episodes by age group and specialist facility



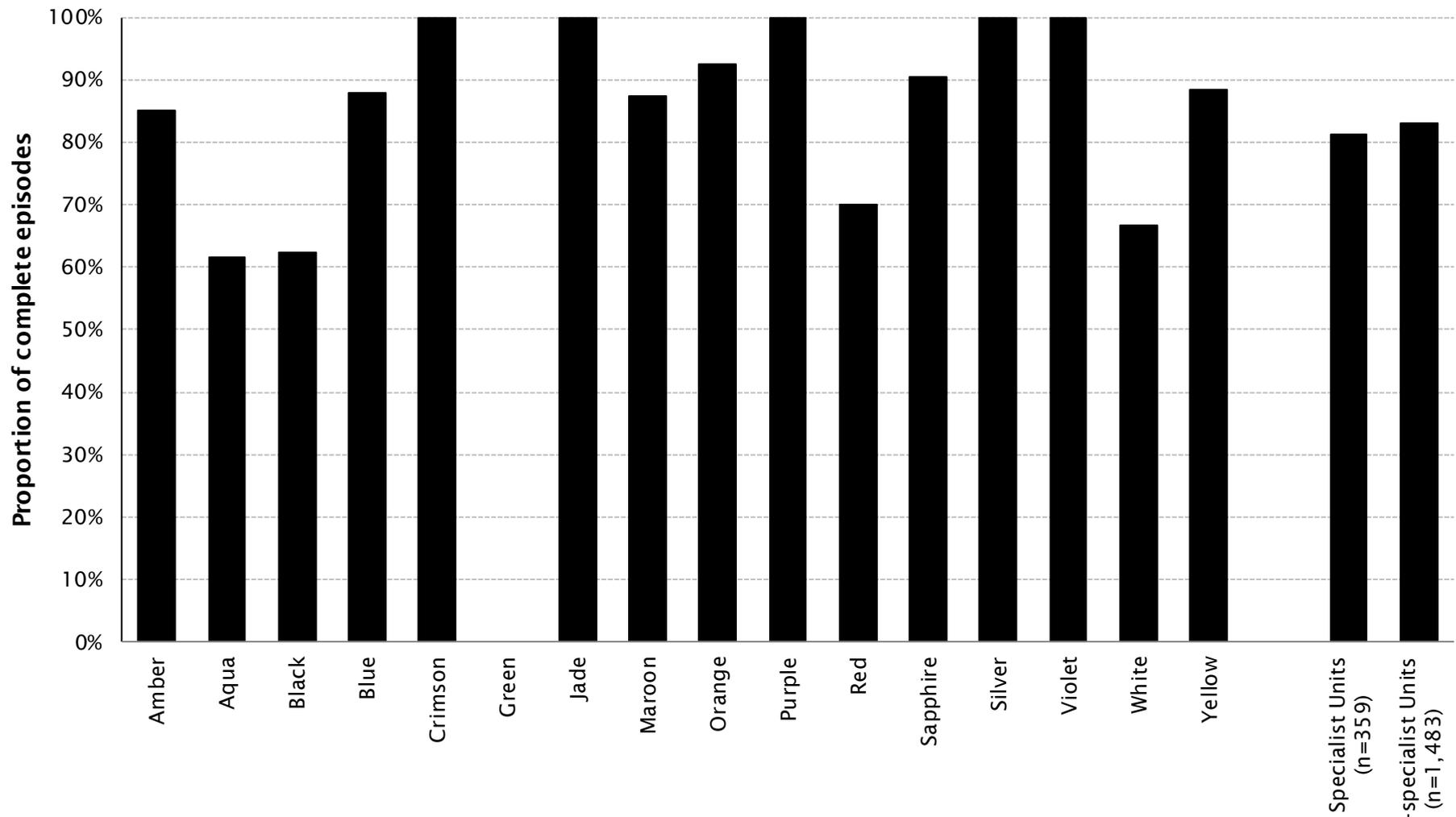
Proportion of complete* first admission traumatic episodes by specialist facility



*See glossary for definition of a 'complete' episode

Note: First admission episodes.

Proportion of complete* first admission non-traumatic episodes by specialist facility



*See glossary for definition of a 'complete' episode
 Note: First admission episodes.

Complete first admission TBI and NTBI episodes by AN-SNAP class and impairment



AN-SNAP class	YOUR FACILITY			SPECIALIST			NON-SPECIALIST		
	All episodes	Completed episodes	%Complete	All episodes	Completed episodes	%Complete	All episodes	Completed episodes	%Complete
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	8	7	87.5	147	141	95.9	362	342	94.5
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	28	27	96.4	234	216	92.3	200	180	90.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	5	3	60.0	72	59	81.9	485	426	87.8
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	10	9	90.0	106	93	87.7	421	356	84.6
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	13	11	84.6	142	119	83.8	206	161	78.2
4AB6 (BI, weighted FIM motor 29-40)	5	5	100.0	64	49	76.6	213	154	72.3
4AB7 (BI, weighted FIM motor 19-28)	4	3	75.0	65	48	73.8	162	116	71.6
4API (MMT, weighted FIM motor 19-91)	26	21	80.8	244	210	86.1	195	173	88.7
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	4	2	50.0	88	54	61.4	136	83	61.0
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	11	6	54.5	150	97	64.7	31	12	38.7
All Brain AN-SNAP classes	114	94	82.5	1,312	1,086	82.8	2,411	2,003	83.1

Note: First Admission Only (excludes AN-SNAP class 499A)

Impairment	YOUR FACILITY			SPECIALIST			NON-SPECIALIST		
	All episodes	Completed episodes	%Complete	All episodes	Completed episodes	%Complete	All episodes	Completed episodes	%Complete
<u>Traumatic impairments</u>									
2.21 Open injury	2	1	50.0	23	19	82.6	67	43	64.2
2.22 Closed injury	54	48	88.9	579	494	85.3	659	548	83.2
14.1 MMT: brain+spine	1	1	100.0	17	9	52.9	25	20	80.0
14.2 MMT: brain+other	32	26	81.3	334	272	81.4	184	159	86.4
Total TBI	89	76	85.4	953	794	83.3	935	770	82.4
<u>Non-traumatic impairments</u>									
2.11 Sub-arachnoid haemorrhage	4	4	100.0	100	72	72.0	429	369	86.0
2.12 Anoxic brain damage	4	3	75.0	66	58	87.9	91	74	81.3
2.13 Other NTBI	11	11	100.0	193	162	83.9	963	791	82.1
Total NTBI	19	18	94.7	359	292	81.3	1,483	1,234	83.2
Total BI	108	94	87.0	1,312	1,086	82.8	2,418	2,004	82.9

Note: First Admission Only

Summary of incomplete episodes

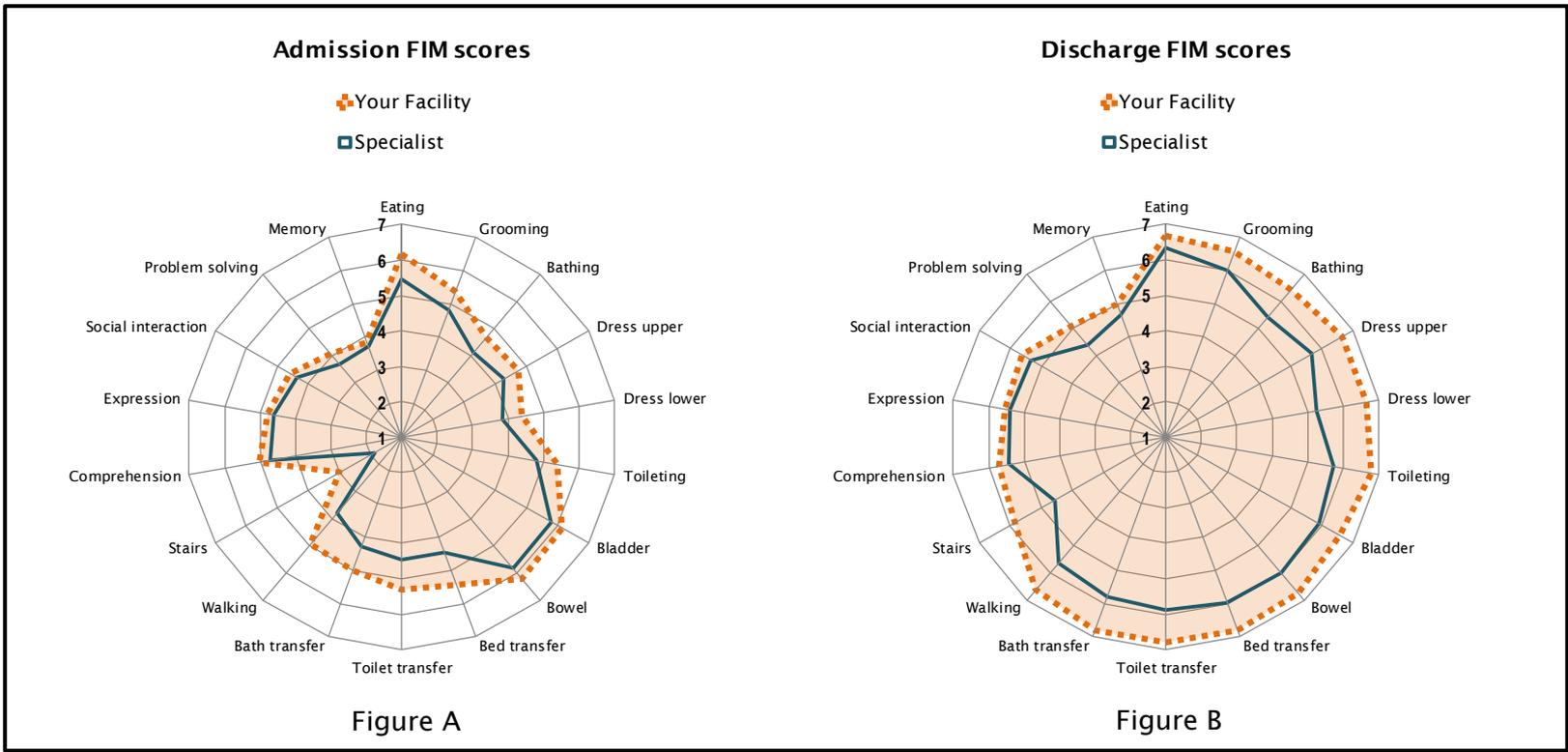


	YOUR FACILITY		SPECIALIST		NON-SPECIALIST		ALL BRAIN	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Total reporting episodes	127		1,441		2,844		4,285	
Incomplete episodes	27	(21.3)	280	(19.4)	507	(17.8)	787	(18.4)
Reason for incomplete:								
Discharged home with end FIM=18	1	(3.7)	12	(4.3)	25	(4.9)	37	(4.7)
Discharged home with no end FIM	0	(0.0)	0	(0.0)	8	(1.6)	8	(1.0)
Discharged to another hospital	9	(33.3)	111	(39.6)	244	(48.1)	355	(45.1)
Care type change - same hospital	12	(44.4)	107	(38.2)	166	(32.7)	273	(34.7)
Discharged at own risk	4	(14.8)	34	(12.1)	24	(4.7)	58	(7.4)
Change of care type (LOS<1 week)	0	(0.0)	0	(0.0)	2	(0.4)	2	(0.3)
Died	0	(0.0)	1	(0.4)	18	(3.6)	19	(2.4)
Other/Unknown Discharge	1	(3.7)	15	(5.4)	20	(3.9)	35	(4.4)

	YOUR FACILITY			
	Incomplete Episodes		Complete episodes	
Impairment Code:				
2.11 Sub-arachnoid haemorrhage	5	(18.5)	5	(5.0)
2.12 Anoxic brain damage	1	(3.7)	3	(3.0)
2.13 Other NTBI	4	(14.8)	13	(13.0)
2.21 Open injury	1	(3.7)	3	(3.0)
2.22 Closed injury	8	(29.6)	49	(49.0)
14.1 MMT: brain+spine	0	(0.0)	1	(1.0)
14.2 MMT: brain+other	8	(29.6)	26	(26.0)
AN-SNAP Class:				
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	1	(3.7)	8	(8.0)
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	1	(3.7)	29	(29.0)
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	3	(11.1)	5	(5.0)
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	1	(3.7)	9	(9.0)
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	2	(7.4)	12	(12.0)
4AB6 (BI, weighted FIM motor 29-40)	1	(3.7)	5	(5.0)
4AB7 (BI, weighted FIM motor 19-28)	1	(3.7)	3	(3.0)
4AP1 (MMT, weighted FIM motor 19-91)	5	(18.5)	21	(21.0)
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	4	(14.8)	2	(2.0)
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	8	(29.6)	6	(6.0)

Review of FIM item scoring by AN-SNAP class

Interpreting the comparative FIM item scoring charts



The FIM splat provides a graphic presentation of functional status in a radar chart. The 18 FIM items are arranged in order as 'spokes' of a wheel and the scoring levels from 1 (total dependence) to 7 (total independence) run from the centre outwards. The mean FIM item score for each item is indicated — a perfect score would be demonstrated as a large circle. The two FIM splats compare FIM scoring on admission (Figure A) and discharge (Figure B) between YOUR FACILITY and SPECIALIST data — differences in the two shaded areas indicate differences in mean admission/discharge scoring. Graphs include completed episodes with valid FIM scoring.

Comparative FIM item scoring

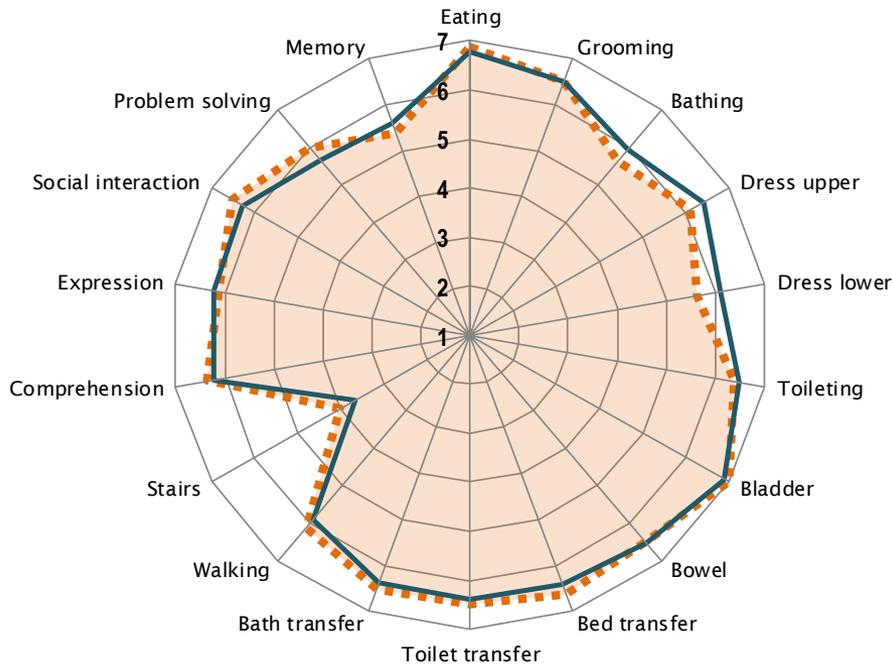
AN-SNAP class 4AB1



4AB1 Admission FIM scores

■ Your Facility (n=8)

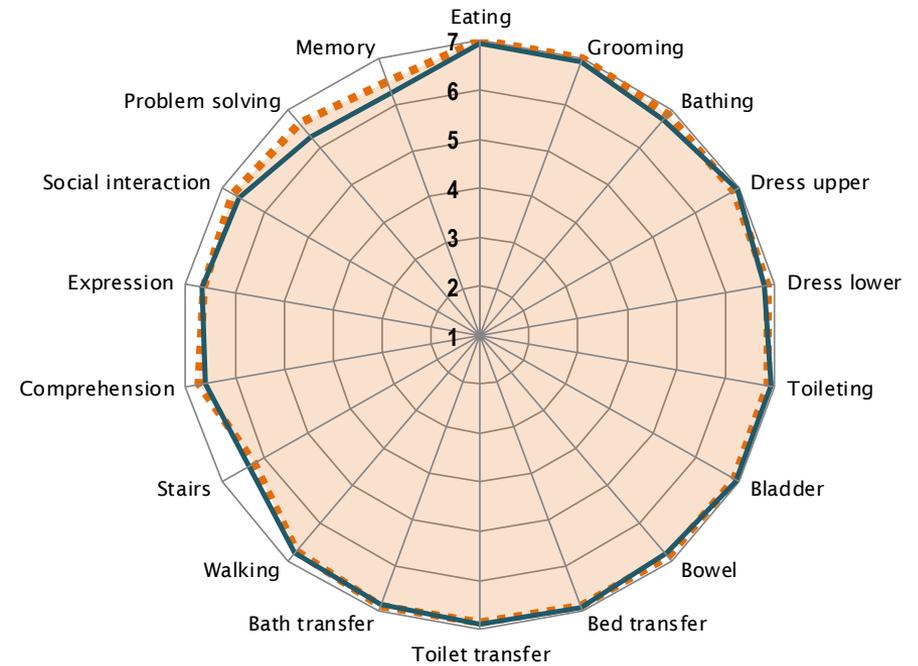
■ Specialist (n=152)



4AB1 Discharge FIM scores

■ Your Facility (n=8)

■ Specialist (n=152)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

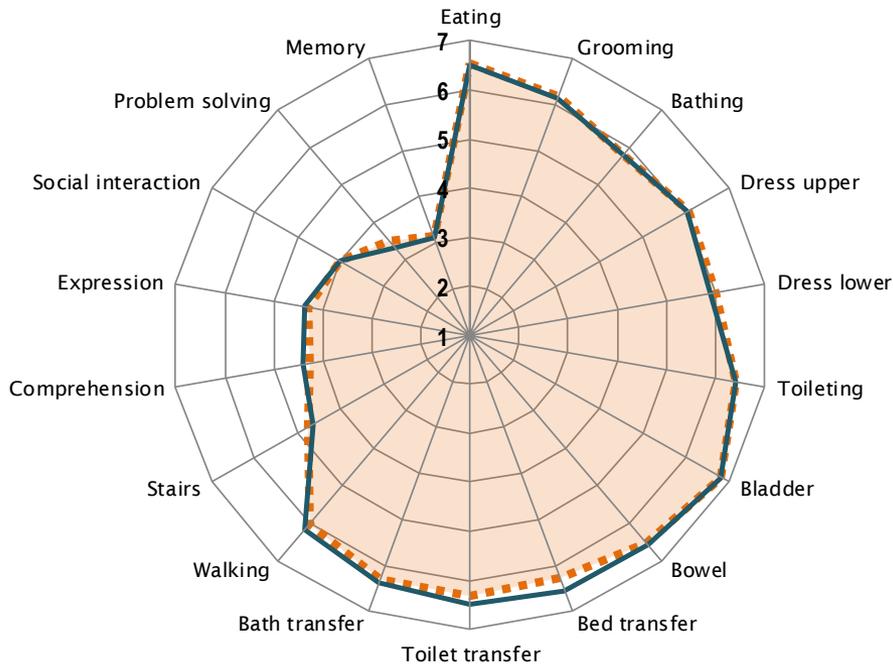
AN-SNAP class 4AB2



4AB2 Admission FIM scores

▣ Your Facility (n=29)

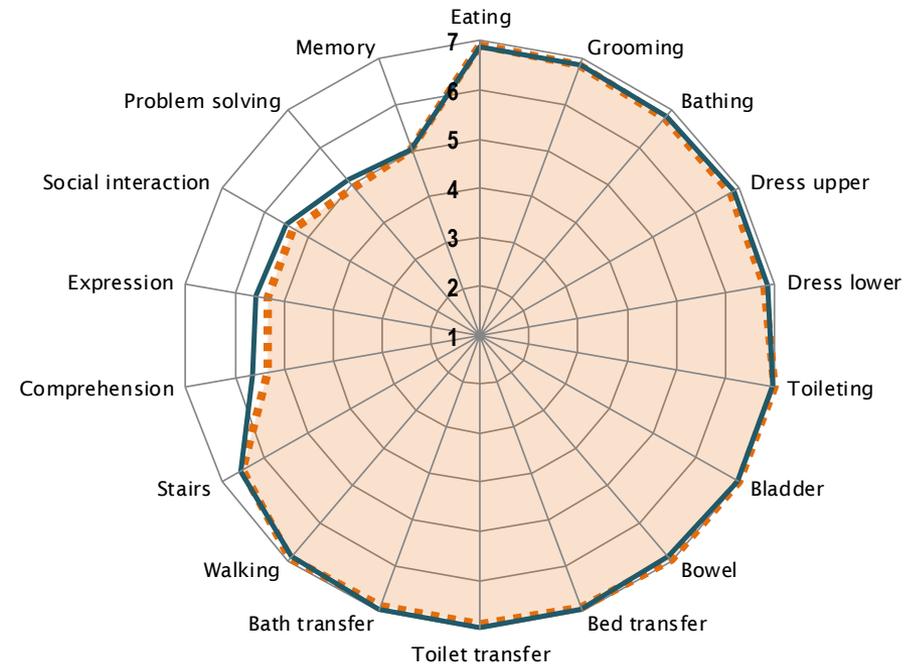
▣ Specialist (n=225)



4AB2 Discharge FIM scores

▣ Your Facility (n=29)

▣ Specialist (n=225)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

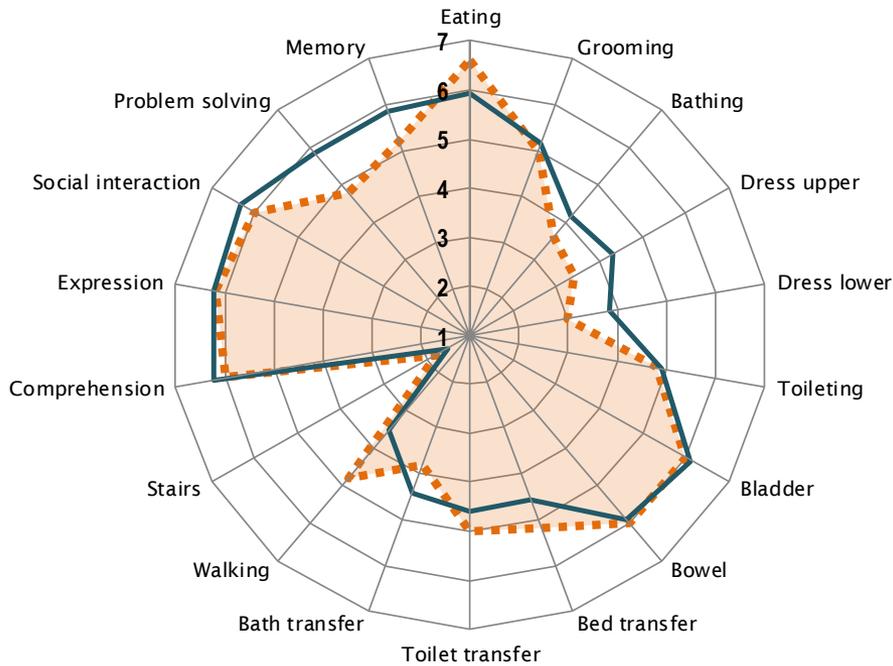
AN-SNAP class 4AB3



4AB3 Admission FIM scores

▣ Your Facility (n=5)

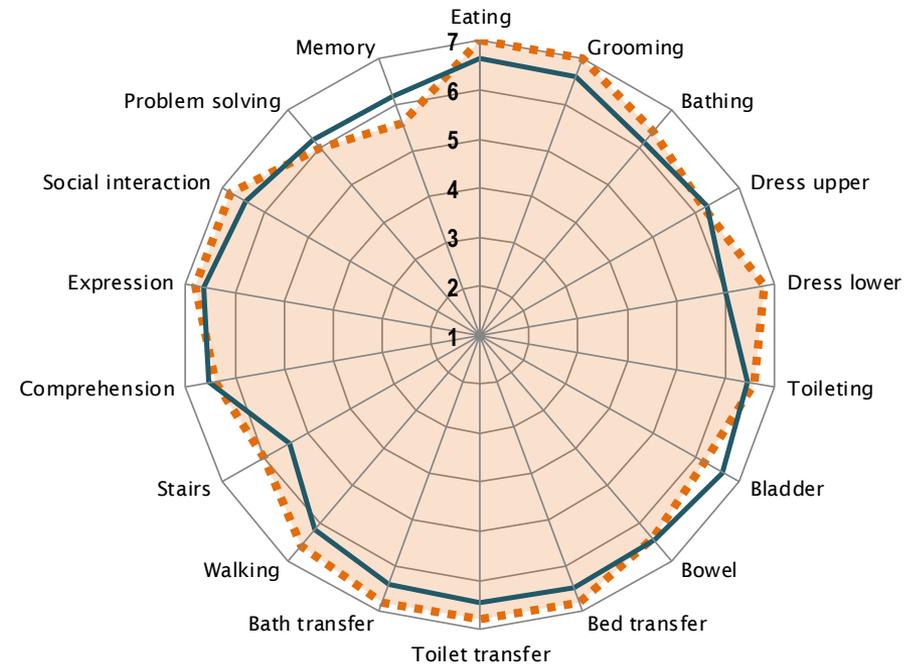
▣ Specialist (n=64)



4AB3 Discharge FIM scores

▣ Your Facility (n=5)

▣ Specialist (n=64)



Note: Includes only completed episodes with valid FIM scores

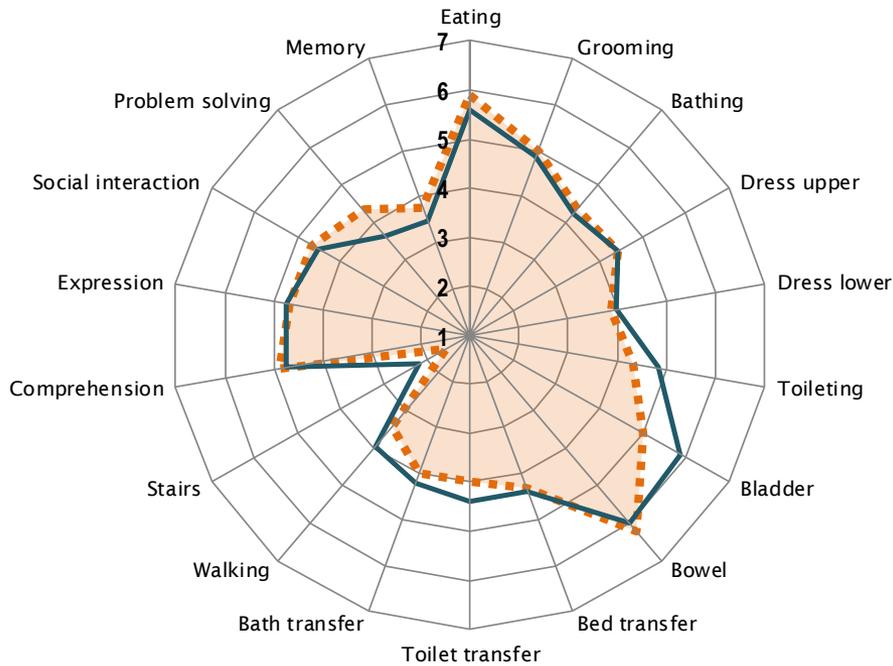
Comparative FIM item scoring

AN-SNAP class 4AB4



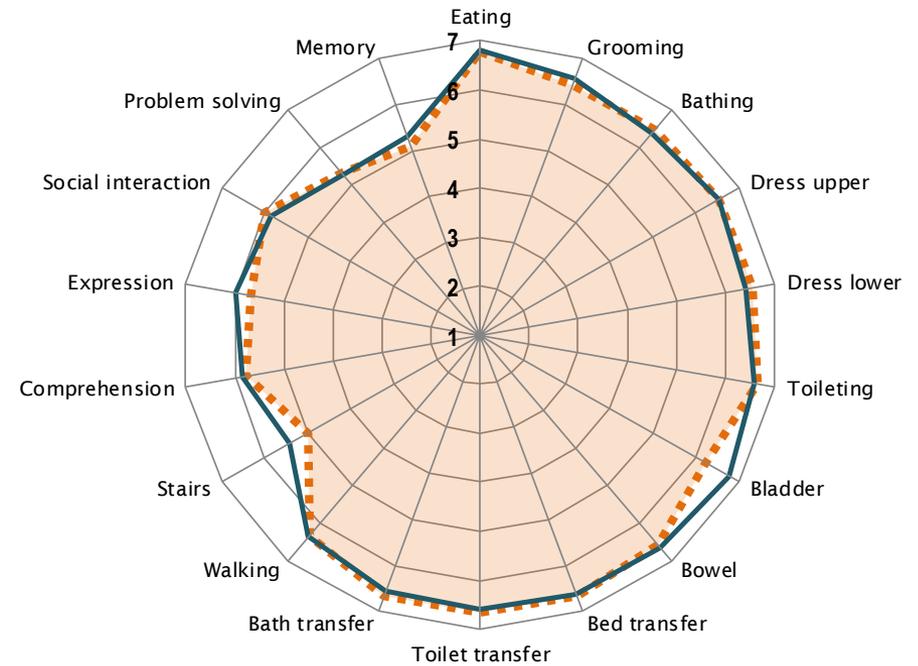
4AB4 Admission FIM scores

- ▣ Your Facility (n=9)
- ▣ Specialist (n=101)



4AB4 Discharge FIM scores

- ▣ Your Facility (n=9)
- ▣ Specialist (n=101)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

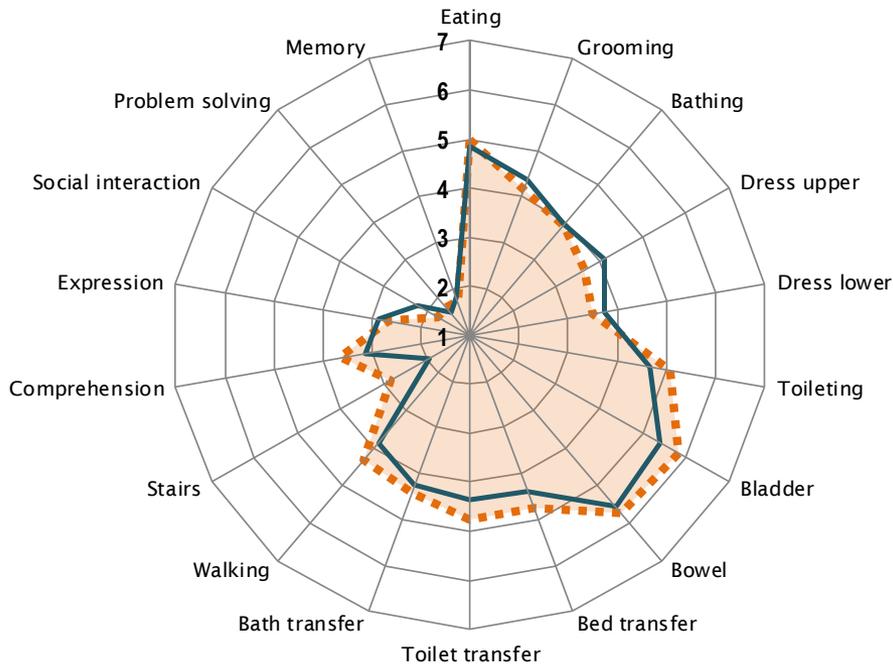
AN-SNAP class 4AB5



4AB5 Admission FIM scores

▣ Your Facility (n=12)

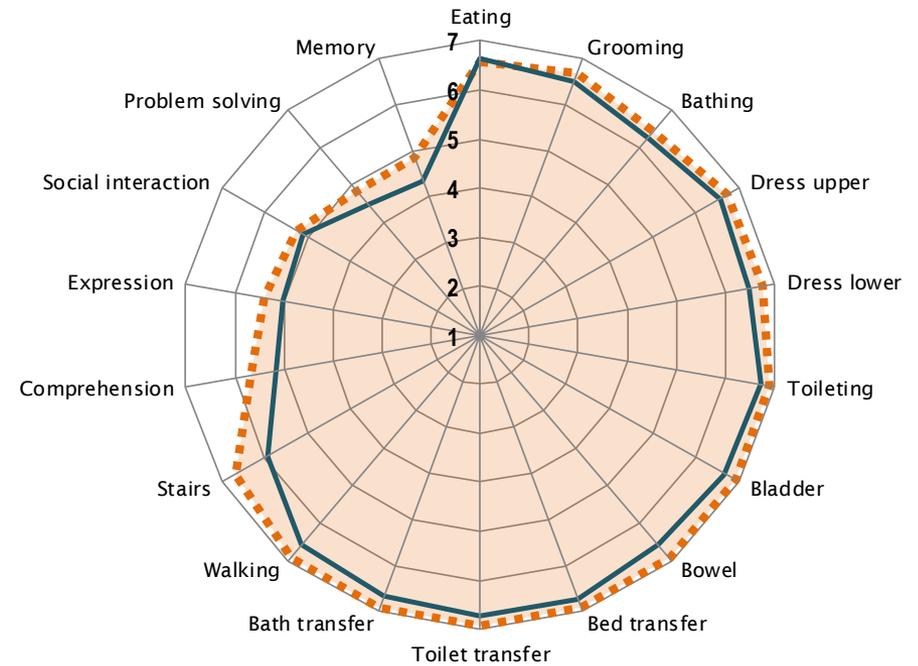
▣ Specialist (n=125)



4AB5 Discharge FIM scores

▣ Your Facility (n=12)

▣ Specialist (n=125)



Note: Includes only completed episodes with valid FIM scores

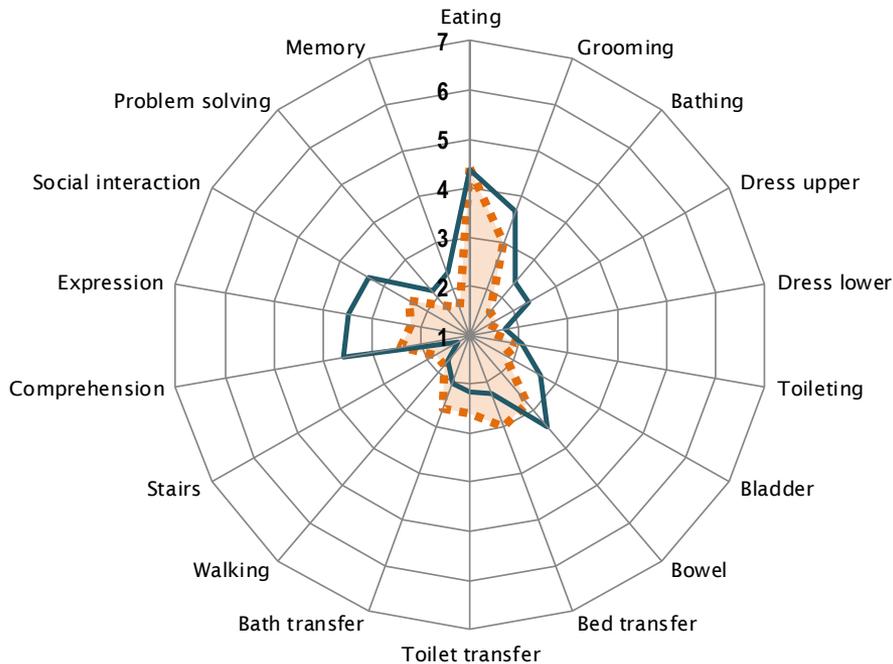
Comparative FIM item scoring

AN-SNAP class 4AB6



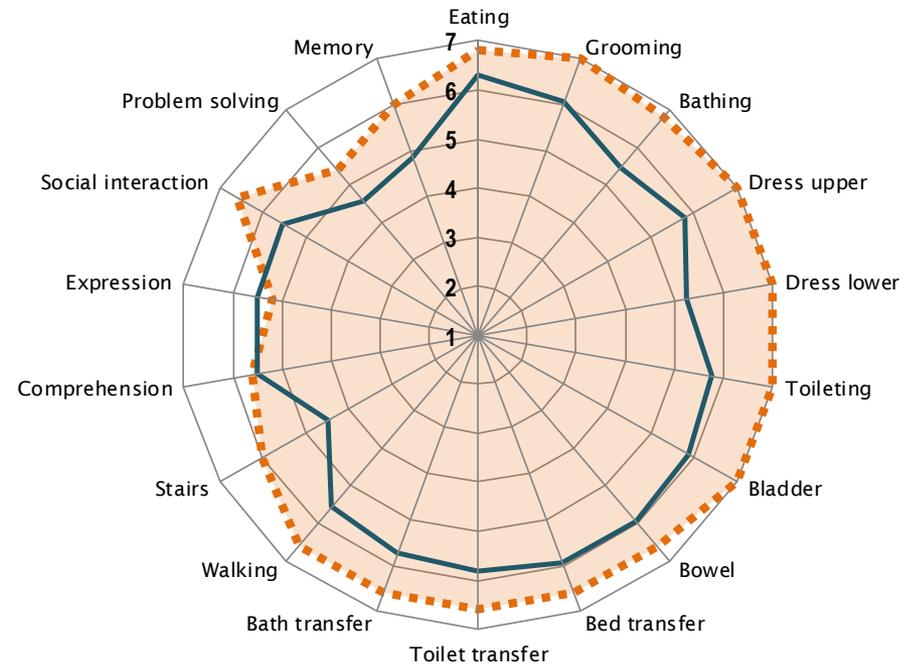
4AB6 Admission FIM scores

- ▣ Your Facility (n=5)
- ▣ Specialist (n=55)



4AB6 Discharge FIM scores

- ▣ Your Facility (n=5)
- ▣ Specialist (n=55)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

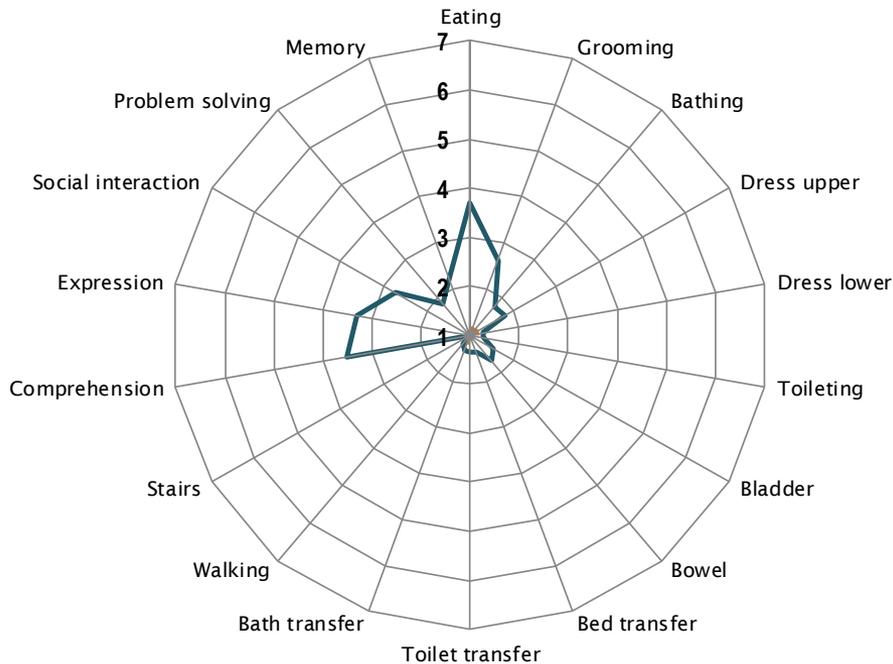
AN-SNAP class 4AB7



4AB7 Admission FIM scores

■ Your Facility (n<5)

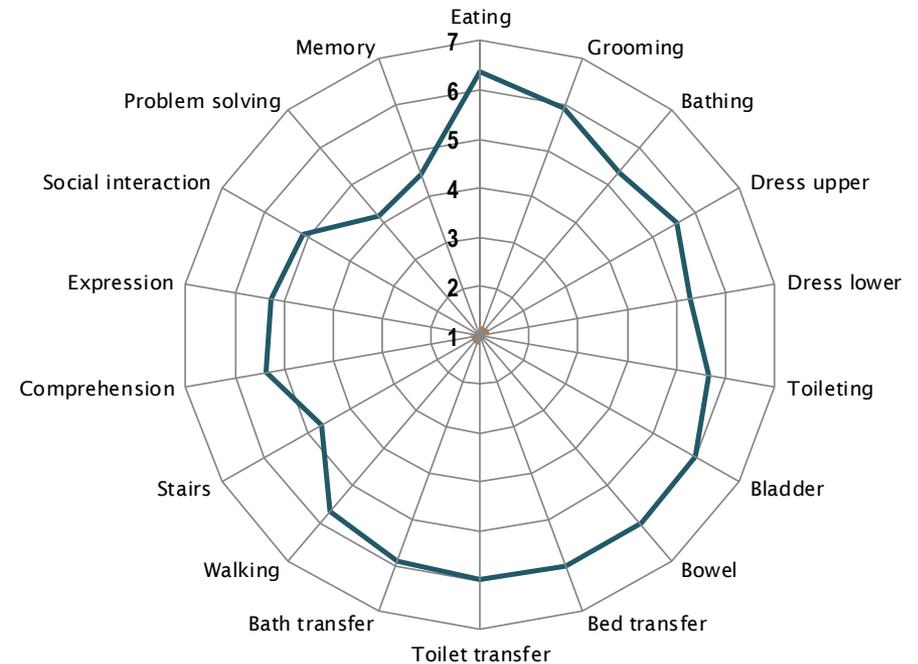
■ Specialist (n=54)



4AB7 Discharge FIM scores

■ Your Facility (n<5)

■ Specialist (n=54)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

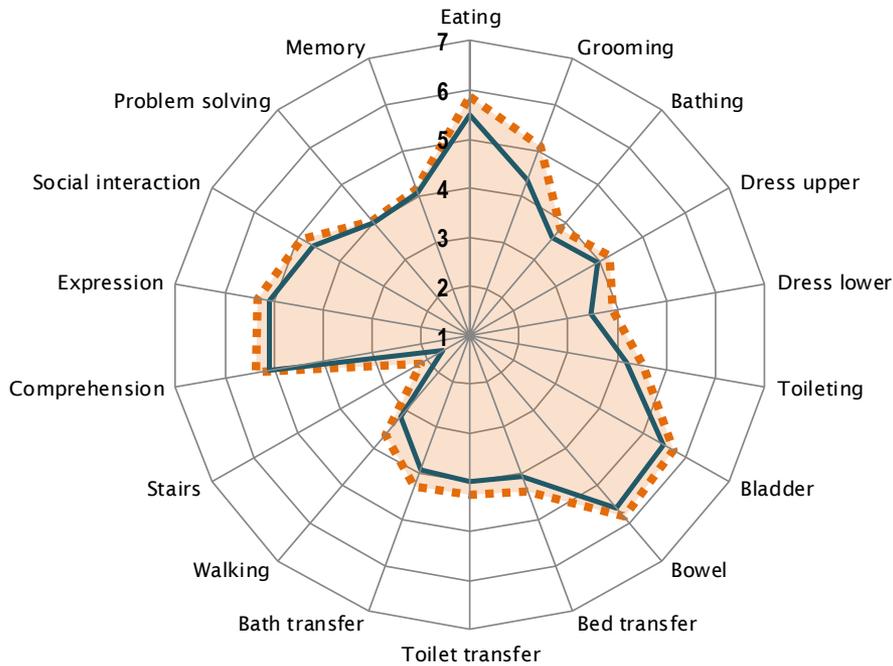
AN-SNAP class 4AP1



4AP1 Admission FIM scores

▣ Your Facility (n=21)

