aroc

AROC Impairment Specific Report

Brain Injury Report

INPATIENT – PATHWAY 3

July 2019 – June 2020

Anywhere Hospital

Australasian Faculty of Rehabilitation Medicine

australian health services research institute

UNIVERSITY OF WOLLONGONG AUSTRALIA

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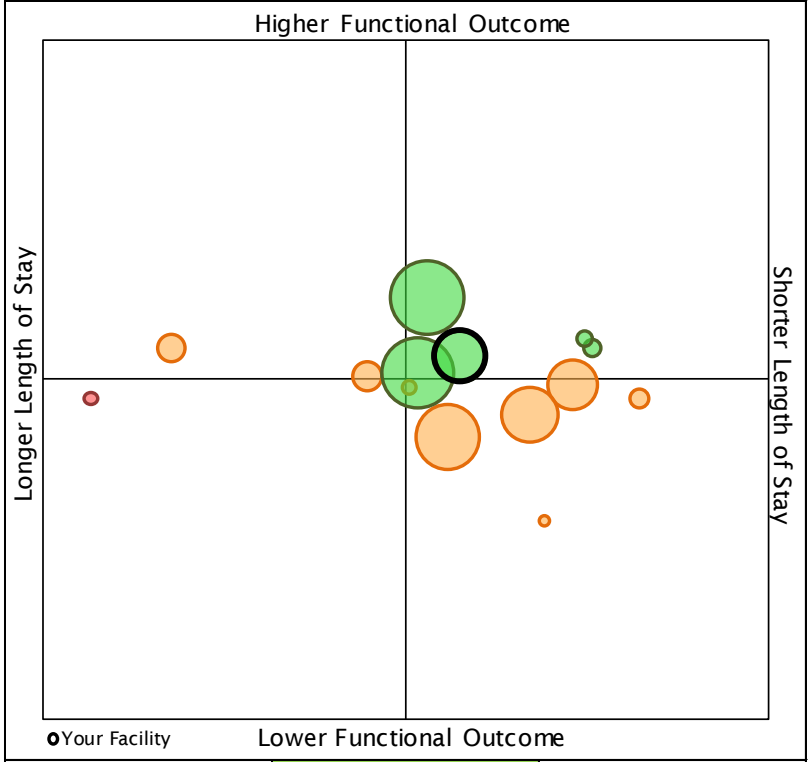
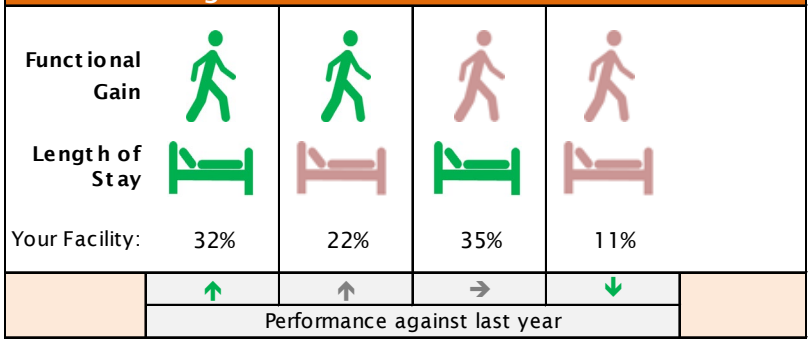
Brain Injury Dashboard

Rehabilitation Outcomes by Facility

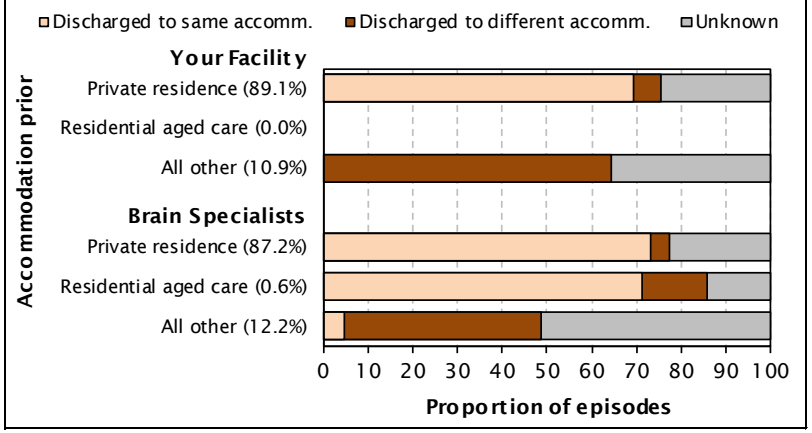


2/16 facilities are outliers and are not shown on graph	Green	
	Status	Trend

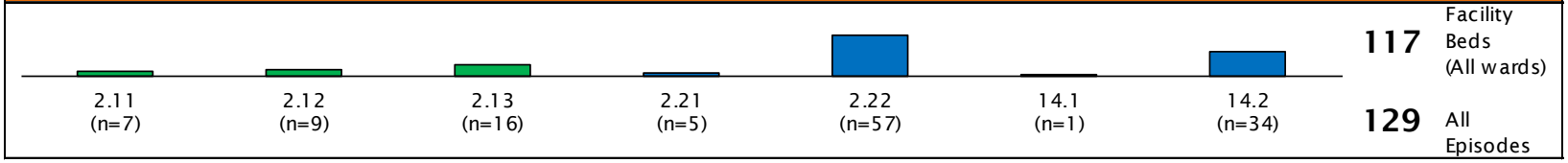
Performance Against Benchmark



Change in Accommodation



Number of Episodes by Impairment



Brain Injury Dashboard

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Key Indicators*

Your Facility		Brain Specialists	
Average Age:	46.7	Average Age:	47.4
Mortality Rate:	0.0%	Mortality Rate:	0.2%
% with at least one comorbidity:	44%	% with at least one comorbidity:	46%
% with at least one complication:	40%	% with at least one complication:	41%
% episodes with start delays:	21%	% episodes with start delays:	21%
Days between onset and rehab episode:	29.4	Days between onset and rehab episode:	29.5
Days between clinically rehab ready & start date:	2.6	Days between clinically rehab ready & start date:	2.1

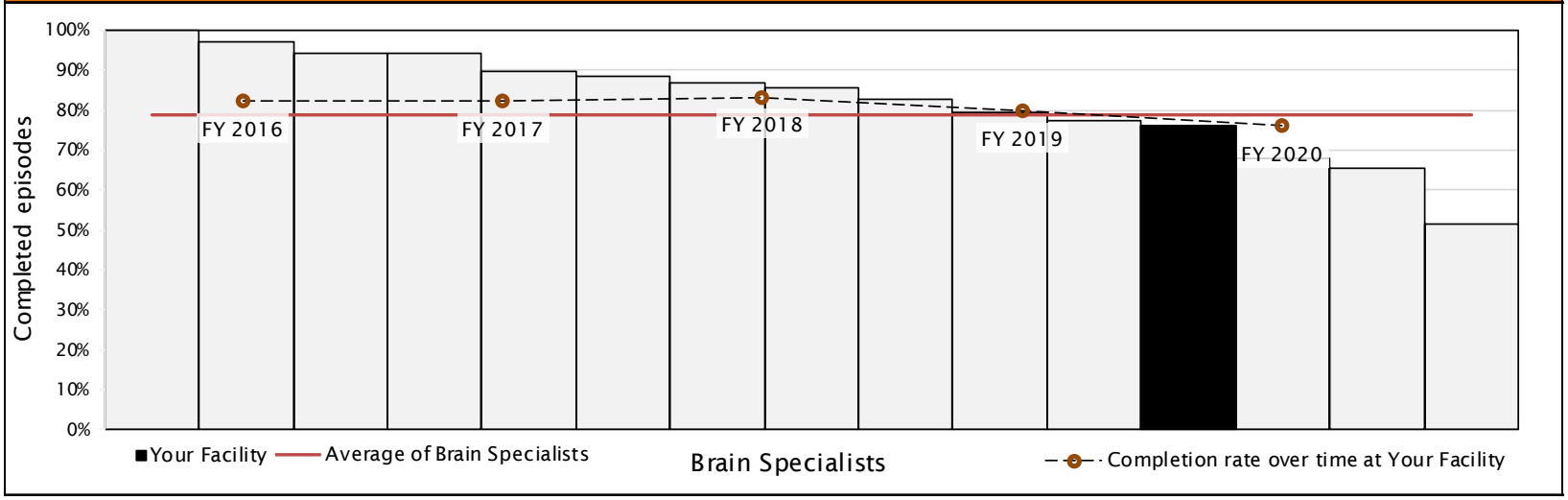
* Mean value provided unless otherwise specified

Facility FIM Training*

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

* This includes all impairments from all wards

Completed Episodes by Facility



Data used in this report

- Brain injury episodes discharged during the reporting period (July 2019 – June 2020) 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 impairment codes

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

Brain injury AN-SNAP classes

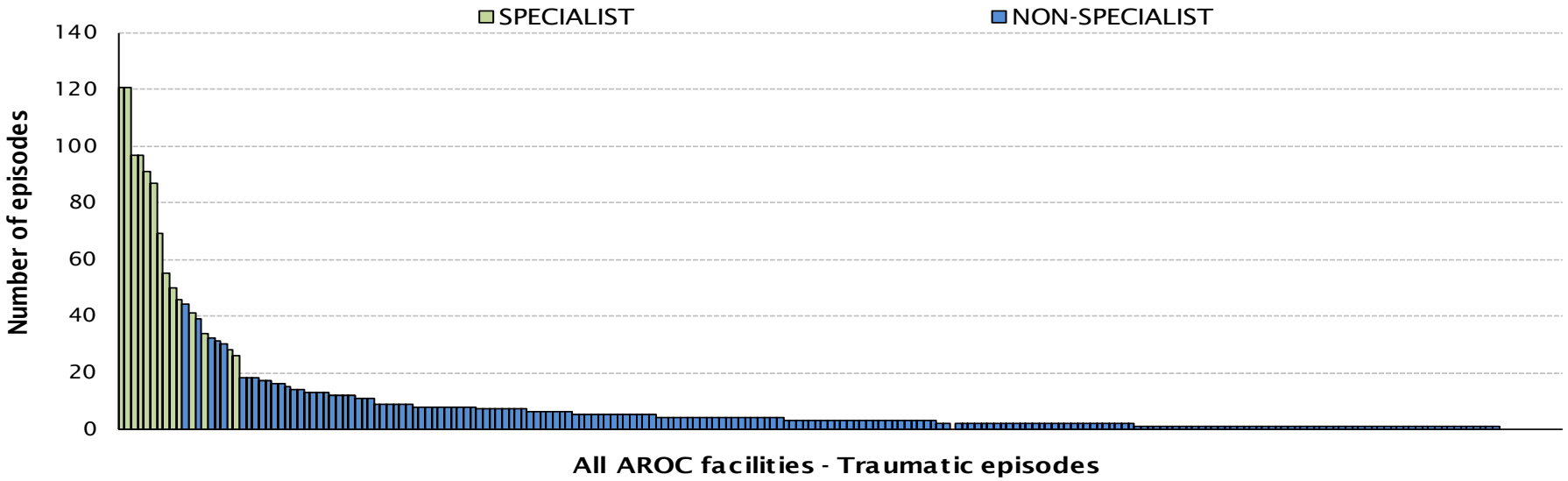
Levels of functioning for brain injury are categorised by the following version 4 AN-SNAP classes:

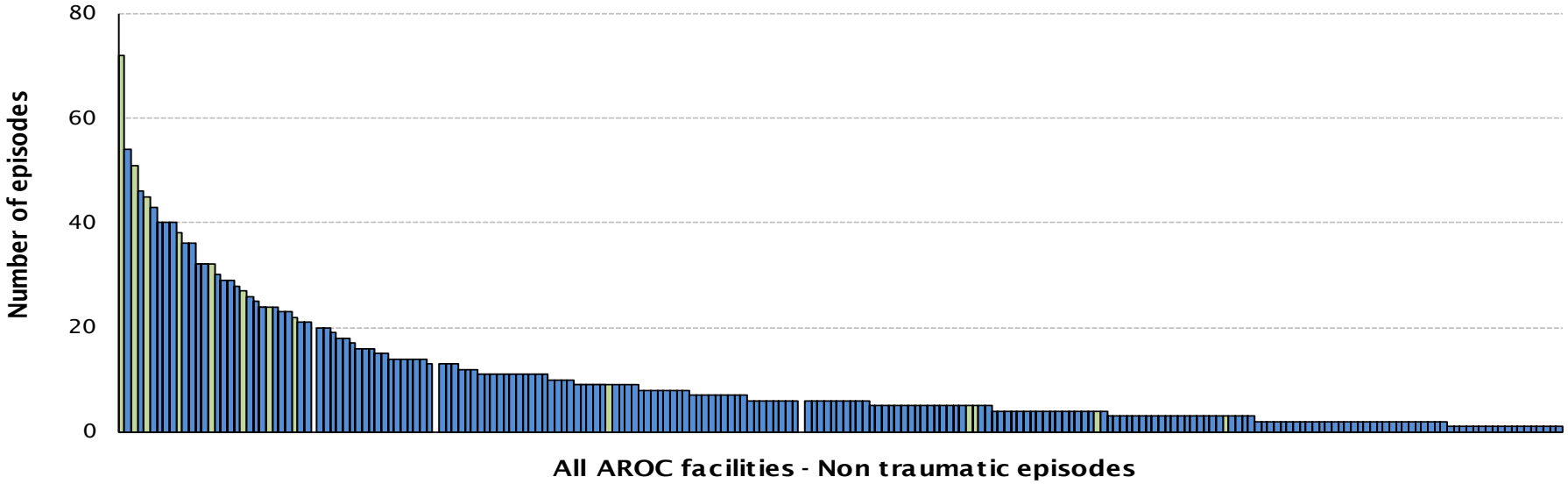
- 4AB1 – Brain dysfunction, weighted FIM motor 71-91, FIM cognition 26-35
- 4AB2 – Brain dysfunction, weighted FIM motor 71-91, FIM cognition 5-25
- 4AB3 – Brain dysfunction, weighted FIM motor 41-70, FIM cognition 26-35
- 4AB4 – Brain dysfunction, weighted FIM motor 41-70, FIM cognition 17-25
- 4AB5 – 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 ≥ 49
- 4AZ2 – Weighted FIM motor score 13-18, Brain, MMT, Age ≤ 48