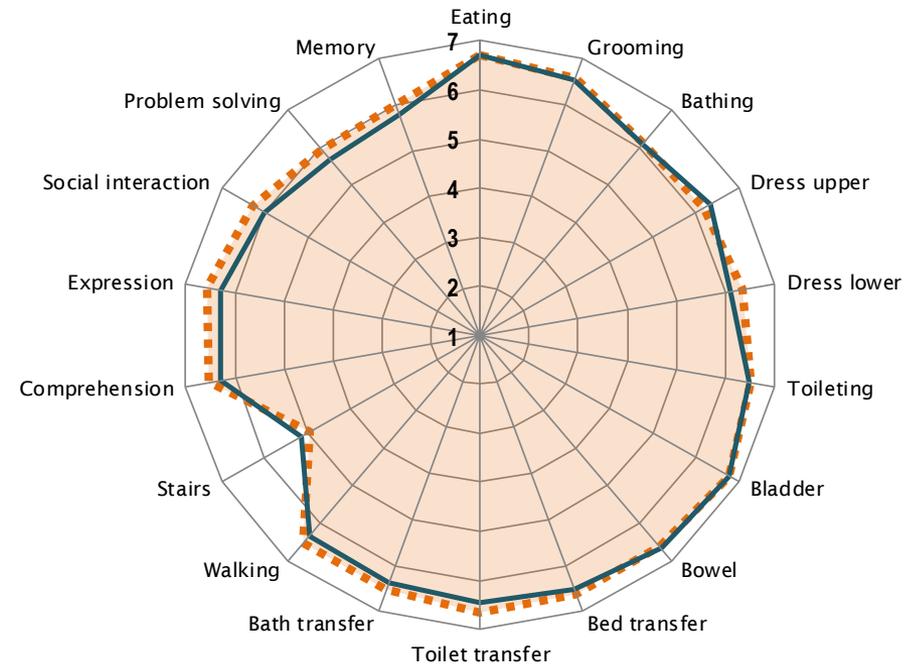
▣ Specialist (n=218)



4AP1 Discharge FIM scores

▣ Your Facility (n=21)

▣ Specialist (n=218)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

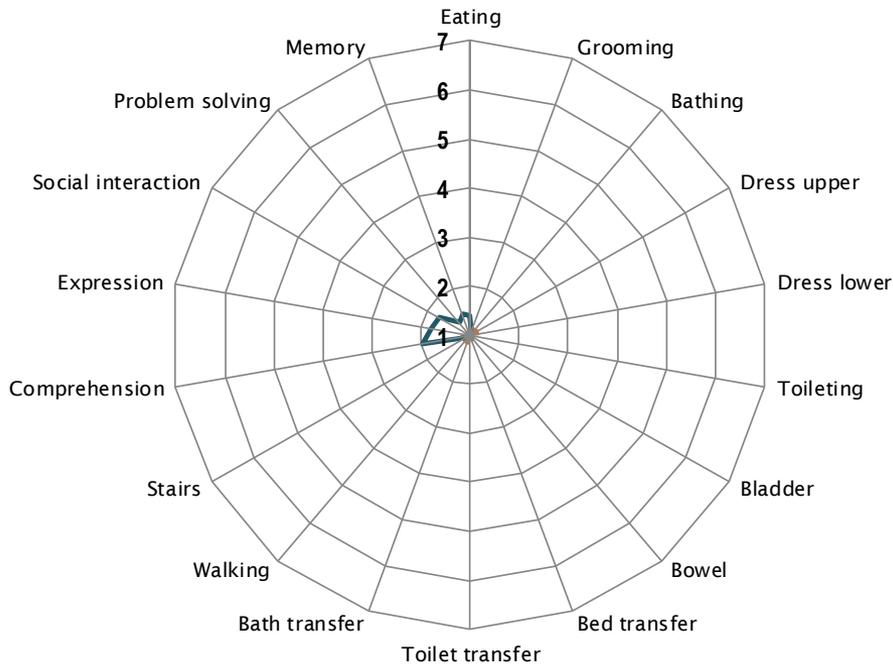
AN-SNAP class 4AZ1



4AZ1 Admission FIM scores

📍 Your Facility (n<5)

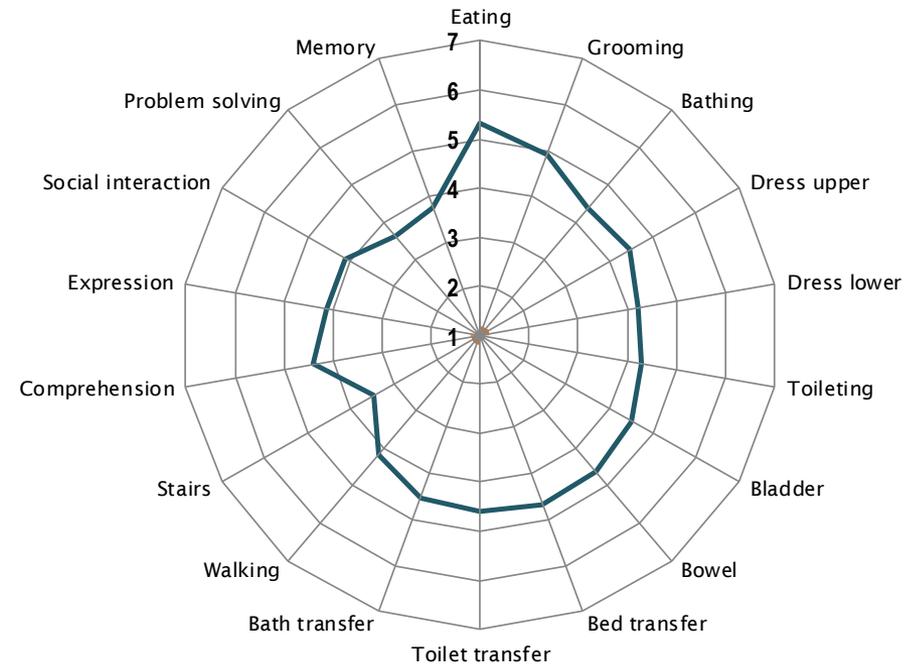
📍 Specialist (n=63)



4AZ1 Discharge FIM scores

📍 Your Facility (n<5)

📍 Specialist (n=63)



Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring

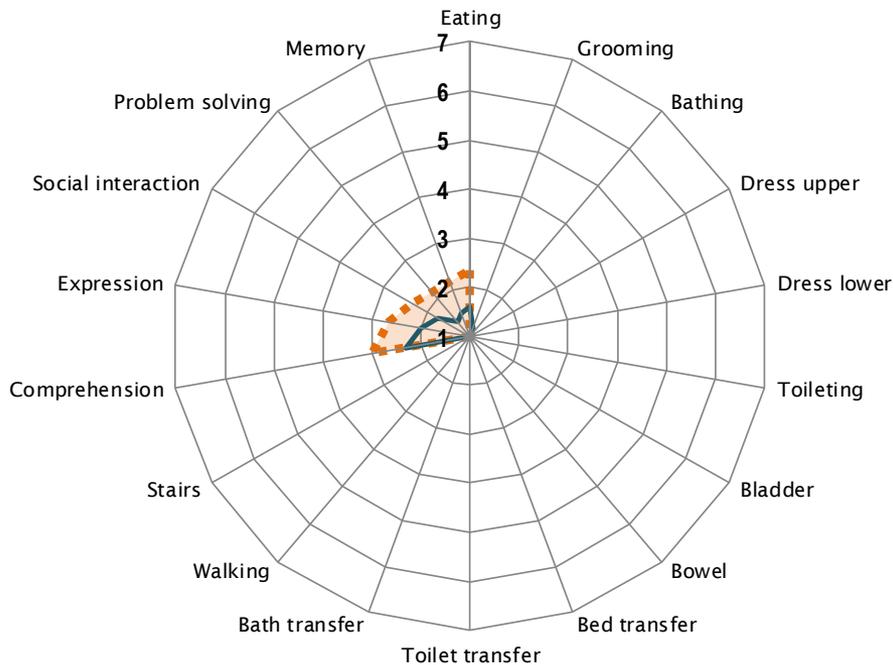
AN-SNAP class 4AZ2



4AZ2 Admission FIM scores

■ Your Facility (n=6)

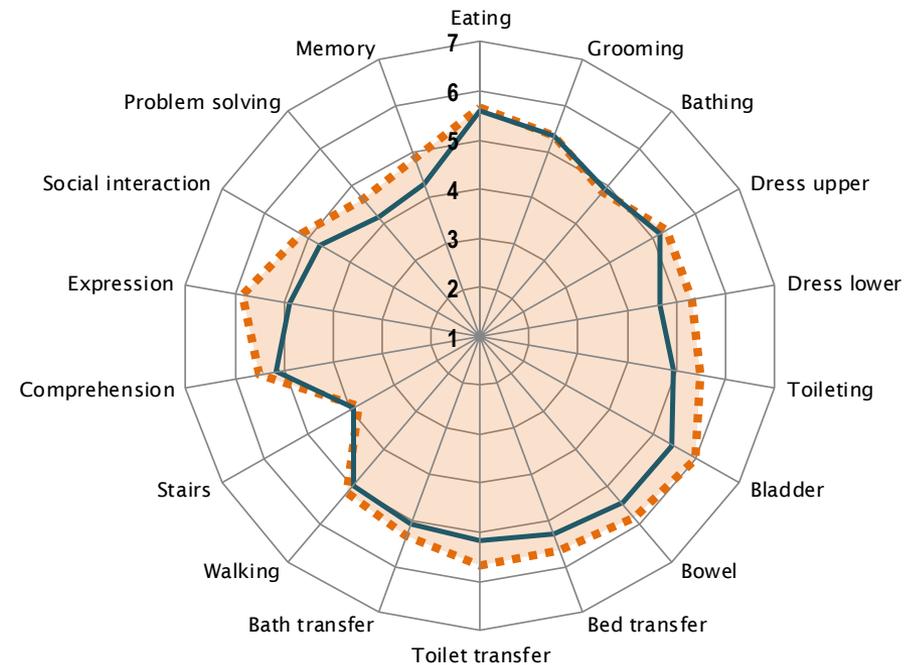
■ Specialist (n=101)



4AZ2 Discharge FIM scores

■ Your Facility (n=6)

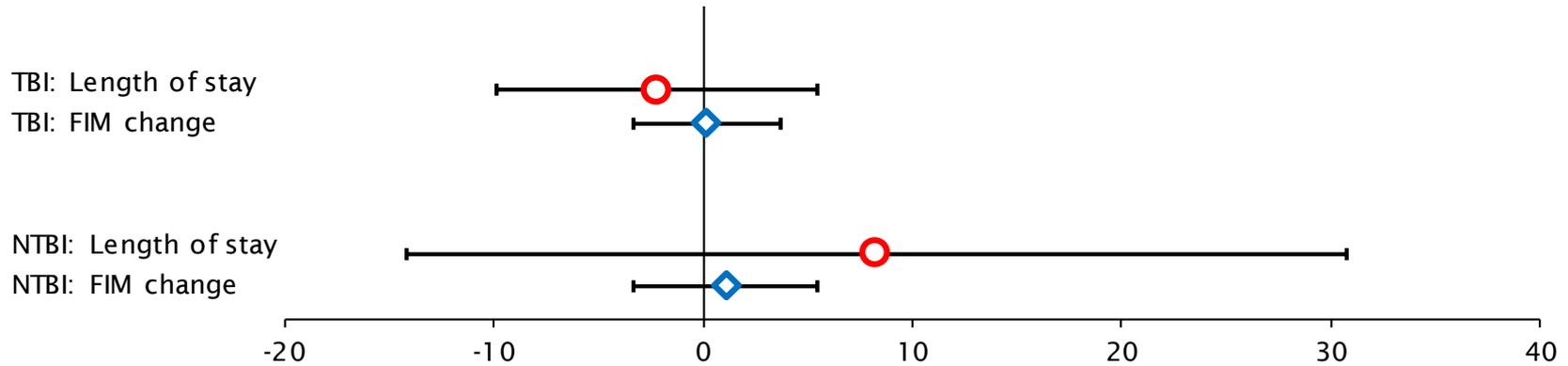
■ Specialist (n=101)



Note: Includes only completed episodes with valid FIM scores

Outcome analysis

Casemix-adjusted* relative means



Casemix-adjusted relative means with 95% confidence intervals

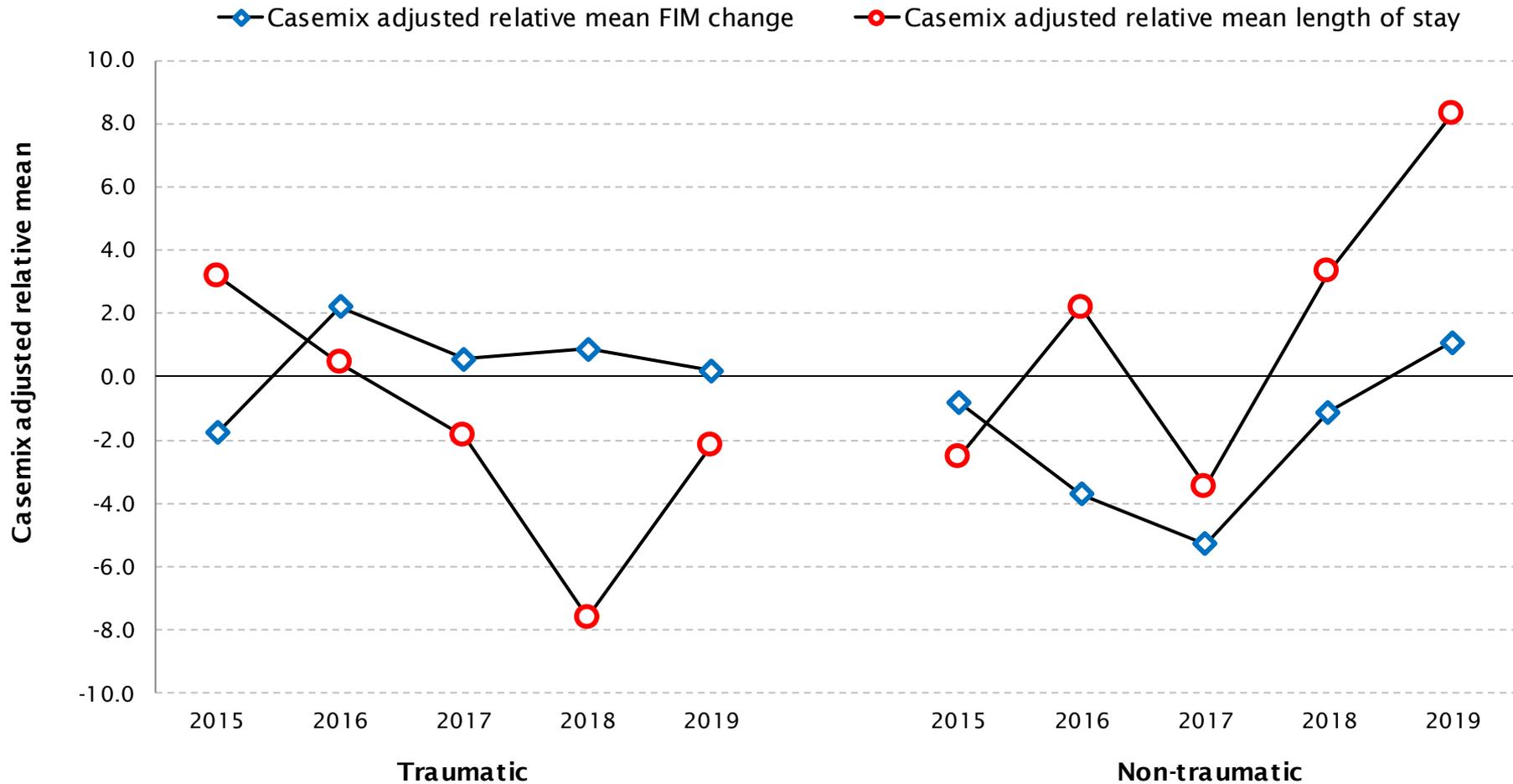
Outcome measures	Traumatic		YOUR FACILITY		Non-traumatic	
	Casemix-adjusted* relative mean	95% CI	Casemix-adjusted* relative mean	95% CI	Casemix-adjusted* relative mean	95% CI
Length of stay	-2.2	-9.9 to 5.5	8.3	-14.1 to 30.7	8.3	-14.1 to 30.7
FIM change	0.2	-3.3 to 3.7	1.1	-3.3 to 5.4	1.1	-3.3 to 5.4

Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Traumatic and non-traumatic brain injury casemix-adjusted* relative means over time

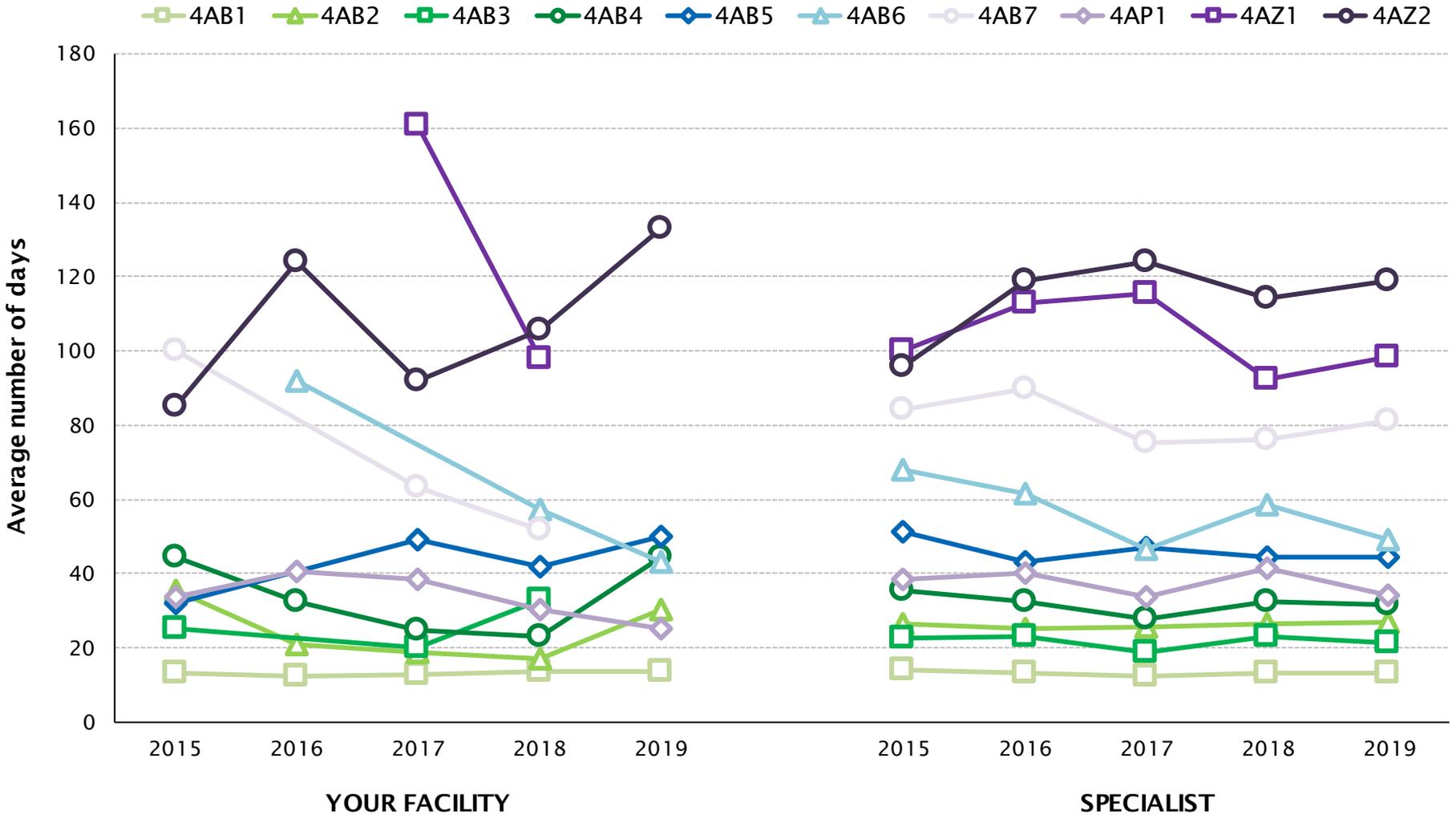
(base year = 2019)



Note: First admission, completed episodes.

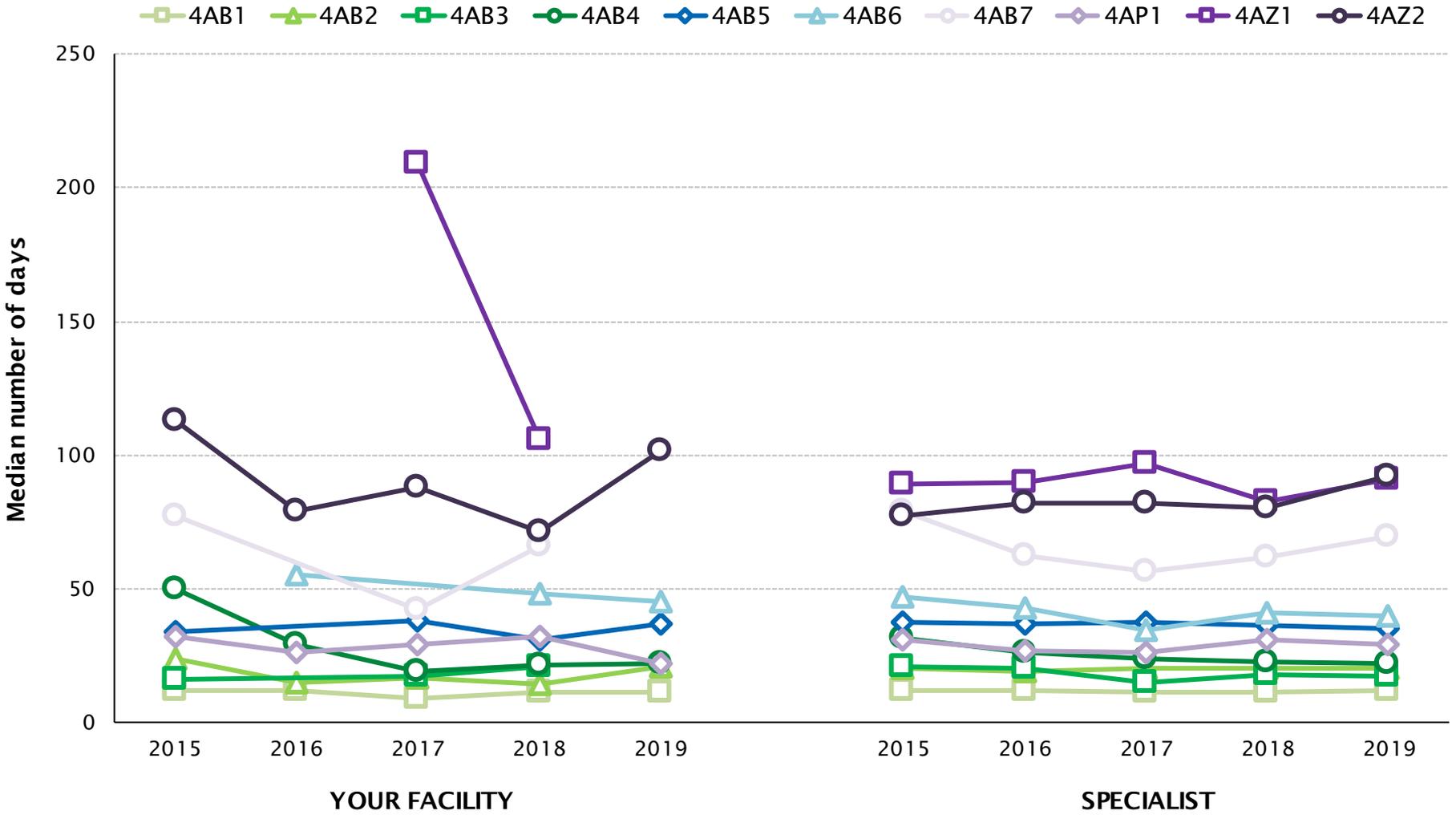
*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Average length of stay by AN-SNAP class over time



Note: First admission, completed episodes.

Median length of stay by AN-SNAP class over time



Note: First admission, completed episodes.

Average and median length of stay by AN-SNAP class over time

AVERAGE

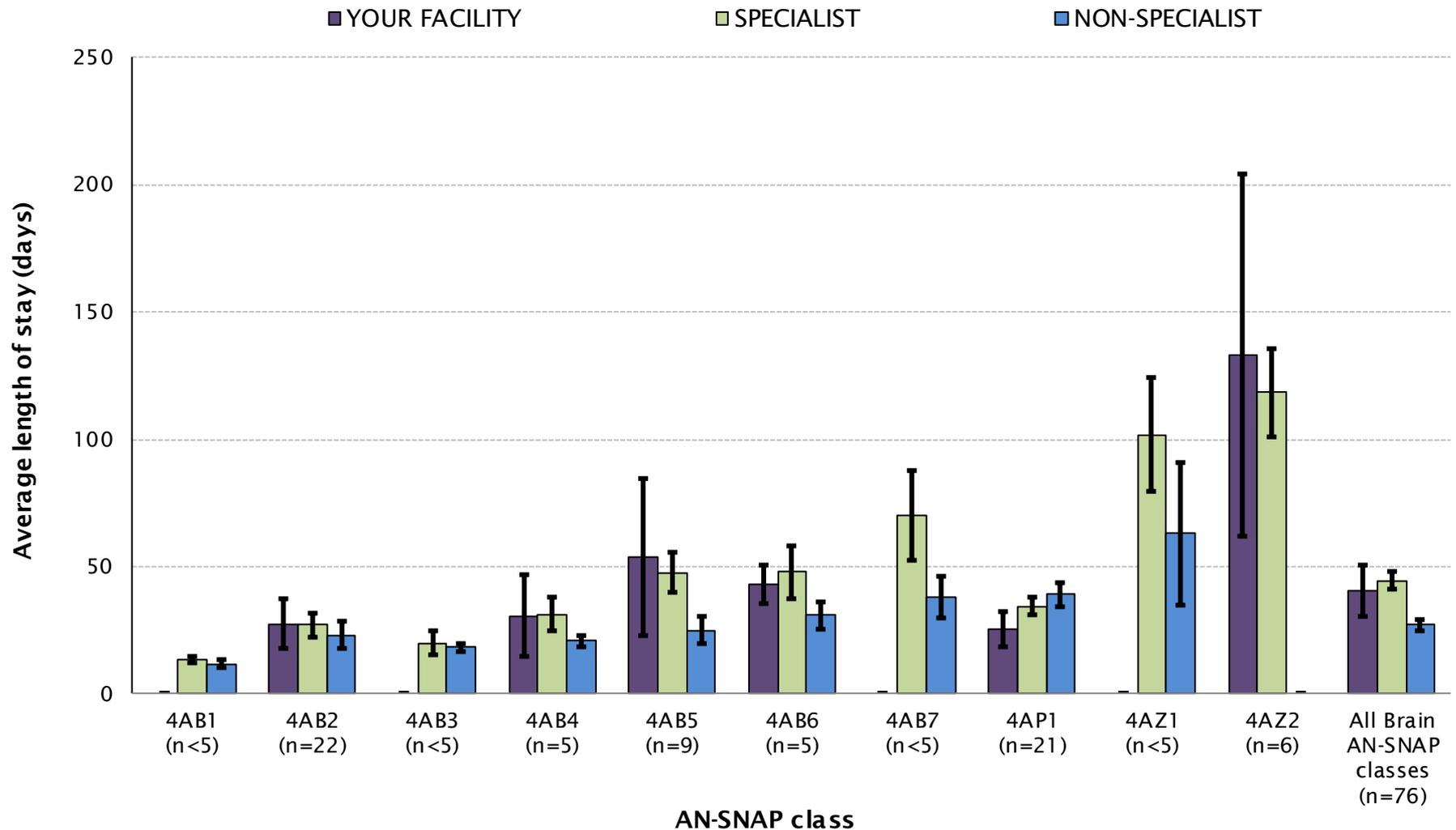
AN-SNAP class	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	13.2	12.3	13.0	13.6	13.9	14.0	13.2	12.6	13.1	13.5	12.9	12.2	12.5	11.2	12.0
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	35.3	20.7	18.9	17.0	30.2	26.6	25.1	25.8	26.4	27.0	20.3	22.6	19.8	19.1	19.3
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	25.4	—	20.2	33.0	—	22.7	22.9	18.9	22.9	21.6	19.8	17.8	17.9	18.1	17.0
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	44.3	32.3	24.8	23.2	44.4	35.4	32.6	28.0	32.6	31.8	22.9	21.9	22.1	22.7	21.2
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	31.9	—	49.1	41.8	50.0	51.2	43.0	47.0	44.6	44.6	27.9	25.3	28.3	25.8	28.8
4AB6 (BI, weighted FIM motor 29-40)	—	92.2	—	57.3	43.0	68.0	61.6	46.8	58.6	49.2	31.1	30.2	31.1	29.2	30.1
4AB7 (BI, weighted FIM motor 19-28)	100.3	—	63.1	51.8	—	84.2	89.9	75.1	76.0	81.3	40.4	37.9	37.5	38.4	37.1
4AP1 (MMT, weighted FIM motor 19-91)	33.9	40.6	38.4	30.3	25.1	38.5	40.2	33.7	41.5	34.2	36.1	32.7	35.5	38.1	39.0
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	160.8	98.0	—	100.2	113.0	115.3	92.3	98.4	71.0	59.0	51.4	45.3	45.3
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	85.2	124.3	91.9	105.8	133.2	95.8	119.0	123.9	114.0	119.0	93.7	87.4	85.9	91.2	152.3
All Brain AN-SNAP classes	38.0	44.9	41.1	41.3	40.7	39.8	41.5	41.3	42.4	43.8	25.5	24.2	24.4	23.9	24.1

MEDIAN

AN-SNAP class	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	12.0	12.0	9.0	11.5	11.0	12.0	12.0	11.0	11.0	12.0	11.0	10.0	12.0	10.0	10.0
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	24.0	15.0	16.5	14.0	21.0	20.0	19.0	20.0	20.0	20.0	15.0	14.0	14.0	16.0	15.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	16.0	—	17.0	20.5	—	20.5	20.0	15.0	18.0	17.0	16.0	14.0	15.0	14.0	14.0
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	50.0	29.0	19.0	21.5	22.0	31.5	26.0	24.0	22.5	22.0	19.0	20.0	19.0	20.0	18.0
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	34.0	—	38.0	31.0	37.0	37.5	37.0	37.5	36.5	35.0	21.0	22.0	23.0	22.0	22.0
4AB6 (BI, weighted FIM motor 29-40)	—	55.0	—	48.0	45.0	47.0	43.0	34.5	41.0	40.0	28.0	28.0	27.0	28.0	26.0
4AB7 (BI, weighted FIM motor 19-28)	77.0	—	42.0	66.0	—	79.0	62.5	56.5	62.0	69.5	35.0	35.0	33.0	31.0	33.5
4AP1 (MMT, weighted FIM motor 19-91)	32.0	26.0	29.0	32.0	22.0	31.0	27.0	26.0	31.0	29.0	24.0	23.0	29.0	22.0	27.0
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	209.0	105.5	—	89.0	90.0	97.0	82.5	91.0	49.0	49.0	42.0	36.5	33.0
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	113.0	79.0	88.0	71.5	101.5	77.0	82.0	82.0	80.0	92.0	76.0	77.0	62.0	79.5	164.0
All Brain AN-SNAP classes	24.0	25.0	26.0	25.5	26.5	25.0	24.0	24.5	27.0	27.0	18.0	17.0	18.0	17.0	17.0

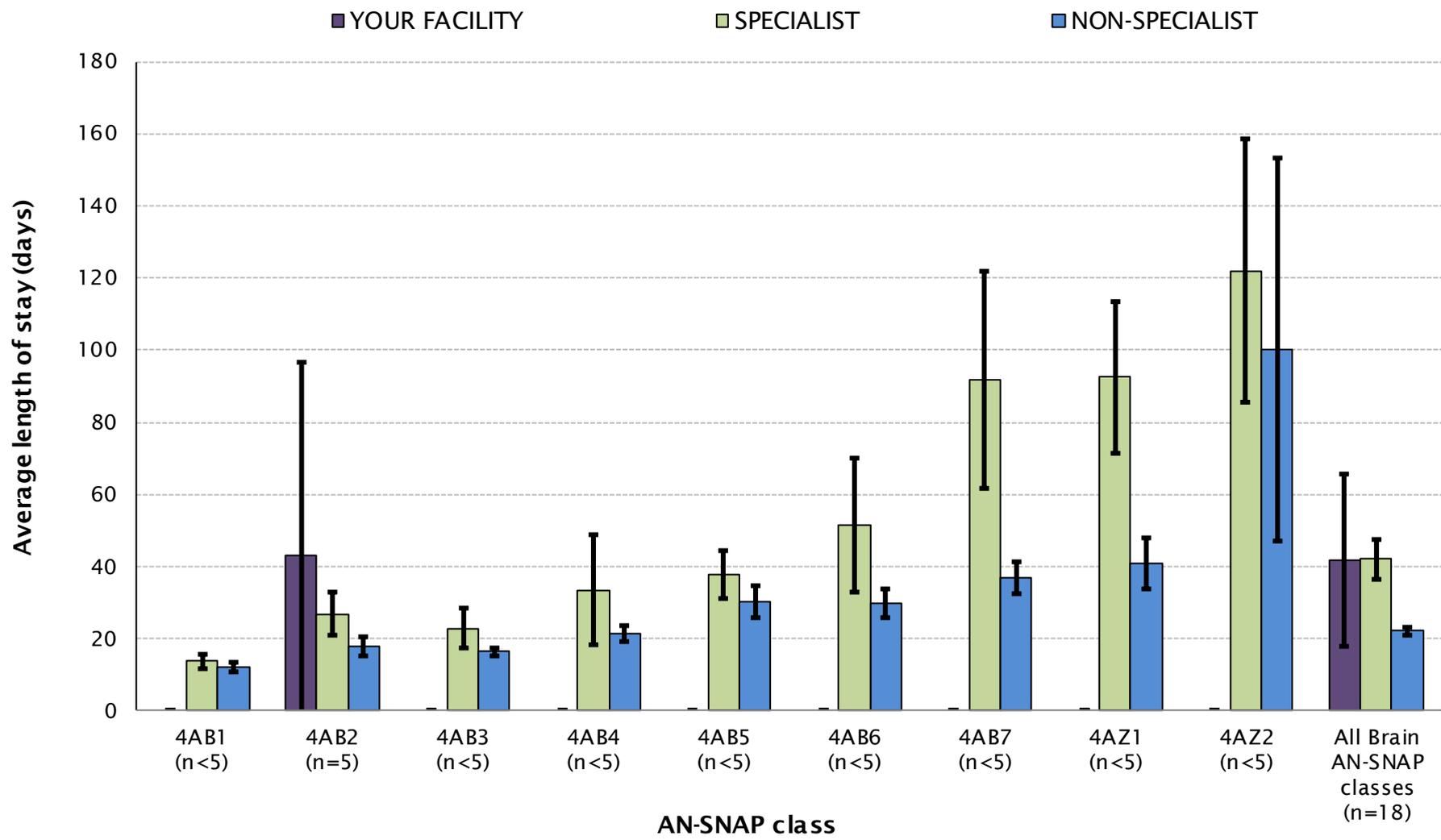
Note: First admission, completed episodes.

Traumatic brain injury average length of stay by AN-SNAP class



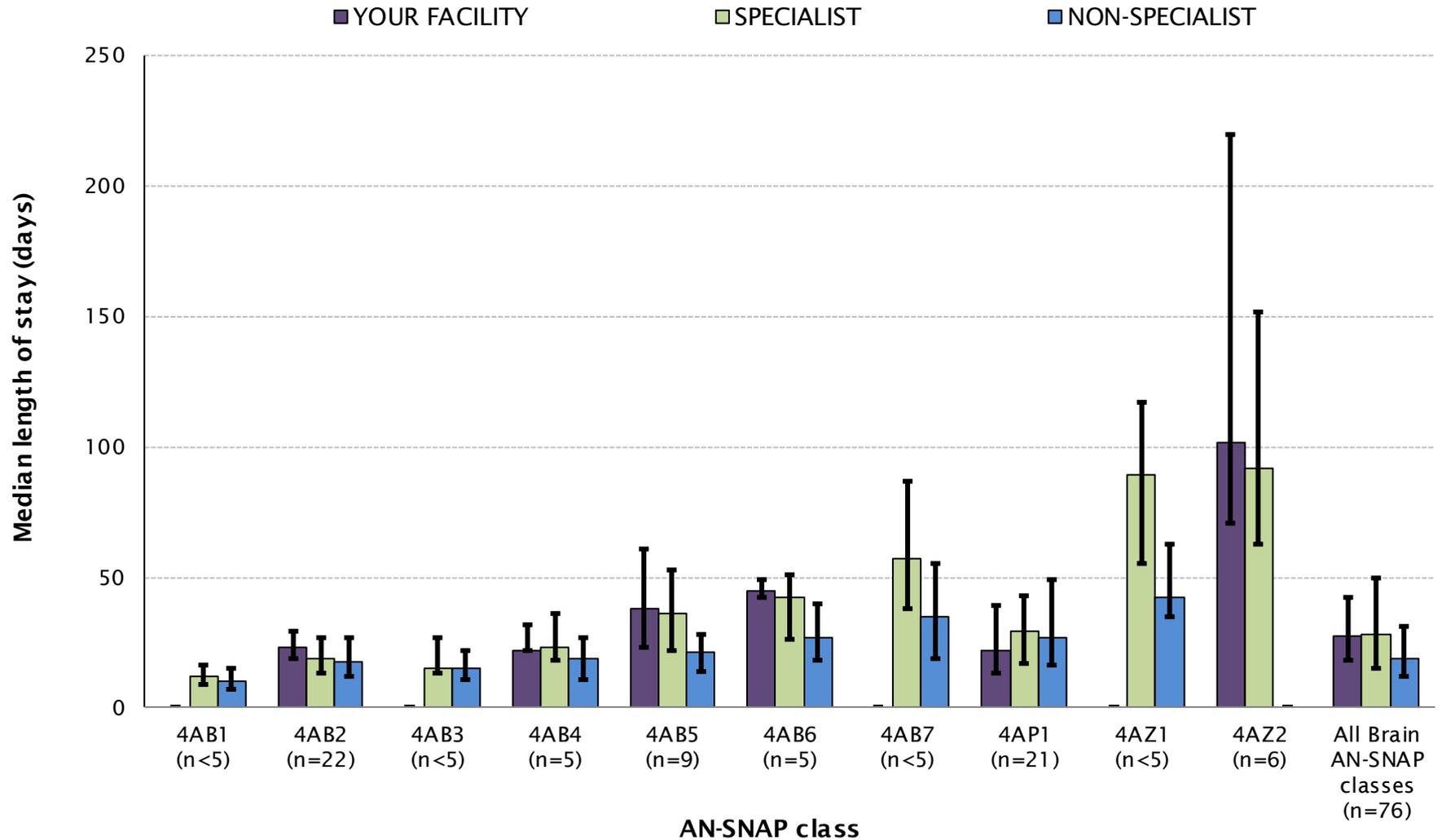
Note: First admission, completed episodes.

Non-traumatic brain injury average length of stay by AN-SNAP class



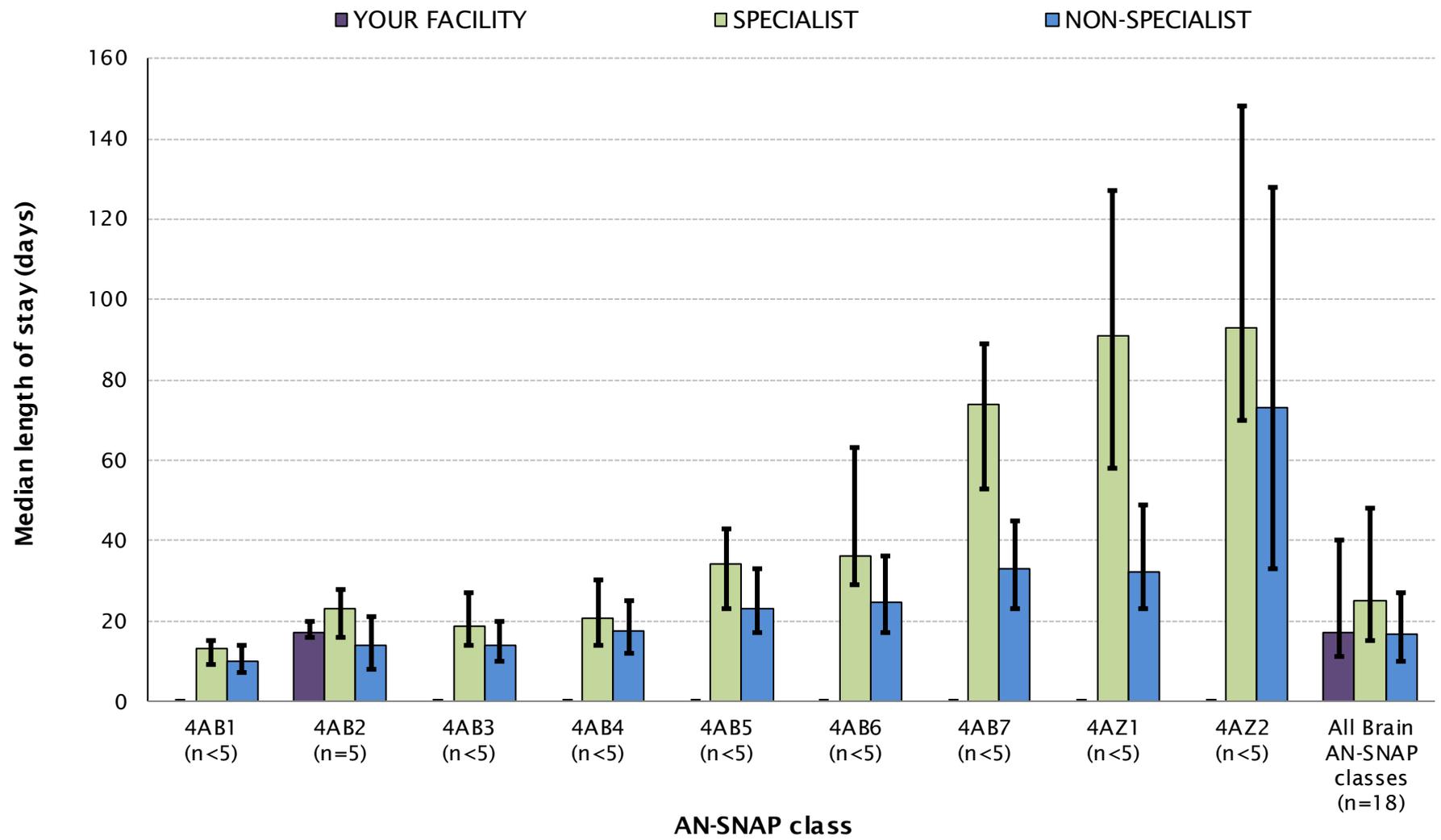
Note: First admission, completed episodes.

Traumatic brain injury median length of stay by AN-SNAP class



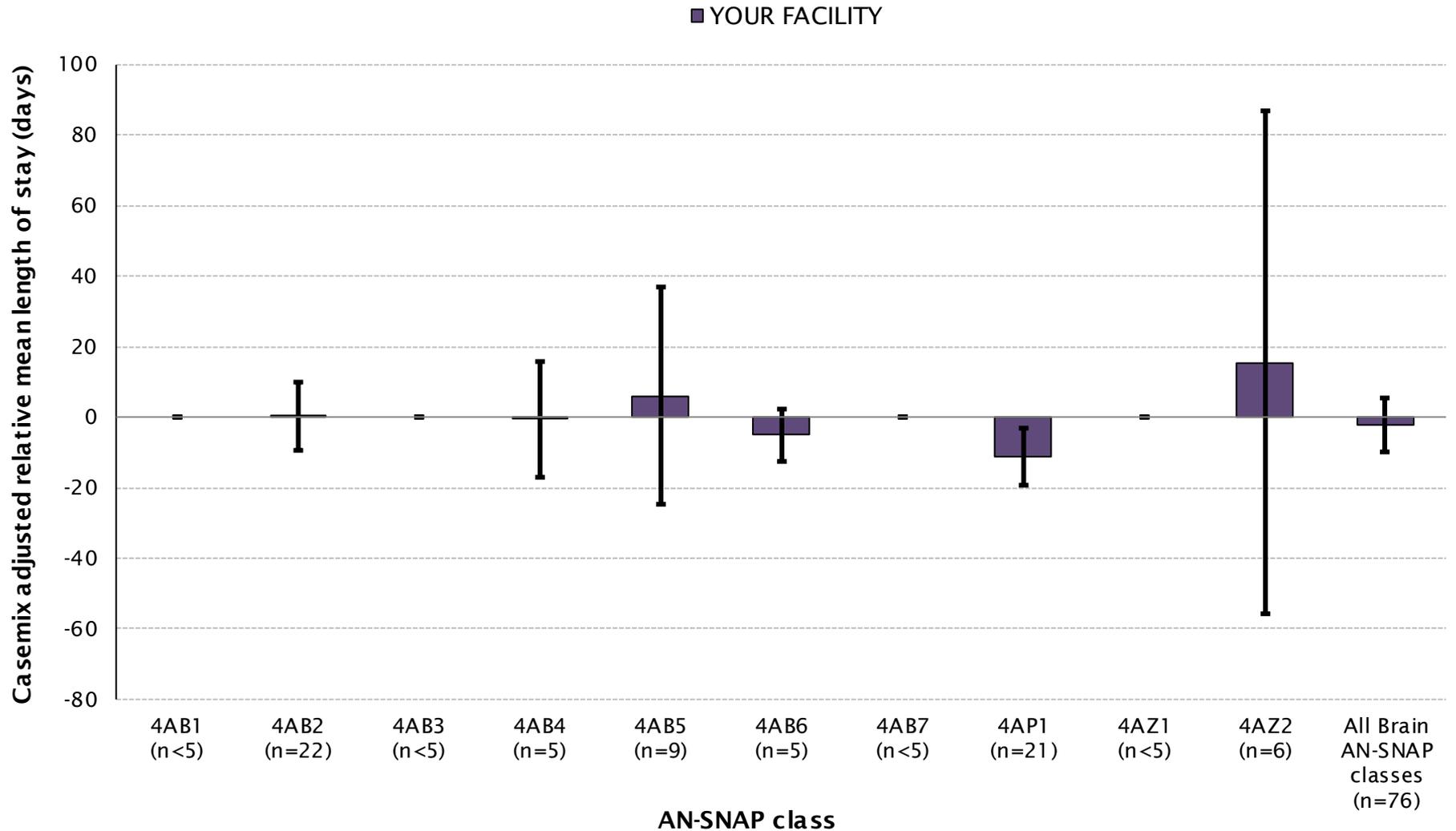
Note: First admission, completed episodes.

Non-traumatic brain injury median length of stay by AN-SNAP class



Note: First admission, completed episodes.

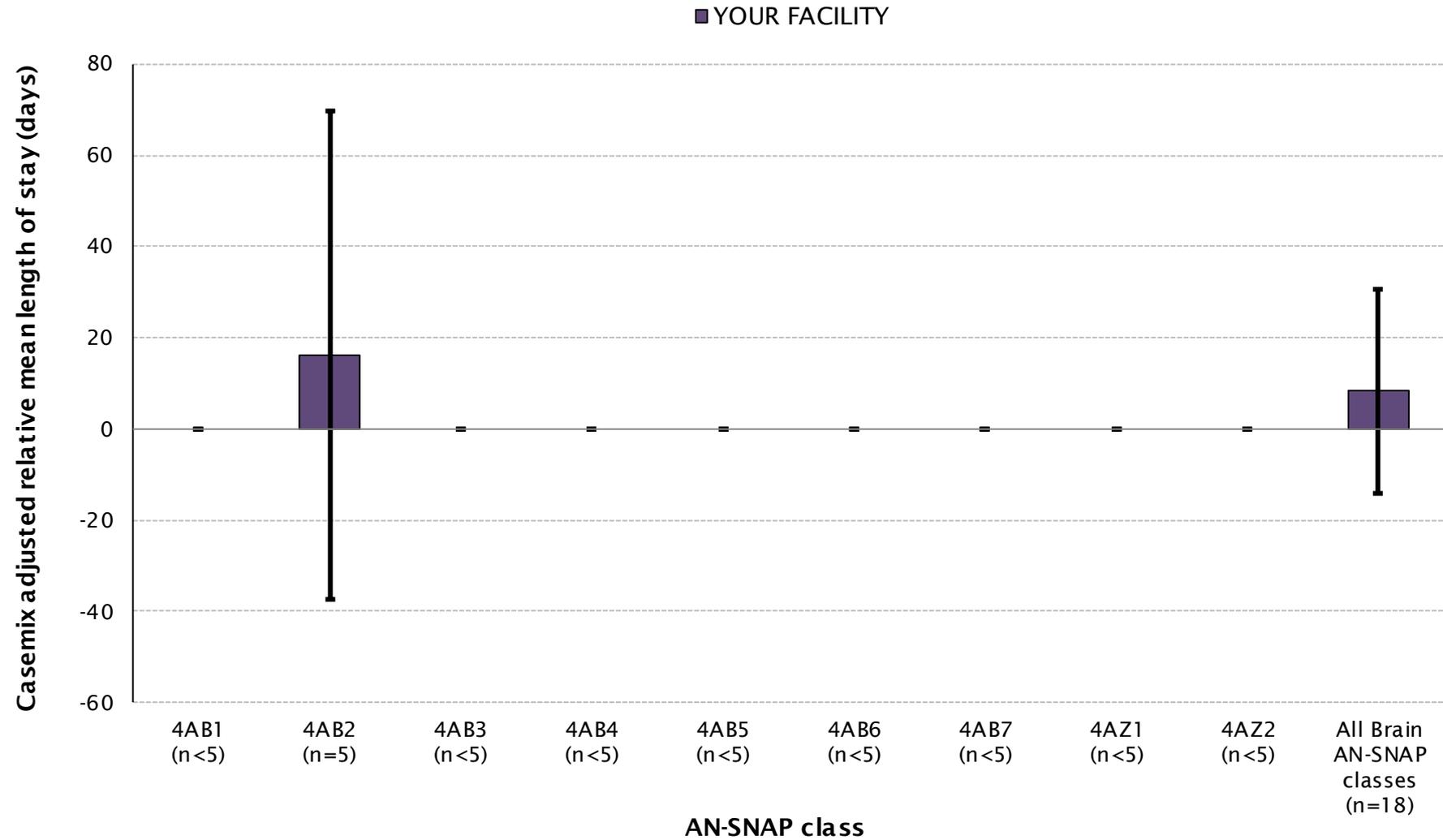
TBI casemix-adjusted* relative mean length of stay by AN-SNAP class



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

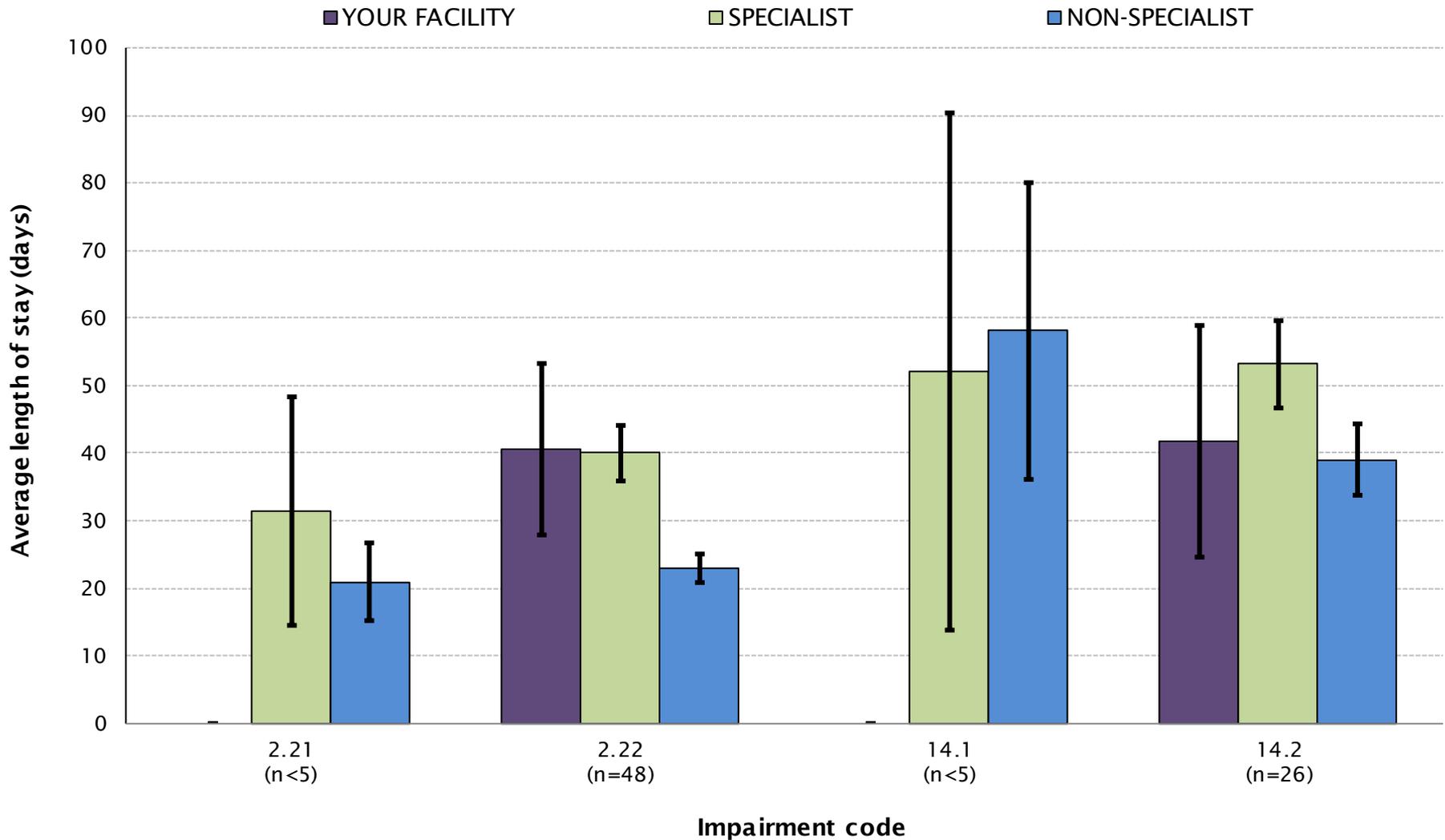
NTBI casemix-adjusted* relative mean length of stay by AN-SNAP class



Note: First admission, completed episodes.

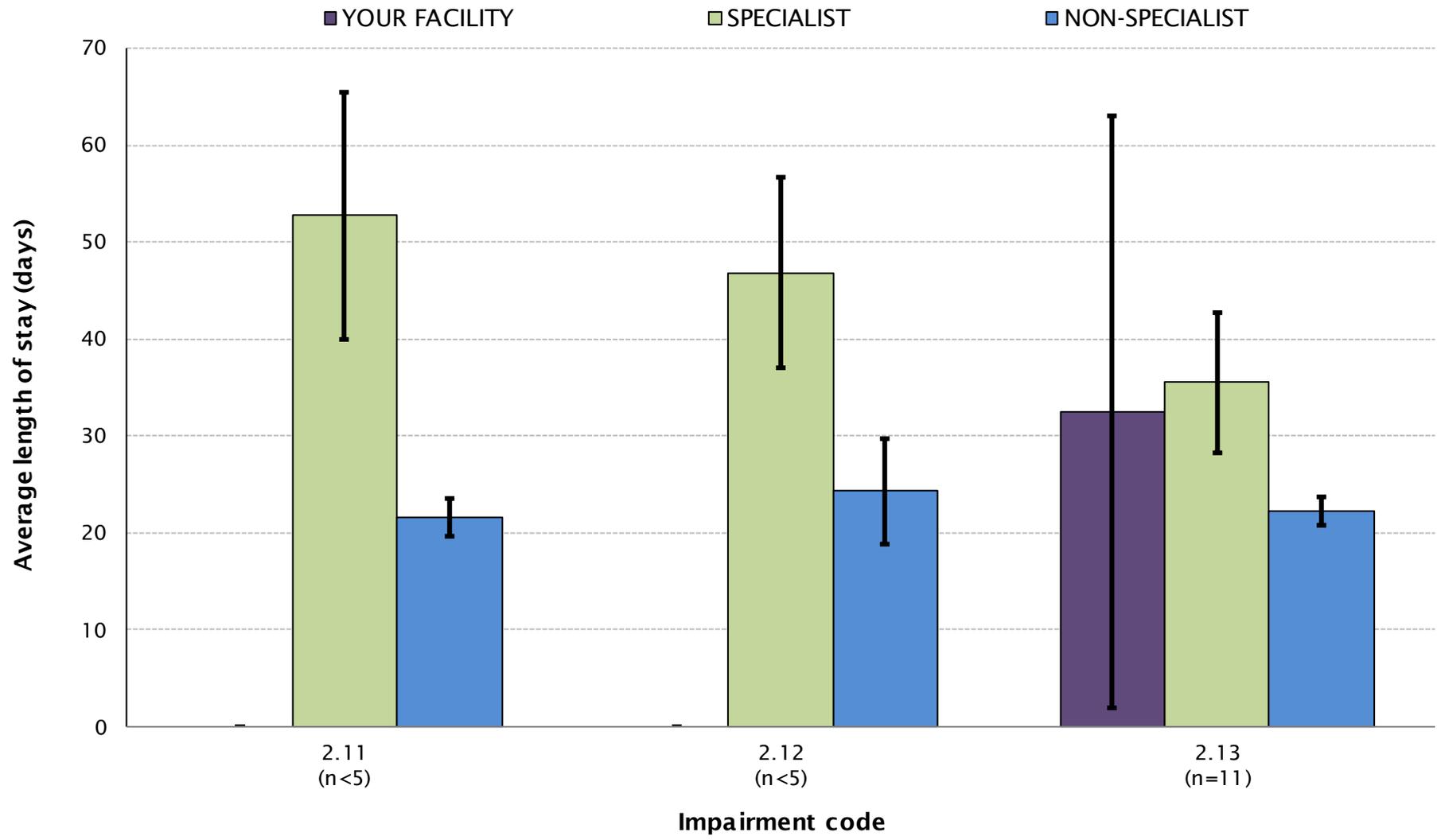
*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Traumatic brain injury average length of stay by impairment



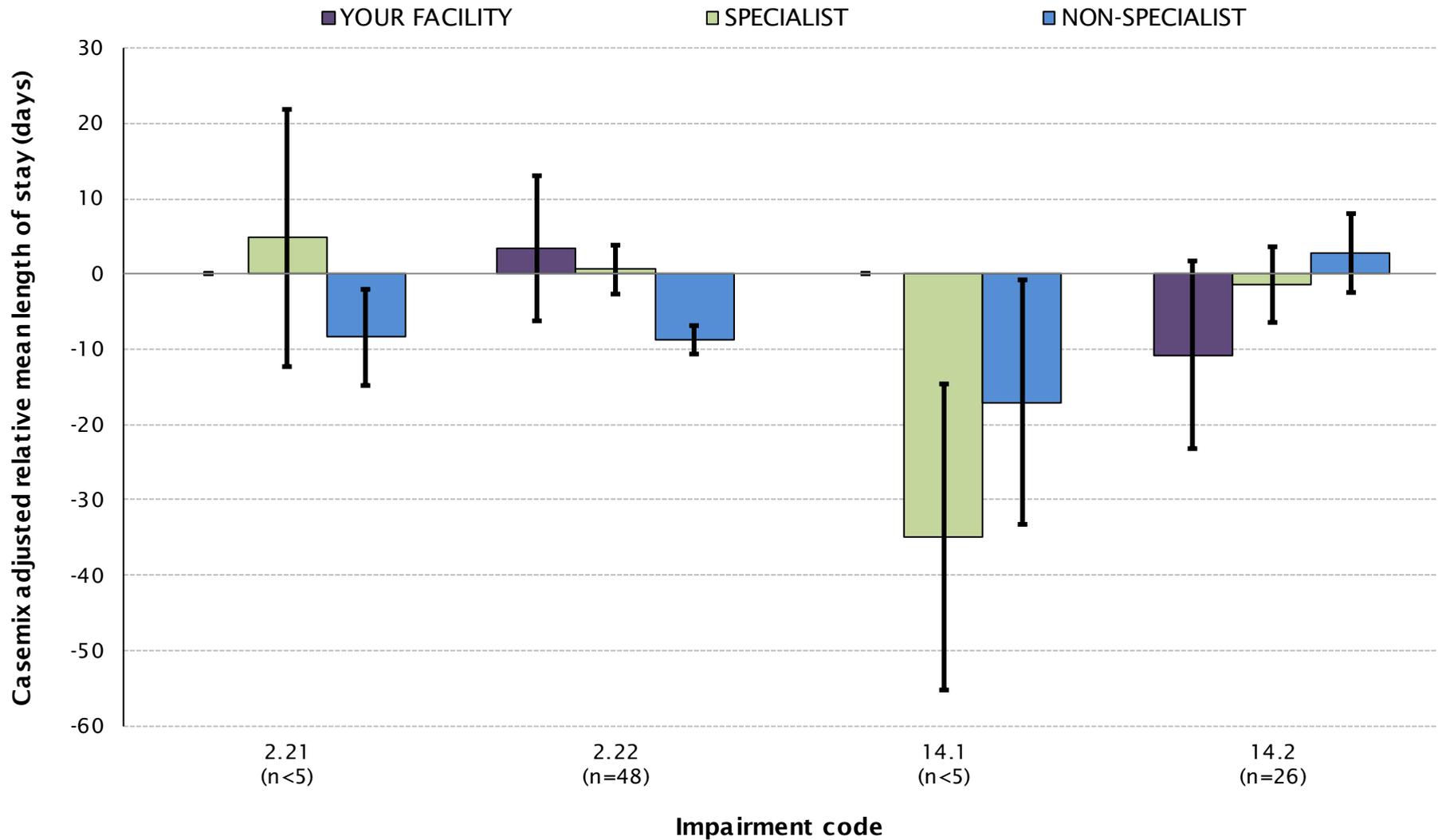
Note: First admission, completed episodes.

Non-traumatic brain injury average length of stay by impairment



Note: First admission, completed episodes.

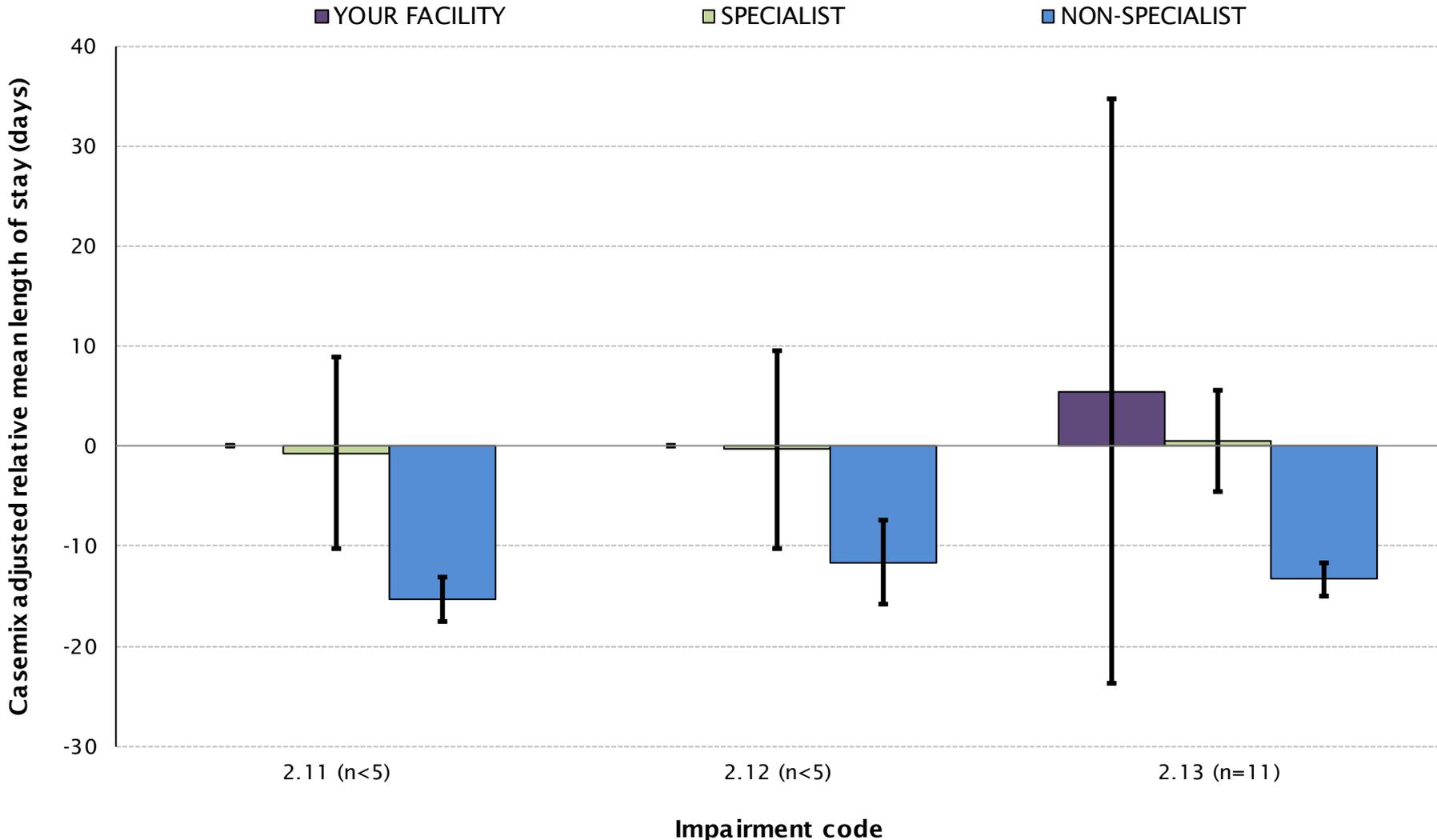
TBI casemix-adjusted* relative mean length of stay by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

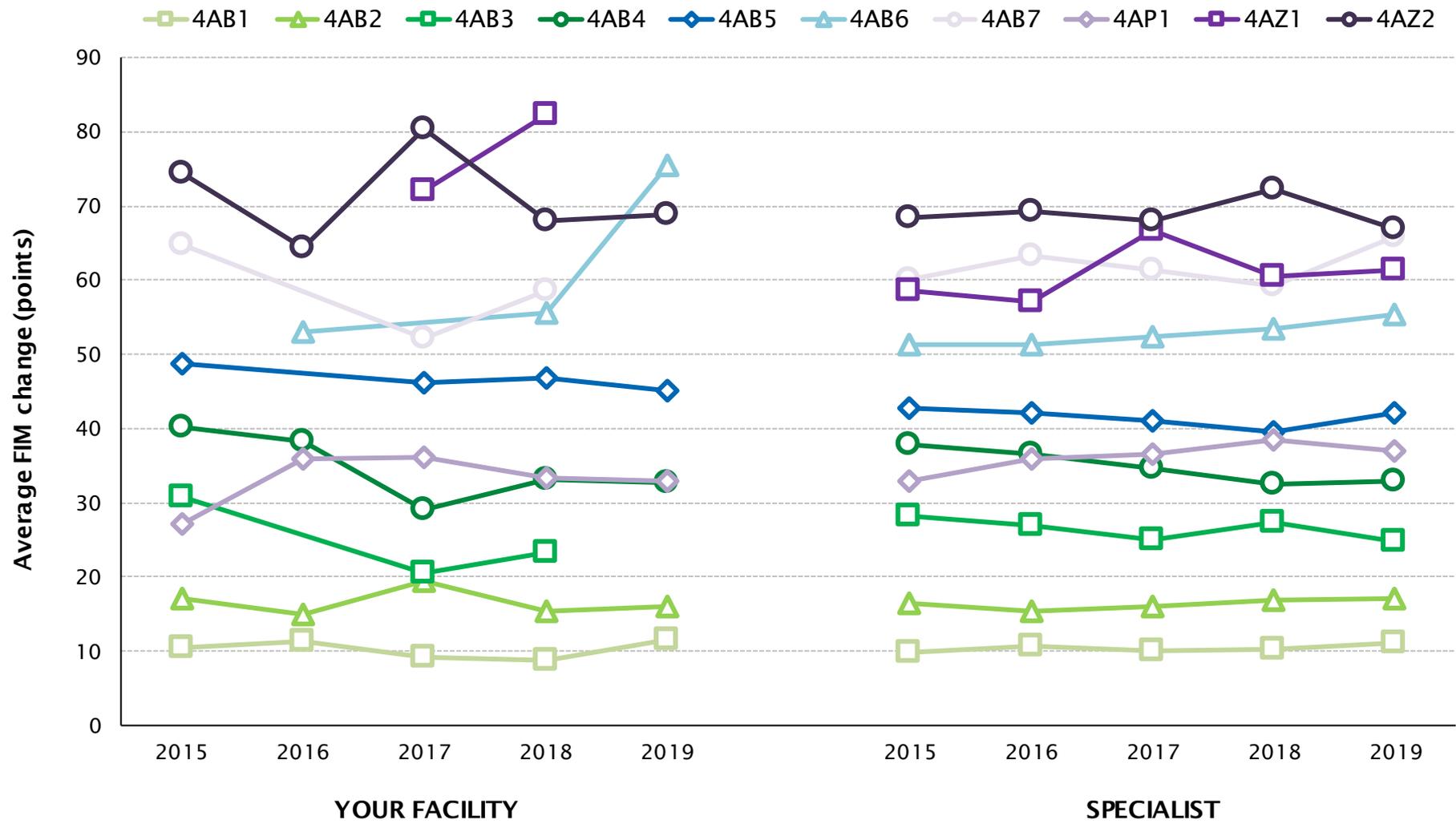
NTBI casemix-adjusted* relative mean length of stay by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Average FIM change by AN-SNAP class over time



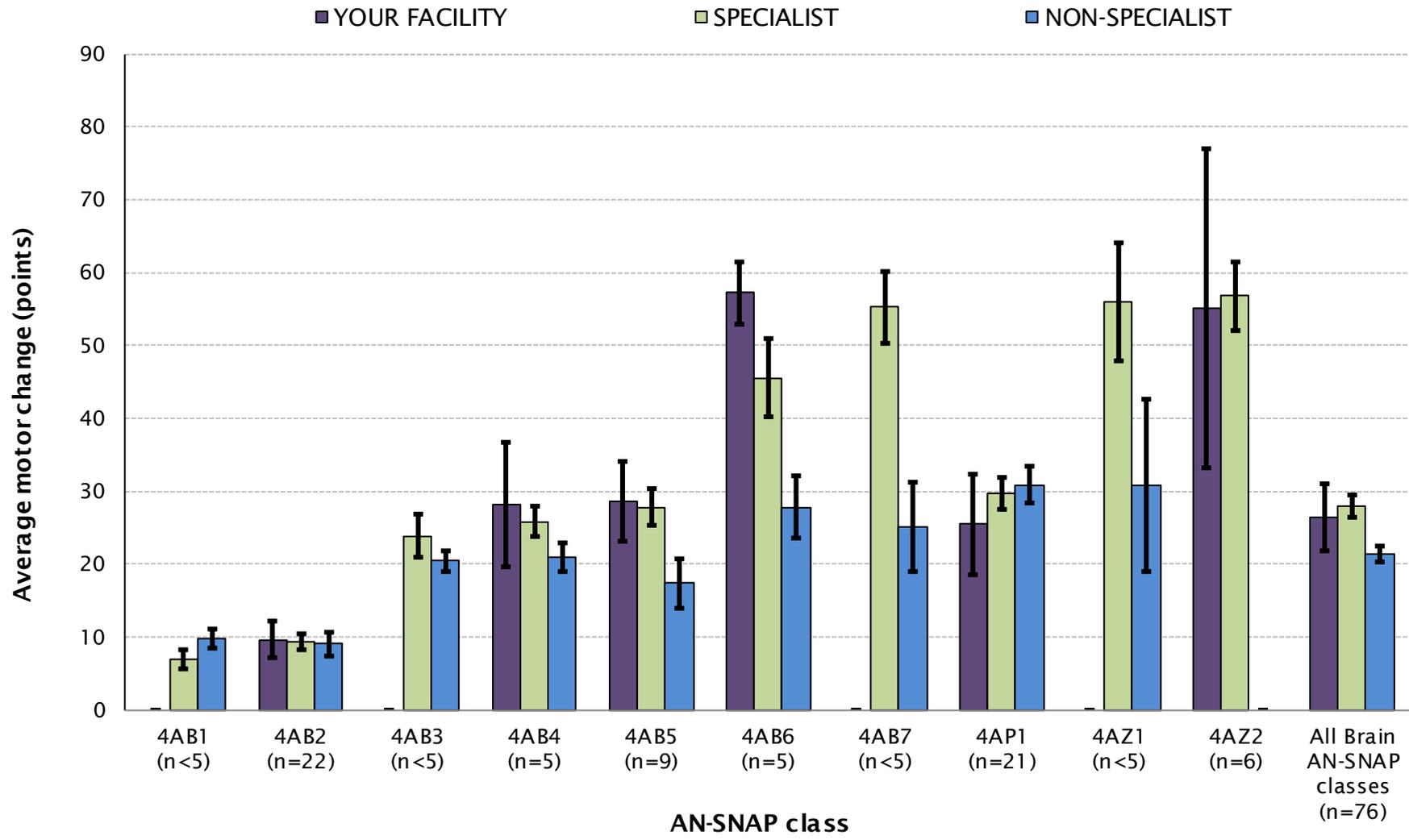
Note: First admission, completed episodes.

Average FIM change by AN-SNAP class over time

AN-SNAP class	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	10.4	11.2	9.3	8.8	11.6	9.7	10.8	10.1	10.3	11.2	9.6	10.9	10.9	10.7	10.9
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	17.0	14.9	19.4	15.4	16.0	16.5	15.4	16.1	17.0	17.1	13.4	13.0	14.4	13.8	12.5
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	30.8	—	20.6	23.3	—	28.2	26.9	25.0	27.3	24.7	21.7	22.3	22.8	22.8	22.7
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	40.2	38.3	29.1	33.1	32.7	37.9	36.6	34.7	32.5	32.9	24.0	24.3	25.1	24.8	24.9
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	48.7	—	46.3	46.9	45.2	42.7	42.1	41.0	39.7	42.2	27.3	30.1	28.8	25.9	23.5
4AB6 (BI, weighted FIM motor 29-40)	—	53.0	—	55.6	75.6	51.3	51.3	52.3	53.4	55.5	31.1	32.4	34.4	30.6	30.8
4AB7 (BI, weighted FIM motor 19-28)	64.9	—	52.1	58.6	—	60.1	63.3	61.5	59.2	65.9	33.7	37.2	36.3	32.5	32.9
4AP1 (MMT, weighted FIM motor 19-91)	27.2	35.9	36.2	33.3	33.0	33.0	35.9	36.5	38.5	36.9	30.7	32.3	35.8	29.1	33.6
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	72.0	82.4	—	58.6	57.2	66.8	60.5	61.4	38.7	34.9	31.3	35.6	35.9
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	74.4	64.3	80.5	68.0	68.8	68.4	69.2	68.1	72.4	66.9	39.3	52.9	47.9	48.6	18.1
All Brain AN-SNAP classes	28.5	33.0	35.4	37.1	34.5	30.8	31.7	33.1	33.9	35.2	22.0	23.3	24.2	23.1	22.9

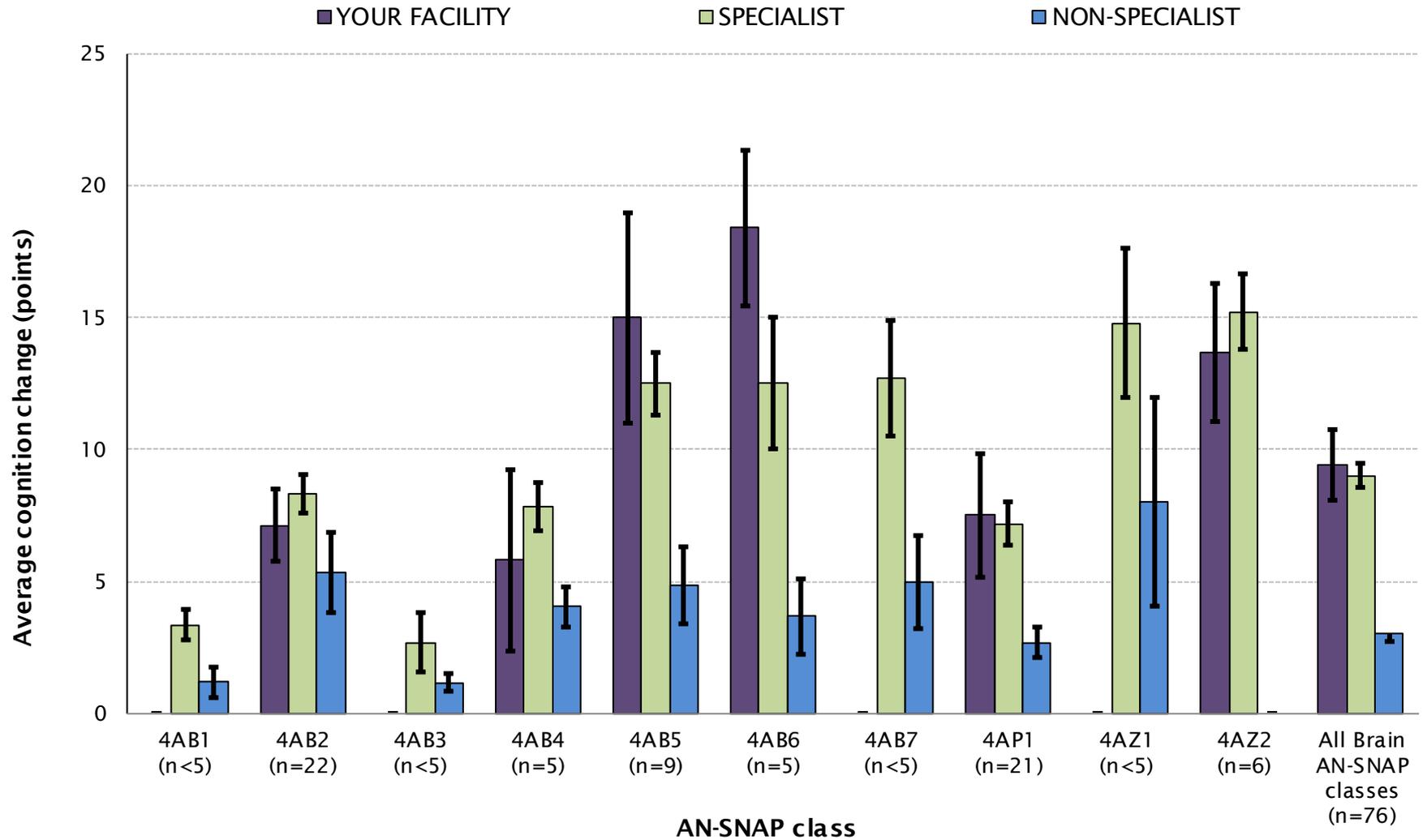
Note: First admission, completed episodes.

Traumatic brain injury average FIM motor change by AN-SNAP class



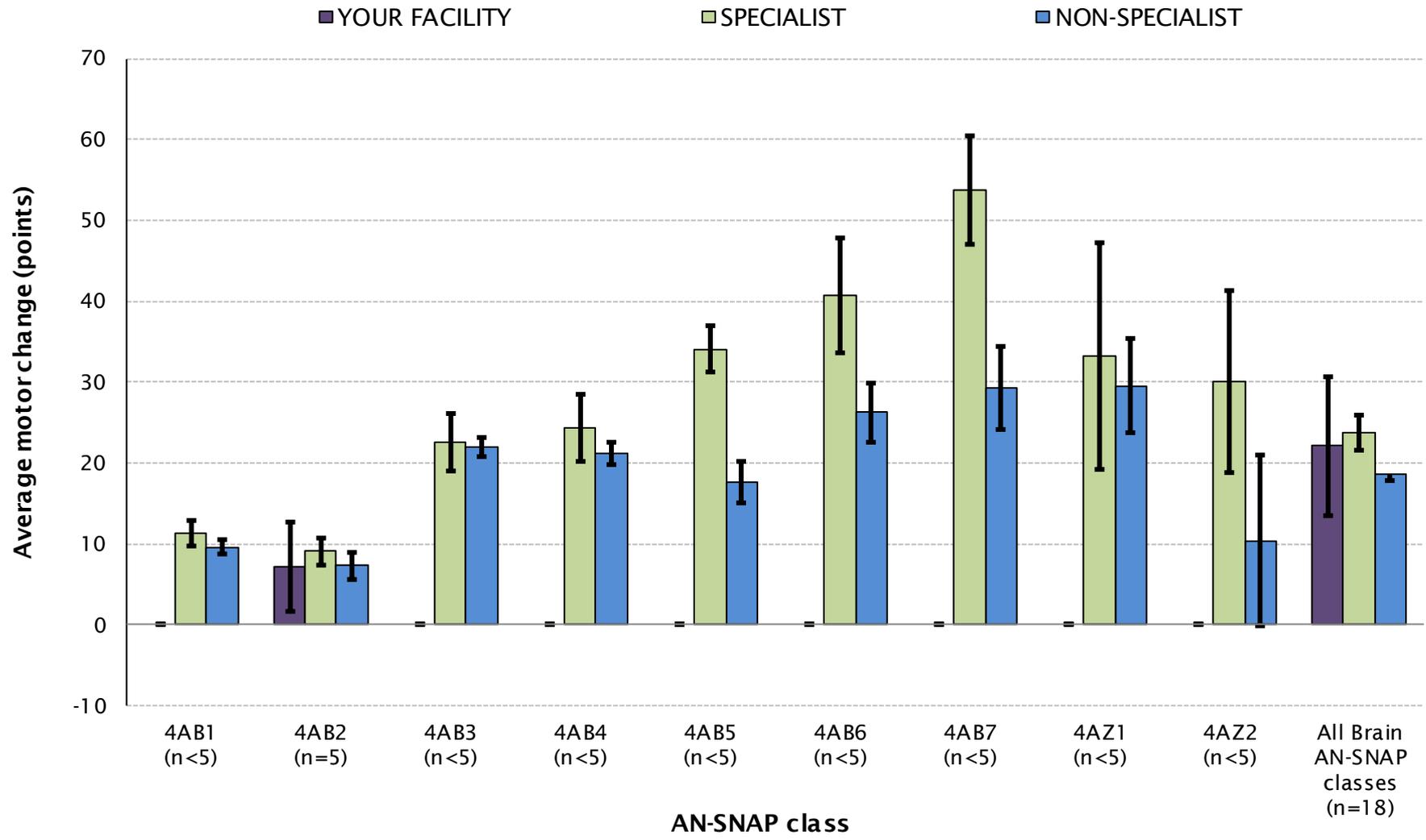
Note: First admission, completed episodes.

Traumatic brain injury average FIM cognition change by AN-SNAP class



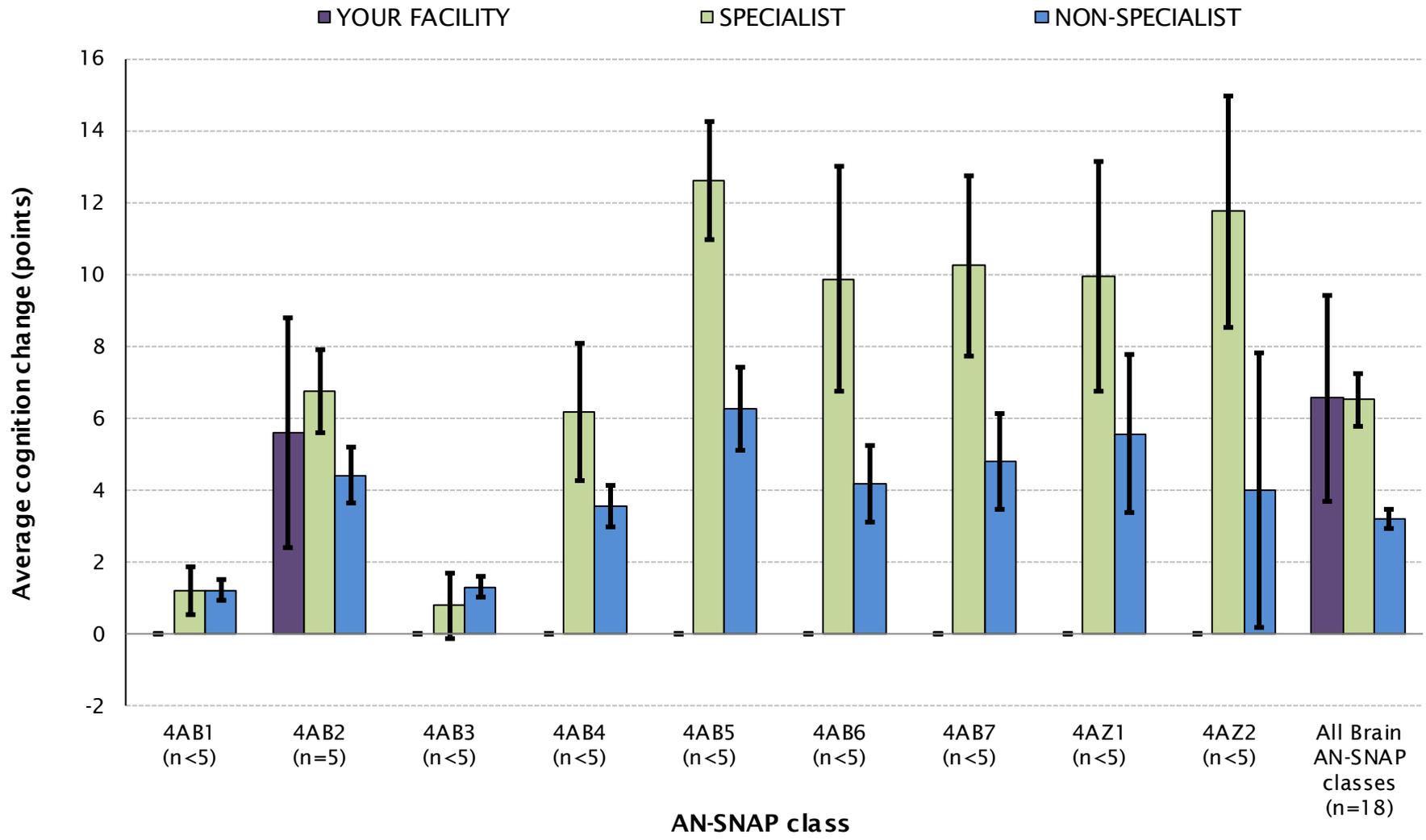
Note: First admission, completed episodes.