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

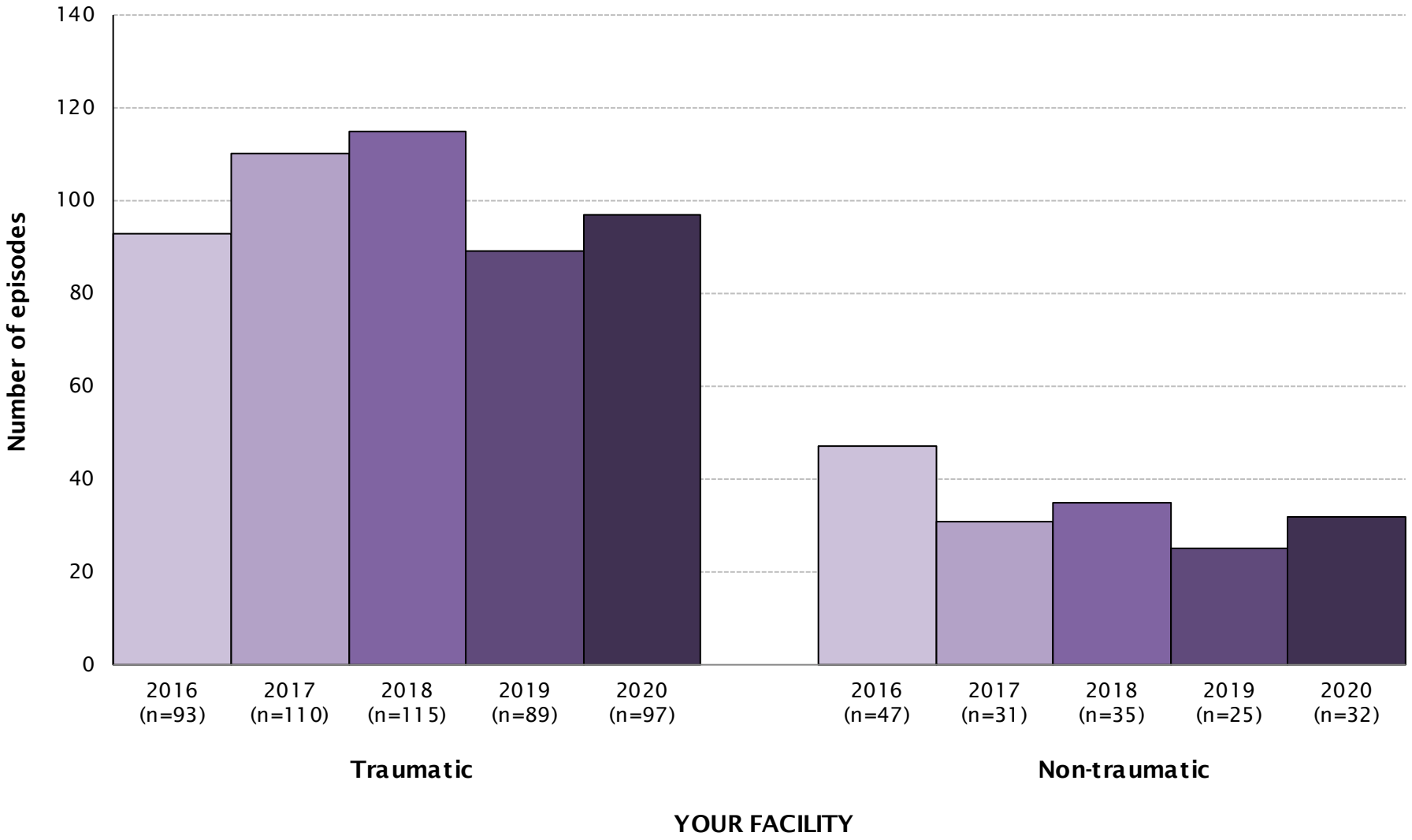
The BIG picture

Volume of episodes by facilities treating brain injury

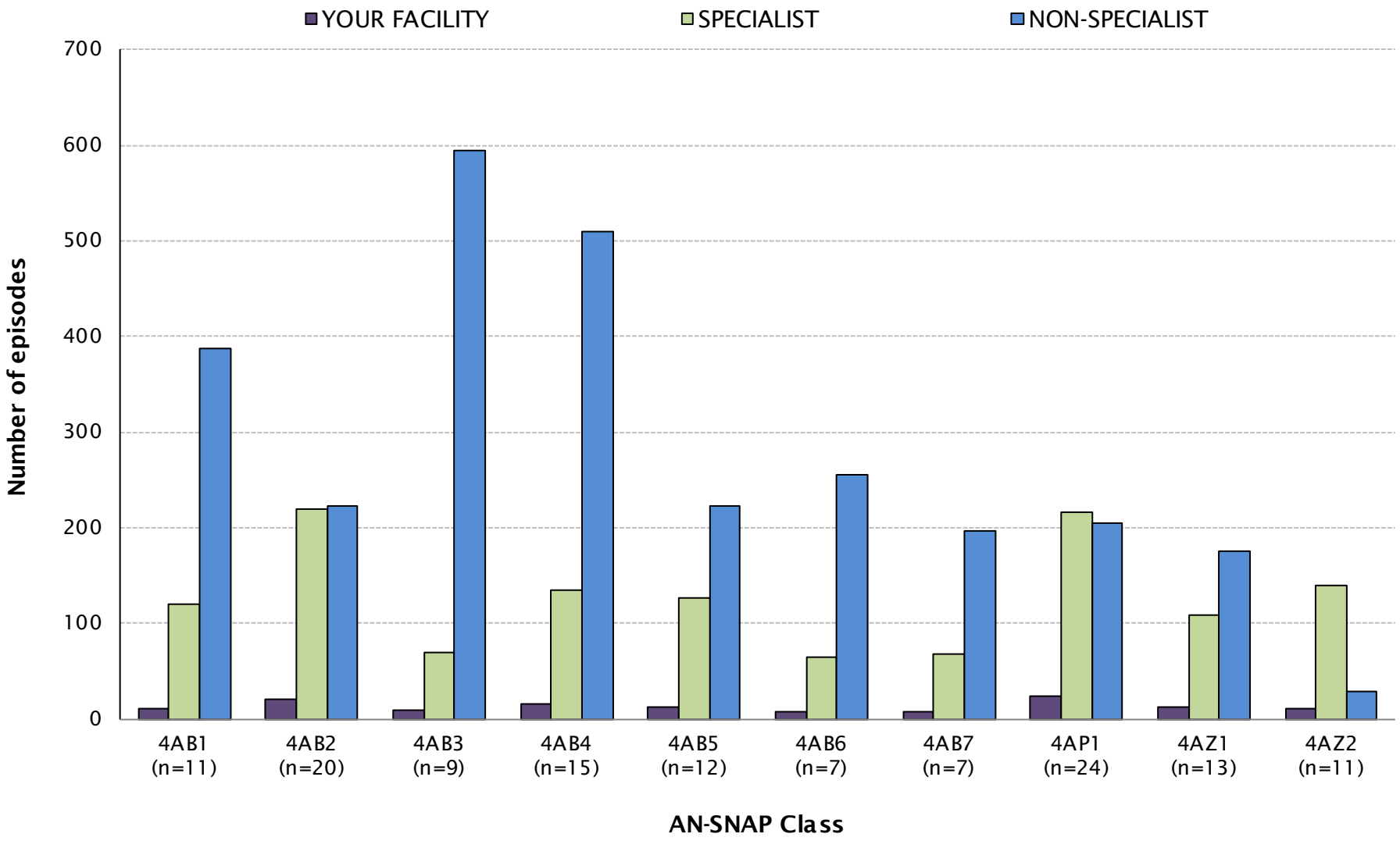




Number of traumatic and non-traumatic episodes over time at your facility



Number of episodes by AN-SNAP class

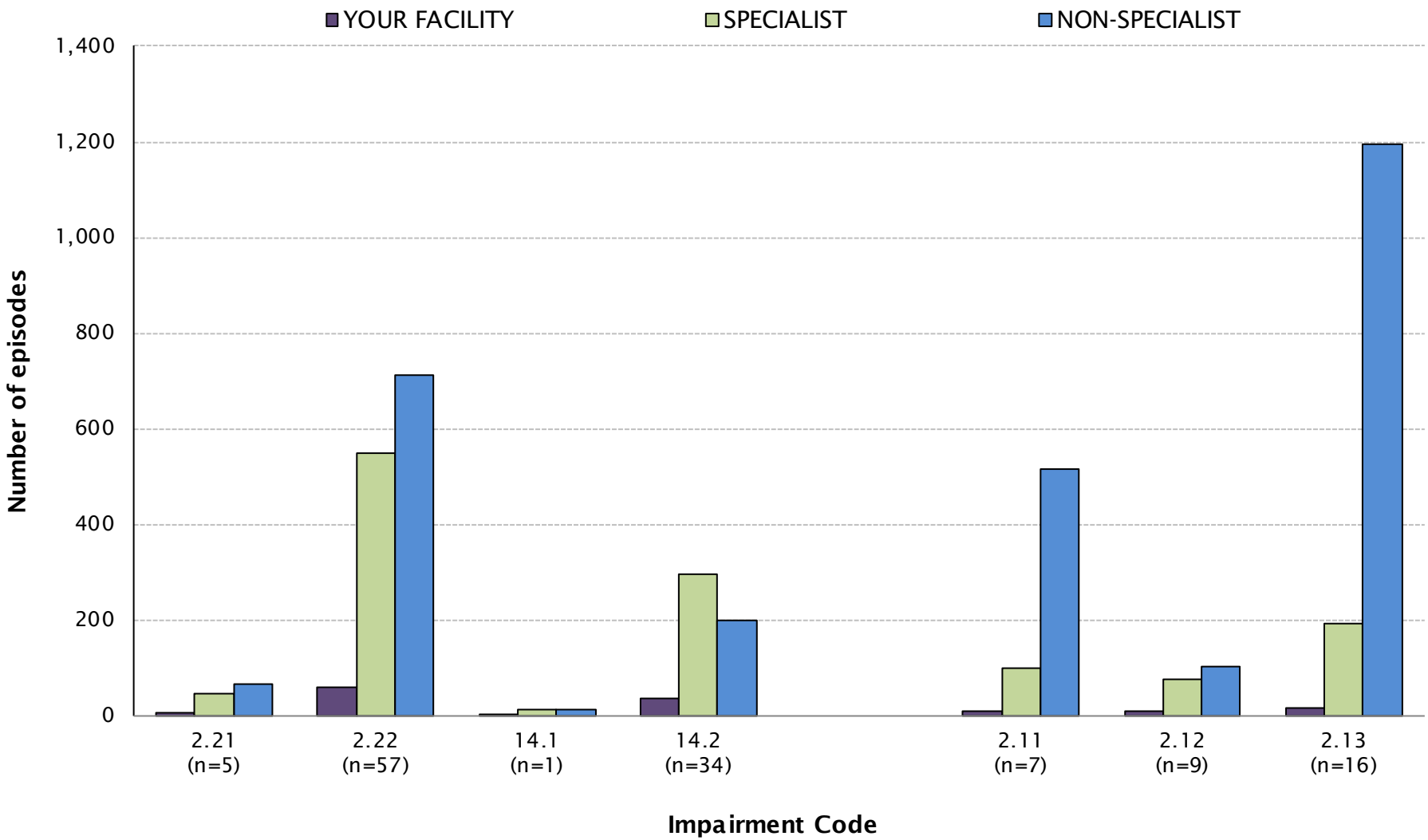


Number of episodes by AN-SNAP class

	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
AN-SNAP class	No.	%	No.	%	No.	%
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	11	8.5	120	9.5	387	13.8
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	20	15.5	219	17.3	223	8.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	9	7.0	69	5.5	594	21.2
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	15	11.6	135	10.7	510	18.2