Non-traumatic brain injury average FIM motor change by AN-SNAP class



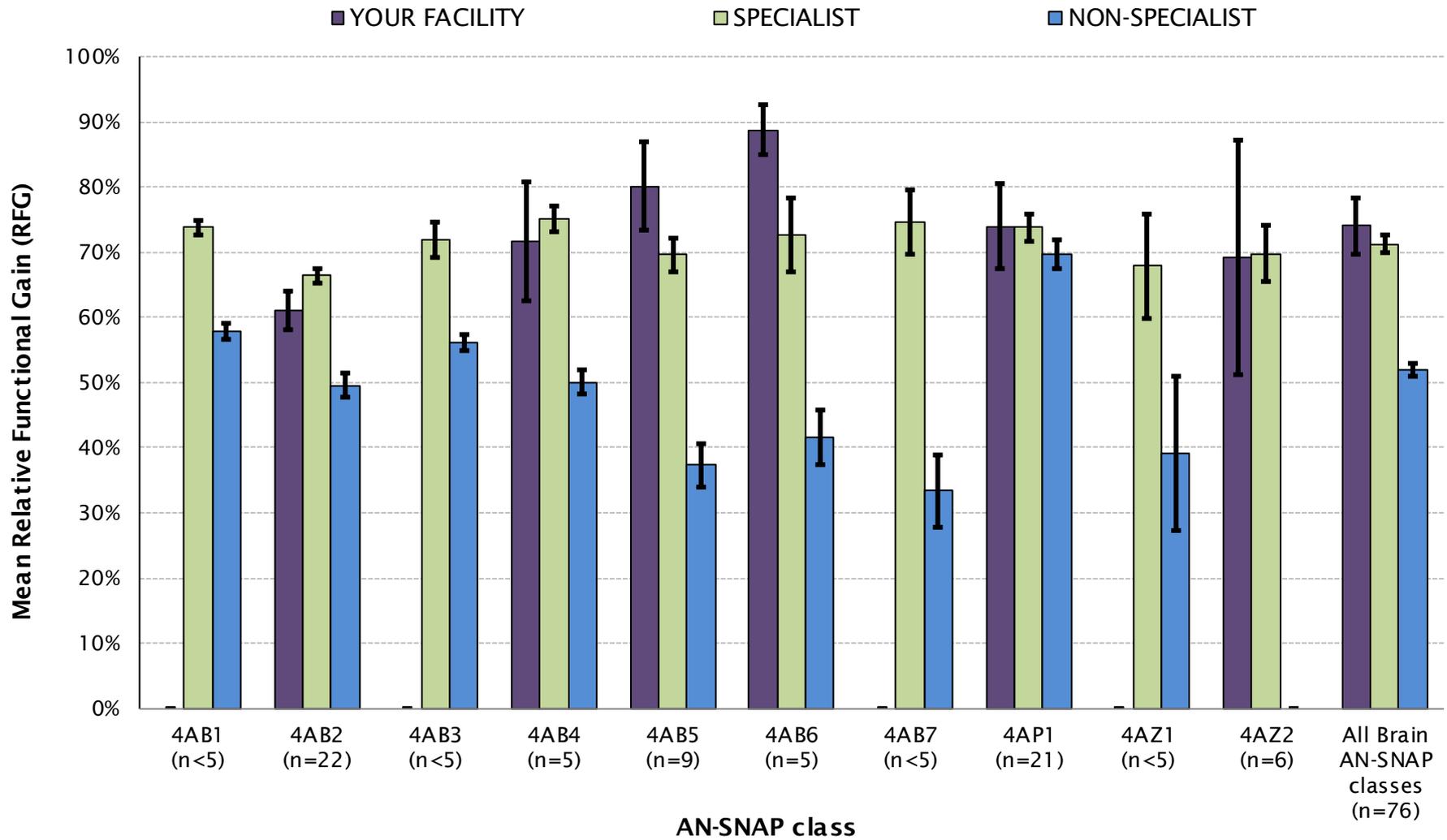
Note: First admission, completed episodes.

Non-traumatic brain injury average FIM cognition change by AN-SNAP class



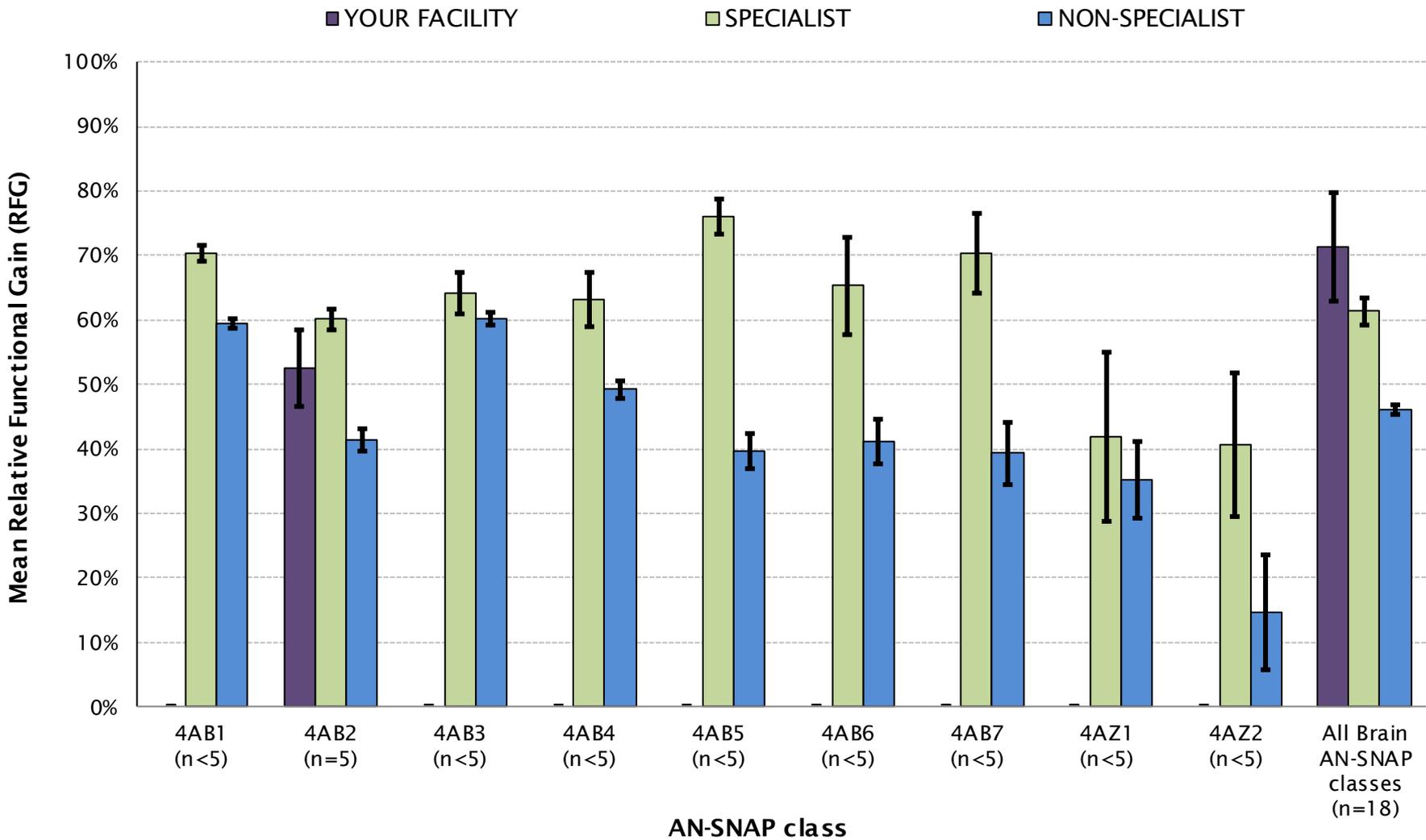
Note: First admission, completed episodes.

Traumatic brain injury average relative functional gain by AN-SNAP class



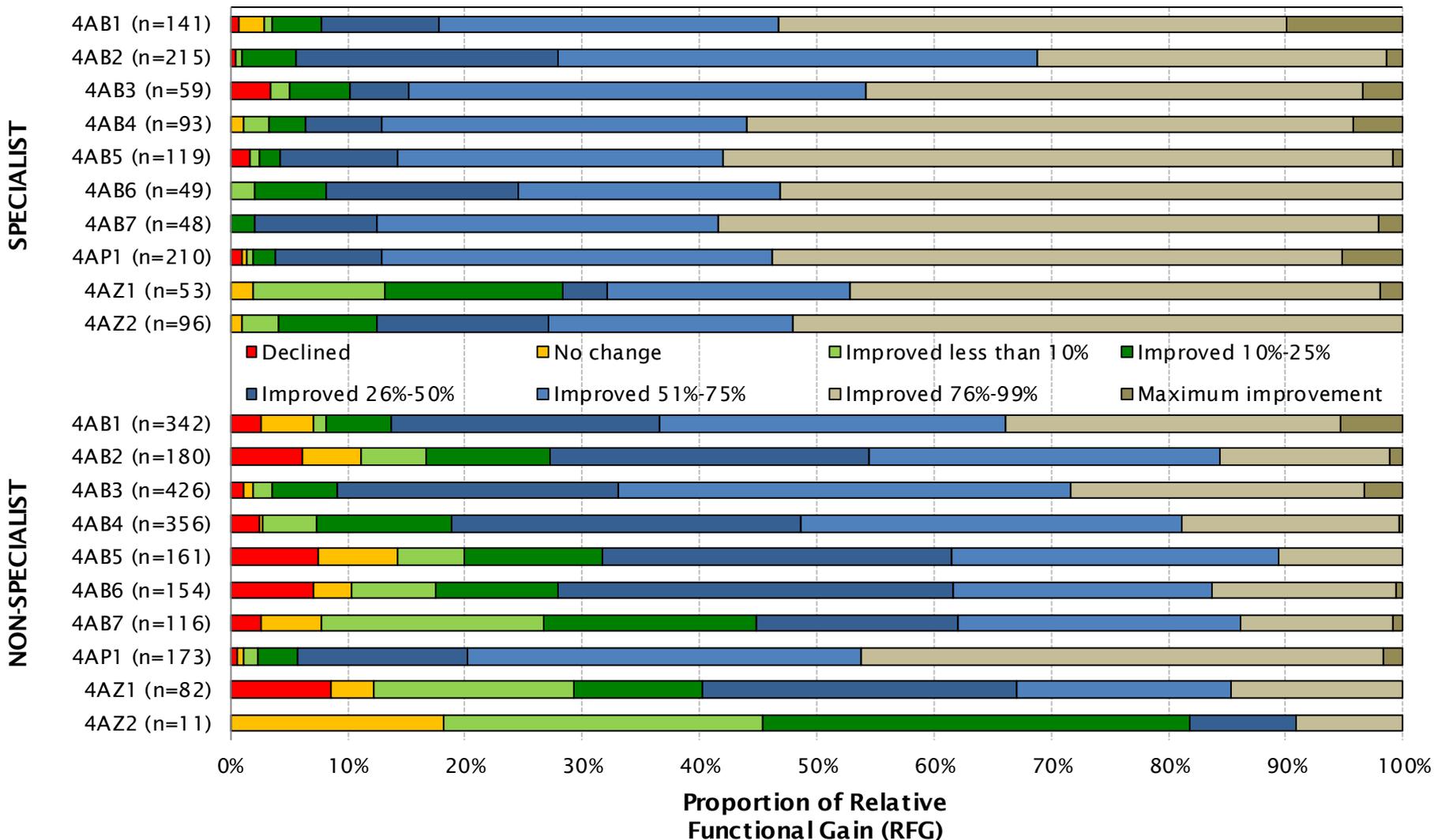
Note: First admission, completed episodes.

Non-traumatic brain injury average relative functional gain by AN-SNAP class



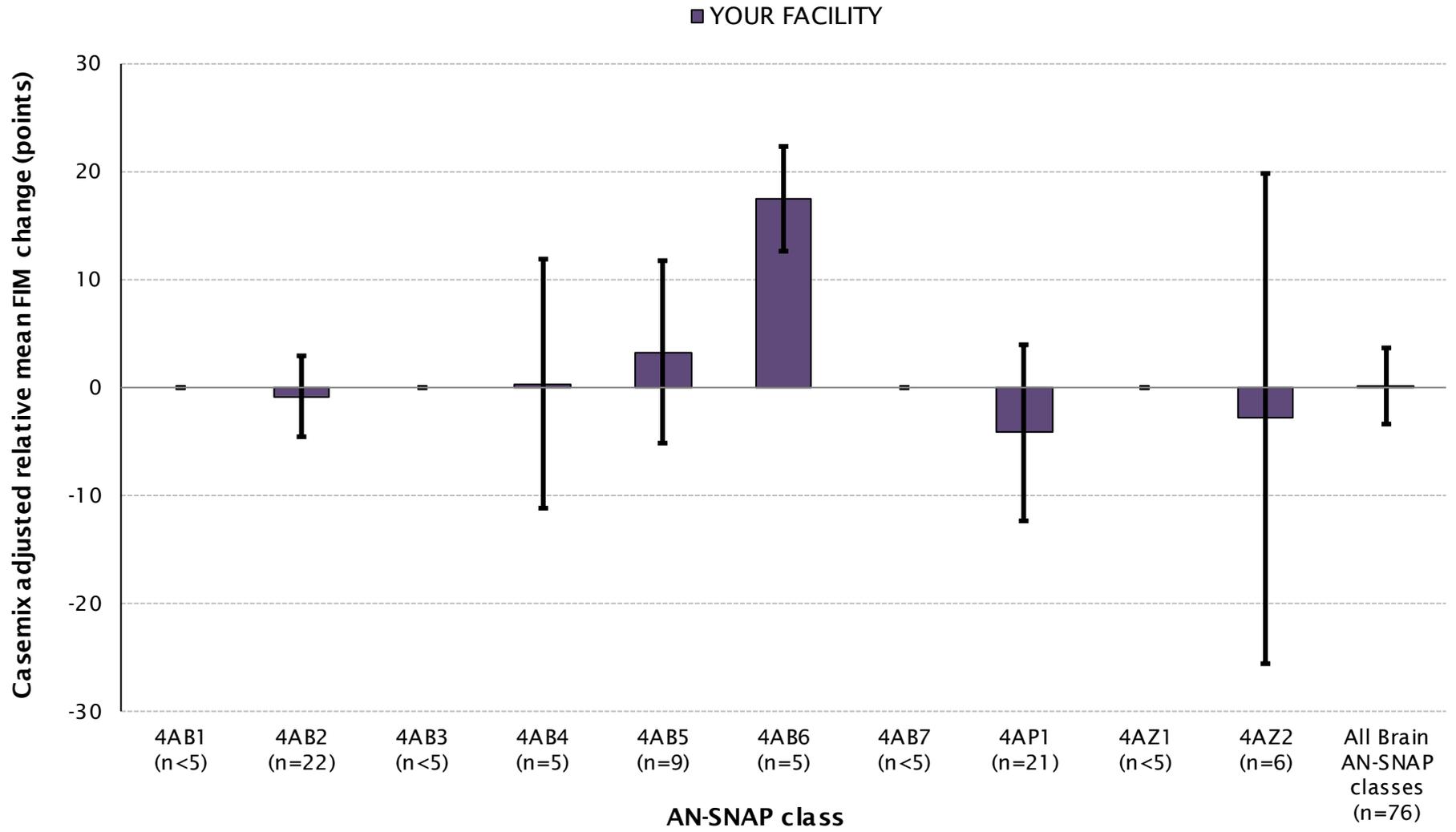
Note: First admission, completed episodes.

Relative functional gain by AN-SNAP class



Note: First admission, completed episodes.

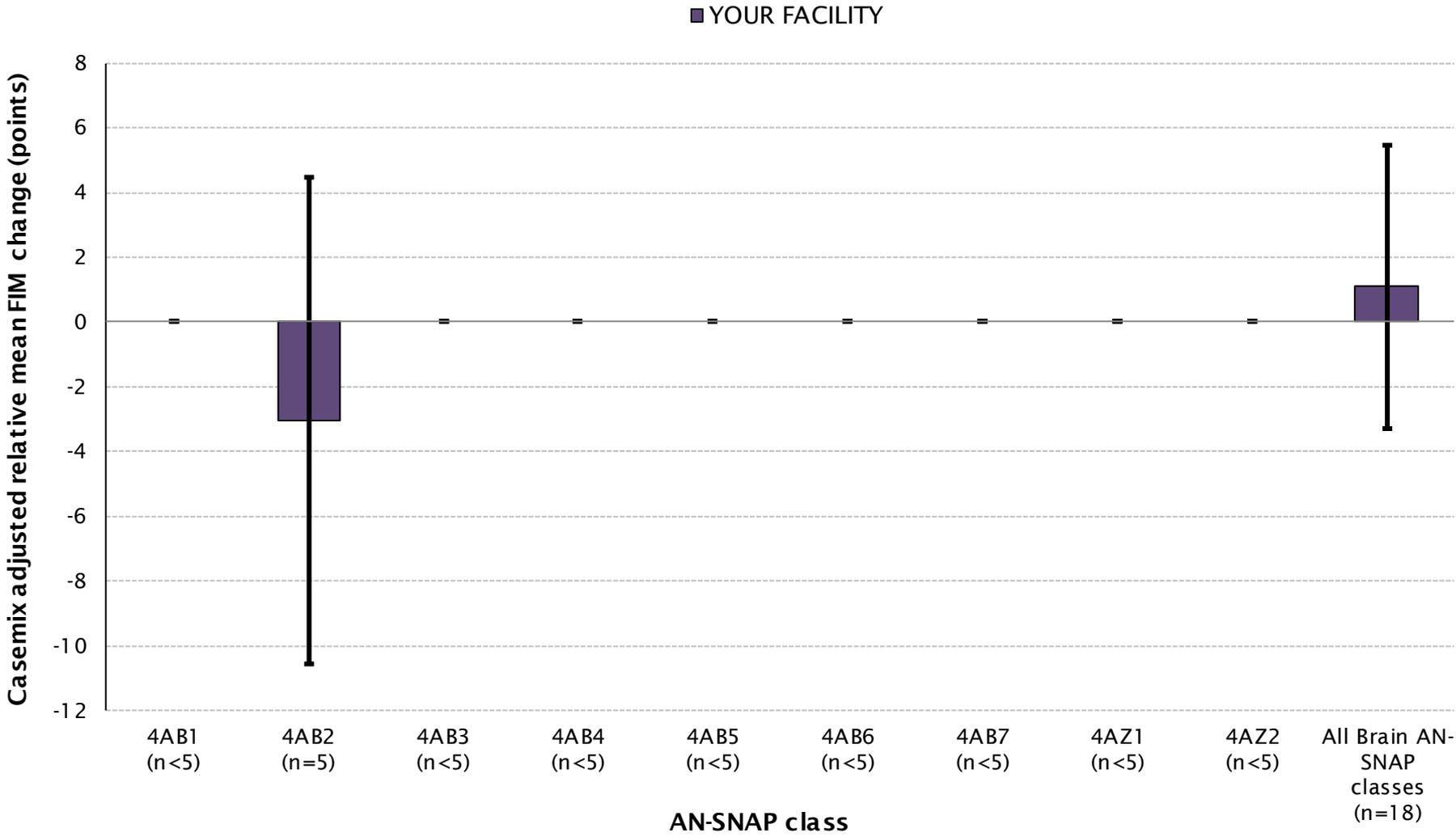
TBI casemix-adjusted* relative mean FIM change by AN-SNAP class



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

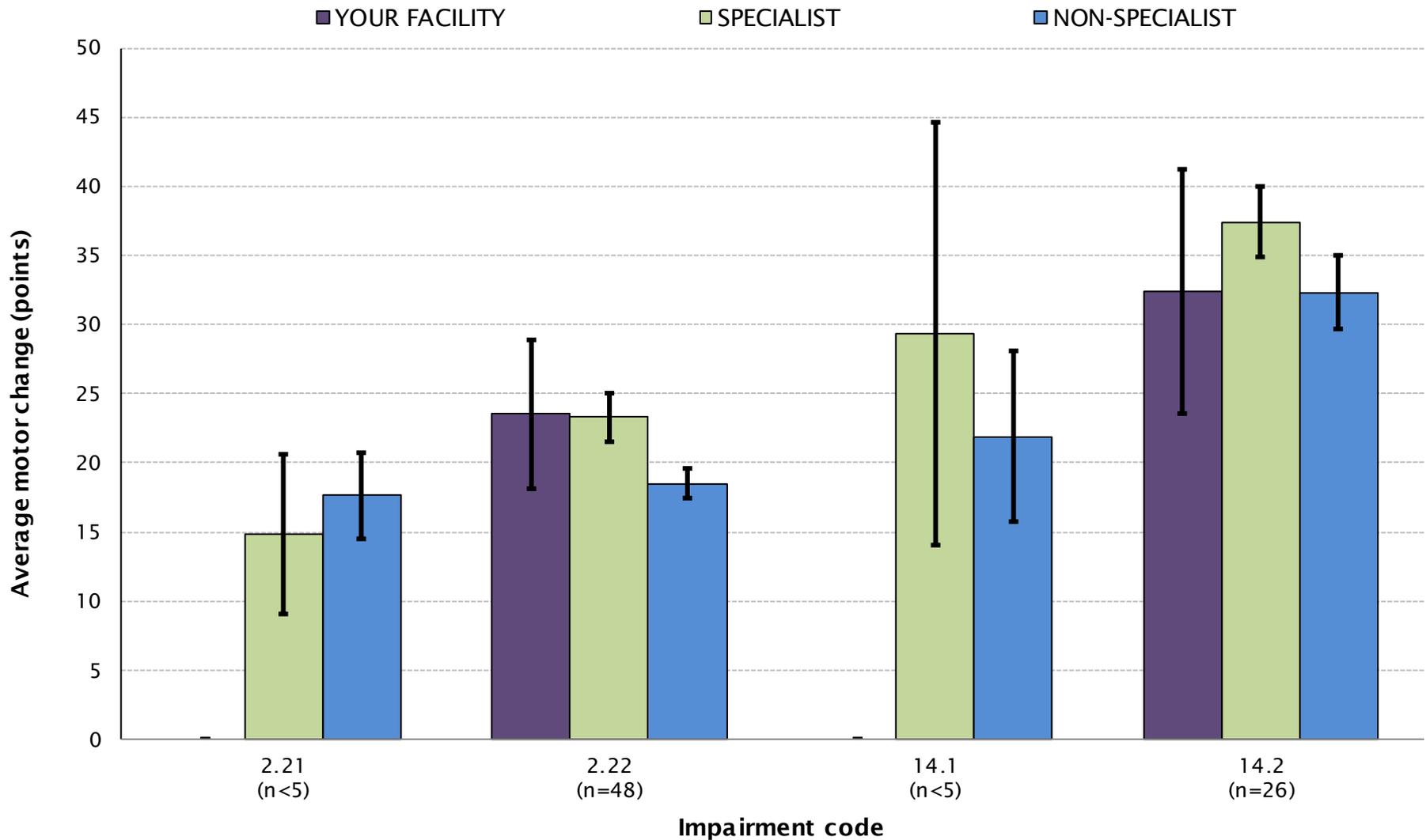
NTBI casemix-adjusted* relative mean FIM change by AN-SNAP class



Note: First admission, completed episodes.

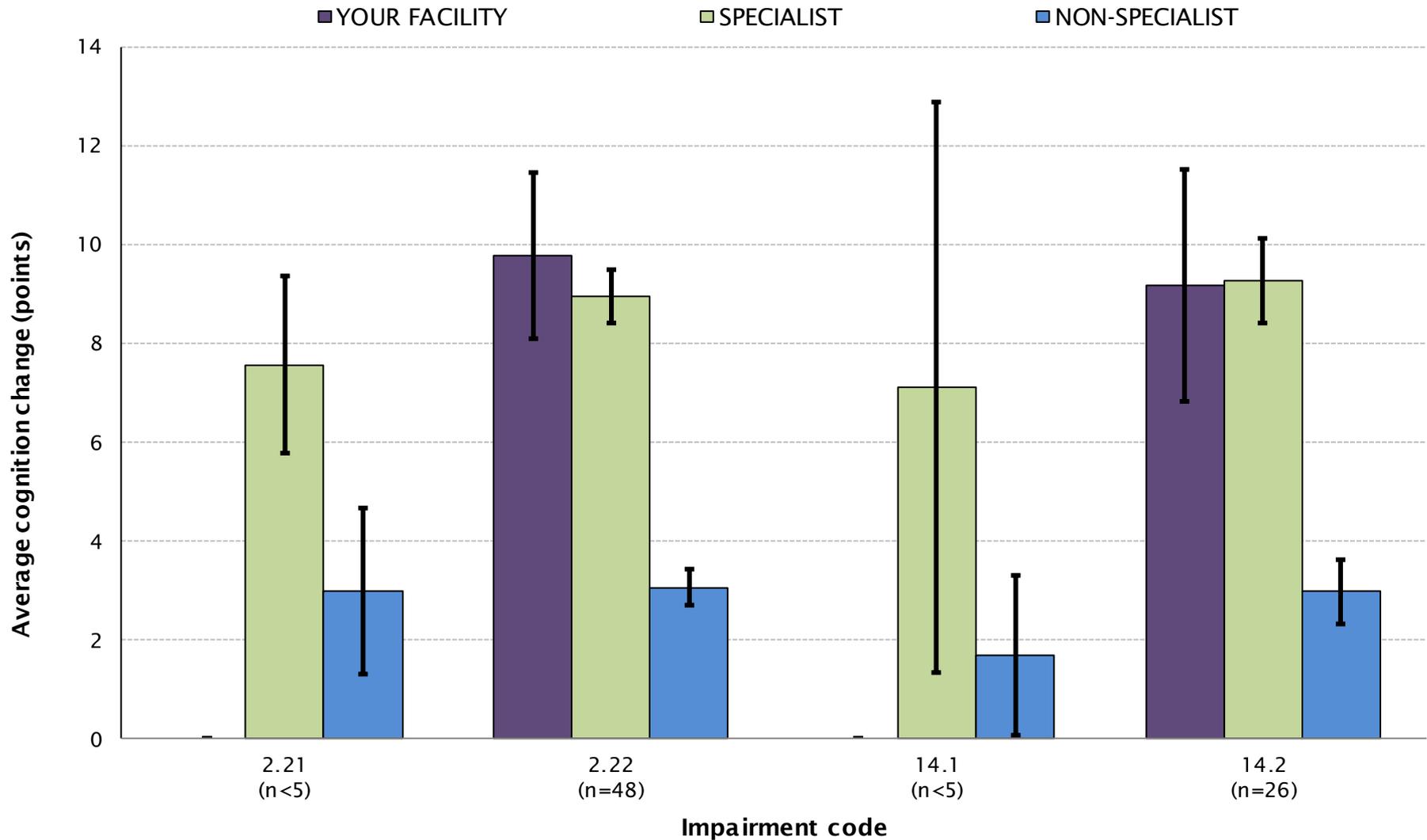
*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Traumatic brain injury average FIM motor change by impairment



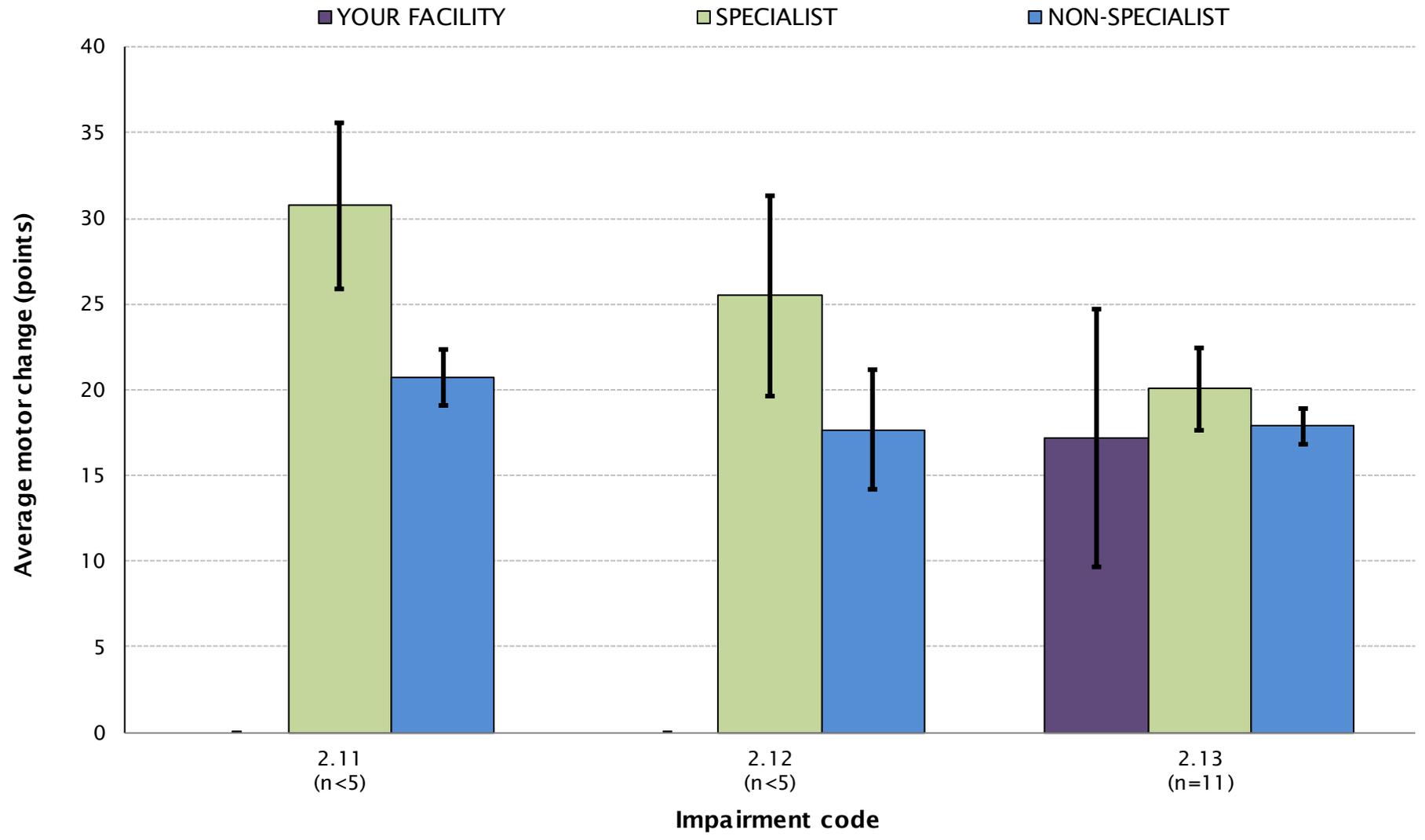
Note: First admission, completed episodes.

Traumatic brain injury average FIM cognition change by impairment



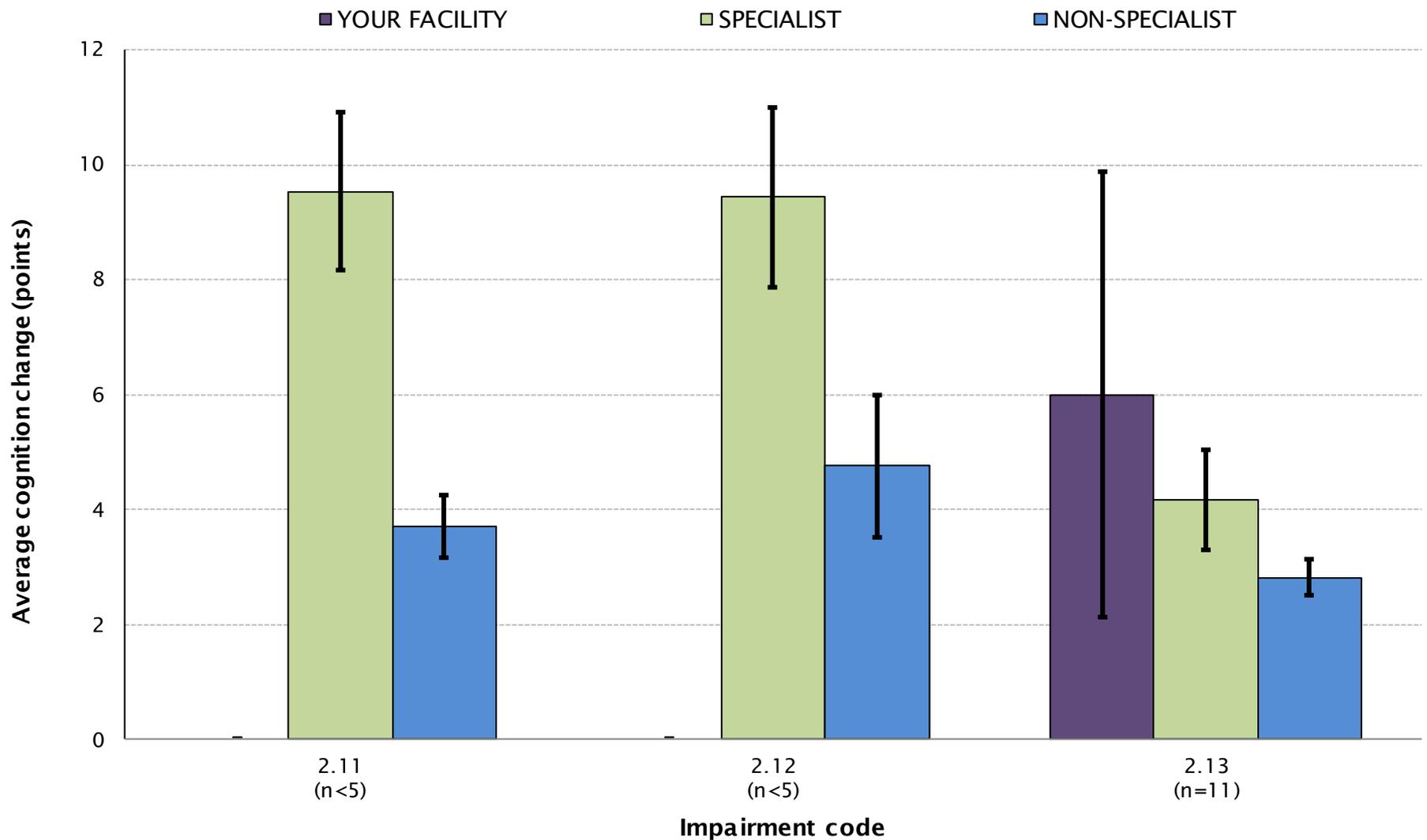
Note: First admission, completed episodes.

Non-traumatic brain injury average FIM motor change by impairment



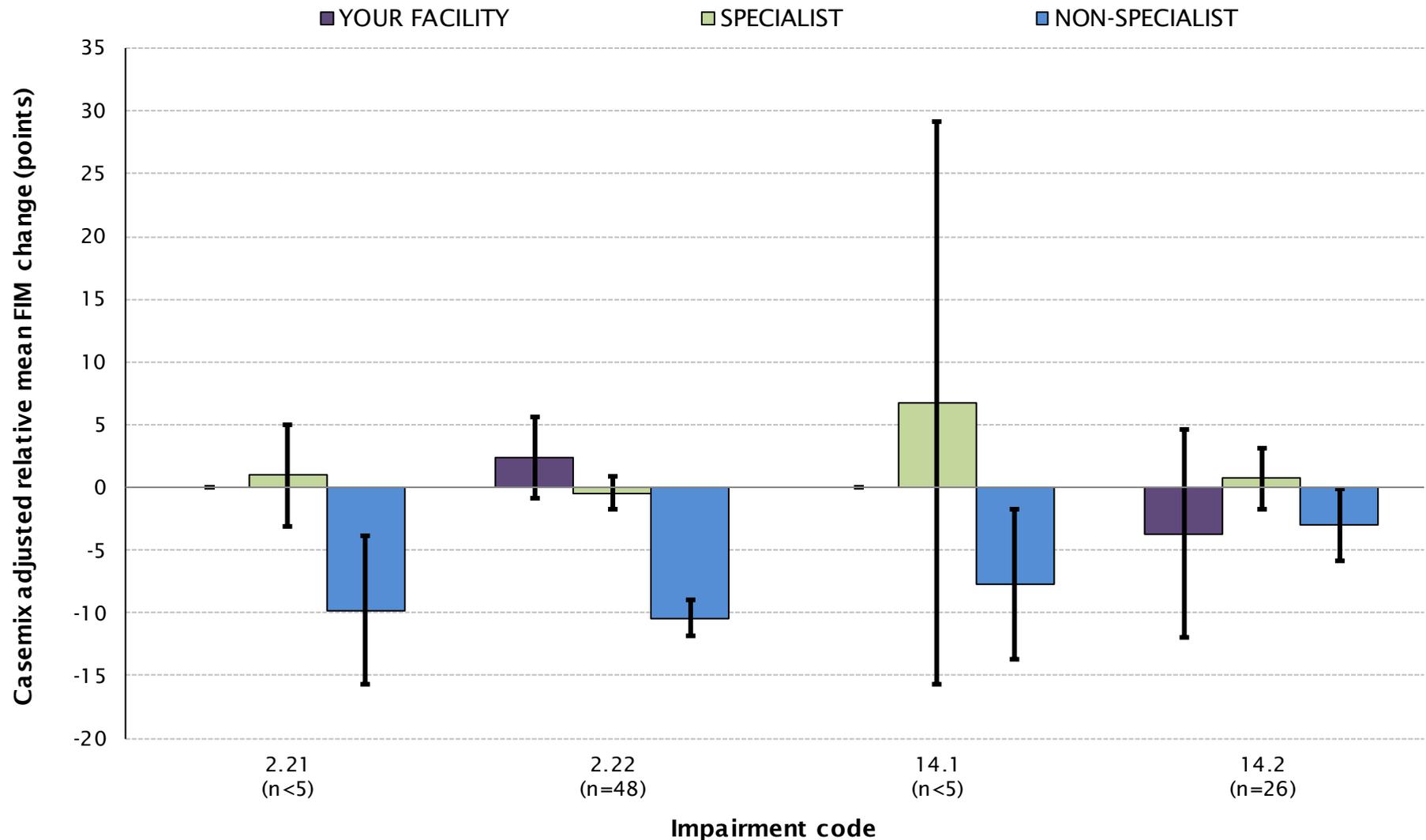
Note: First admission, completed episodes.

Non-traumatic brain injury average FIM cognition change by impairment



Note: First admission, completed episodes.

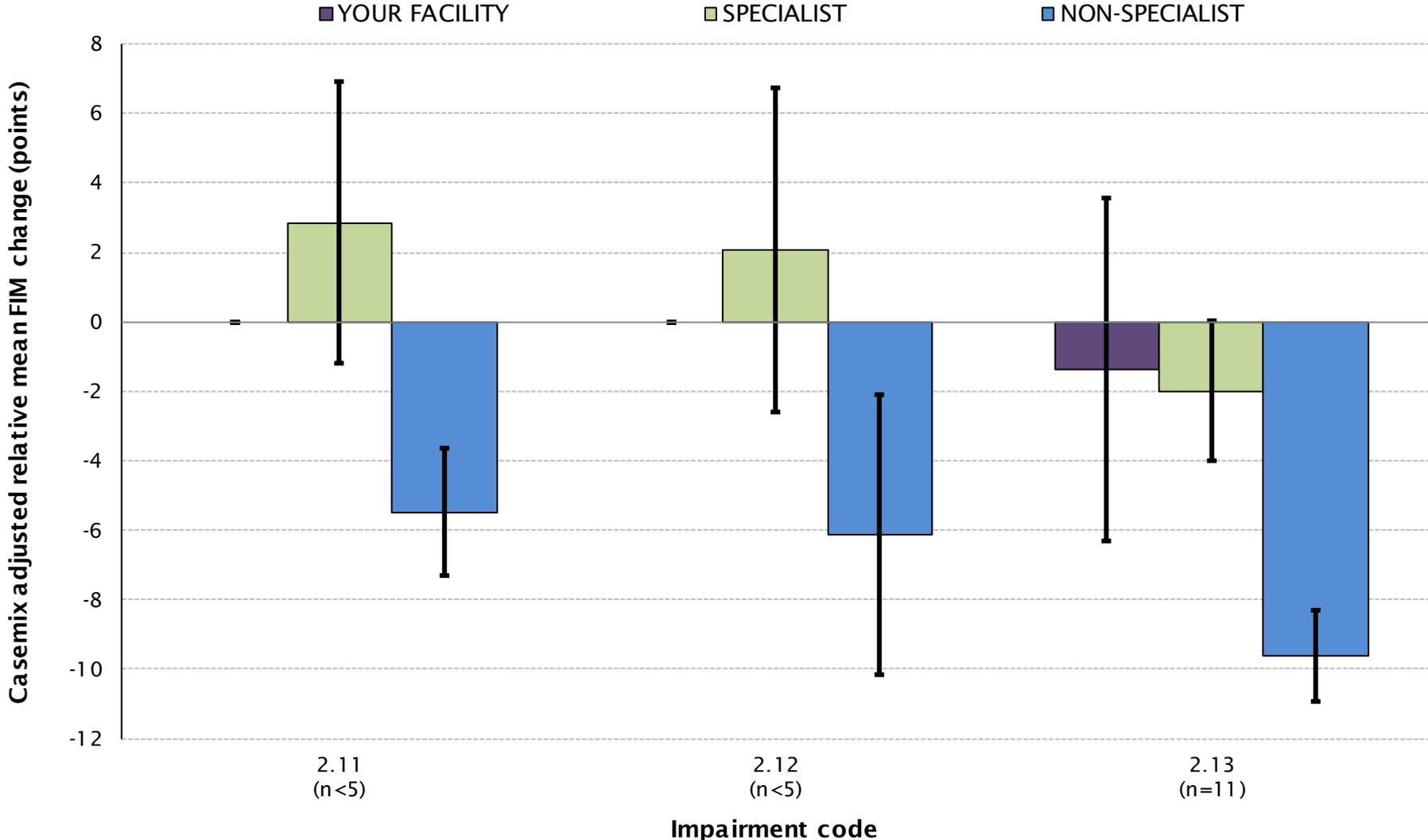
TBI casemix-adjusted* relative mean FIM change by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

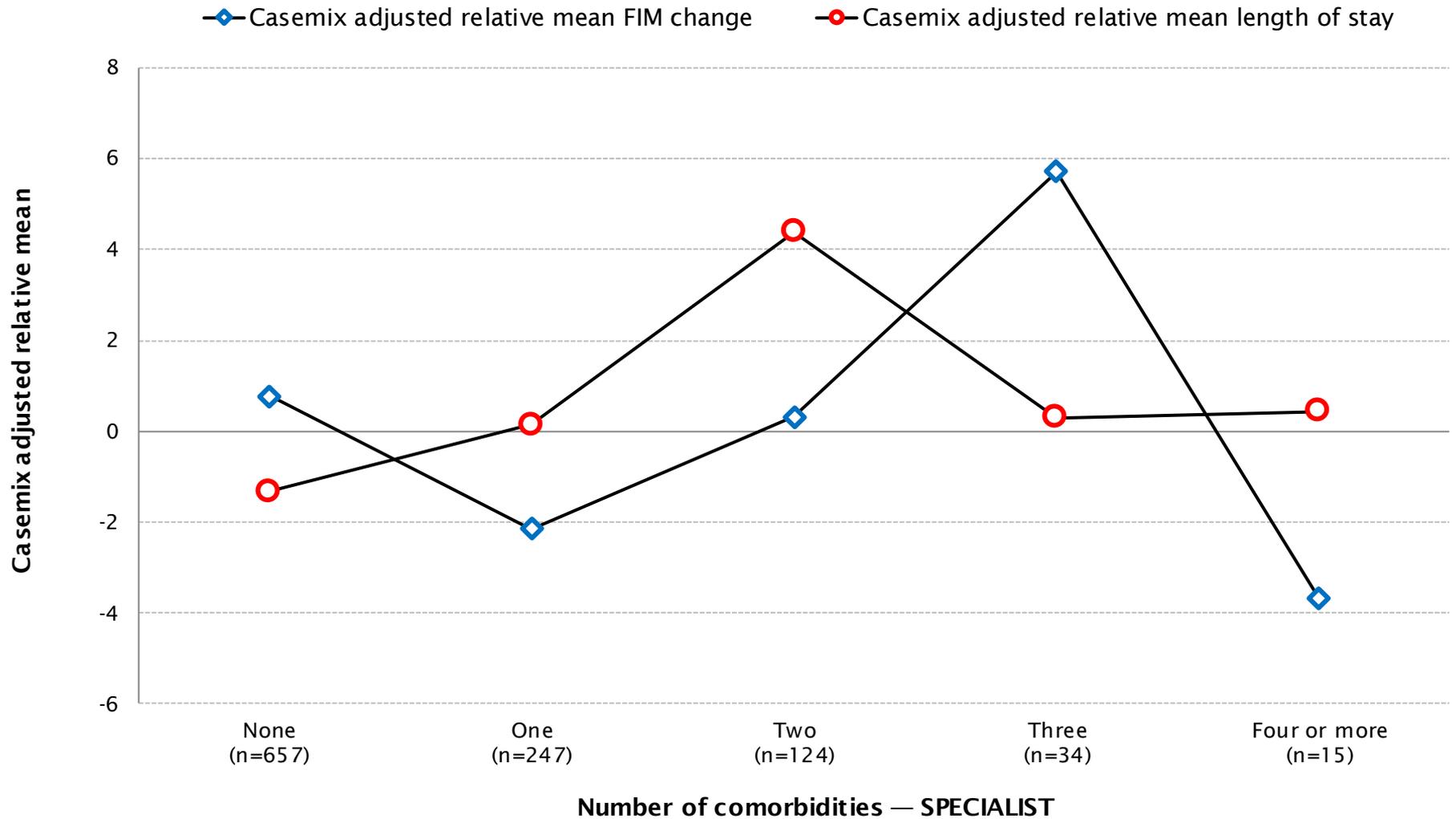
NTBI casemix-adjusted* relative mean FIM change by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