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	12	9.3	126	10.0	223	8.0
4AB6 (BI, weighted FIM motor 29-40)	7	5.4	65	5.1	255	9.1
4AB7 (BI, weighted FIM motor 19-28)	7	5.4	68	5.4	197	7.0
4AP1 (MMT, weighted FIM motor 19-91)	24	18.6	216	17.1	204	7.3
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	13	10.1	108	8.5	175	6.3
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	11	8.5	140	11.1	28	1.0
All Brain AN-SNAP classes	**129**	**100.0**	**1,266**	**100.0**	**2,796**	**100.0**

Note: 0 episode(s) at YOUR FACILITY, 0 episode(s) at SPECIALIST facilities and 7 episode(s) at NON-SPECIALIST facilities had an AN-SNAP class of 499A.

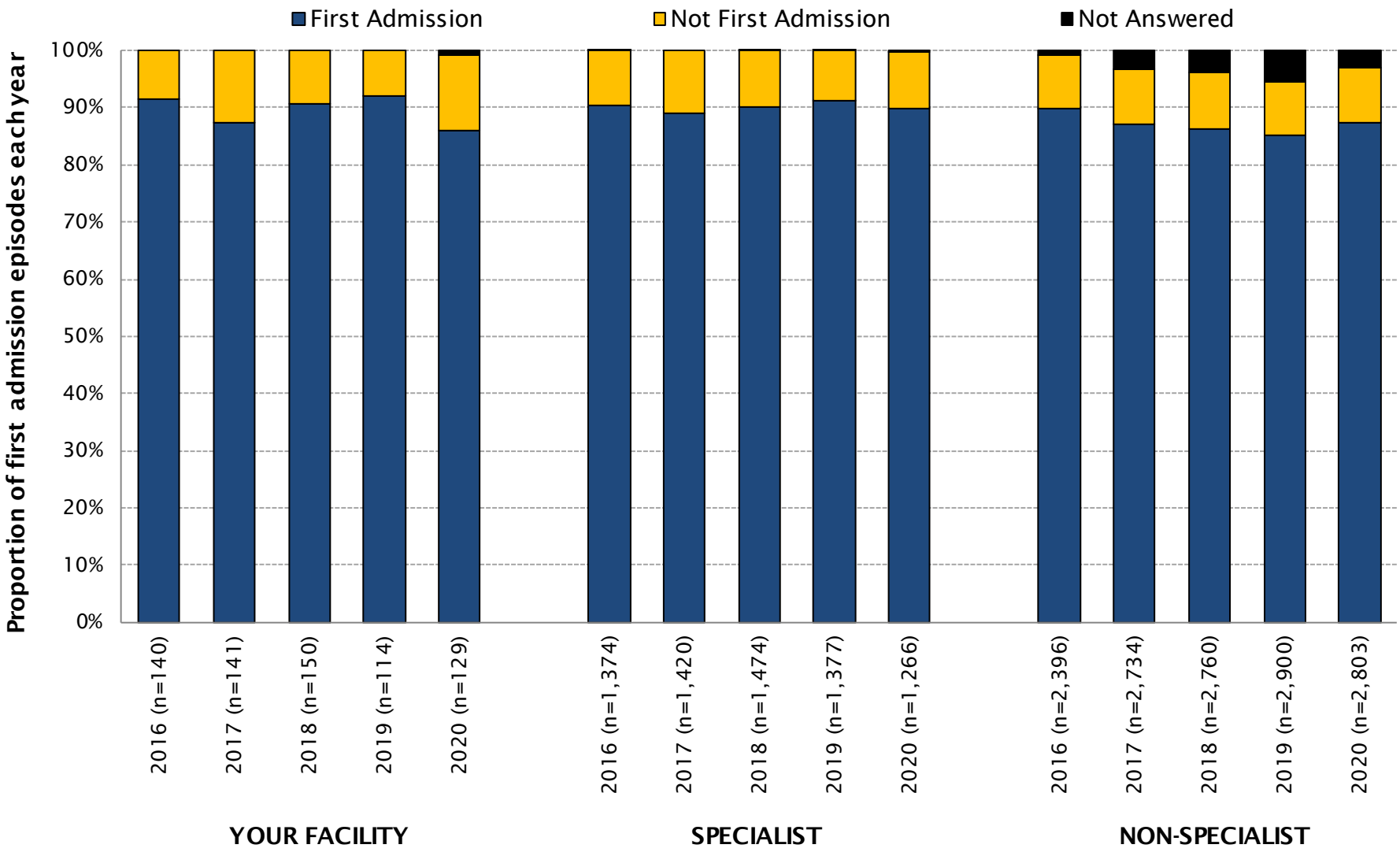
Number of traumatic and non-traumatic episodes by impairment



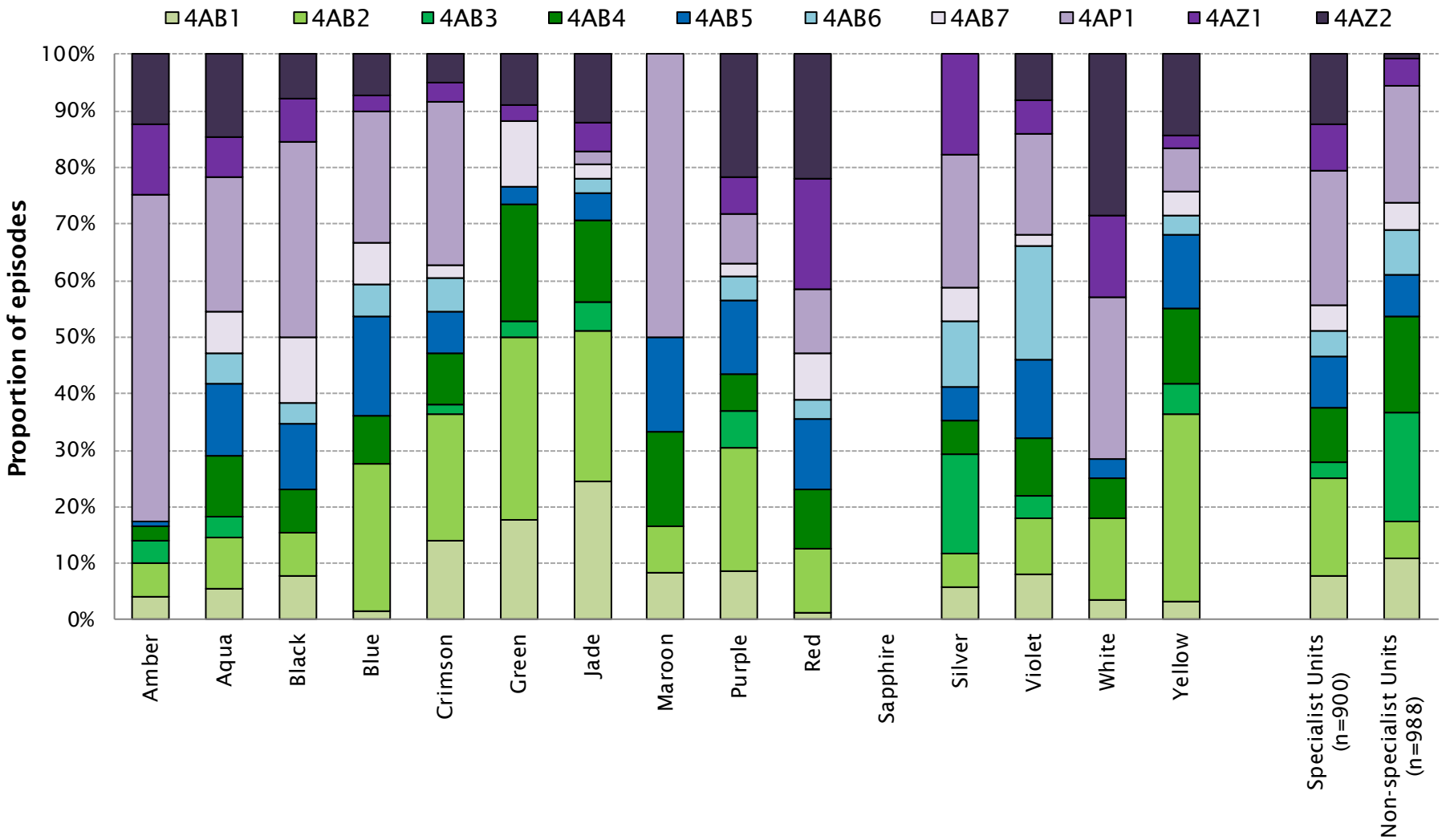
Number of traumatic and non-traumatic episodes by impairment

	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
Impairment	**No.**	**%**	**No.**	**%**	**No.**	**%**
Traumatic impairments						
2.21 Open injury	5	5.2	44	4.9	64	6.5
2.22 Closed injury	57	58.8	550	61.1	713	72.1
14.1 MMT: brain+spine	1	1.0	11	1.2	12	1.2
14.2 MMT: brain+other	34	35.1	295	32.8	200	20.2
Total TBI	**97**	**100.0**	**900**	**100.0**	**989**	**100.0**
Non-traumatic impairments						
2.11 Sub-arachnoid haemorrhage	7	21.9	100	27.3	516	28.4
2.12 Anoxic brain damage	9	28.1	75	20.5	102	5.6
2.13 Other NTBI	16	50.0	191	52.2	1,196	65.9
Total NTBI	**32**	**100.0**	**366**	**100.0**	**1,814**	**100.0**
Total BI	**129**		**1,266**		**2,803**	

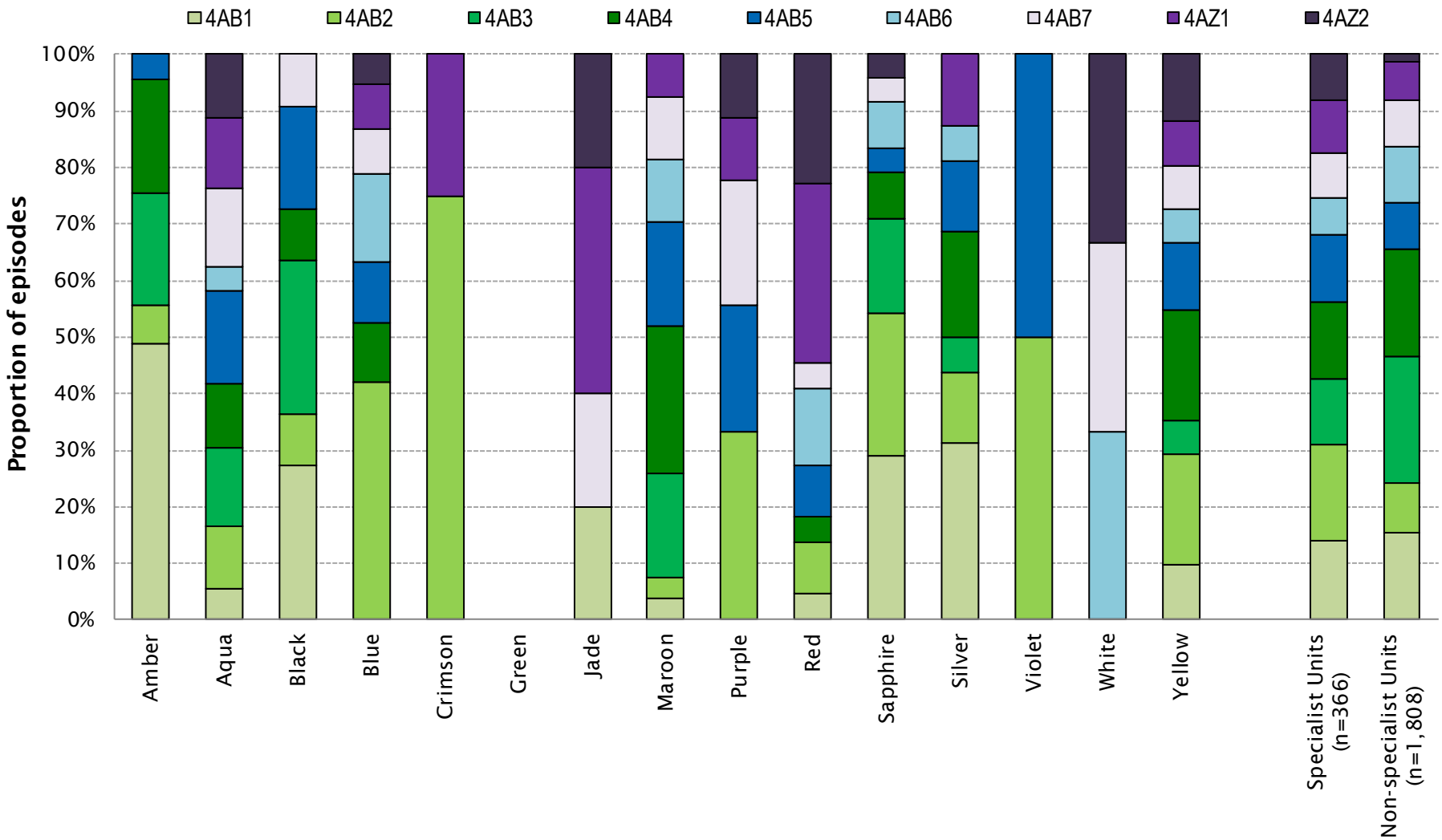
Proportion of first admission episodes over time