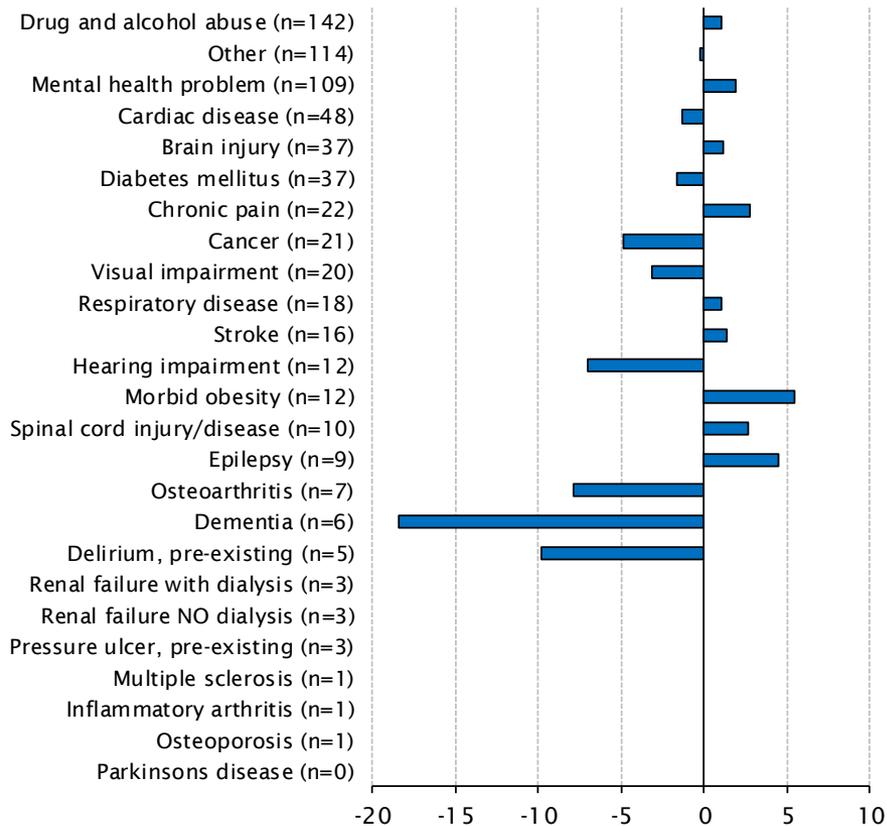
Casemix-adjusted* relative mean length of stay and FIM change by number of comorbidities



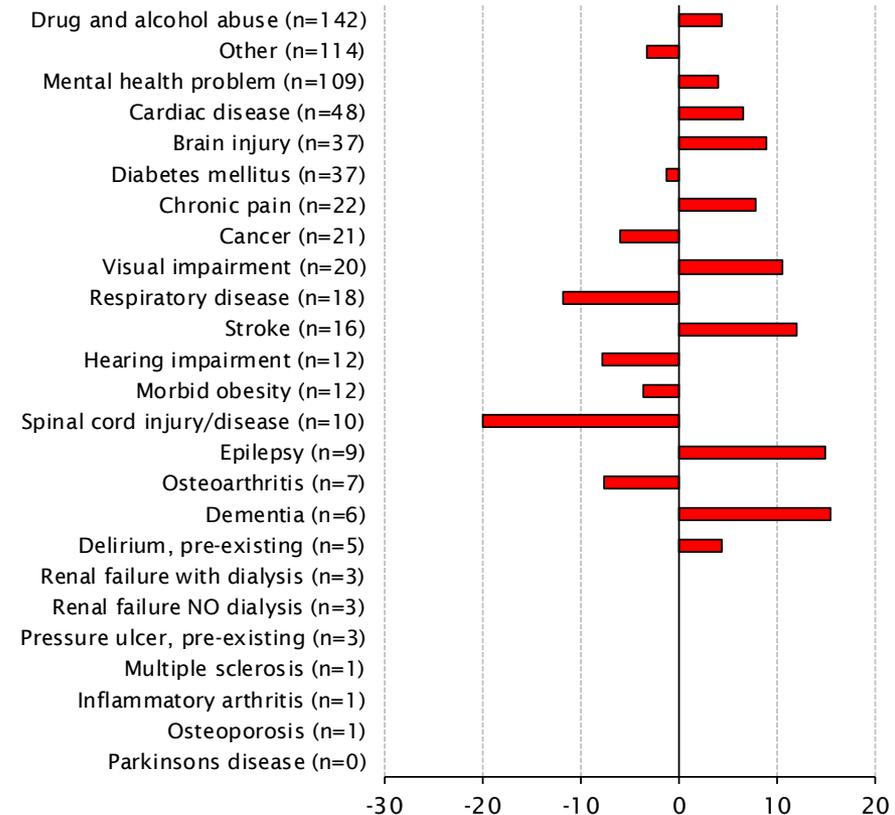
Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Casemix-adjusted* relative mean length of stay and FIM change by type of comorbidity



Casemix adjusted relative mean FIM change — SPECIALIST

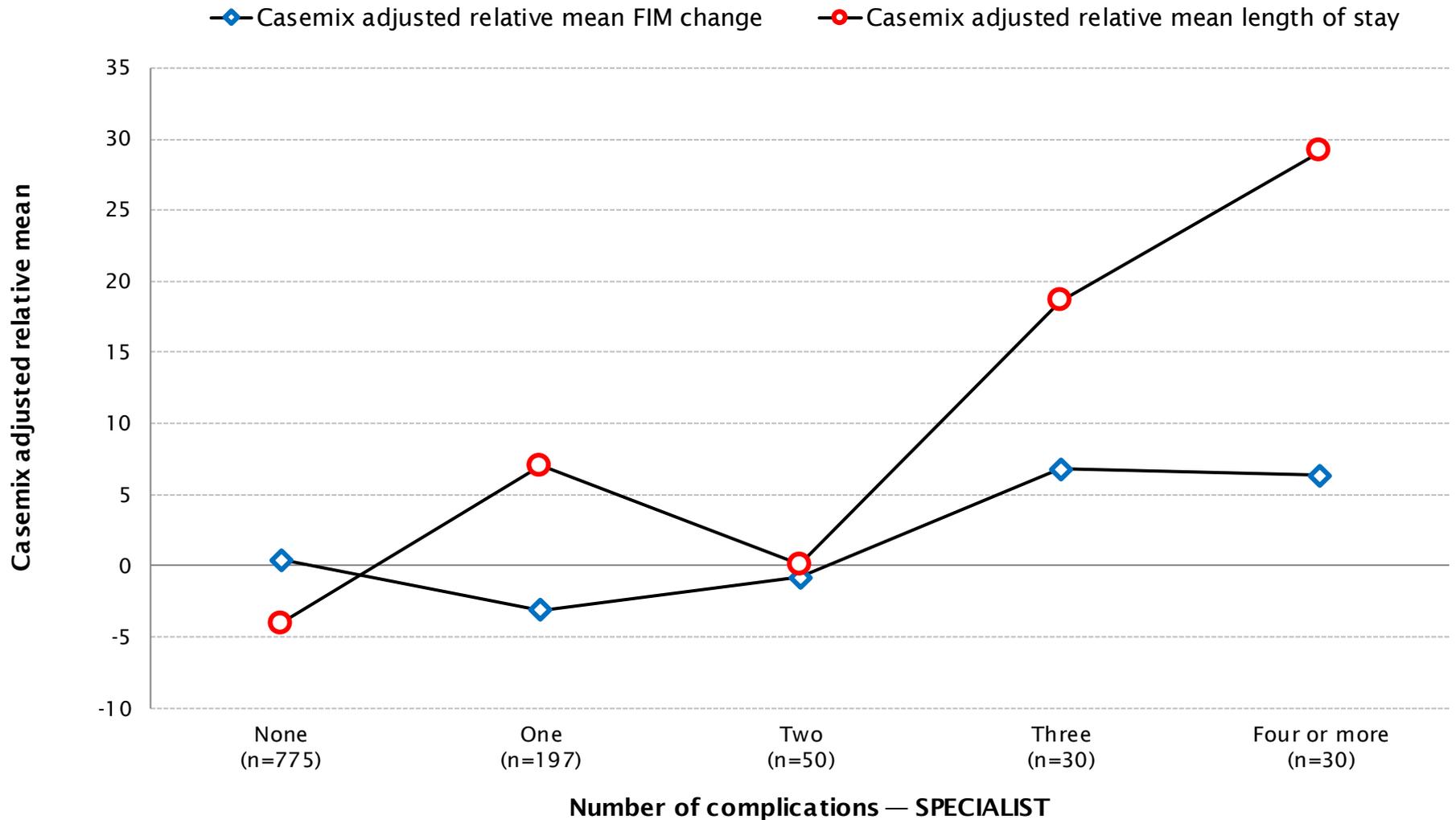


Casemix adjusted relative mean LOS — SPECIALIST

Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

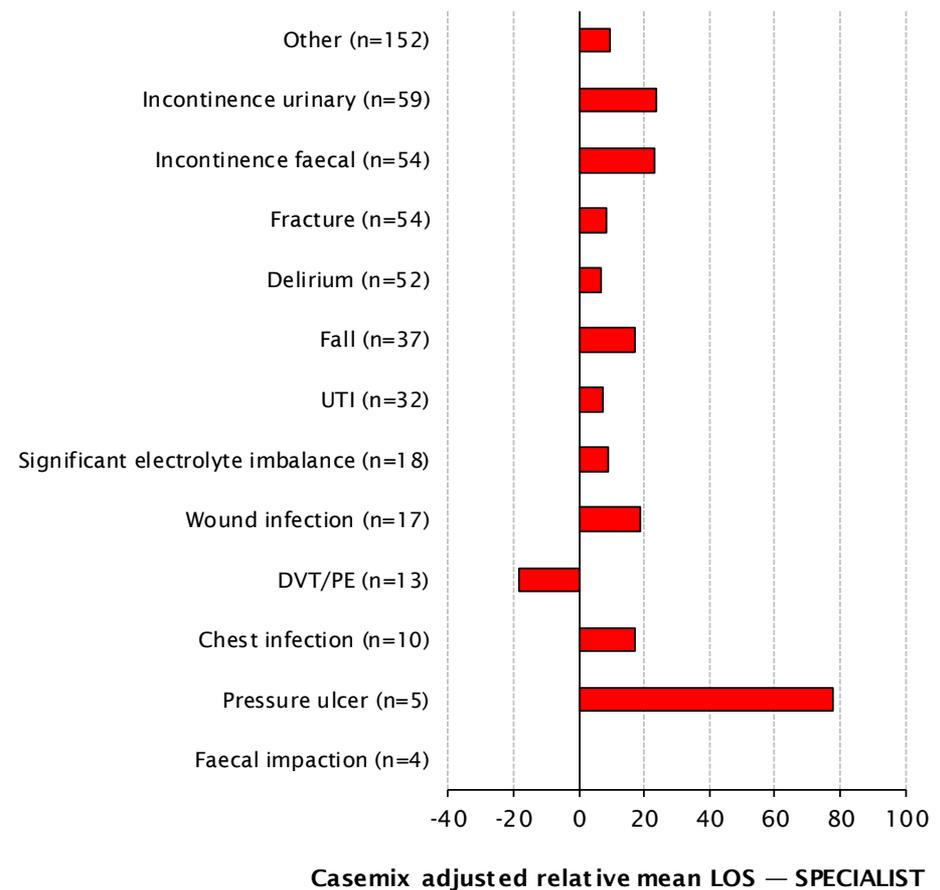
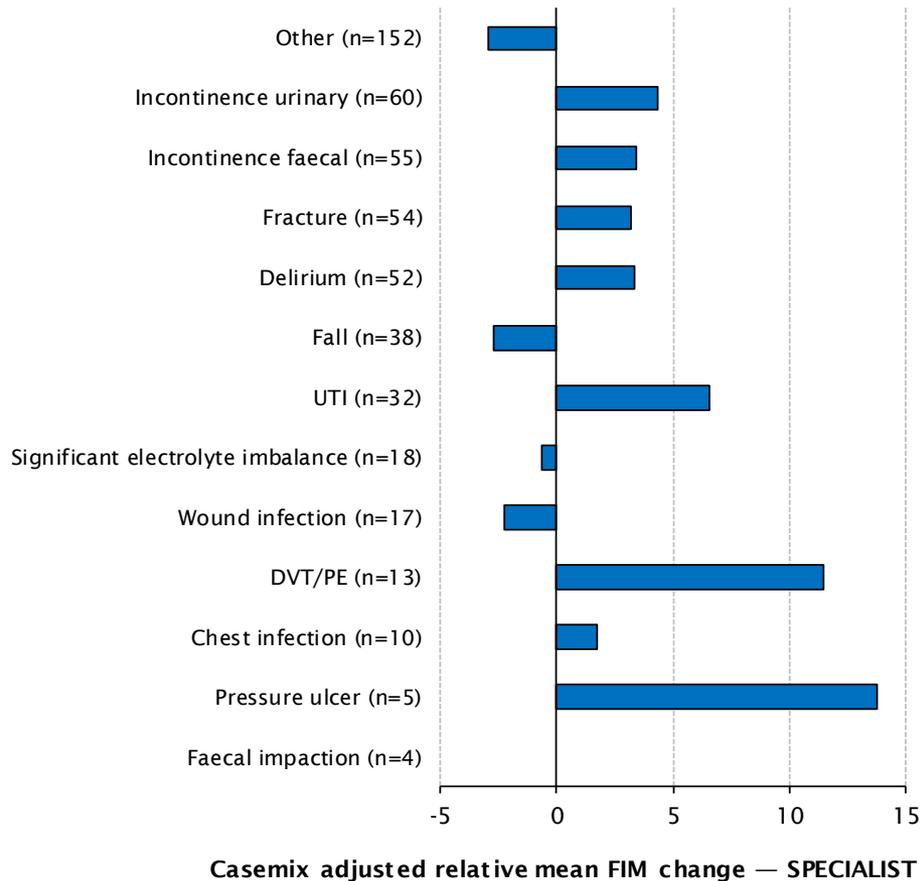
Casemix-adjusted* relative mean length of stay and FIM change by number of complications



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Casemix-adjusted* relative mean length of stay and FIM change by type of complication

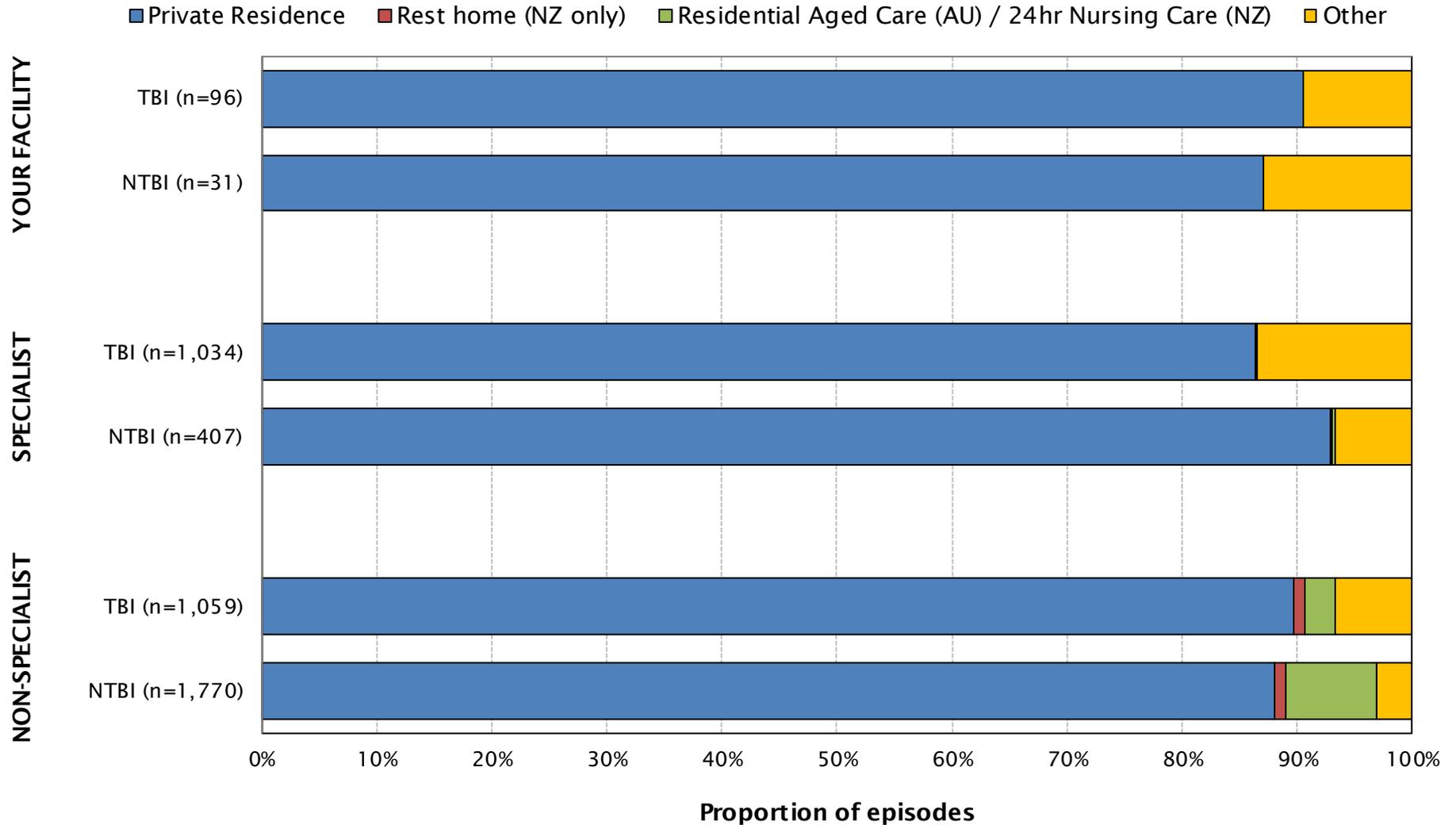


Note: First admission, completed episodes.

*Casemix-adjustment uses FY2019 specialist unit first admissions calculated separately for TBI and NTBI

Explanatory data

Type of accommodation prior to impairment



Days from injury to episode start with an acute admission by AN-SNAP class



■ Days from injury to acute admission
 ■ Days from acute admission to rehabilitation episode start

YOUR FACILITY

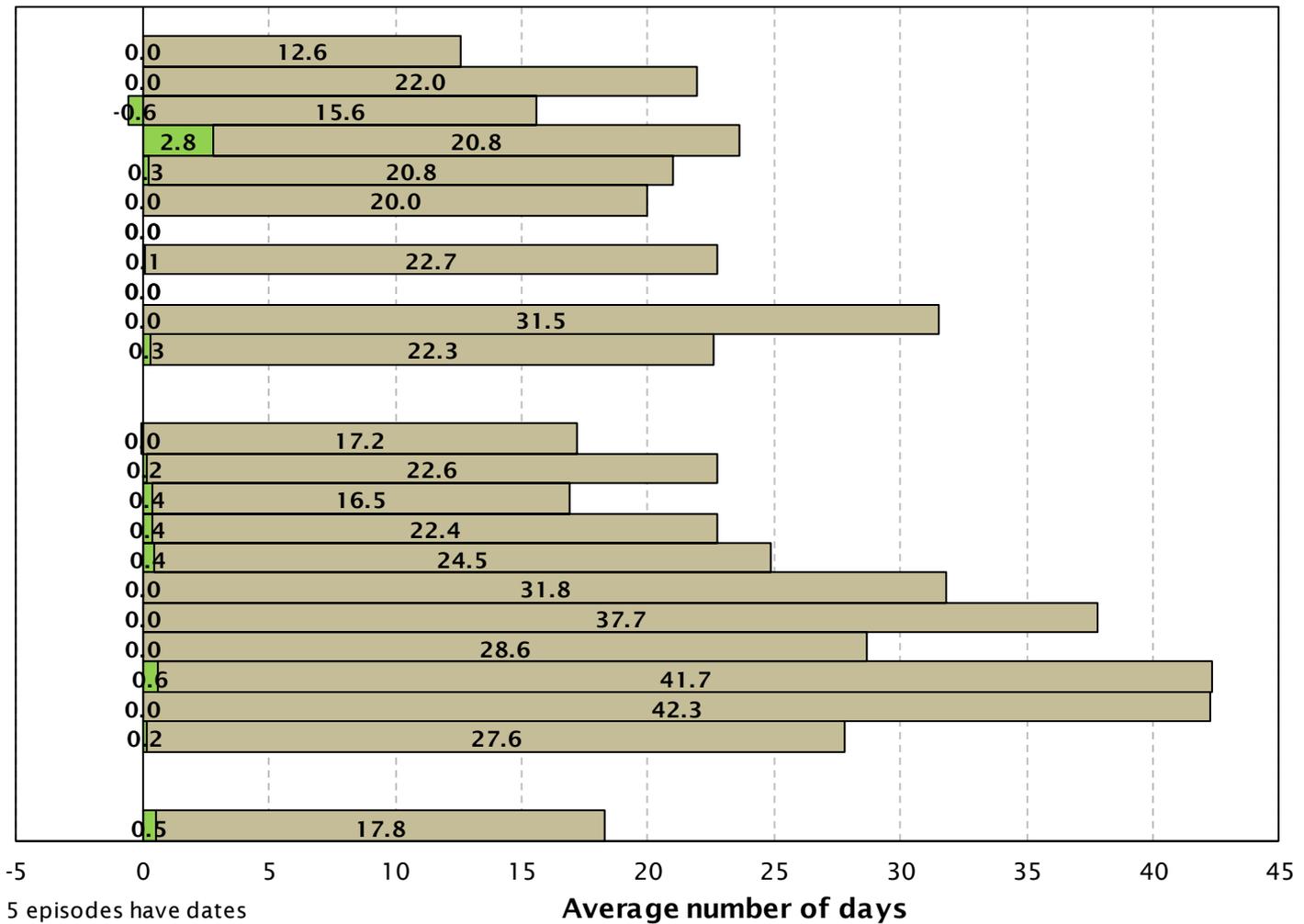
- 4AB1 (n=5)
- 4AB2 (n=24)
- 4AB3 (n=5)
- 4AB4 (n=10)
- 4AB5 (n=12)
- 4AB6 (n=5)
- 4AB7 (n<5)*
- 4AP1 (n=20)
- 4AZ1 (n<5)*
- 4AZ2 (n=6)
- All AN-SNAP classes (n=92)

SPECIALIST

- 4AB1 (n=101)
- 4AB2 (n=202)
- 4AB3 (n=45)
- 4AB4 (n=89)
- 4AB5 (n=126)
- 4AB6 (n=55)
- 4AB7 (n=58)
- 4AP1 (n=160)
- 4AZ1 (n=60)
- 4AZ2 (n=112)
- All AN-SNAP classes (n=1,008)

NON-SPECIALIST

- All AN-SNAP classes (n=1,561)



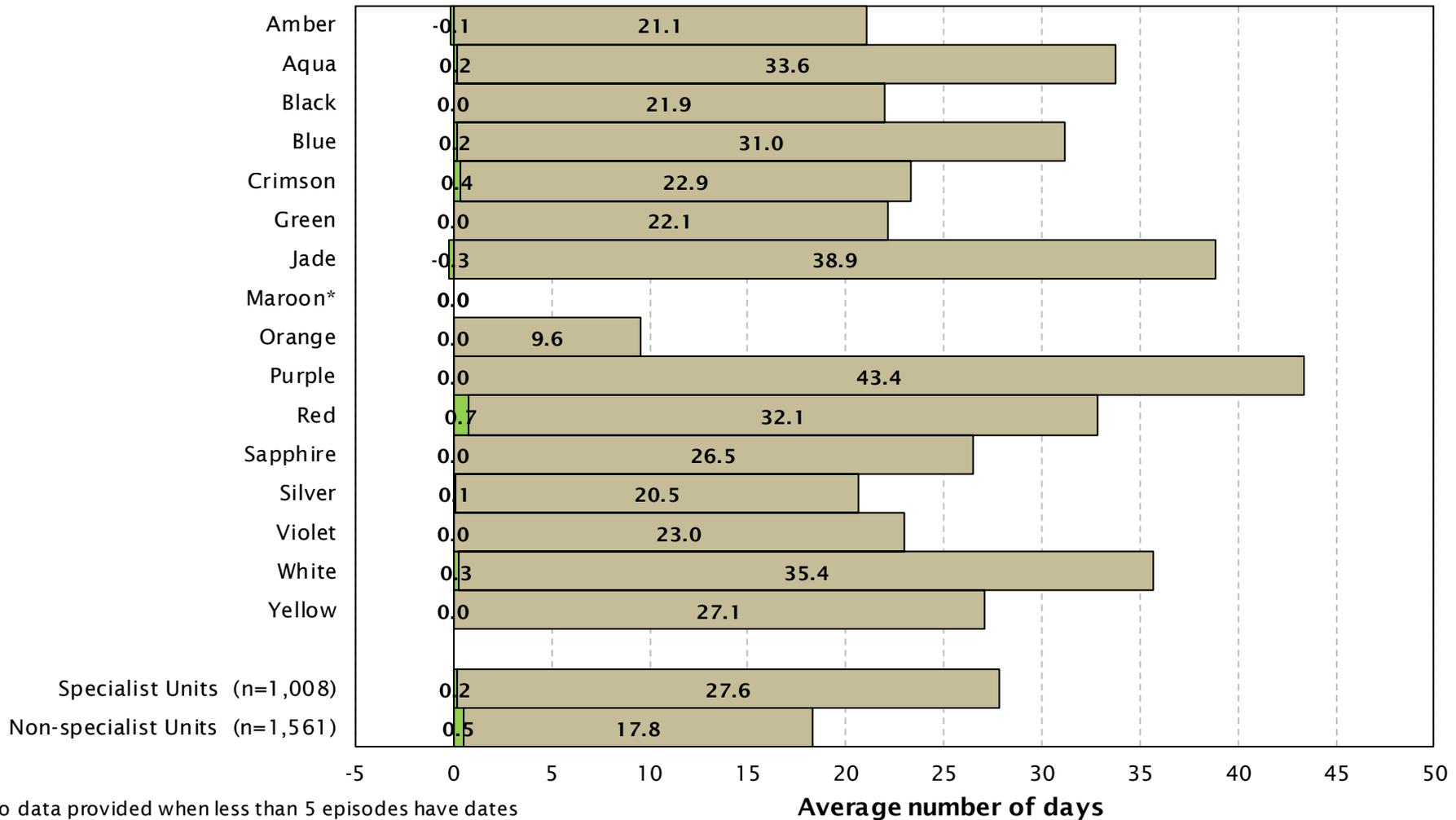
*No data provided when less than 5 episodes have dates

Note: First admission episodes.

Days from injury to episode start with an acute admission by specialist facility



■ Days from injury to acute admission
 ■ Days from acute admission to rehabilitation episode start



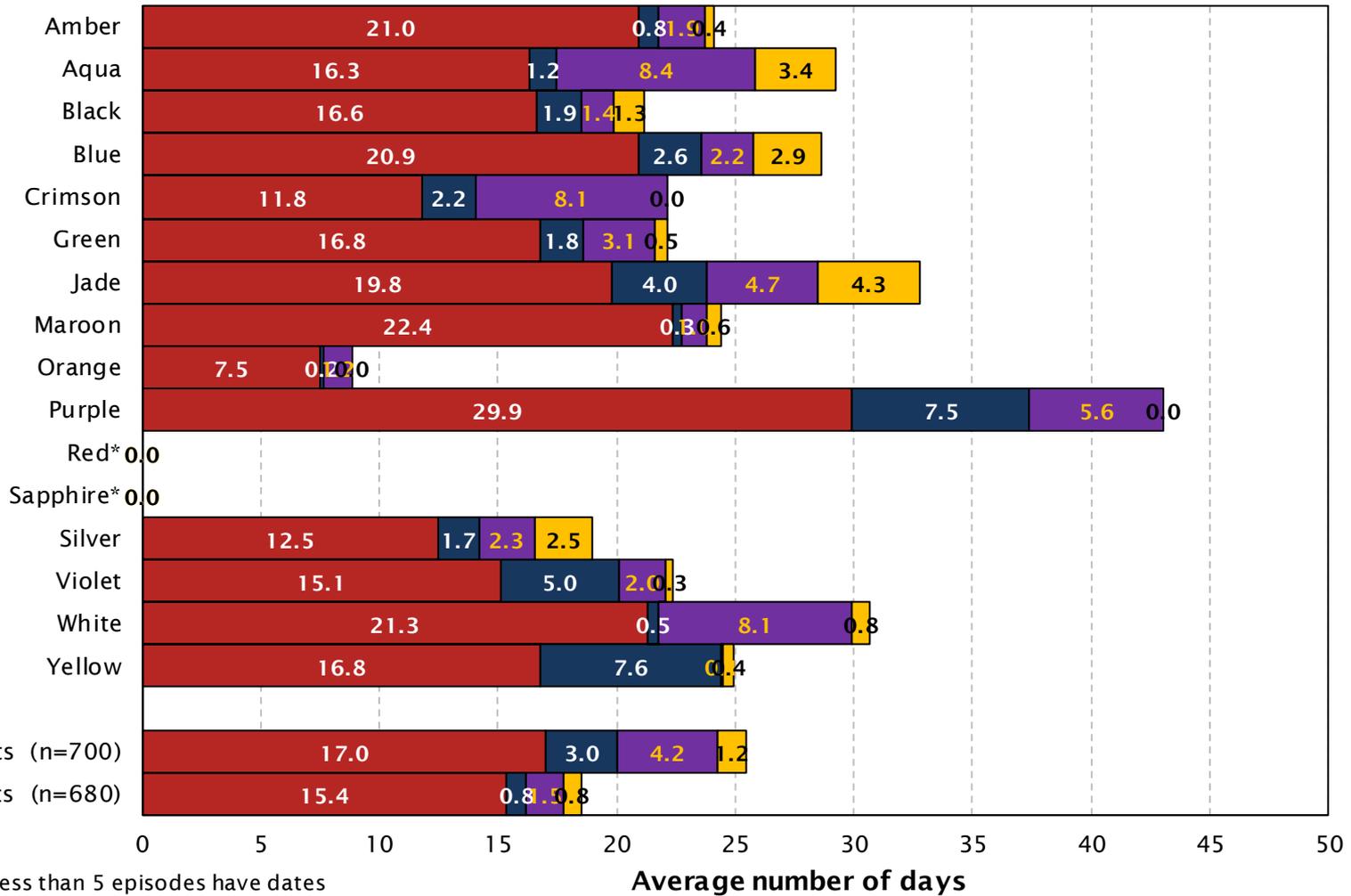
*No data provided when less than 5 episodes have dates

Note: First admission episodes.

Days from brain injury to episode start by specialist facility - TBI



■ Injury to referral
 ■ Referral to assessment
 ■ Assessment to clinically rehab ready
 ■ Clinically rehab ready to episode start



*No data provided when less than 5 episodes have dates

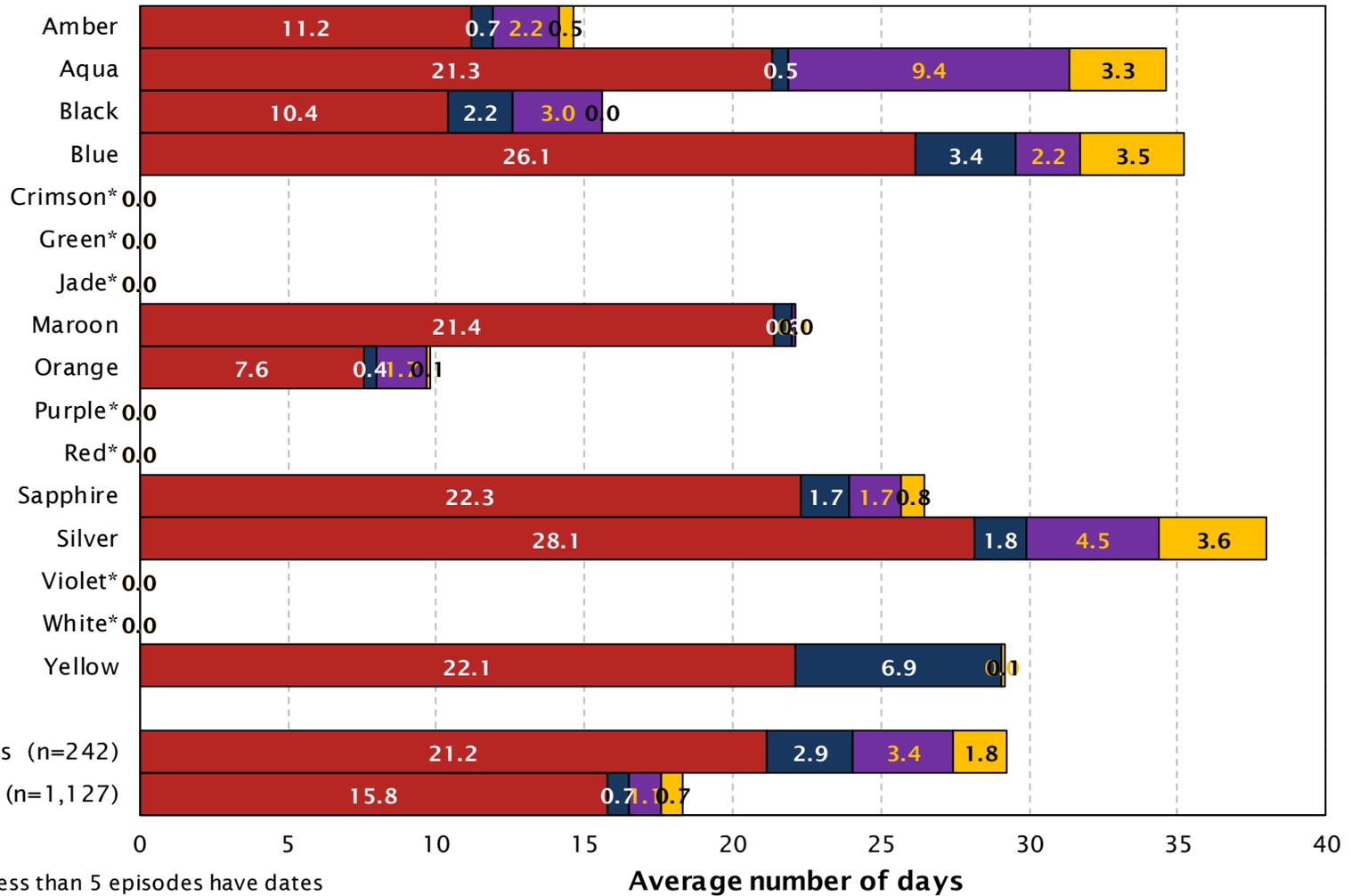
Average number of days

Note: First admission episodes.

Days from brain injury to episode start by specialist facility - NTBI



■ Injury to referral
 ■ Referral to assessment
 ■ Assessment to clinically rehab ready
 ■ Clinically rehab ready to episode start

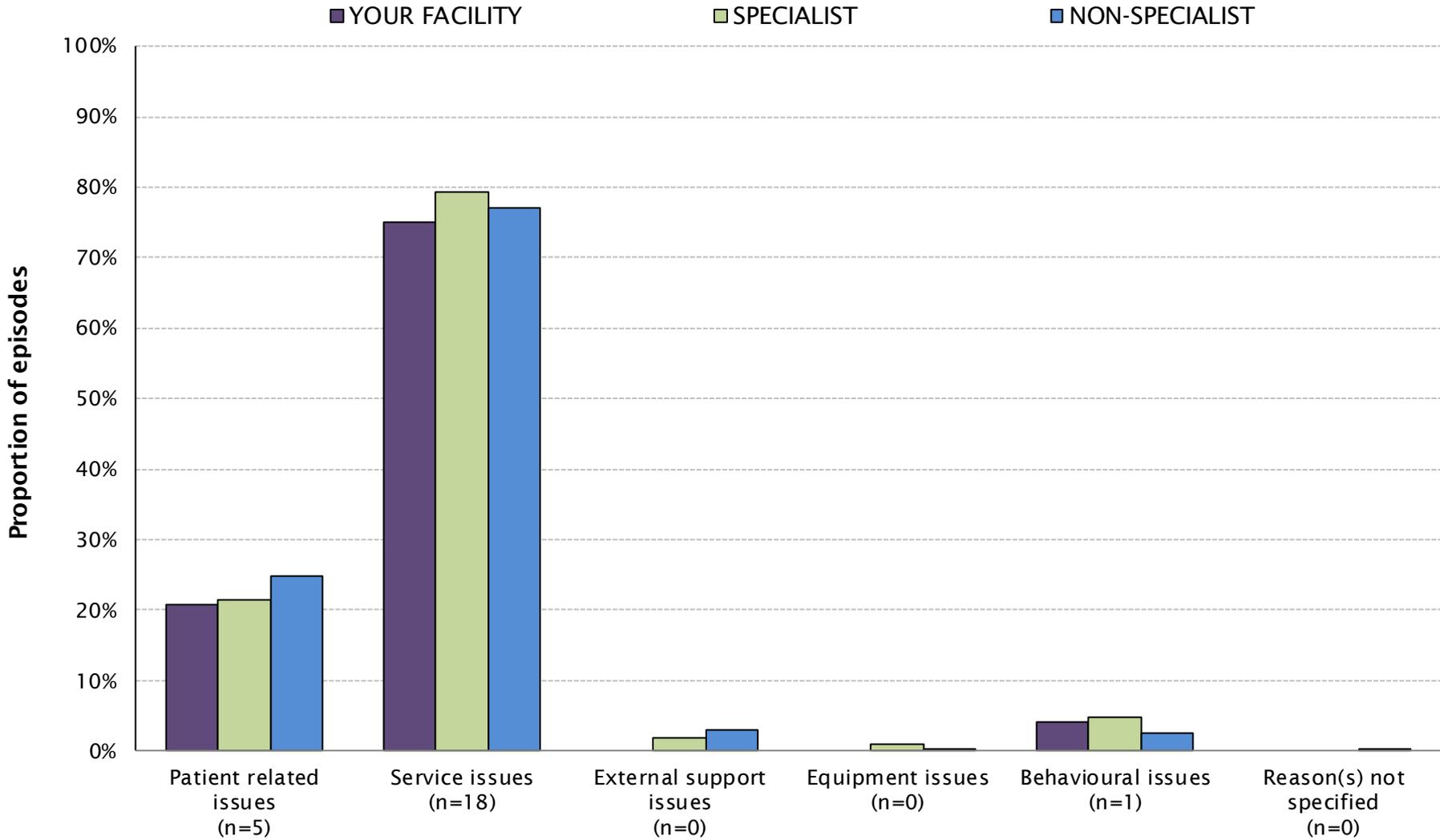


*No data provided when less than 5 episodes have dates

Average number of days

Note: First admission episodes.

Reason for delay in episode start



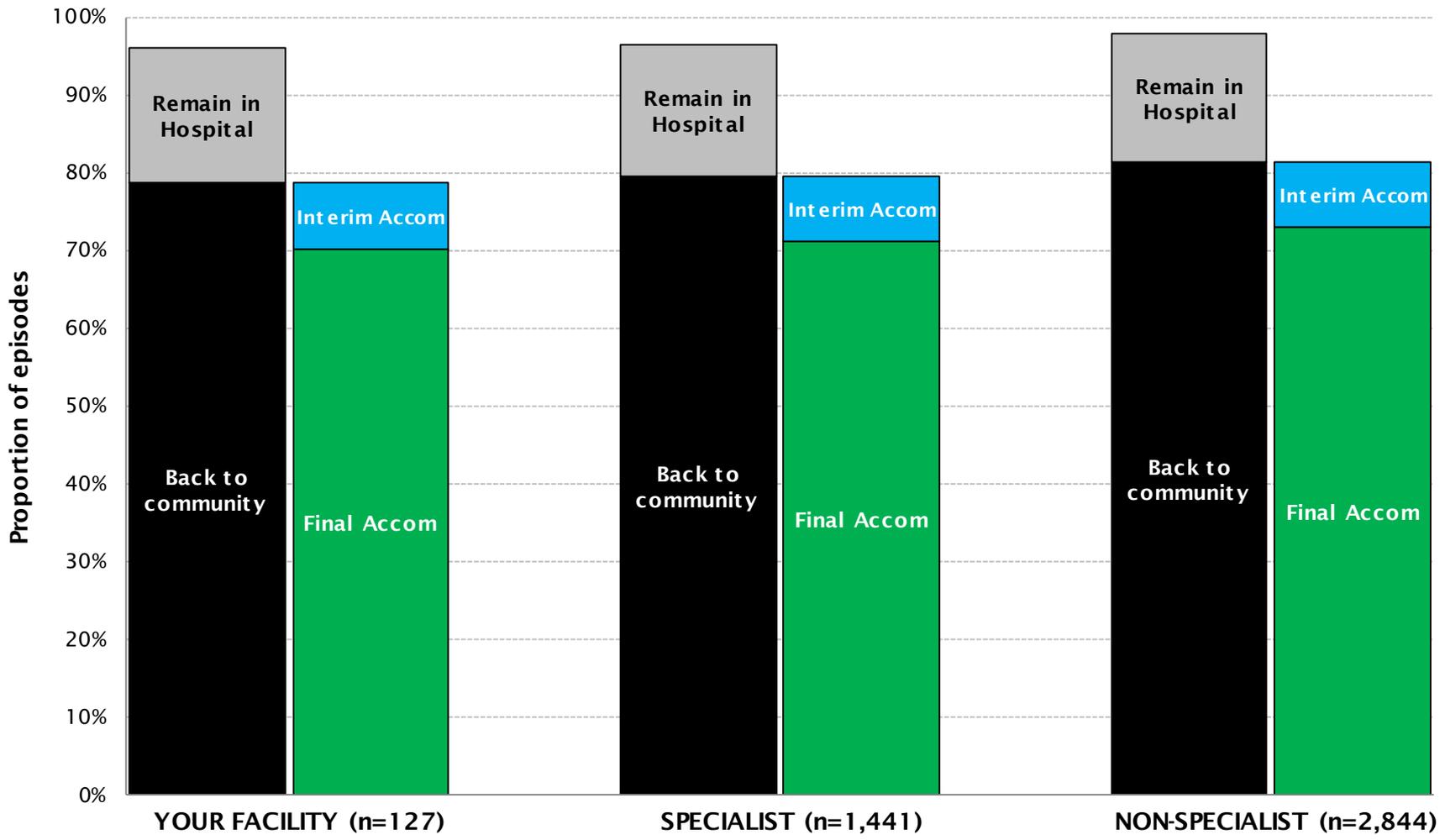
Delays in episode start



Delay in episode start	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	No.	%	No.	%	No.	%
No delay	83	77.6	911	80.0	2,117	83.0
Delay in episode start	24	22.4	228	20.0	435	17.0
Missing	20		302		292	
All episodes	127	100.0	1,441	100.0	2,844	100.0

Delay in episode start	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	No.	%	No.	%	No.	%
Patient related issues	5	20.8	49	21.5	108	24.8
Service issues	18	75.0	181	79.4	335	77.0
External support issues	0	0.0	4	1.8	13	3.0
Equipment issues	0	0.0	2	0.9	1	0.2
Behavioural issues	1	4.2	11	4.8	11	2.5
Reason(s) not specified	0	0.0	0	0.0	1	0.2

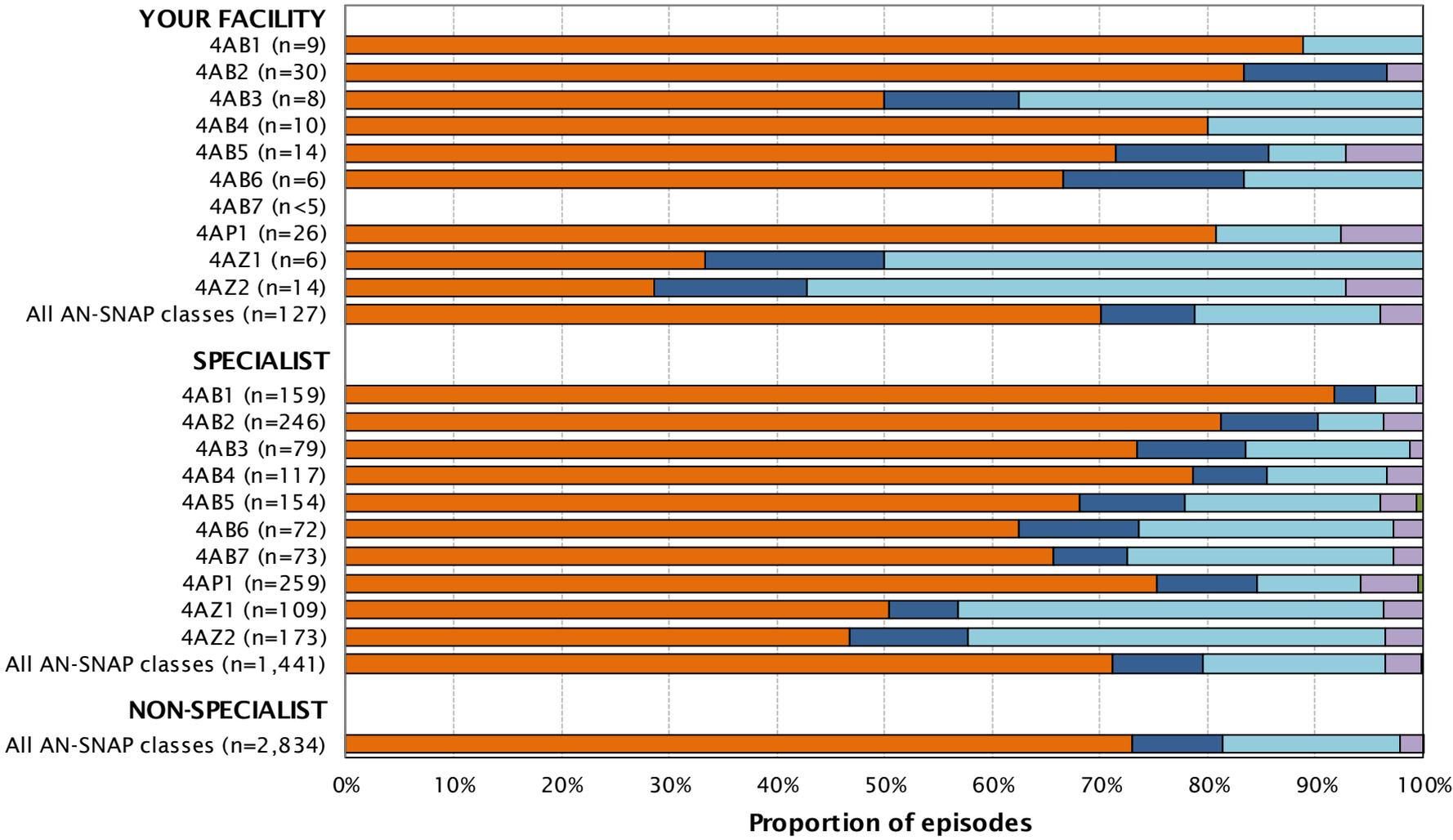
Discharge destination



Discharge destination by AN-SNAP class



■ Final Accommodation
 ■ Interim Accommodation
 ■ Remaining in Hospital
 ■ Other
 ■ Unknown



Discharge destination by AN-SNAP class

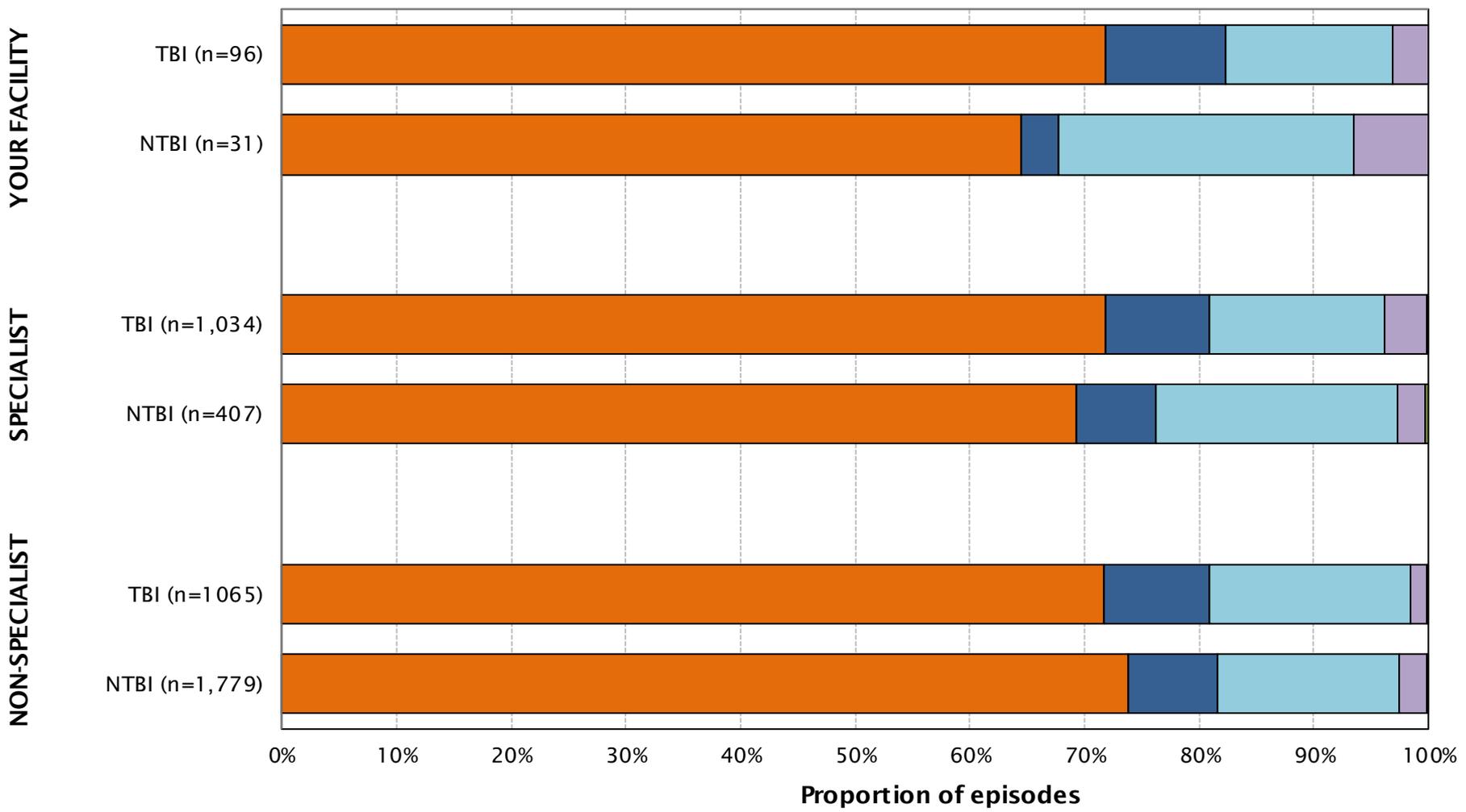


		Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown
AN-SNAP class		No.					%				
Your Facility	4AB1	8	0	1	0	0	88.9	0.0	11.1	0.0	0.0
	4AB2	25	4	0	1	0	83.3	13.3	0.0	3.3	0.0
	4AB3	4	1	3	0	0	50.0	12.5	37.5	0.0	0.0
	4AB4	8	0	2	0	0	80.0	0.0	20.0	0.0	0.0
	4AB5	10	2	1	1	0	71.4	14.3	7.1	7.1	0.0
	4AB6	4	1	1	0	0	66.7	16.7	16.7	0.0	0.0
	4AB7	3	0	1	0	0	75.0	0.0	25.0	0.0	0.0
	4AP1	21	0	3	2	0	80.8	0.0	11.5	7.7	0.0
	4AZ1	2	1	3	0	0	33.3	16.7	50.0	0.0	0.0
	4AZ2	4	2	7	1	0	28.6	14.3	50.0	7.1	0.0
All AN-SNAP classes		89	11	22	5	0	70.1	8.7	17.3	3.9	0.0
SPECIALIST units		1,025	122	244	48	2	71.1	8.5	16.9	3.3	0.1
NON-SPECIALIST units		2,071	235	469	58	1	73.1	8.3	16.5	2.0	0.0

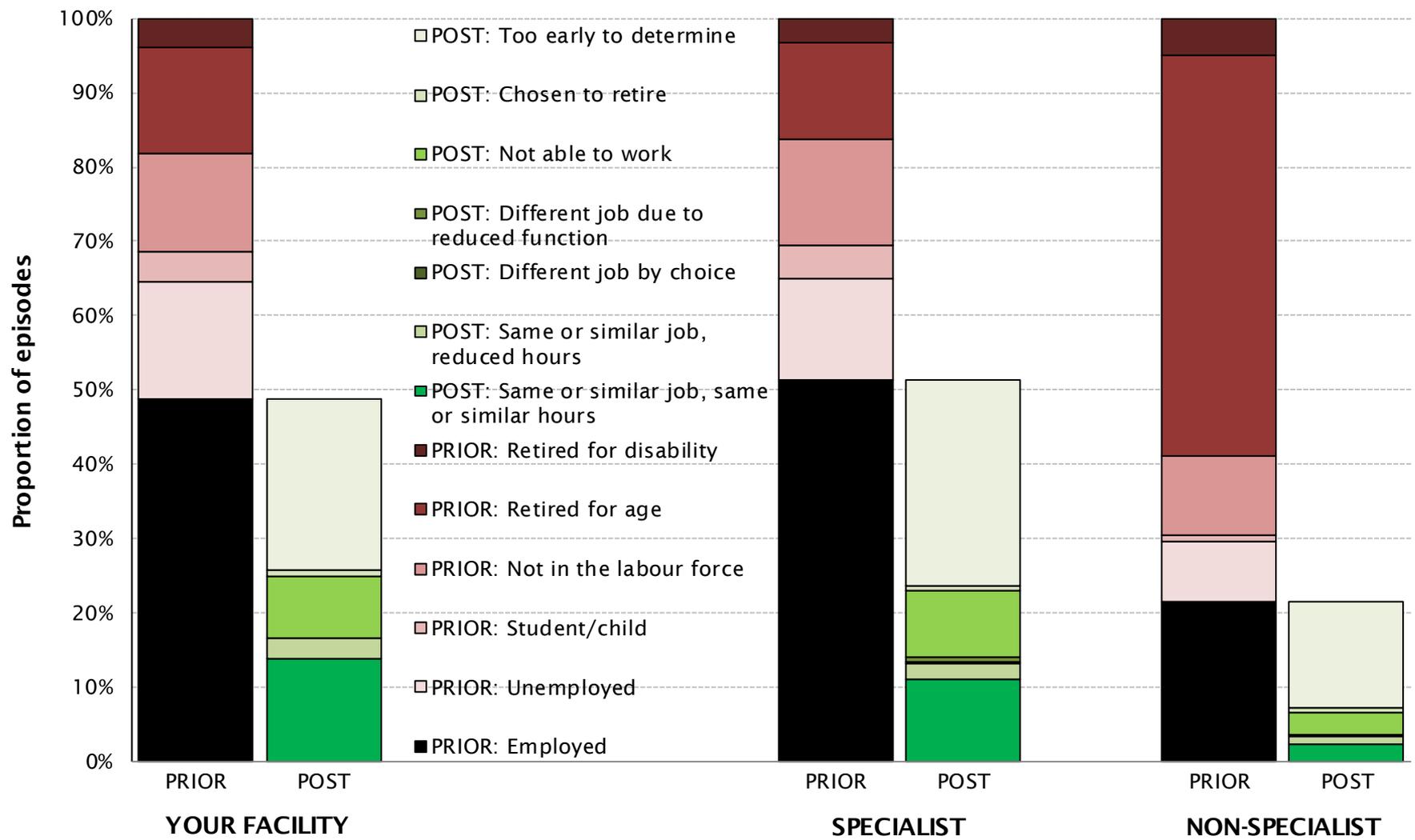
Discharge destination by traumatic and non-traumatic brain injury



■ Final Accommodation
 ■ Interim Accommodation
 ■ Remaining in Hospital
 ■ Other
 ■ Unknown



Employment status prior and post brain injury

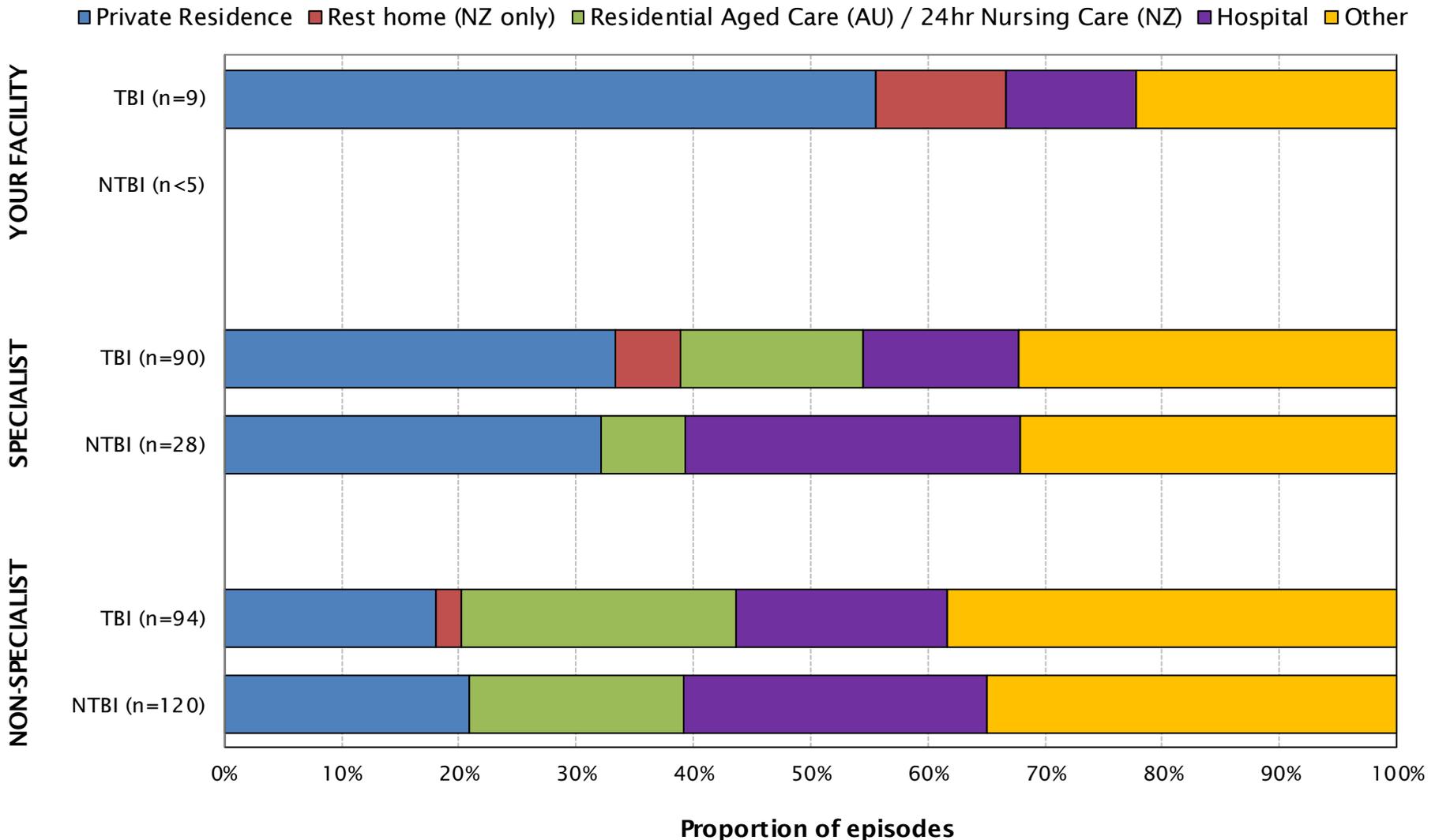


Employment status prior and post brain injury



Employment status	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	No.	%	No.	%	No.	%
<u>Prior to brain injury:</u>						
Employed	62	48.8	737	51.3	582	21.4
Unemployed	20	15.7	198	13.8	223	8.2
Student/child	5	3.9	63	4.4	23	0.8
Not in the labour force	17	13.4	205	14.3	289	10.6
Retired for age	18	14.2	187	13.0	1467	54.0
Retired for disability	5	3.9	47	3.3	135	5.0
Not answered	0		4		125	
Total	127	100.0	1,441	100.0	2,844	100.0
<u>After discharge (if previously employed):</u>						
Same or similar job, same or similar hours	15	28.3	134	21.5	55	10.9
Same or similar job, reduced hours	3	5.7	26	4.2	23	4.6
Different job by choice	0	0.0	3	0.5	1	0.2
Different job due to reduced function	0	0.0	8	1.3	2	0.4
Not able to work	9	17.0	109	17.5	70	13.9
Chosen to retire	1	1.9	6	1.0	17	3.4
Too early to determine	25	47.2	338	54.2	335	66.6
Not answered	9		113		79	
Total employed prior	62	100.0	737	100.0	582	100.0

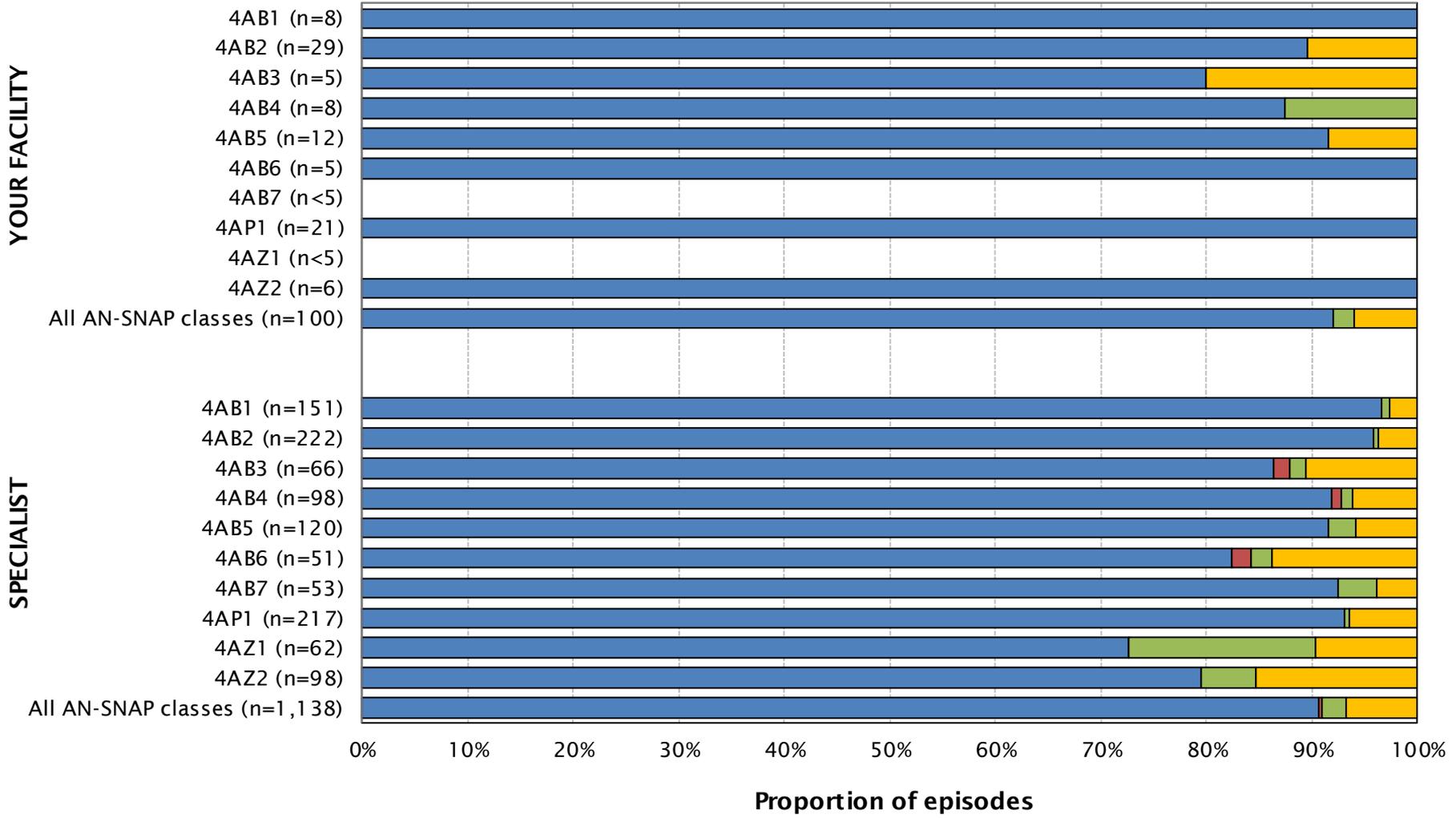
Interim accommodation post discharge by TBI and NTBI



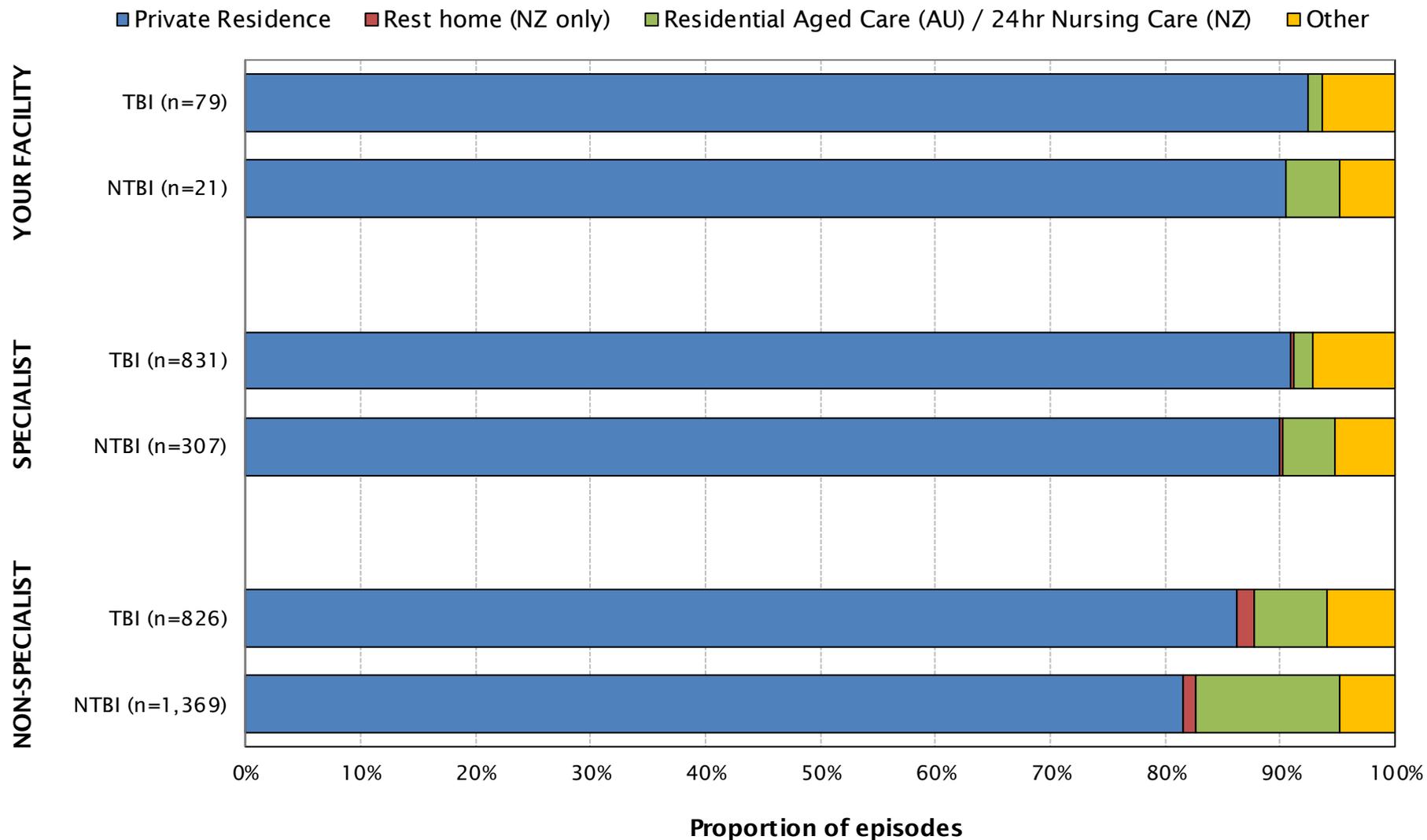
Final accommodation post discharge by AN-SNAP class



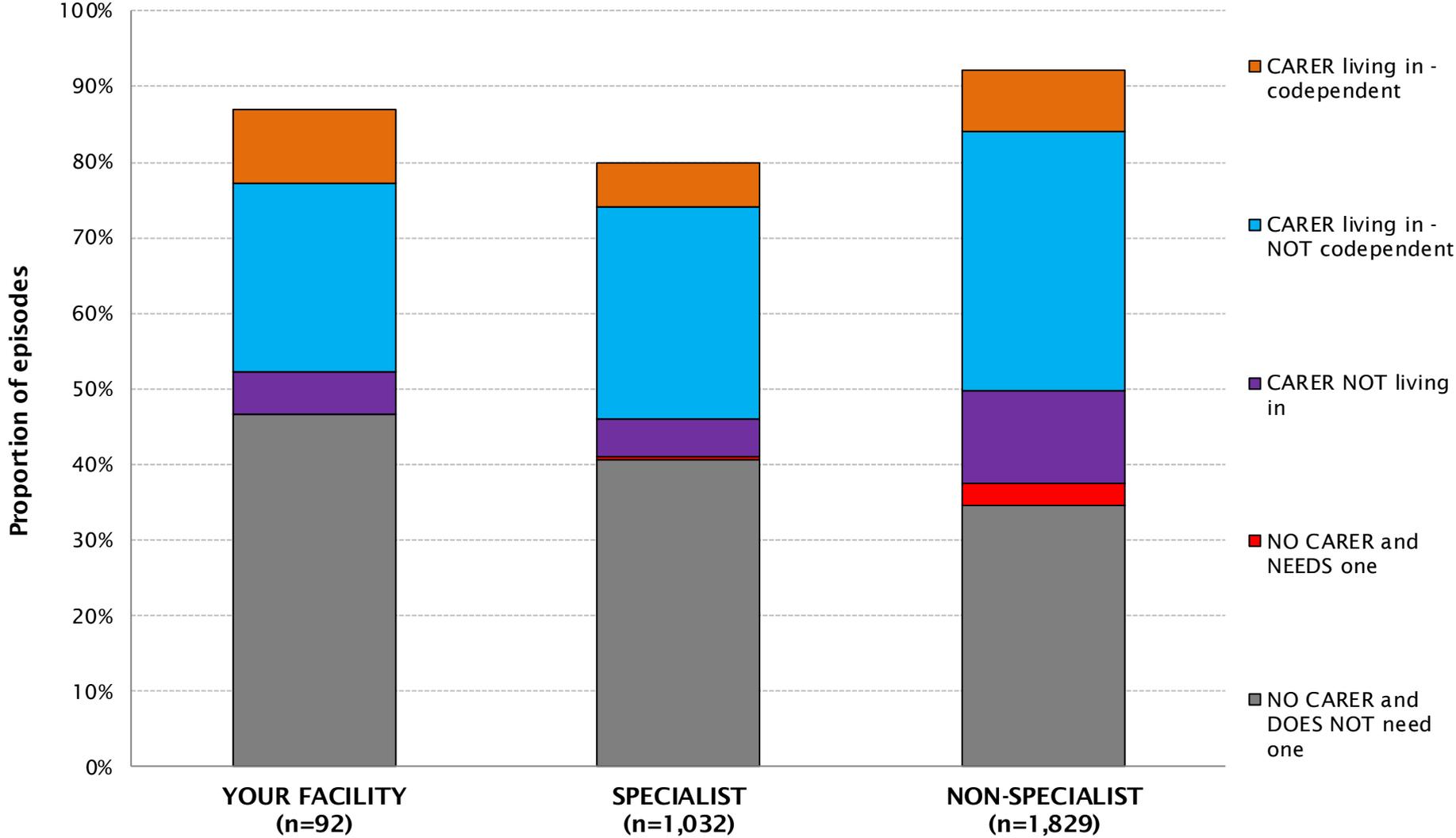
■ Private Residence
 ■ Rest home (NZ only)
 ■ Residential Aged Care (AU) / 24hr Nursing Care (NZ)
 ■ Other



Final accommodation post discharge by TBI and NTBI

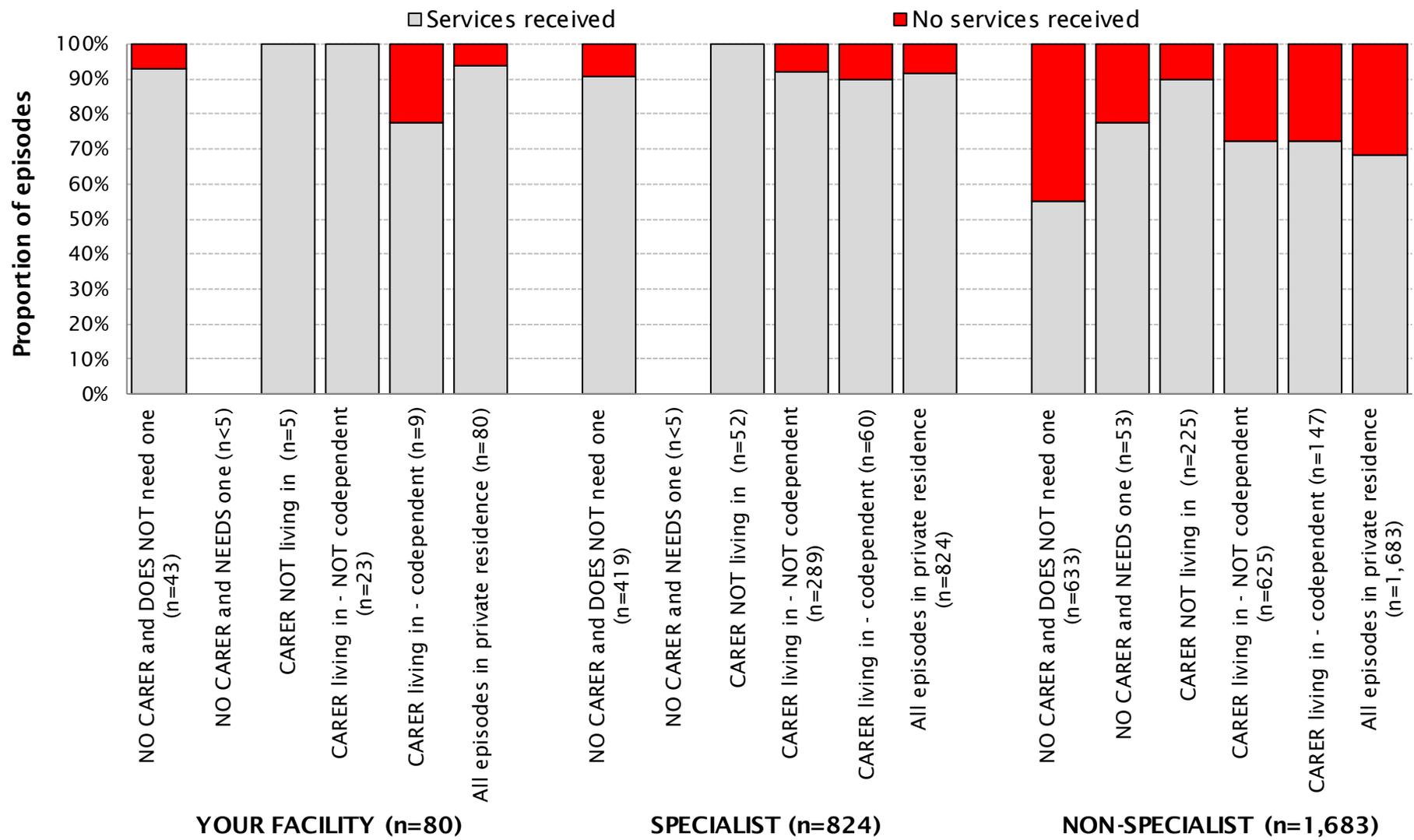


Carer status post discharge



Note: Final accommodation is private residence.

Any services received post discharge by carer status



Note: Final accommodation is private residence.

Carer status and any services received post discharge

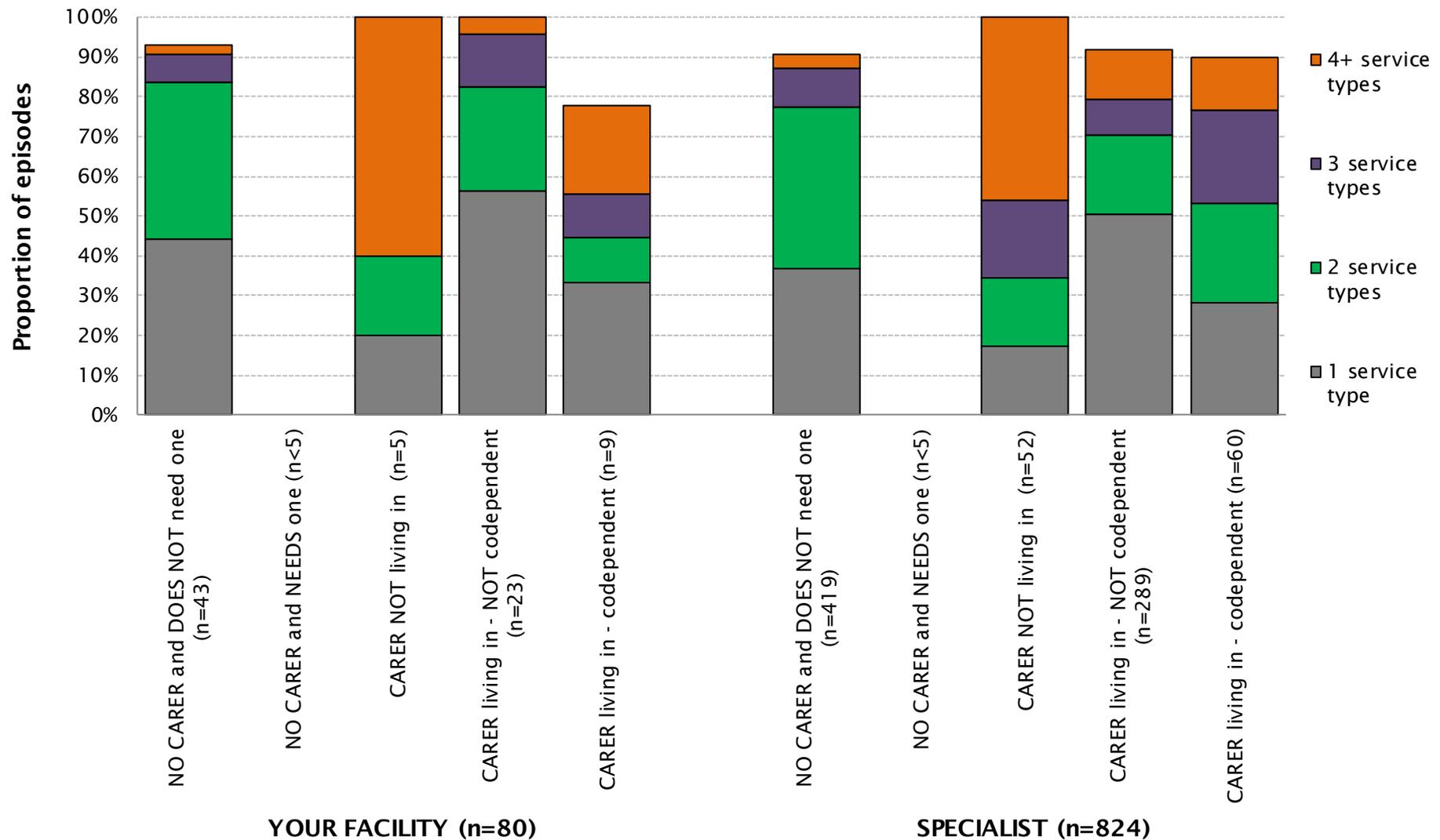


Carer status post discharge	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	No.	%	No.	%	No.	%
NO CARER and DOES NOT need one	43	53.8	419	50.8	634	37.6
NO CARER and NEEDS one	0	0.0	4	0.5	53	3.1
CARER NOT living in	5	6.3	52	6.3	225	13.3
CARER living in - NOT codependent	23	28.8	289	35.1	626	37.1
CARER living in - codependent	9	11.3	60	7.3	148	8.8
Missing	12		208		143	
All episodes in private residence	92	100.0	1,032	100.0	1,829	100.0

Any services received post discharge?						
Carer status post discharge	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
NO CARER and DOES NOT need one	93.0	7.0	90.9	9.1	55.2	44.6
NO CARER and NEEDS one	—	—	75.0	25.0	77.4	22.6
CARER NOT living in	100.0	0.0	100.0	0.0	89.8	10.2
CARER living in - NOT codependent	100.0	0.0	92.0	8.0	72.0	27.8
CARER living in - codependent	77.8	22.2	90.0	10.0	71.6	27.7
All episodes in private residence	93.8	6.3	91.7	8.3	68.2	31.6

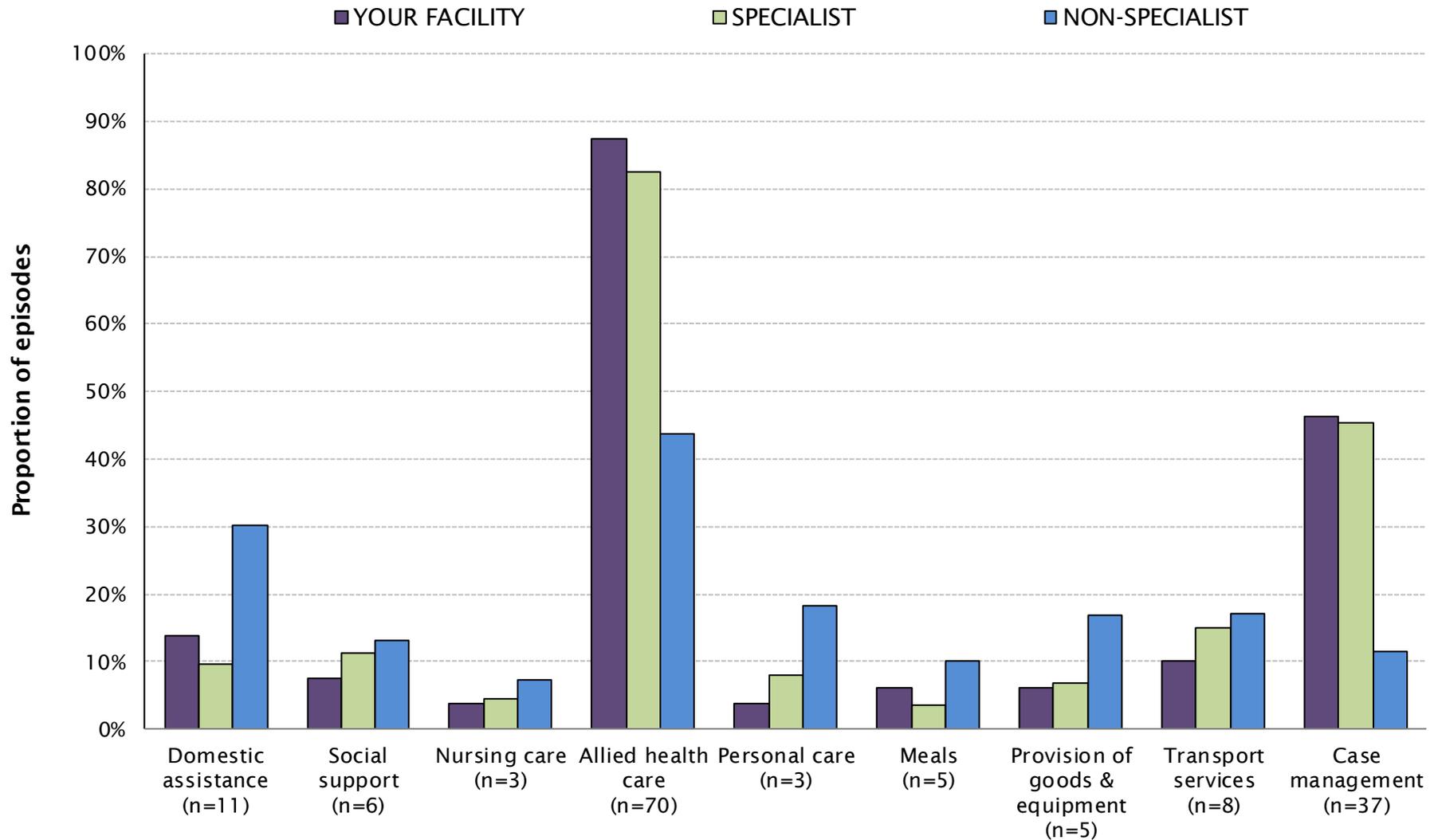
Note: Final accommodation is private residence.

Number of services received post discharge by carer status



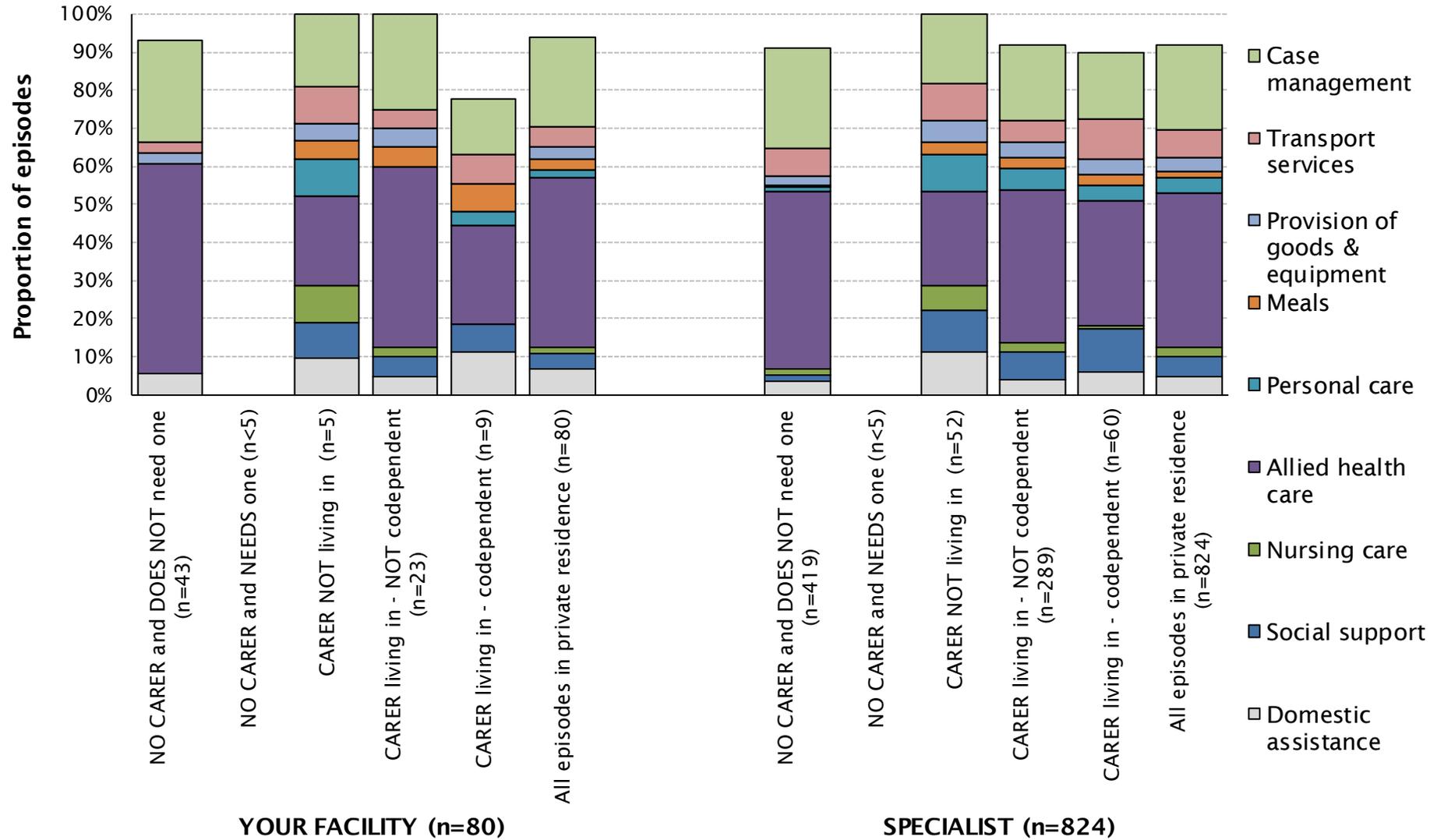
Note: Final accommodation is private residence.