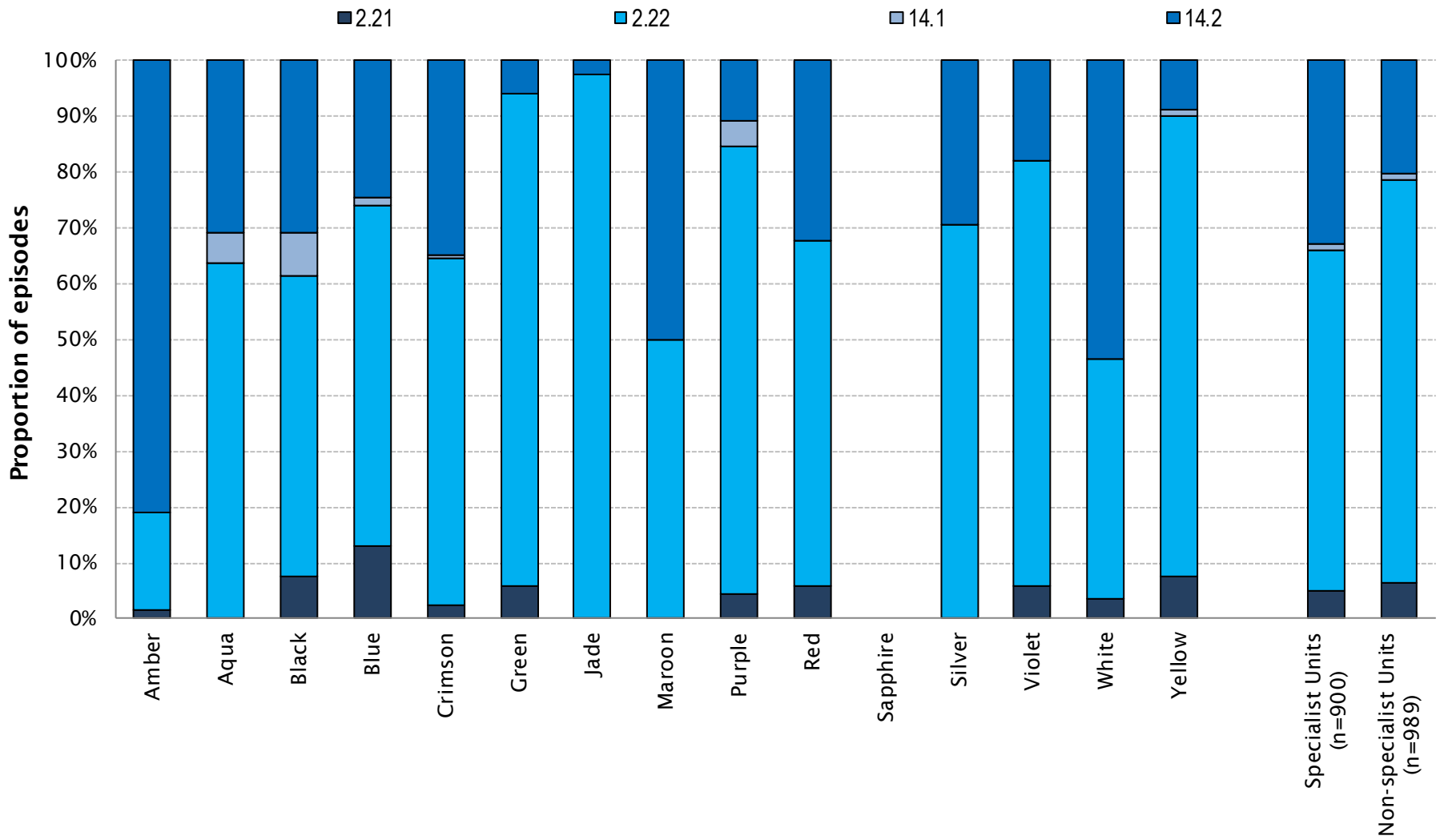
Proportion of traumatic episodes by AN-SNAP class and specialist facility



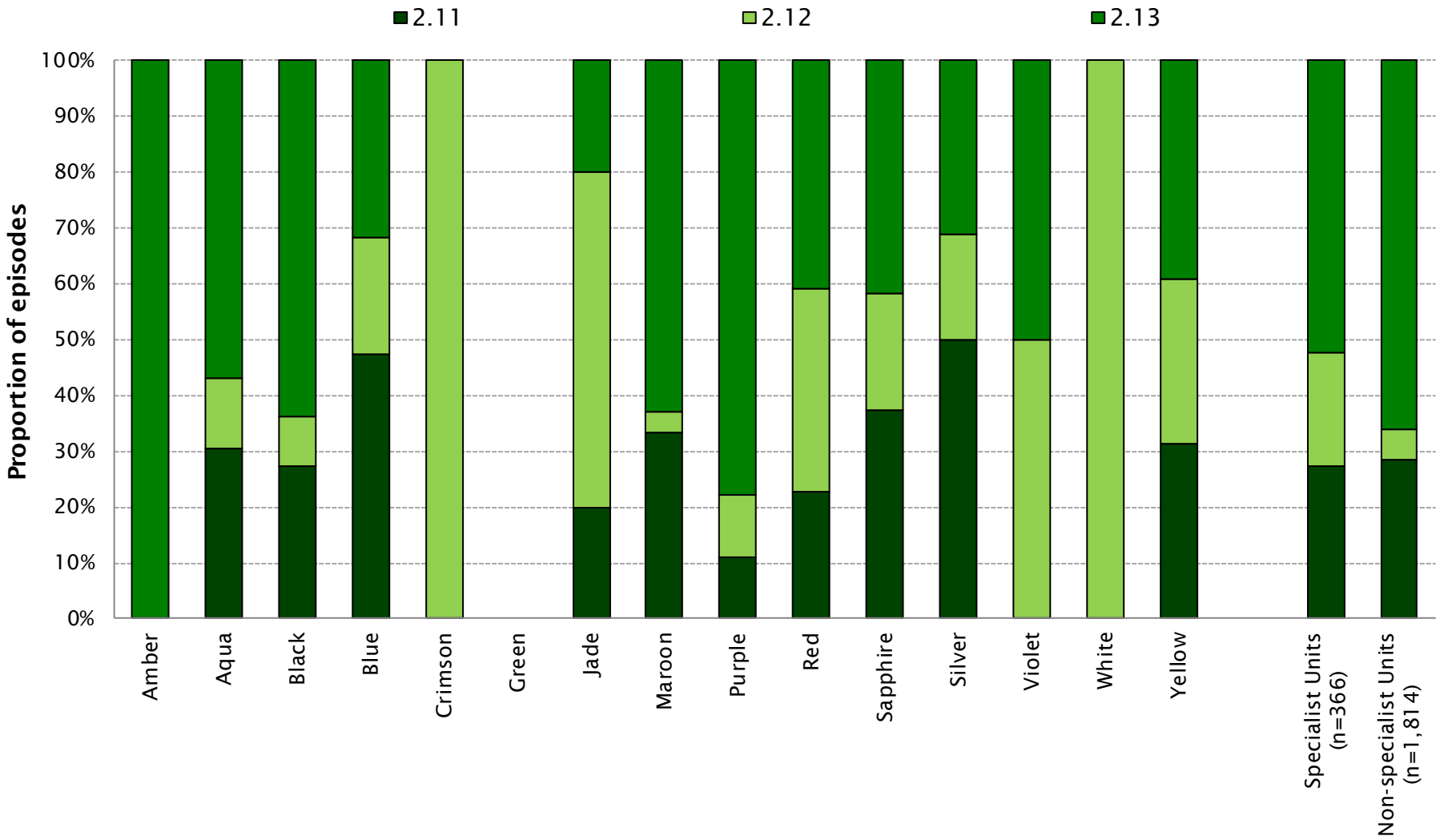
Proportion of non-traumatic episodes by AN-SNAP class and specialist facility