Type of services received post discharge



Note: Final accommodation is private residence.

Type of services received post discharge by carer status



Note: Final accommodation is private residence.

Number and type of services received post discharge by carer status



Carer status post discharge - YOUR FACILITY						
Services received post discharge	NO CARER and DOES NOT need one	NO CARER and NEEDS one	CARER NOT living in	CARER living in - NOT codependent	CARER living in - codependent	All episodes in private residence
Number of episodes in private residence	43	0	5	23	9	
Percent of episodes receiving:						
No services	7.0	—	0.0	0.0	22.2	6.3
1 service type	44.2	—	20.0	56.5	33.3	45.0
2 service types	39.5	—	20.0	26.1	11.1	31.3
3 service types	7.0	—	0.0	13.0	11.1	8.8
4 or more service types	2.3	—	60.0	4.3	22.2	8.8
Service Type received						
Domestic assistance	9.3	—	40.0	8.7	33.3	13.8
Social support	0.0	—	40.0	8.7	22.2	7.5
Nursing care	0.0	—	40.0	4.3	0.0	3.8
Allied health care	90.7	—	100.0	82.6	77.8	87.5
Personal care	0.0	—	40.0	0.0	11.1	3.8
Meals	0.0	—	20.0	8.7	22.2	6.3
Provision of goods & equipment	4.7	—	20.0	8.7	0.0	6.3
Transport services	4.7	—	40.0	8.7	22.2	10.0
Case management	44.2	—	80.0	43.5	44.4	46.3

Note: Final accommodation is private residence.

Number and type of services received post discharge by carer status



Carer status post discharge - SPECIALIST						
Services received post discharge	NO CARER and DOES NOT need one	NO CARER and NEEDS one	CARER NOT living in	CARER living in - NOT codependent	CARER living in - codependent	All episodes in private residence
Number of episodes in private residence	419	4	52	289	60	
Percent of episodes receiving:						
No services	9.1	25.0	0.0	8.0	10.0	8.3
1 service type	36.8	25.0	17.3	50.5	28.3	39.7
2 service types	40.6	25.0	17.3	19.7	25.0	30.6
3 service types	10.0	25.0	19.2	9.3	23.3	11.4
4 or more service types	3.6	0.0	46.2	12.5	13.3	10.1
Service Type received						
Domestic assistance	6.4	0.0	40.4	7.6	15.0	9.6
Social support	3.1	25.0	38.5	14.5	28.3	11.3
Nursing care	2.4	0.0	23.1	5.2	1.7	4.6
Allied health care	84.0	75.0	88.5	79.6	81.7	82.5
Personal care	1.9	0.0	34.6	11.4	10.0	7.9
Meals	1.2	0.0	11.5	5.2	6.7	3.6
Provision of goods & equipment	4.1	0.0	19.2	8.0	10.0	6.8
Transport services	13.1	0.0	34.6	11.8	26.7	14.9
Case management	47.0	50.0	65.4	39.4	43.3	45.3

Note: Final accommodation is private residence.

Number and type of services received post discharge by carer status

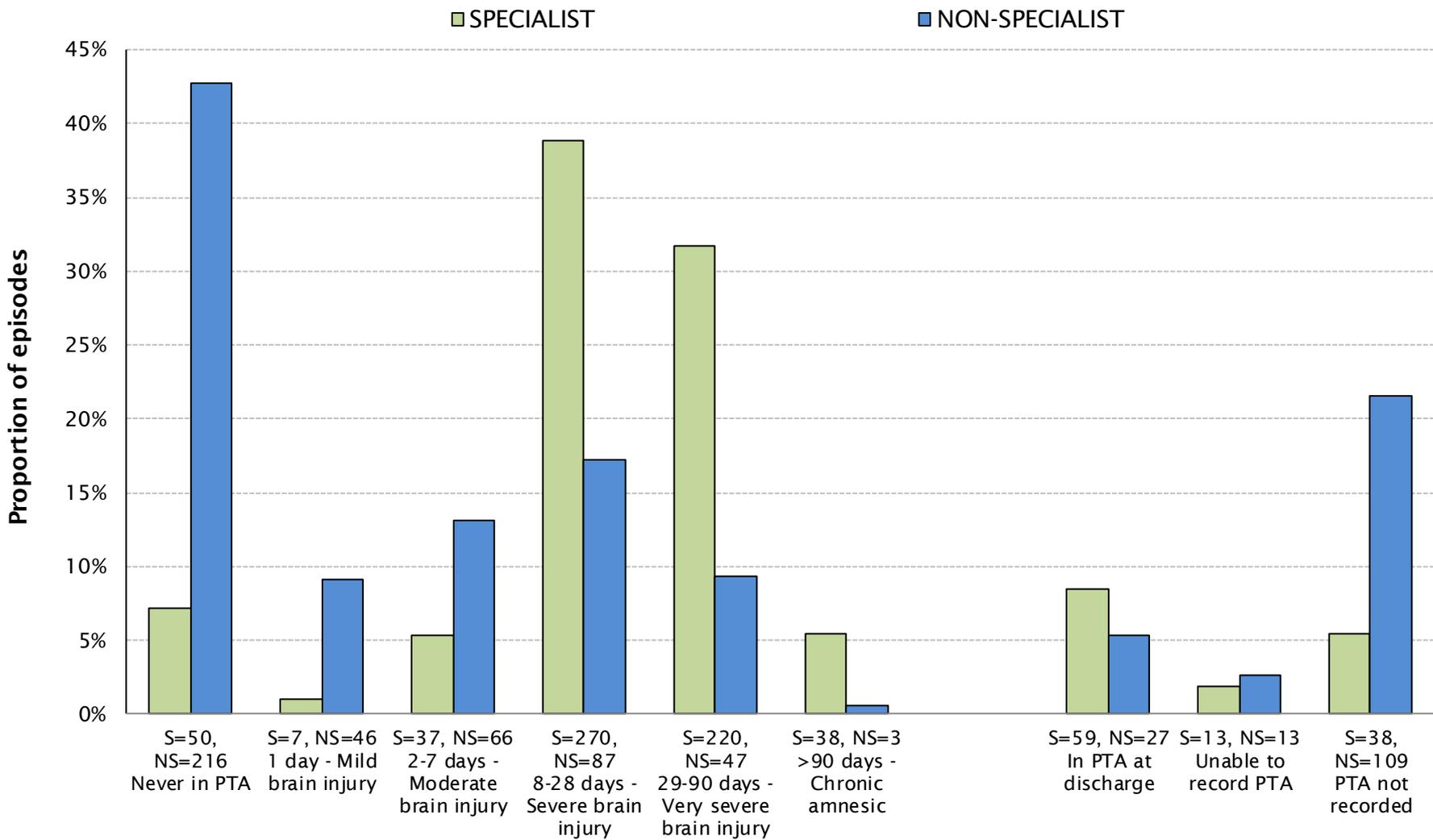


Carer status post discharge - NON-SPECIALIST							
Services received post discharge	NO CARER and DOES NOT need one	NO CARER and NEEDS one	CARER NOT living in	CARER living in - NOT codependent	CARER living in - codependent	All episodes in private residence	
Number of episodes in private residence	634	53	225	626	148		
Percent of episodes receiving:							
No services	44.6	22.6	10.2	27.8	27.7	31.6	
1 service type	31.7	18.9	18.2	26.8	28.4	27.4	
2 service types	13.2	13.2	18.7	14.4	18.2	14.8	
3 service types	5.7	18.9	19.1	12.9	11.5	11.1	
4 or more service types	4.6	26.4	33.8	17.9	13.5	14.9	
Service Type received							
Domestic assistance	20.0	34.0	60.4	28.9	30.4	30.2	
Social support	6.2	28.3	23.6	14.5	14.9	13.1	
Nursing care	3.5	15.1	18.2	7.0	6.1	7.4	
Allied health care	35.6	49.1	42.7	52.1	39.9	43.7	
Personal care	5.4	30.2	43.1	20.8	20.3	18.3	
Meals	2.4	17.0	24.4	12.9	6.1	10.0	
Provision of goods & equipment	7.9	18.9	33.3	18.7	19.6	16.8	
Transport services	10.7	24.5	34.2	18.7	9.5	17.1	
Case management	6.6	22.6	18.2	12.5	14.2	11.5	

Note: Final accommodation is private residence.

Brain injury specific data

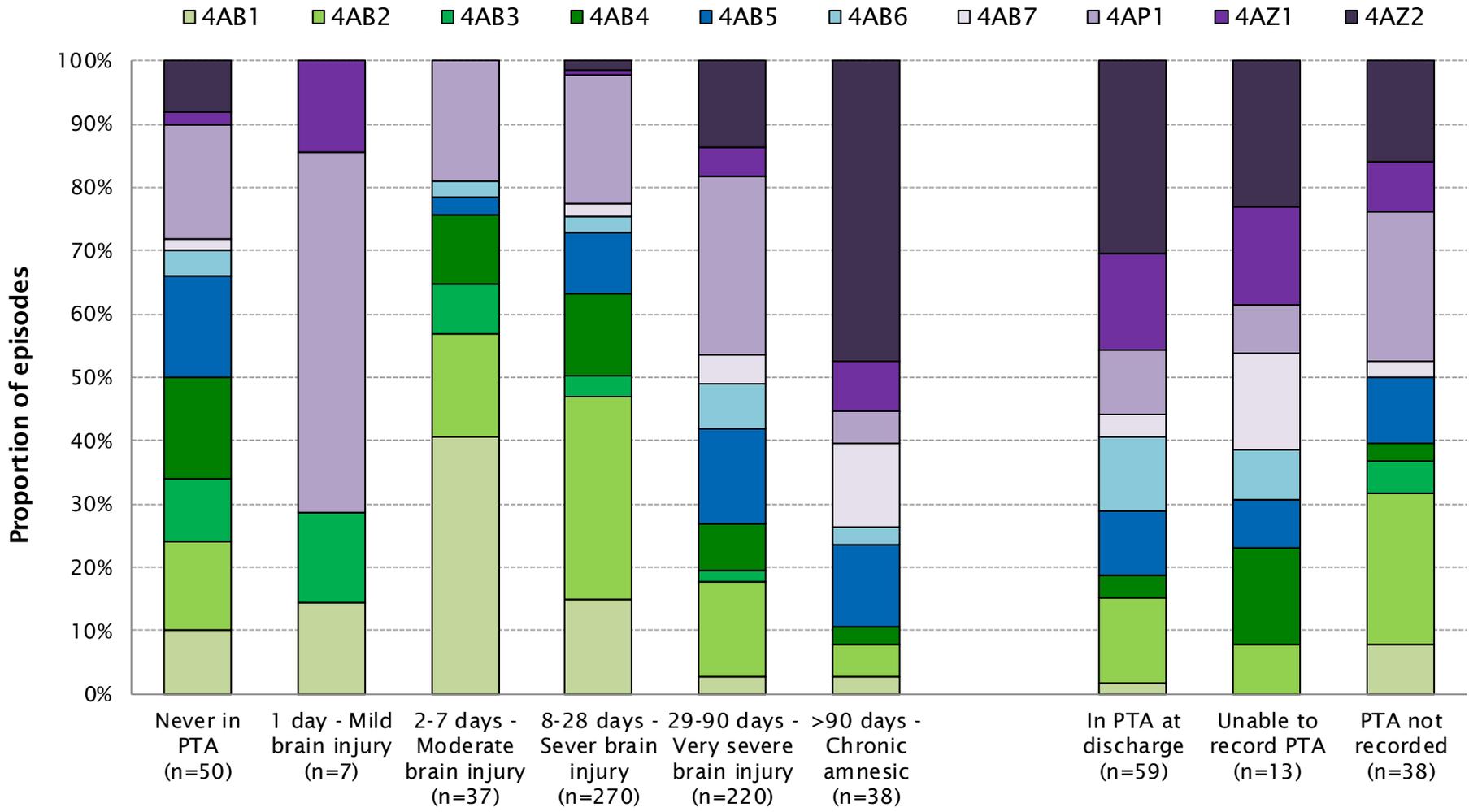
Proportion of episodes by duration of PTA



Note: 221 episodes at SPECIALIST facilities and 321 episodes at NON-SPECIALIST facilities did not collect PTA.

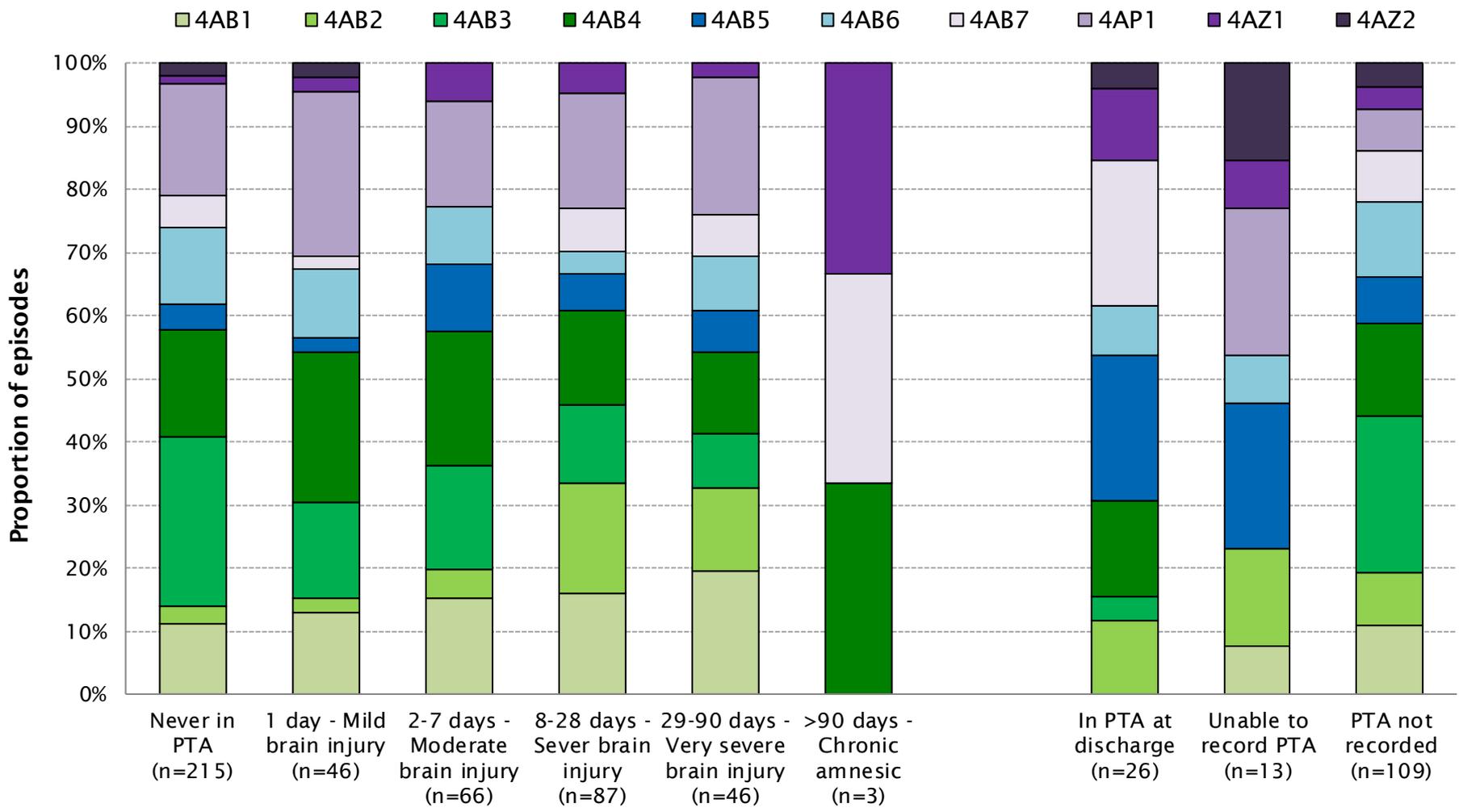
Note: First admission episodes.

Proportion of specialist facility episodes by AN-SNAP class and duration of PTA



Note: 320 episodes at SPECIALIST facilities did not collect PTA.
 Note: First admission episodes.

Proportion of non-specialist facility episodes by AN-SNAP class and duration of PTA



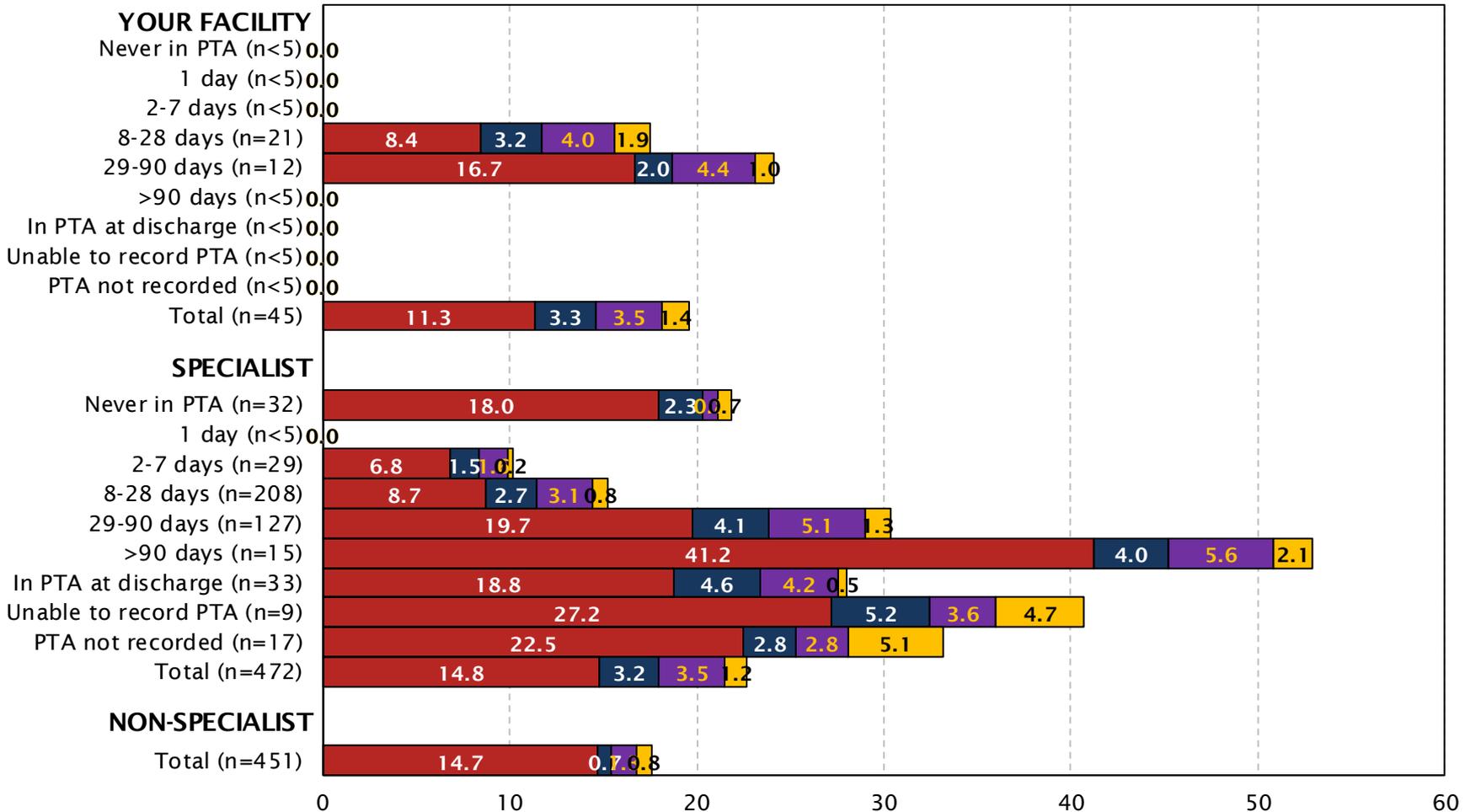
Note: 216 episodes at NON-SPECIALIST facilities did not collect PTA.

Note: First admission episodes.

Days from injury to episode start by duration of PTA



■ Injury to referral ■ Referral to assessment ■ Assessment to clinically rehab ready ■ Clinically rehab ready to episode start



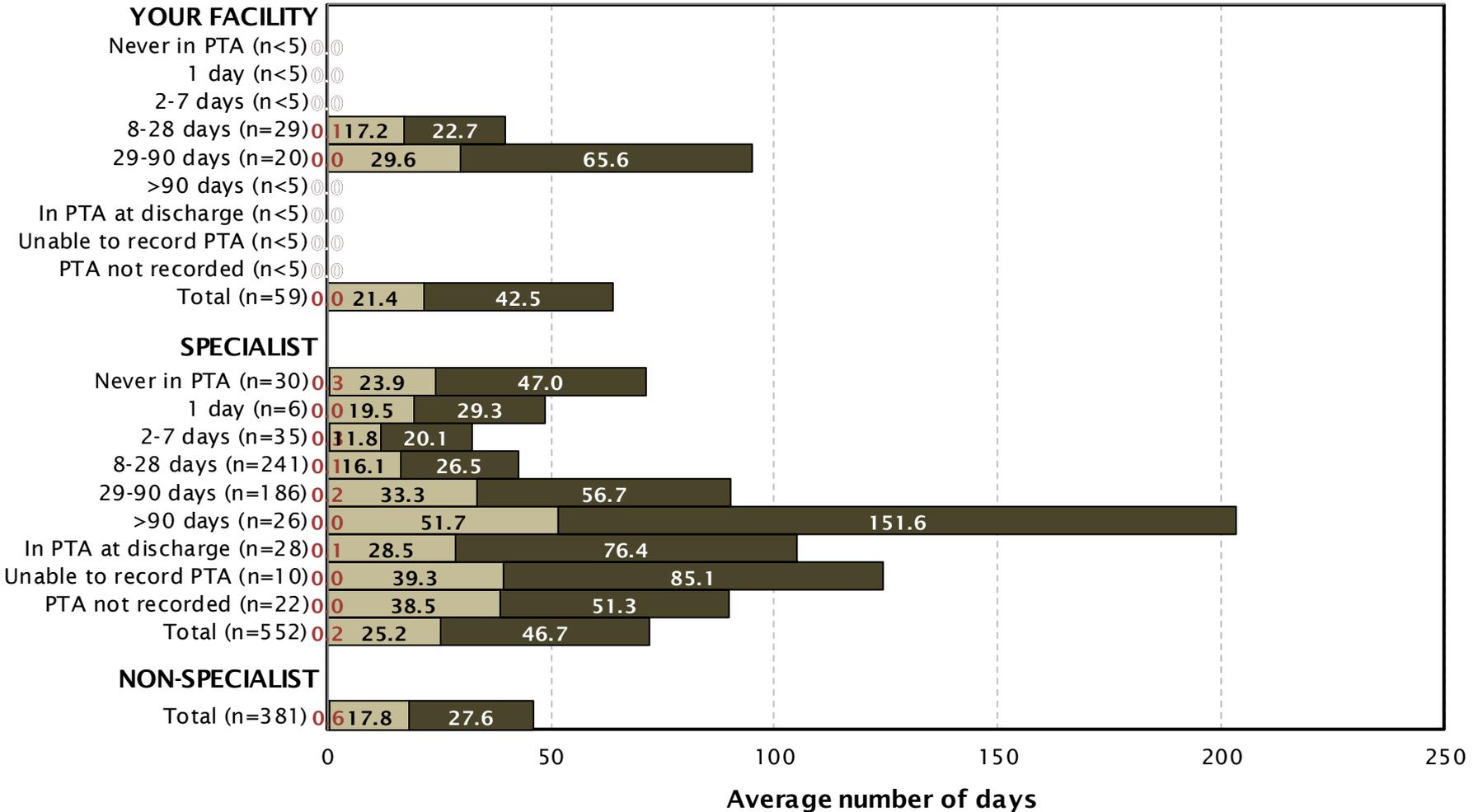
*No data provided when less than 5 episodes have dates

Average number of days

Note: First admission episodes.

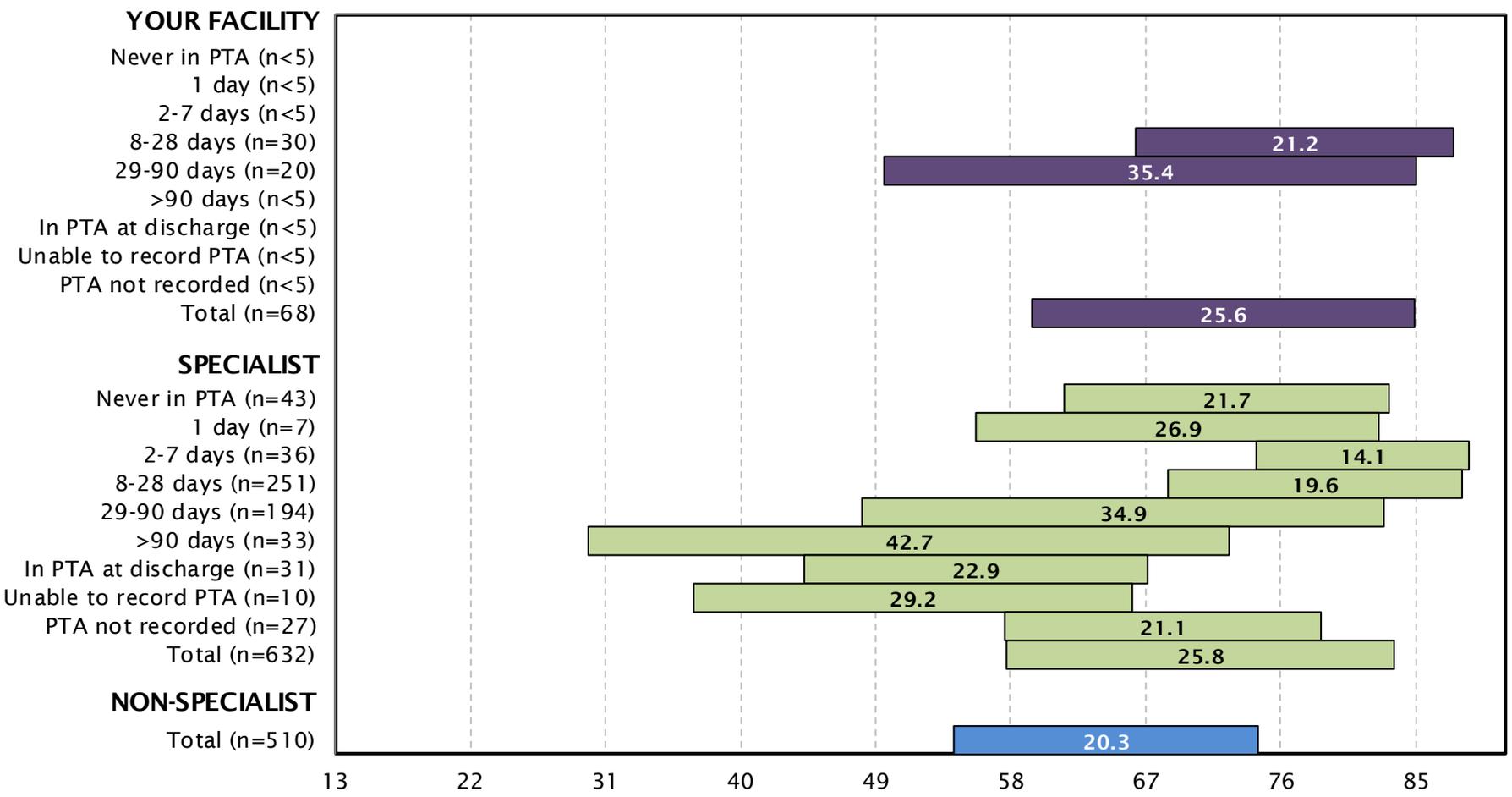
Days from injury to episode start with an acute admission by duration of PTA

■ Injury to acute admission
 ■ Acute admission to episode end
 ■ Episode start to episode end



Note: 4 episodes at YOUR FACILITY. 62 episodes at SPECIALIST facilities and 124 episodes at NON-SPECIALIST facilities did not collect PTA.
 Note: First admission episodes.

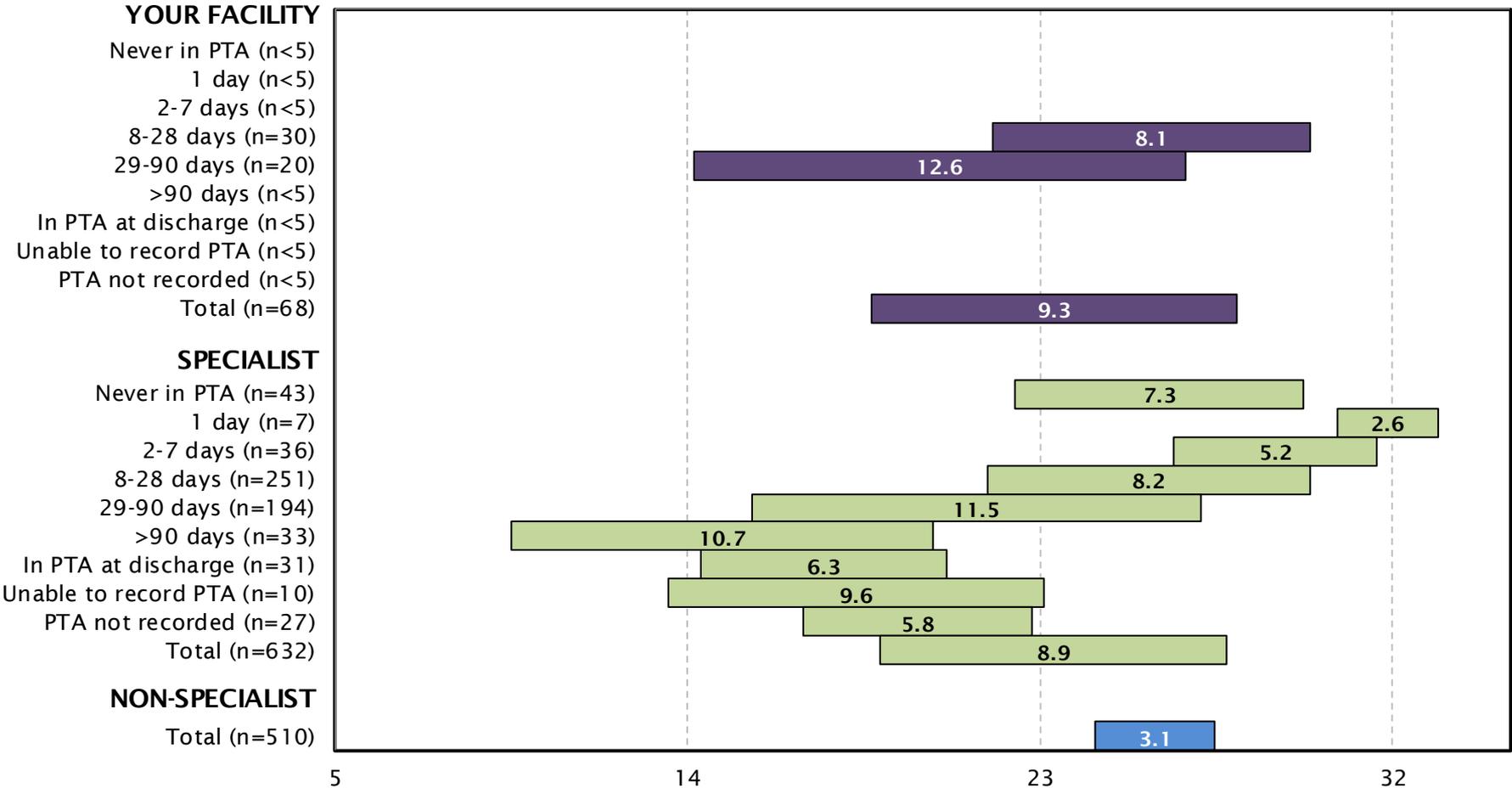
Admission and discharge FIM motor scores by duration of PTA



Mean FIM motor admission and discharge score (range 13 - 91)

Note: 8 episodes at YOUR FACILITY, 160 episodes at SPECIALIST facilities and 260 episodes at NON-SPECIALIST facilities did not collect PTA.
 Note: First admission episodes.

Admission and discharge FIM cognition scores by duration of PTA



Mean FIM cognition admission and discharge score (range 5 - 35)

Note: 8 episodes at YOUR FACILITY. 160 episodes at SPECIALIST facilities and 260 episodes at NON-SPECIALIST facilities did not collect PTA.
 Note: First admission episodes.

Average length of stay by AN-SNAP class and duration of PTA

YOUR FACILITY									
AN-SNAP class	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	—	—	—	—	—	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	—	—	—	20.0	—	—	—	—	—
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	—	—	—	—	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	—	—	—	—	—	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	—	—	—	70.4	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	—	—	—	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	—	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	—	—	—	13.6	39.2	—	—	—	—
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	—	—	—	20.5	62.5	—	—	—	—

SPECIALIST									
AN-SNAP class	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	15.0	—	10.7	14.3	13.5	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	24.1	—	18.0	20.8	37.8	—	45.0	—	43.4
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	—	—	25.6	—	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	48.9	—	—	22.1	29.3	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	53.4	—	—	25.2	51.9	75.6	89.8	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	37.3	52.3	—	30.0	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	58.4	135.4	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	37.6	—	20.8	29.3	45.4	—	—	—	28.9
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	79.8	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	86.9	170.4	—	—	—
All Brain AN-SNAP classes	39.2	26.7	17.6	23.8	51.1	130.2	79.2	84.0	50.3

NON-SPECIALIST									
AN-SNAP class	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	10.6	12.3	9.1	13.0	13.6	—	—	—	16.2
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	21.8	—	—	25.2	—	—	—	—	13.7
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	19.9	12.5	17.4	22.0	—	—	—	—	16.2
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	19.6	16.1	20.5	22.3	22.7	—	—	—	15.2
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	20.0	—	19.0	—	—	—	—	—	23.2
4AB6 (BI, weighted FIM motor 29-40)	28.5	—	27.7	—	—	—	—	—	25.6
4AB7 (BI, weighted FIM motor 19-28)	34.7	—	—	—	—	—	—	—	53.3
4AP1 (MMT, weighted FIM motor 19-91)	43.3	33.3	35.5	39.4	52.3	—	—	—	22.9
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	26.1	21.5	21.7	26.5	34.5	—	34.3	70.4	23.4

Note: First admission episodes.

Average FIM admission by AN-SNAP class and duration of PTA

YOUR FACILITY									
AN-SNAP class	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	—	—	—	—	—	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	—	—	—	97.8	—	—	—	—	—
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	—	—	—	—	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	—	—	—	—	—	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	—	—	—	77.0	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	—	—	—	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	—	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	—	—	—	91.2	67.5	—	—	—	—
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	—	—	—	88.1	63.8	—	—	—	—

SPECIALIST									
AN-SNAP class	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	112.4	—	112.9	112.0	116.3	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	103.0	—	109.5	99.8	97.6	—	94.3	—	100.5
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	—	—	90.8	—	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	77.4	—	—	83.6	79.6	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	69.4	—	—	73.5	67.7	60.0	58.8	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	41.8	45.4	—	49.0	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	35.7	33.6	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	90.5	—	96.0	82.8	68.3	—	—	—	70.6
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	20.2	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	22.8	20.8	—	—	—
All Brain AN-SNAP classes	83.9	86.3	100.8	90.1	63.7	39.4	58.6	50.4	74.6

NON-SPECIALIST									
AN-SNAP class	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	106.7	106.8	113.1	107.5	108.0	—	—	—	106.4
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	94.7	—	—	99.4	—	—	—	—	97.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	88.7	85.8	86.3	84.6	—	—	—	—	87.9
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	76.5	78.0	75.9	73.8	78.7	—	—	—	76.9
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	67.1	—	62.2	—	—	—	—	—	74.5
4AB6 (BI, weighted FIM motor 29-40)	51.8	—	47.5	—	—	—	—	—	50.3
4AB7 (BI, weighted FIM motor 19-28)	36.6	—	—	—	—	—	—	—	34.1
4AP1 (MMT, weighted FIM motor 19-91)	77.1	86.8	74.2	85.3	71.3	—	—	—	85.6
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	78.6	83.1	77.8	83.8	79.7	—	63.6	59.8	78.6

Note: First admission episodes.

Average FIM change by AN-SNAP class and duration of PTA

AN-SNAP class	YOUR FACILITY								
	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	—	—	—	—	—	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	—	—	—	19.1	—	—	—	—	—
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	—	—	—	—	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	—	—	—	—	—	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	—	—	—	34.8	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	—	—	—	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	—	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	—	—	—	24.6	42.0	—	—	—	—
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	—	—	—	29.3	48.0	—	—	—	—

AN-SNAP class	SPECIALIST								
	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	11.6	—	10.6	10.9	6.0	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	15.4	—	12.2	18.3	18.5	—	15.0	—	12.1
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	—	—	27.6	—	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	32.4	—	—	34.9	33.8	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	38.4	—	—	42.8	44.4	26.4	27.5	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	74.0	61.3	—	33.2	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	69.0	61.4	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	21.6	—	23.5	33.1	40.7	—	—	—	36.8
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	86.5	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	79.8	67.2	—	—	—
All Brain AN-SNAP classes	29.0	29.4	19.3	27.9	46.3	53.5	29.2	38.8	26.9

AN-SNAP class	NON-SPECIALIST								
	Never in PTA	1 day	2-7 days	8-28 days	29-90 days	>90 days	PTA at dis.	Unable PTA	No PTA record
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	11.1	8.8	10.5	9.1	11.8	—	—	—	12.4
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	14.2	—	—	13.7	—	—	—	—	11.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	22.8	20.2	22.7	19.0	—	—	—	—	18.6
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	23.4	23.2	27.4	24.0	25.7	—	—	—	18.5
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	24.1	—	27.0	—	—	—	—	—	16.0
4AB6 (BI, weighted FIM motor 29-40)	35.5	—	22.3	—	—	—	—	—	37.7
4AB7 (BI, weighted FIM motor 19-28)	23.9	—	—	—	—	—	—	—	27.9
4AP1 (MMT, weighted FIM motor 19-91)	37.0	25.3	37.8	29.5	29.2	—	—	—	30.7
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	25.5	20.3	24.9	19.8	23.7	—	33.8	14.3	21.3

Note: First admission episodes.

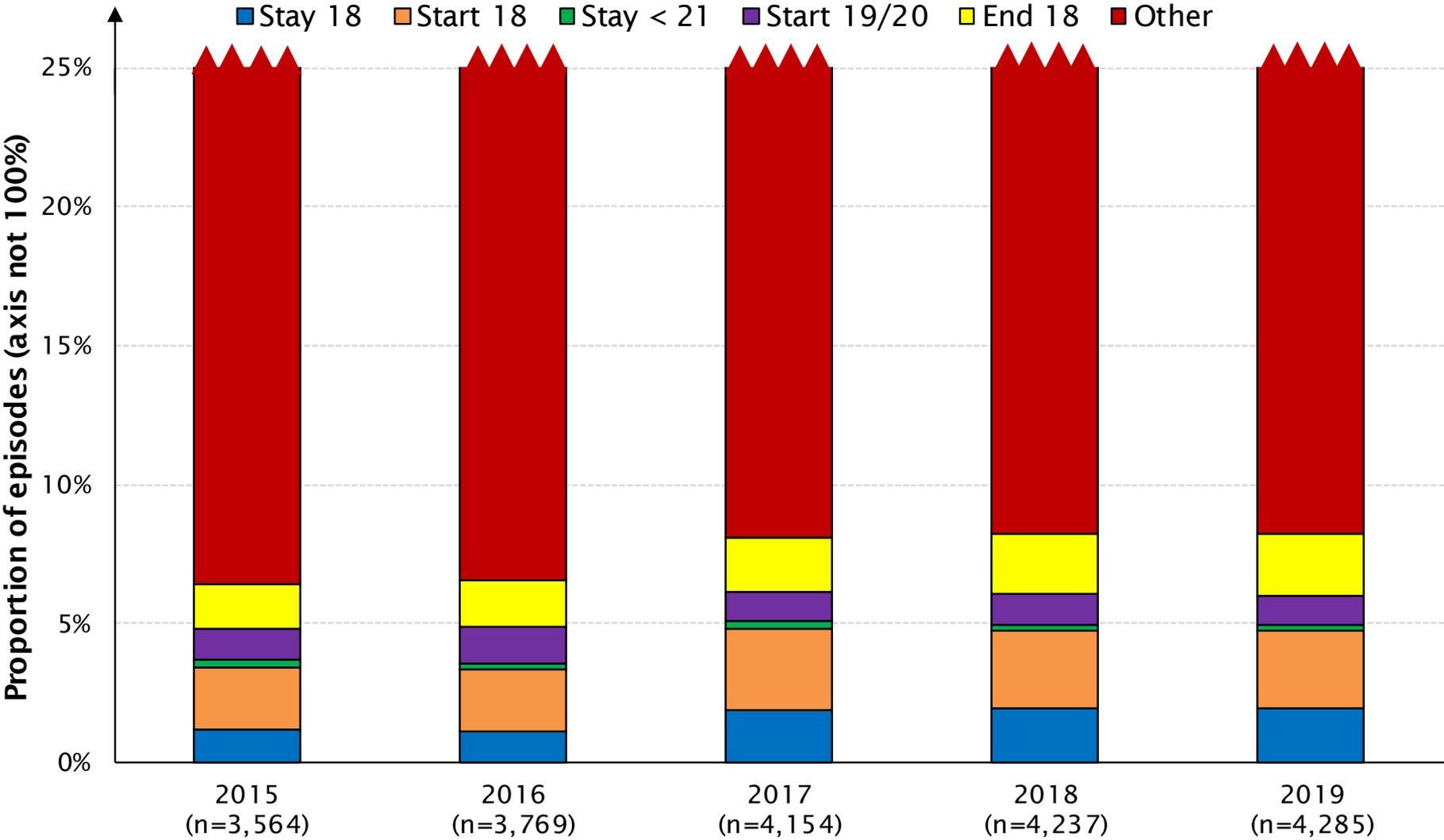
Low FIM score summary report

The Low FIM score categories are divided as follows:

- **Stay 18** – FIM score of 18 on admission AND discharge.
- **Start 18** – FIM score of 18 on admission, FIM score >18 on discharge
- **Stay <21** – FIM score of 19 or 20 on admission, score of ≤ 20 on discharge
- **Start 19/20** – FIM score of 19 or 20 on admission, score of >20 on discharge
- **End 18** – FIM score of >20 on admission, score of 18 on discharge
- **Other** – all other FIM scores

All graphs in this section reflect **ALL** data (TBI and NTBI) for the current reporting period, unless otherwise specified.