Proportion of traumatic episodes by impairment and specialist facility



Proportion of non-traumatic episodes by impairment and specialist facility



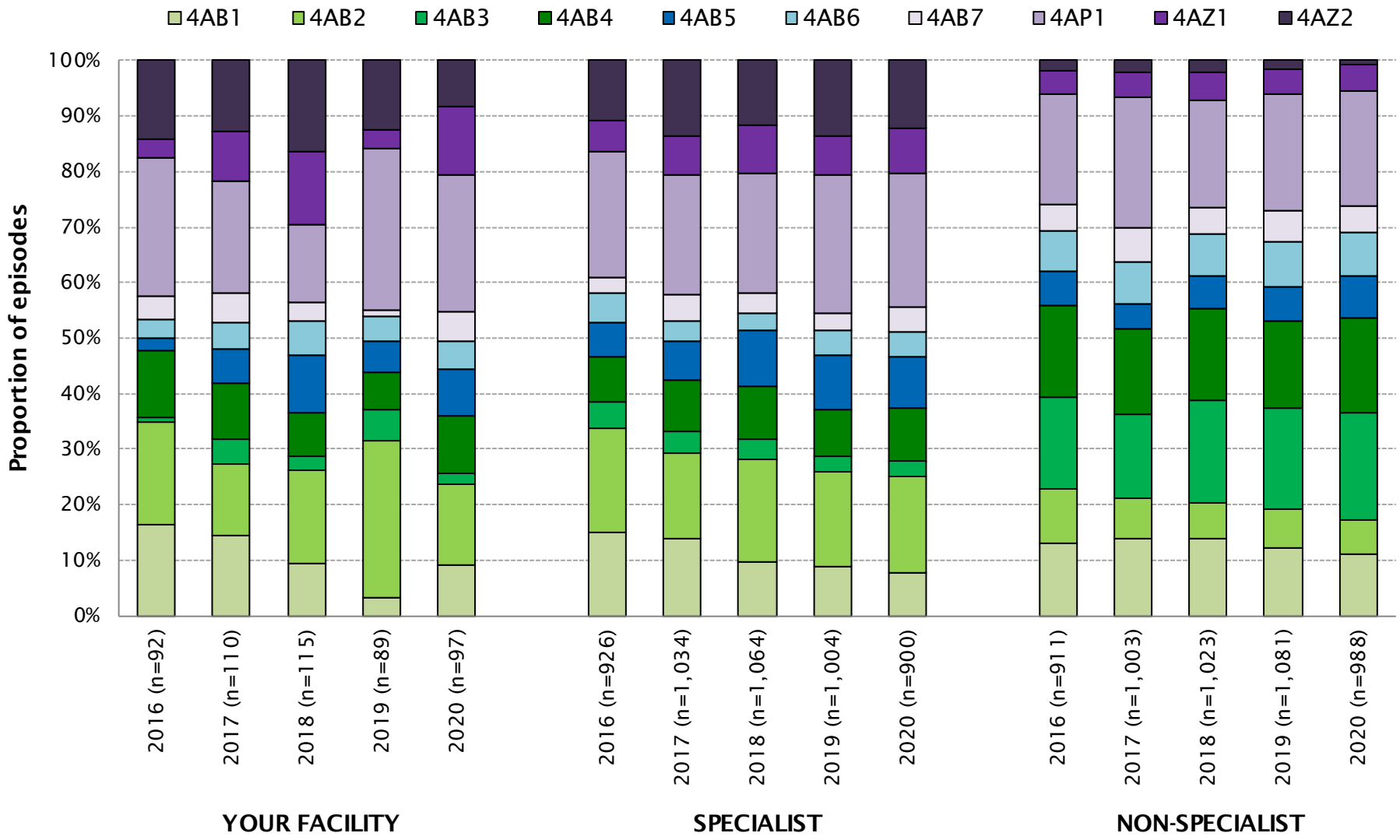
Traumatic and non-traumatic episodes by impairment and AN-SNAP class

Traumatic	YOUR FACILITY												
Impairment	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AP1	4AZ1	4AZ2	Total	SPECIALIST	NON-SPECIALIST
2.21 Open injury	1	1	0	1	0	1	1	0	0	0	5	44	64
2.22 Closed injury	8	13	2	9	8	4	4	0	4	5	57	550	713
14.1 MMT: brain+spine	0	0	0	0	0	0	0	1	0	0	1	11	12
14.2 MMT: brain+other	0	0	0	0	0	0	0	23	8	3	34	295	199
Total	**9**	**14**	**2**	**10**	**8**	**5**	**5**	**24**	**12**	**8**	**97**	**900**	**988**
SPECIALIST	**69**	**156**	**27**	**85**	**83**	**41**	**39**	**216**	**74**	**110**	**900**		
NON-SPECIALIST	**109**	**62**	**191**	**169**	**73**	**77**	**48**	**204**	**48**	**7**	**988**		