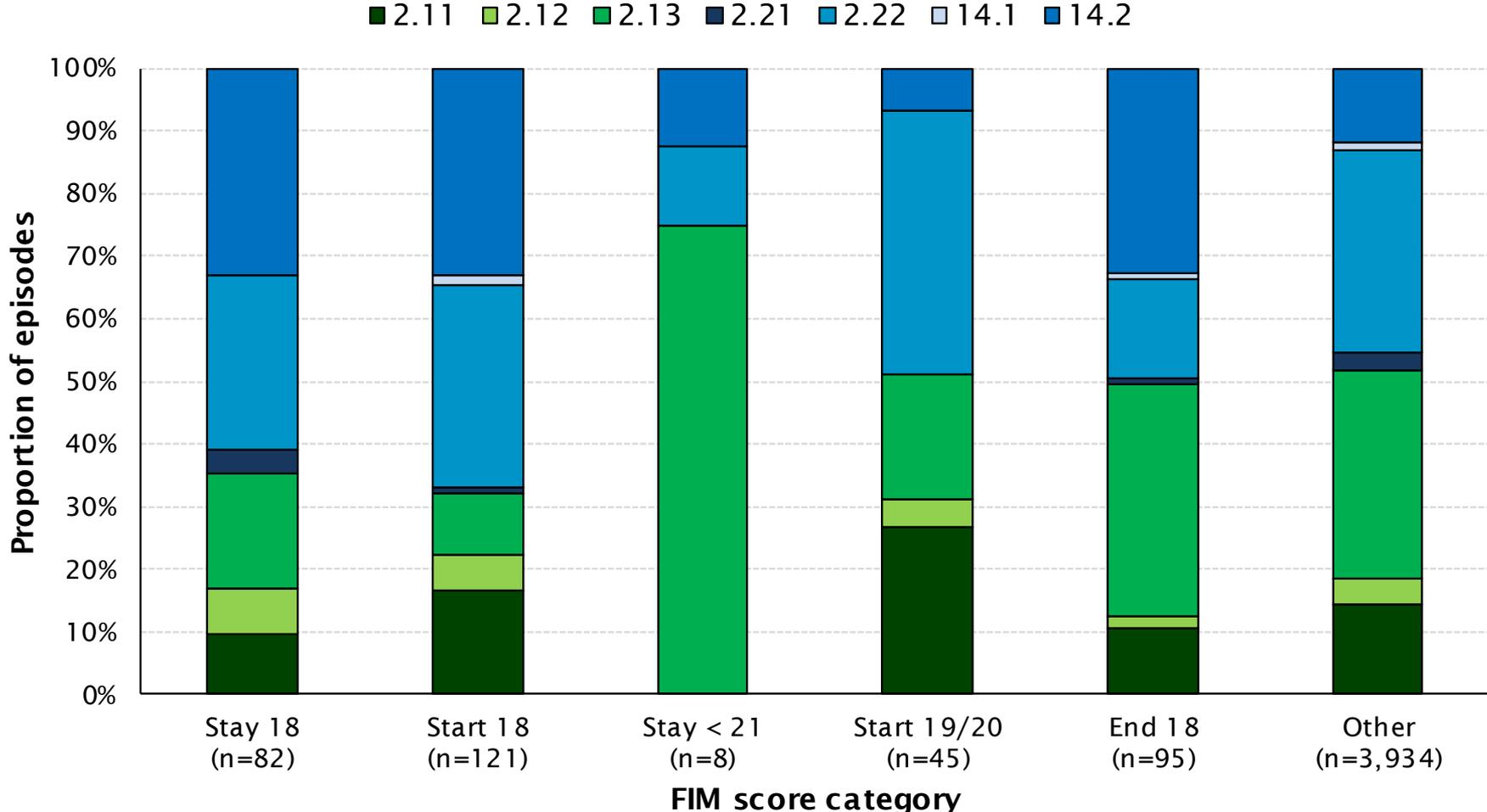
Low FIM score episodes over time



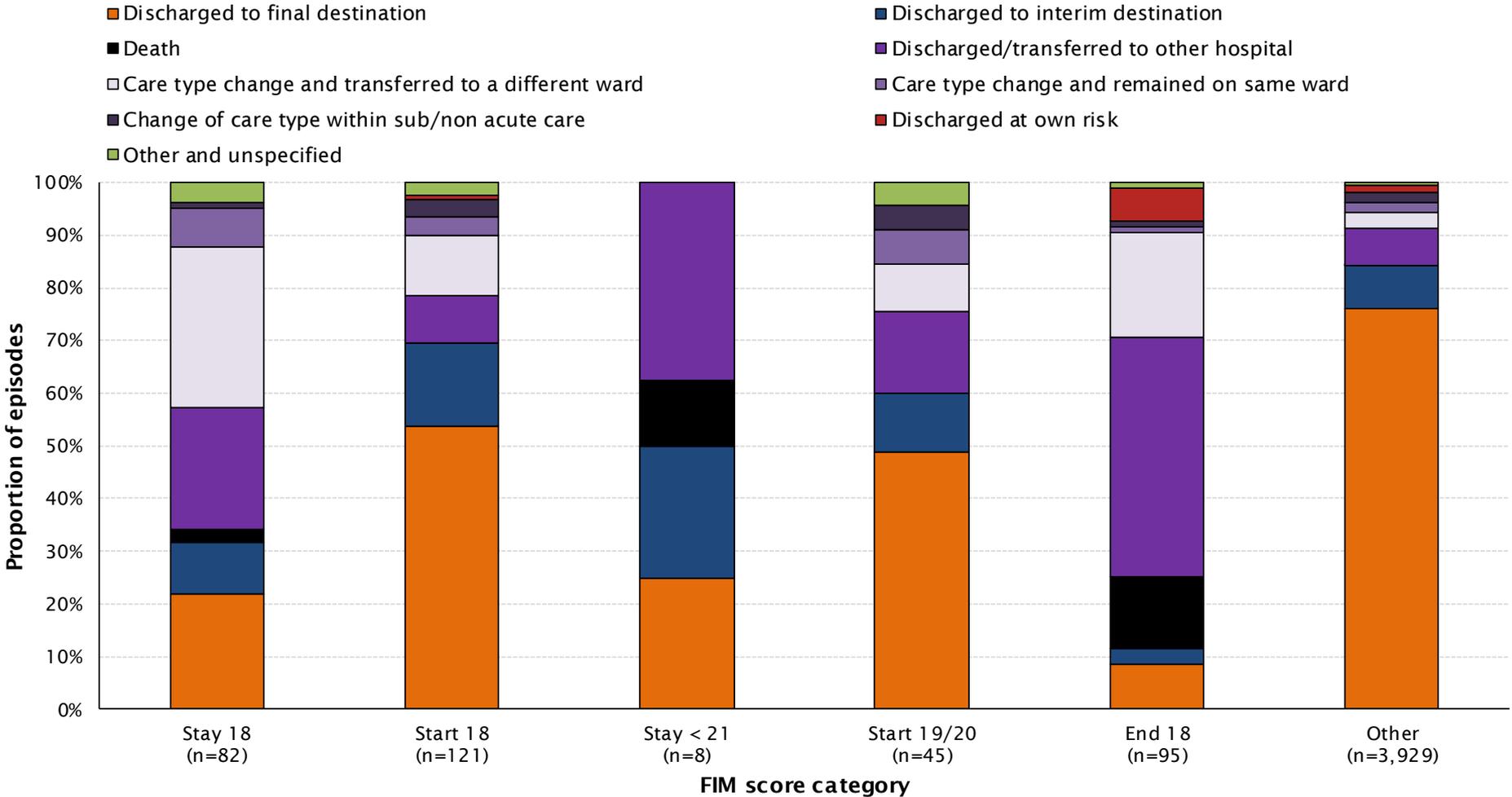
Low FIM score episodes over time

Year	Stay 18	Start 18	Stay < 21	Start 19/20	End 18	Other
YOUR FACILITY						
2015	3	4	0	0	3	134
2016	2	9	1	4	1	132
2017	4	11	0	5	3	123
2018	3	18	0	2	1	130
2019	6	6	0	1	3	111
SPECIALIST (ALL FACILITIES)						
2015	21	46	2	19	13	1,196
2016	24	61	3	28	18	1,302
2017	51	97	5	26	30	1,278
2018	62	88	1	26	43	1,312
2019	50	94	3	25	38	1,231
NON-SPECIALIST (ALL FACILITIES)						
2015	21	34	7	20	45	2,140
2016	18	22	6	22	45	2,220
2017	26	24	7	19	50	2,541
2018	19	32	8	20	48	2,578
2019	32	27	5	20	57	2,703

Low FIM score impairment distribution



Low FIM score discharge destination

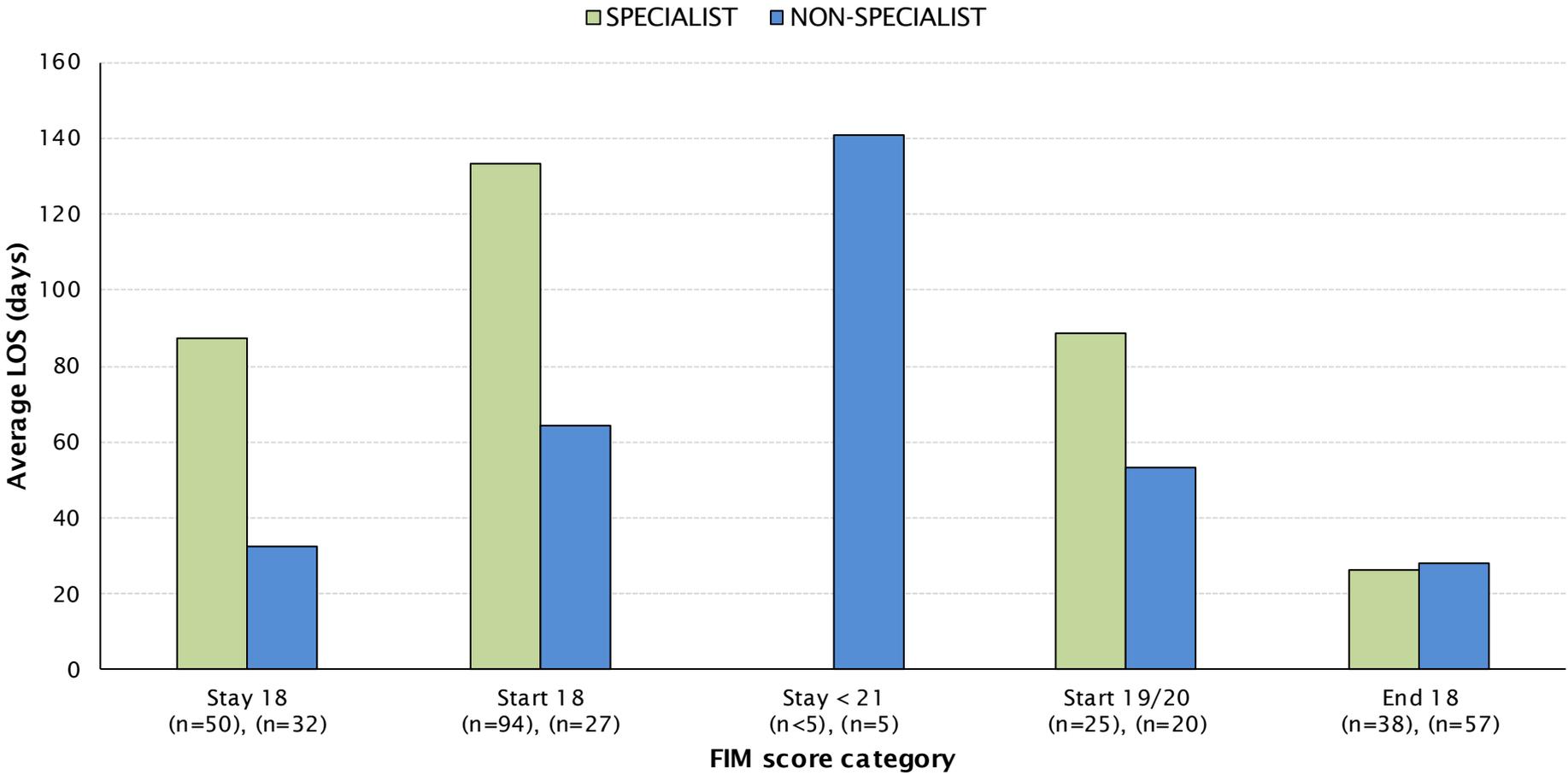


Low FIM score discharge destination

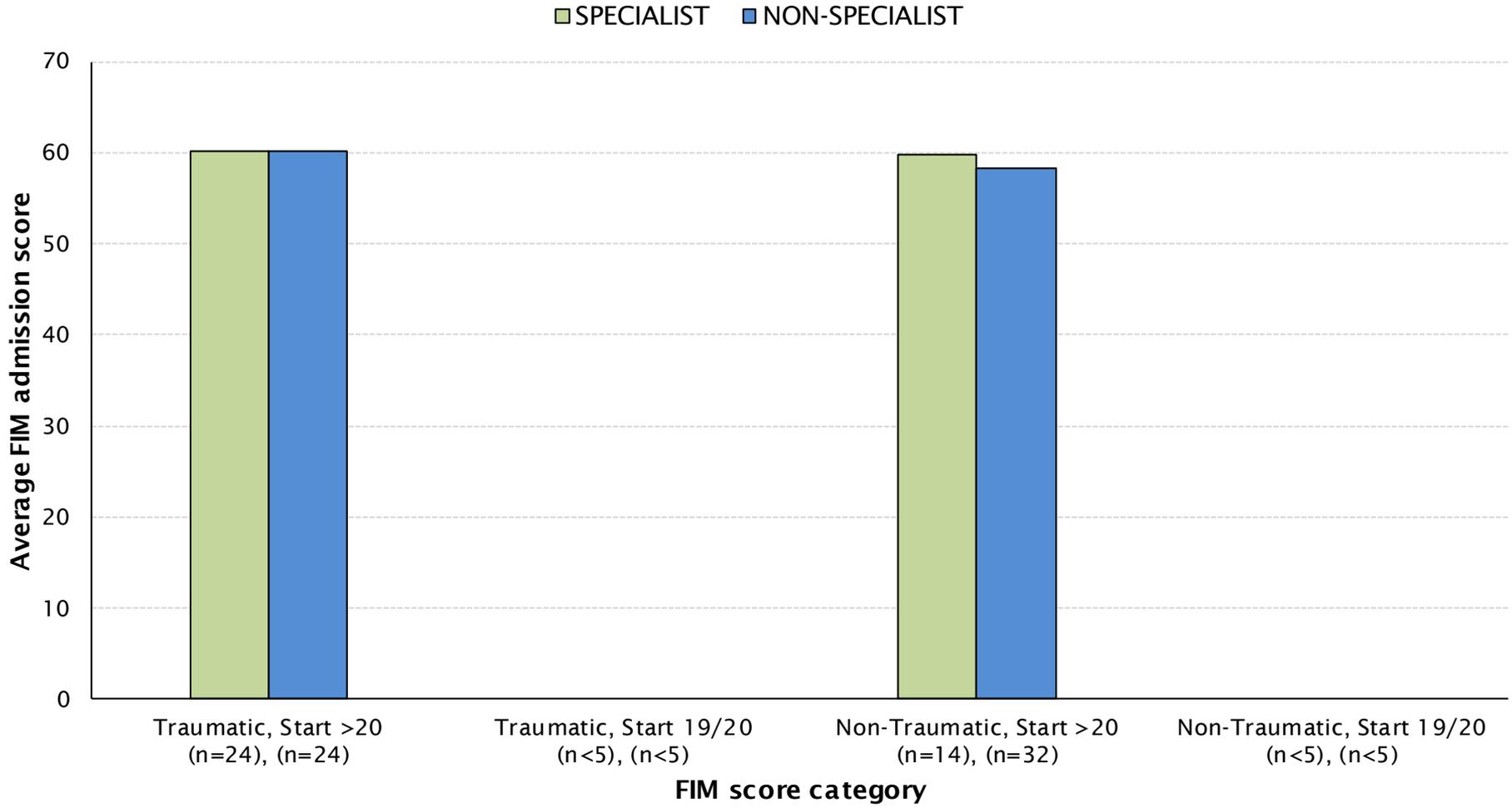


Discharge Destination	Discharge Destination					
	Stay 18	Start 18	Stay <21	Start 19/20	End 18	Other
YOUR FACILITY						
Discharged to final destination	1	1	0	1	0	86
Discharged to interim destination	0	2	0	0	0	9
Death	0	0	0	0	0	0
Discharged/transferred to other hospital	0	1	0	0	1	7
Care type change and transferred to a different ward	3	2	0	0	1	5
Care type change and remained on same ward	1	0	0	0	0	0
Change of care type within sub/non acute care	0	0	0	0	0	1
Discharged at own risk	0	0	0	0	1	3
Other and unspecified	1	0	0	0	0	0
Total	6	6	0	1	3	111
SPECIALIST (ALL FACILITIES)						
Discharged to final destination	7	54	1	15	2	946
Discharged to interim destination	2	12	1	1	1	105
Death	0	0	0	0	1	0
Discharged/transferred to other hospital	12	5	1	2	21	70
Care type change and transferred to a different ward	23	11	0	2	8	38
Care type change and remained on same ward	4	4	0	2	0	15
Change of care type within sub/non acute care	0	4	0	2	0	20
Discharged at own risk	0	1	0	0	5	28
Other and unspecified	2	3	0	1	0	7
Total	50	94	3	25	38	1,229
NON-SPECIALIST (ALL FACILITIES)						
Discharged to final destination	11	11	1	7	6	2,041
Discharged to interim destination	6	7	1	4	2	216
Death	2	0	1	0	12	3
Discharged/transferred to other hospital	7	6	2	5	22	202
Care type change and transferred to a different ward	2	3	0	2	11	80
Care type change and remained on same ward	2	0	0	1	1	64
Change of care type within sub/non acute care	1	0	0	0	1	57
Discharged at own risk	0	0	0	0	1	23
Other and unspecified	1	0	0	1	1	14
Total	32	27	5	20	57	2,700

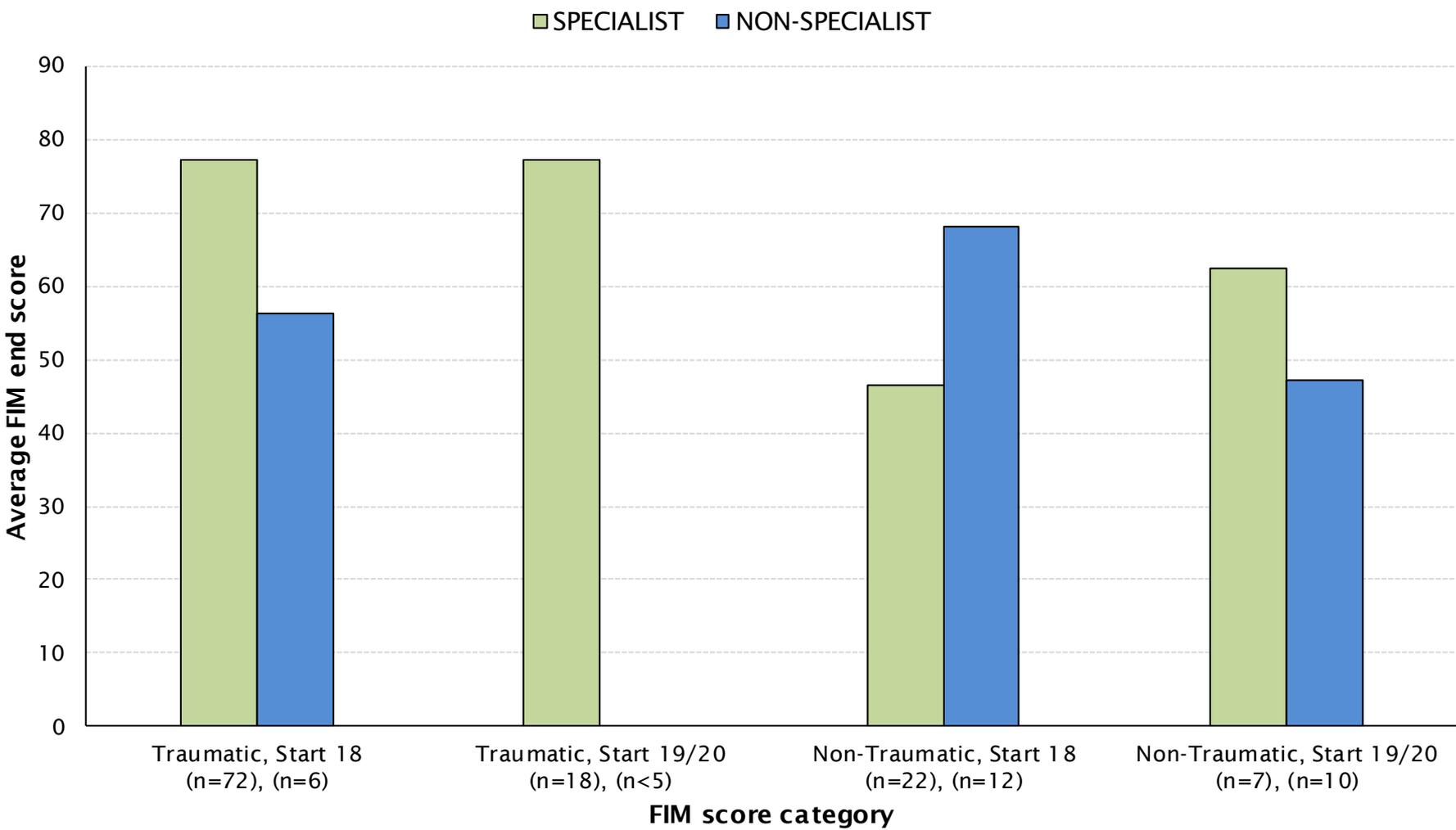
Low FIM score average LOS



Low FIM score average FIM admission — episodes with end FIM =18



Low FIM score average FIM discharge — episodes with start FIM ≤ 20



AN-SNAP class

The Australian National Sub-Acute and Non-Acute Patient Classification (AN-SNAP) is a casemix classification for sub-acute and non-acute care provided in a variety of treatment settings. Version 4, introduced in July 2016 and used in these reports, uses the episode's impairment, age, weighted FIM motor admission score and FIM cognition score to determine which of 50 inpatient (admitted overnight adult) rehabilitation classes the episode should be assigned to.

Between AN-SNAP V3 and V4 there have been some minor refinements to the positioning of age and FIM score splits, however the greatest change has been the introduction of impairment-specific weights to FIM item scores in the calculation of a motor score, the introduction of reconditioning only classes and the removal of orthopaedic replacement classes (now grouped with all other orthopaedic conditions). Refer Appendix 3 for the full list of classes and the section Impairment-specific weighted FIM scores below for more detail about how the items are weighted. For more information about AN-SNAP class V4 please refer to the AROC website.

AROC

The Australasian Rehabilitation Outcomes Centre (AROC) was established in 2002 and current membership encompasses close to 100% of all Australian and New Zealand rehabilitation facilities. Facilities routinely submit deidentified data to AROC for each rehabilitation episode, including information about demographics, process indicators and functional status.

Benchmark group

In Calendar Year 2015 new benchmark groups were introduced. With the exception of brain injury and spinal cord dysfunction an episode's benchmark group is determined by the country of the submitting facility and can be either Australia or New Zealand. For episodes recorded as brain injury or spinal cord dysfunction (or major multi trauma involving brain injury and/or spinal cord dysfunction) the benchmark group is determined by first admission episodes reported by all specialist (brain/spinal) units in both Australia and New Zealand, calculated separately for traumatic and non-traumatic episodes. The benchmark data set is all episodes during the reporting period in the AROC database.

Appendix 1: Glossary

Casemix-adjusted relative mean

A comparison of some statistics such as length of stay and FIM change is only possible if the groups being compared comprise similar episodes. The specific impairment, level of functional independence, age and other factors relating to the episode have an impact on these statistics. If, for example, your average length of stay were different from the benchmark group, we could not tell if your episodes really were different or if the difference was merely due to the unique casemix.

To overcome this difficulty, it is possible to statistically control for casemix. This is achieved by adjusting measures such as length of stay and FIM change so that the comparison is only made between similar types of episodes.

In this report we have calculated casemix-adjusted relative mean length of stay and casemix-adjusted relative mean FIM change for completed episodes. To do this, we needed to know the LOS (or FIM change) and AN-SNAP class for each episode as well as the mean LOS (or FIM change) for the benchmark group for each AN-SNAP class. We then calculated the difference between each episode LOS (or FIM change) and the mean LOS (or FIM change) of the appropriate AN-SNAP class. These differences were then averaged to produce the casemix-adjusted relative mean. This may be easier to understand as a set of two equations illustrated below.

For each episode calculate:

LOSdiff = episode's LOS - mean LOS appropriate AN-SNAP class.

Casemix-adjusted relative mean = Sum of LOSdiff for all episodes divided by Number of episodes

A casemix-adjusted relative mean length of stay of, say, -2 days would indicate that, on average, your facility has a LOS of 2 days less than similar episodes in the benchmark group. A casemix-adjusted relative mean FIM change of, say, 4 would indicate that, on average, your facility improved 4 FIM points more than similar episodes in the benchmark group. It is important to consider both of these statistics together. For example, your episodes may have stayed longer than similar episodes in the benchmark group, but they may also have achieved a greater functional improvement.

Complete/incomplete episode

An episode is considered "complete" for the purpose of calculating outcome statistics in this report if (A) the mode of episode end was either 1 (discharged to usual accommodation) or 2 (discharged to interim accommodation) AND total FIM score at episode end was greater than 18, or (B) the mode of episode end was 7 (change of care type within sub-acute/non-acute care) AND length of stay greater than 6 days.

Confidence interval for a mean

To decide if a difference between your facility's mean score and the benchmark group's mean is statistically significant, look at the two confidence intervals. If they overlap, the difference is not likely to be statistically significant. For example your facility's mean onset to first admission may be 16 days while the benchmark group's mean is 12 days. These values are certainly different, but the difference may not be statistically significant. If the 95% confidence interval of your data were (13 - 19) (i.e. 13 days to 19 days) and that of the benchmark group data set were (10.5 - 13.5) (i.e. 10.5 days to 13.5 days), the difference is not likely to be statistically significant as the two confidence intervals overlap. Note that this is a conservative comparison and is not as accurate as a formal statistical test.

Data Concatenation

Increasingly some jurisdictions have introduced business rules around data collection that have resulted in episodes of rehabilitation being ended and then re-commenced a few days later. AROC definitions would record these as one episode with the period in between defined as a suspension of rehabilitation. Such business rules result in two (or more) episodes of rehabilitation being reported to AROC when only one full episode should be reported.

Whilst this happens much more frequently in some impairment groups (e.g. spinal cord dysfunction & brain injury) it does impact all impairments to some degree. Reporting of multiple episodes impacts outcomes analysis, resulting in shorter than real length of stays and reduced FIM change being reported.

Concatenated episodes will have a revised Length of stay and FIM change (start details will be taken from the identified primary episode; end details from the identified final episode), and will also have a revised number of suspensions (being the sum across all concatenated 'submitted episodes' plus the number of breaks between 'submitted episodes') and a revised number of suspension days (being the sum across all concatenated 'submitted episodes' plus the sum of all days between 'submitted episodes').

Submitted episodes to AROC are identified for concatenation based on the following rules:

- Subsequent episodes **MUST** have same impairment code and be from same reporting facility with same MRN and DOB.
- Leading episode must be discharged into the hospital system with following episode being admitted from hospital system.
- Number of days between episodes being 0-14 days for spinal and 0-7 days for all other impairments.

To make it easier for AROC to identify episodes that should be concatenated in January 2014 the data item Mode of Episode Start had an additional code set value added: **9 = recommenced rehabilitation episode following suspension**

Data quality score

The data quality score is the average percent reported for all AROC data items (including impairment specific items where relevant) with the exception of those items that are optional. Path, facility code, facility name, MRN and episode end date are not included as these fields are used to extract the data for reporting.

Functional Independence Measure (FIM)

The Functional Independence Measure (FIM) is used as a tool to assess the functional independence of patients at episode start and end.

- The FIM motor score is the sum of the scores obtained for the first thirteen (13) items in the FIM instrument. A higher FIM motor score indicates a greater level of functional independence in motor skills.
- The FIM cognition score is the sum of the scores obtained for the final five (5) items in the FIM instrument. A higher FIM cognition score indicates better cognitive function.

FIM change

The change in functional status from the beginning to the end of the episode is measured by the change in FIM score. This is calculated as the FIM score at the end of the episode minus the FIM score at the start of the episode. In some instances the change in total FIM score (the sum of items 1 to 18) is calculated. In other cases either the change in FIM motor score (the sum of items 1 to 13) or the change in FIM cognition score (the sum of items 14 to 18) is calculated.

A higher FIM score corresponds to higher level of function while a lower FIM score represents less functional independence. This means that a positive value for the change in FIM score indicates functional improvement during the episode. A negative value for the change in FIM score indicates a decline in functional independence during the episode.

FIM efficiency

The FIM efficiency indicates the average FIM improvement per day. This statistic is calculated as the mean FIM change divided by the mean length of stay (LOS).

Impairment-specific weighted FIM motor scores

Impairment-specific weighted FIM motor scores are new to the inpatient (admitted overnight adult) rehabilitation AN-SNAP V4 classes. Weights reflect the relative impact of each item on the cost of caring for the rehabilitation patient. If an item has a weight of more than 1, it will have an impact on the cost of care that is more than average – a weight less than 1 implies the impact will be less than average. Within each impairment type, the weights are scaled to sum to 13 – thus both weighted and unweighted scores range from a minimum of 13 to a maximum of 91. Where impairments are grouped together in the classification, a single set of weights for that group has been derived. The exception is Major Multiple Trauma (MMT) where there were too few episodes to develop relative weights and so all weights were set to 1.

Interquartile range (IQR)

The middle 50% — between the 25% percentile and the 75% percentile.

Length of stay (LOS)

The length of stay (LOS) of an episode is the number of days on which care has been provided. It is calculated as the end date minus the start date, minus the number of leave days during the episode.

Mean

The mean, or average, is a measure of the "centre" of your data. It is calculated by adding all data values and dividing by the number of values. The mean can be used to calculate a total. For example, if the mean length of stay were 21 days for a group of 30 episodes, the total number of bed days could be calculated as 21 multiplied by 30.

Mean or median - which to use?

The mean and the median are both measures of the "centre" of your data. For data that are symmetric about the mean (e.g. normally distributed data), the mean and the median will be close to each other. However they may have very different values for some data sets.

As an example, consider length of stay. Typically, most episodes within a class will have roughly the same length of stay. However, there will be a few episodes that are longer than the others and a smaller number that are very long. These longer lengths of stay have the effect of increasing the mean length of stay, but have little or no effect on the median.

If you want to know how long episodes in this class "typically" stay, you will probably be interested in the median as this gives you the middle value - half the episodes are longer and half the episodes are shorter. If, however, your interest is in allocation of resources and you want to know how long episodes stay on average, or if you want to get an idea of the total number of days of care provided to episodes in this class, you will need to look at the mean. (The total days can be calculated by multiplying the mean with the number in the class).

Median

The median provides the middle value of your data - half the values lie above it and half the values lie below. For example, if your median length of stay were 20 days, half of your episodes would have stayed for 20 days or less, while the other half would have stayed 20 days or longer. Note that the median, unlike the mean, cannot be used to calculate the total number of bed days.

Appendix 1: Glossary

Relative Functional Gain (RFG) and Relative Functional Efficiency (RFE)

FIM change measures the absolute difference between admission FIM and discharge FIM scores, i.e. client 1 had a 10 point improvement (admission 46 - discharge 56) and client 2 also had a ten point improvement (admission 116 - discharge 126). FIM change does not take into account the proportion of FIM change possible, i.e. client 1 improved 10 points out of possible 80 (126-46) and client 2 improved 10 points out of a possible 10 (126-116). So not all patients that improve 10 FIM points are the same. This proportion of FIM change possible is known as the Relative Functional Gain (RFG) and tries to take into account the amount of FIM gain possible. RFG is calculated as follows:

- If actual FIM change > 0 [improved]
 - **(Discharge FIM – Admission FIM)/(126 – Admission FIM)**
 - e.g. $(90 - 50)/(126-50) = 40/76 = 52.6\%$
- If actual FIM change < 0 [declined]
 - **(Discharge FIM – Admission FIM)/ (Admission FIM)**
 - e.g. $(90 - 100)/100 = -10/100 = -10\%$
- If actual FIM change = 0 [no change]
 - 0%

FIM efficiency measures the absolute difference between admission FIM and discharge FIM scores per day, without taking into account the proportion of FIM change possible. The Relative Functional Gain per day is known as the Relative Functional Efficiency (RFE), and is calculated as the RFG divided by the length of stay (LOS).

Submitted versus reporting episodes

Submitted episodes are those submitted to AROC either via direct data entry or upload through AROC Online Services. These episodes have not been concatenated.

The reporting data used by AROC in this report is made up of concatenated episodes. For most episodes there is no difference between the submitted episode and the one used for reporting.

Valid FIM

For an episode to have a Valid FIM flag it must be a complete episode and each of the 18 items on admission and discharge must have been answered with a valid response of 1-7.

Valid LOS

For an episode to have a Valid LOS flag it must be a complete episode with a length of stay ranging between 1 and 500 days.

Version 4 data set

The version 4 (V4) AROC dataset was introduced on 1 July 2012. V4 is designed as a bank of data items, combinations of which are used to describe 6 possible pathways of care (see the AROC website for more information about the different pathways). NOTE: This report utilises only Pathway 3 data (inpatient direct care).

Appendix 2: AROC Impairment Codes

STROKE

Haemorrhagic

- 1.11 Left body involvement
- 1.12 Right body involvement
- 1.13 Bilateral involvement
- 1.14 No paresis
- 1.19 Other Orthopaedic fractures

Ischaemic

- 1.21 Left body involvement (right brain)
- 1.22 Right body involvement (left brain)
- 1.23 Bilateral involvement
- 1.24 No paresis
- 1.29 Other Orthopaedic fractures

BRAIN DYSFUNCTION

Non-traumatic

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

Traumatic

- 2.21 Open injury
- 2.22 Closed injury

NEUROLOGICAL CONDITIONS

- 3.1 Multiple Sclerosis
- 3.2 Parkinsonism
- 3.3 Polyneuropathy
- 3.4 Guillian-Barre
- 3.5 Cerebral palsy
- 3.8 Neuromuscular disorders
- 3.9 Other neurological conditions

SPINAL CORD DYSFUNCTION

Non traumatic spinal cord dysfunction

- 4.111 Paraplegia, incomplete
- 4.112 Paraplegia, complete
- 4.1211 Quadriplegia, incomplete C1-4
- 4.1212 Quadriplegia, incomplete C5-8
- 4.1221 Quadriplegia, complete C1-4
- 4.1222 Quadriplegia, complete C5-8
- 4.13 Other non-traumatic spinal cord dysfunction

Traumatic spinal cord dysfunction

- 4.211 Paraplegia, incomplete
- 4.212 Paraplegia, complete
- 4.2211 Quadriplegia, incomplete C1-4
- 4.2212 Quadriplegia, incomplete C5-8
- 4.2221 Quadriplegia, complete C1-4
- 4.2222 Quadriplegia, complete C5-8
- 4.23 Other traumatic spinal cord dysfunction

AMPUTATION OF LIMB

Not resulting from trauma

- 5.11 Single upper above elbow
- 5.12 Single upper below elbow
- 5.13 Single lower above knee (includes through knee)
- 5.14 Single lower below knee
- 5.15 Double lower above knee (includes through knee)
- 5.16 Double lower above/below knee
- 5.17 Double lower below knee
- 5.18 Partial foot (single or double)
- 5.19 Other amputation not from trauma

AMPUTATION OF LIMB

Resulting from trauma

- 5.21 Single upper above elbow
- 5.22 Single upper below elbow
- 5.23 Single lower above knee (includes through knee)
- 5.24 Single lower below knee
- 5.25 Double lower above knee (includes through knee)
- 5.26 Double lower above/below knee
- 5.27 Double lower below knee
- 5.28 Partial foot (single or double)
- 5.29 Other amputation from trauma

ARTHRITIS

- 6.1 Rheumatoid arthritis
- 6.2 Osteoarthritis
- 6.9 Other arthritis

PAIN SYNDROMES

- 7.1 Neck pain
- 7.2 Back Pain
- 7.3 Extremity pain
- 7.4 Headache (includes migraine)
- 7.5 Multi-site pain
- 7.9 Other pain (includes abdo/chest wall)

Appendix 2: AROC Impairment Codes

ORTHOPAEDIC CONDITIONS

Fractures (includes dislocation)

- 8.111 Fracture of hip, unilateral (incl. #NOF)
- 8.112 Fracture of hip, bilateral (incl. #NOF)
- 8.12 Fracture of shaft of femur
- 8.13 Fracture of pelvis
- 8.141 Fracture of knee
- 8.142 Fracture of lower leg, ankle, foot
- 8.15 Fracture of upper limb
- 8.16 Fracture of spine
- 8.17 Fracture of multiple sites
- 8.19 Other orthopaedic fracture

Post Orthopaedic Surgery

- 8.211 Unilateral hip replacement
- 8.212 Bilateral hip replacement
- 8.221 Unilateral knee replacement
- 8.222 Bilateral knee replacement
- 8.231 Knee and hip replacement, same side
- 8.232 Knee and hip replacement, diff sides
- 8.24 Shoulder replacement
- 8.25 Post spinal surgery
- 8.26 Other orthopaedic surgery

Soft tissue injury

- 8.3 Soft tissue injury

CARDIAC

- 9.1 Following recent onset of new cardiac impairment
- 9.2 Chronic cardiac insufficiency
- 9.3 Heart and heart/lung transplant

PULMONARY

- 10.1 Chronic obstructive pulmonary disease
- 10.2 Lung transplant
- 10.9 Other pulmonary

BURNS

- 11 Burns

CONGENITAL DEFORMITIES

- 12.1 Spina bifida
- 12.9 Other congenital deformity

OTHER DISABLING IMPAIRMENTS

- 13.1 Lymphoedema
- 13.3 Conversion disorder
- 13.9 Other disabling impairments that cannot be classified into a specific group

MAJOR MULTIPLE TRAUMA

- 14.1 Brain + spinal cord injury
- 14.2 Brain + multiple fracture/amputation
- 14.3 Spinal cord + multi fracture/amputation
- 14.9 Other multiple trauma

DEVELOPMENTAL DISABILITIES

- 15.1 Developmental disabilities (excludes cerebral palsy)

RE-CONDITIONING/RESTORATIVE

- 16.1 Re-conditioning following surgery
- 16.2 Reconditioning following medical illness
- 16.3 Cancer rehabilitation

Appendix 3: AN-SNAP V4 Overnight Rehabilitation Classes (Pathway 3)



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
4AZ3	Weighted FIM motor score 13- 18, All other impairments, Age ≥ 65
4AZ4	Weighted FIM motor score 13- 18, All other impairments, Age ≤ 64
4AA1	Stroke, weighted FIM motor 51- 91, FIM cognition 29- 35
4AA2	Stroke, weighted FIM motor 51- 91, FIM cognition 19- 28
4AA3	Stroke, weighted FIM motor 51- 91, FIM cognition 5- 18
4AA4	Stroke, weighted FIM motor 36- 50, Age ≥ 68
4AA5	Stroke, weighted FIM motor 36- 50, Age ≤ 67
4AA6	Stroke, weighted FIM motor 19- 35, Age ≥ 68
4AA7	Stroke, weighted FIM motor 19- 35, Age ≤ 67
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
4AC1	Neurological conditions, weighted FIM motor 62- 91
4AC2	Neurological conditions, weighted FIM motor 43- 61
4AC3	Neurological conditions, weighted FIM motor 19- 42
4AD1	Spinal cord dysfunction, Age ≥ 50, weighted FIM motor 42- 91
4AD2	Spinal cord dysfunction, Age ≥ 50, weighted FIM motor 19- 41
4AD3	Spinal cord dysfunction, Age ≤ 49, weighted FIM motor 34- 91
4AD4	Spinal cord dysfunction, Age ≤ 49, weighted FIM motor 19- 33

Class Description of AN- SNAP class

4AE1	Amputation of limb, Age ≥ 54, weighted FIM motor 68- 91
4AE2	Amputation of limb, Age ≥ 54, weighted FIM motor 31- 67
4AE3	Amputation of limb, Age ≥ 54, weighted FIM motor 19- 30
4AE4	Amputation of limb, Age ≤ 53, weighted FIM motor 19- 91
4AH1	Orthopaedic conditions, fractures, weighted FIM motor 49- 91, FIM cognition 33- 35
4AH2	Orthopaedic conditions, fractures, weighted FIM motor 49- 91, FIM cognition 5- 32
4AH3	Orthopaedic conditions, fractures, weighted FIM motor 38- 48
4AH4	Orthopaedic conditions, fractures, weighted FIM motor 19- 37
4A21	Orthopaedic conditions, all other, weighted FIM motor 68- 91
4A22	Orthopaedic conditions, all other, weighted FIM motor 50- 67
4A23	Orthopaedic conditions, all other, weighted FIM motor 19- 49
4A31	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72- 91
4A32	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55- 71
4A33	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34- 54
4A34	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19- 33
4AP1	Major Multiple Trauma, weighted FIM motor 19- 91
4AR1	Reconditioning, weighted FIM motor 67- 91
4AR2	Reconditioning, weighted FIM motor 50- 66, FIM cognition 26- 35
4AR3	Reconditioning, weighted FIM motor 50- 66, FIM cognition 5- 25
4AR4	Reconditioning, weighted FIM motor 34- 49, FIM cognition 31- 35
4AR5	Reconditioning, weighted FIM motor 34- 49, FIM cognition 5- 30
4AR6	Reconditioning, weighted FIM motor 19- 33
4A91	All other impairments, weighted FIM motor 55- 91
4A92	All other impairments, weighted FIM motor 33- 54
4A93	All other impairments, weighted FIM motor 19- 32
499A	Adult Overnight Rehabilitation - Ungroupable

- **AROC wish to acknowledge the valuable contributions made by:**
 - Members of the Management Advisory Group of the Australasian Rehabilitation Outcomes Centre.
 - Members of the Scientific and Clinical Advisory Committee of the Australasian Rehabilitation Outcomes Centre.
 - The many staff from the rehabilitation facilities who have spent a great deal of time and care to collect, collate and correct the data, without whose considerable effort these reports would not be possible.
- **Disclaimer**

AROC has made every effort to ensure that the data used in these reports are accurate. Data submitted to AROC are checked for anomalies and facilities are asked to re-submit data prior to the production of AROC reports. We have provided general guidelines on the interpretation of the information reported but would advise readers to use their professional judgement in considering all information contained in this report.
- **Copyright**

This work is copyright. It may be produced in whole or in part for study or training purposes subject to the inclusion of an acknowledgment of the source and no commercial usage or sale. Reproduction for purposes other than those above requires the written permission of AROC.
- **Suggested acknowledgement**

Anywhere Hospital AROC Impairment Specific Report on Brain Dysfunction (Inpatient - Pathway 3), July 2018 – June 2019. Australasian Rehabilitation Outcomes Centre (2019).

Australasian **R**ehabilitation **O**utcomes **C**entre
Australian Health Services Research Institute
iC Enterprise 1, Innovation Campus
University of Wollongong NSW 2522
Phone: +61 2 4221 4411
Email: aroc@uow.edu.au
Web: aroc.org.au