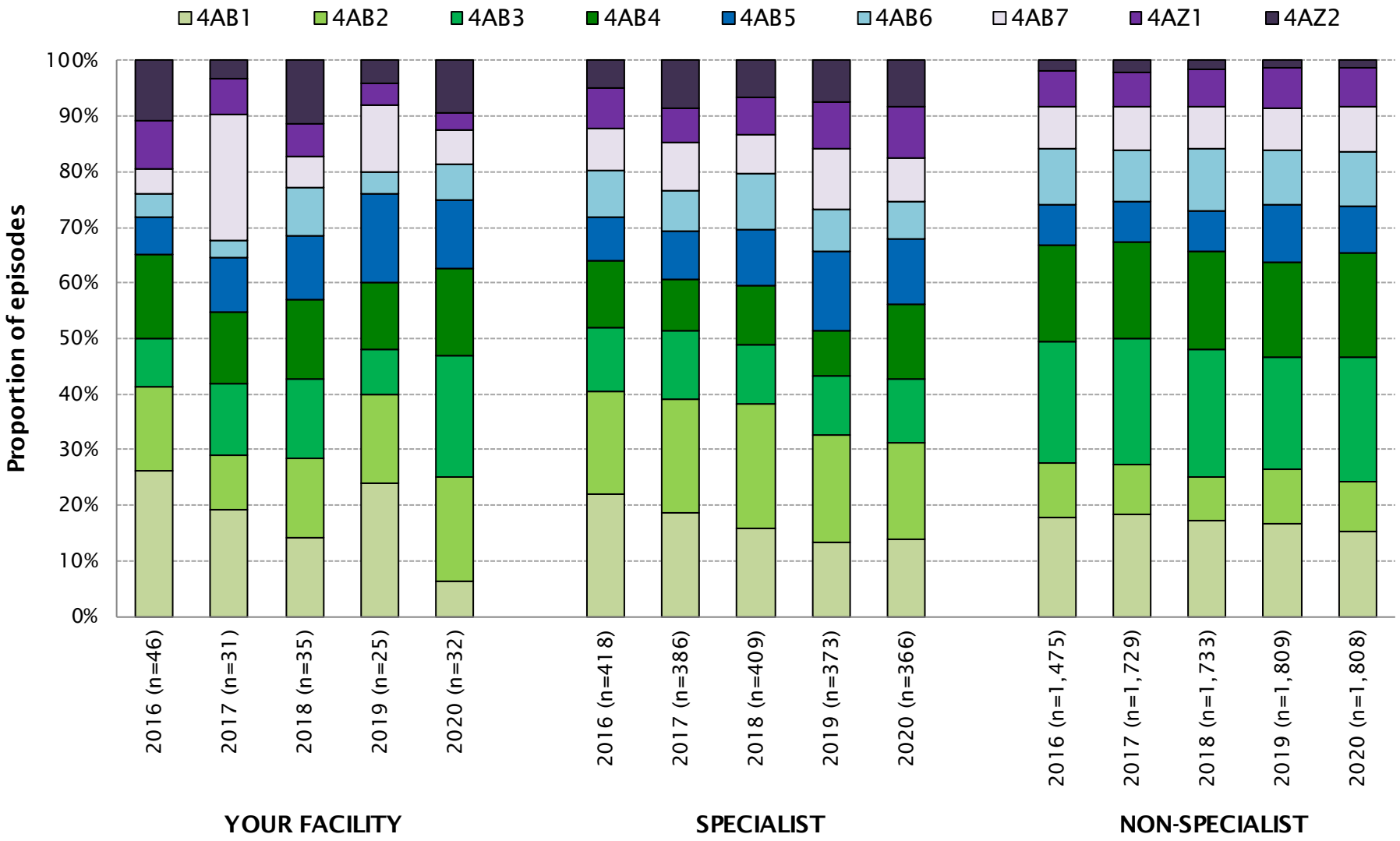
Non-traumatic	YOUR FACILITY											
Impairment	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AZ1	4AZ2	Total	SPECIALIST	NON-SPECIALIST
2.11 Sub-arachnoid haemorrhage	0	1	1	1	1	1	2	0	0	7	100	516
2.12 Anoxic brain damage	2	2	1	1	0	0	0	0	3	9	75	102
2.13 Other NTBI	0	3	5	3	3	1	0	1	0	16	191	1,190
Total	**2**	**6**	**7**	**5**	**4**	**2**	**2**	**1**	**3**	**32**	**366**	**1,808**
SPECIALIST	**51**	**63**	**42**	**50**	**43**	**24**	**29**	**34**	**30**	**366**		
NON-SPECIALIST	**278**	**161**	**403**	**341**	**150**	**178**	**149**	**127**	**21**	**1,808**		

Note: 0 episode(s) at YOUR FACILITY, 0 episode(s) at SPECIALIST facilities and 7 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

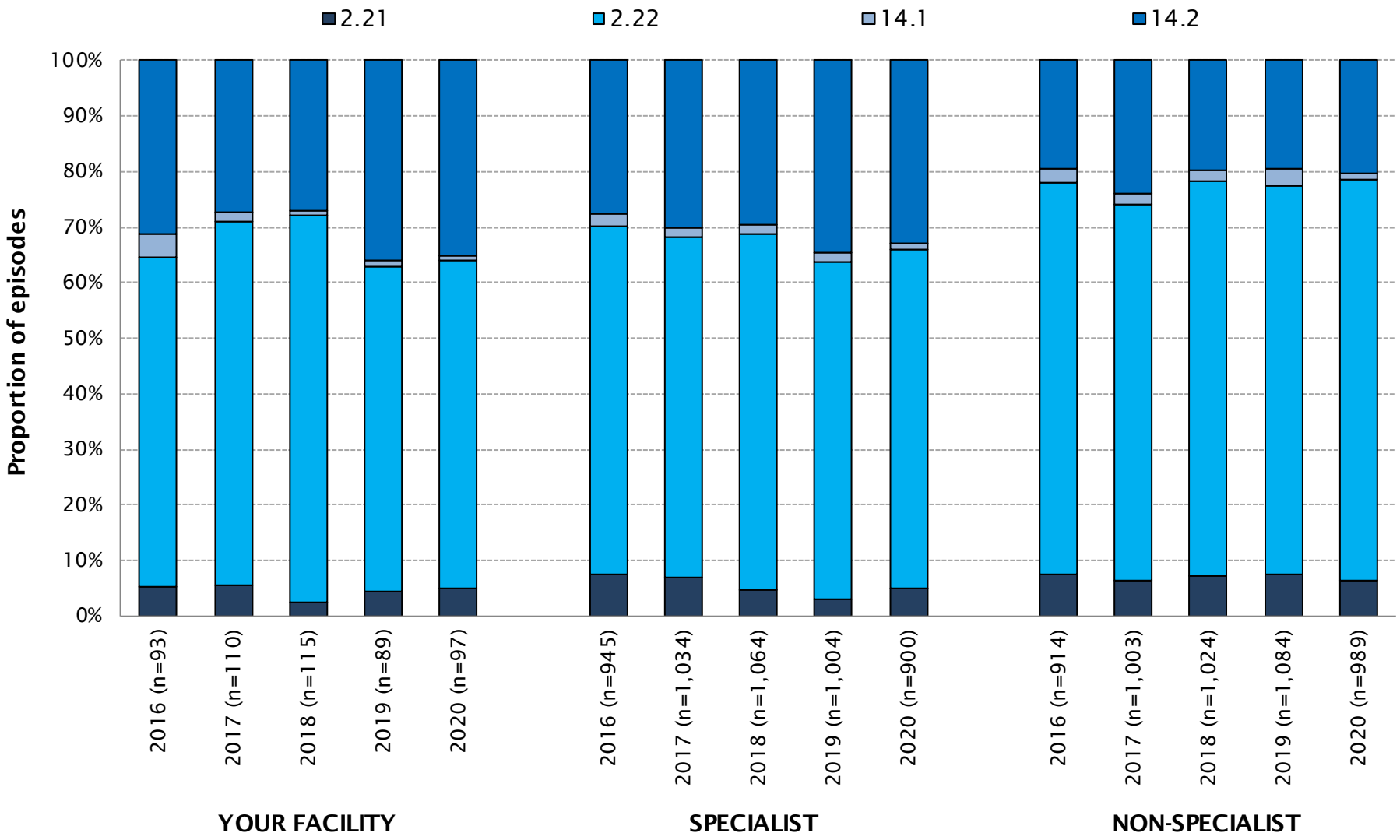


Traumatic and non-traumatic episodes by AN-SNAP class over time

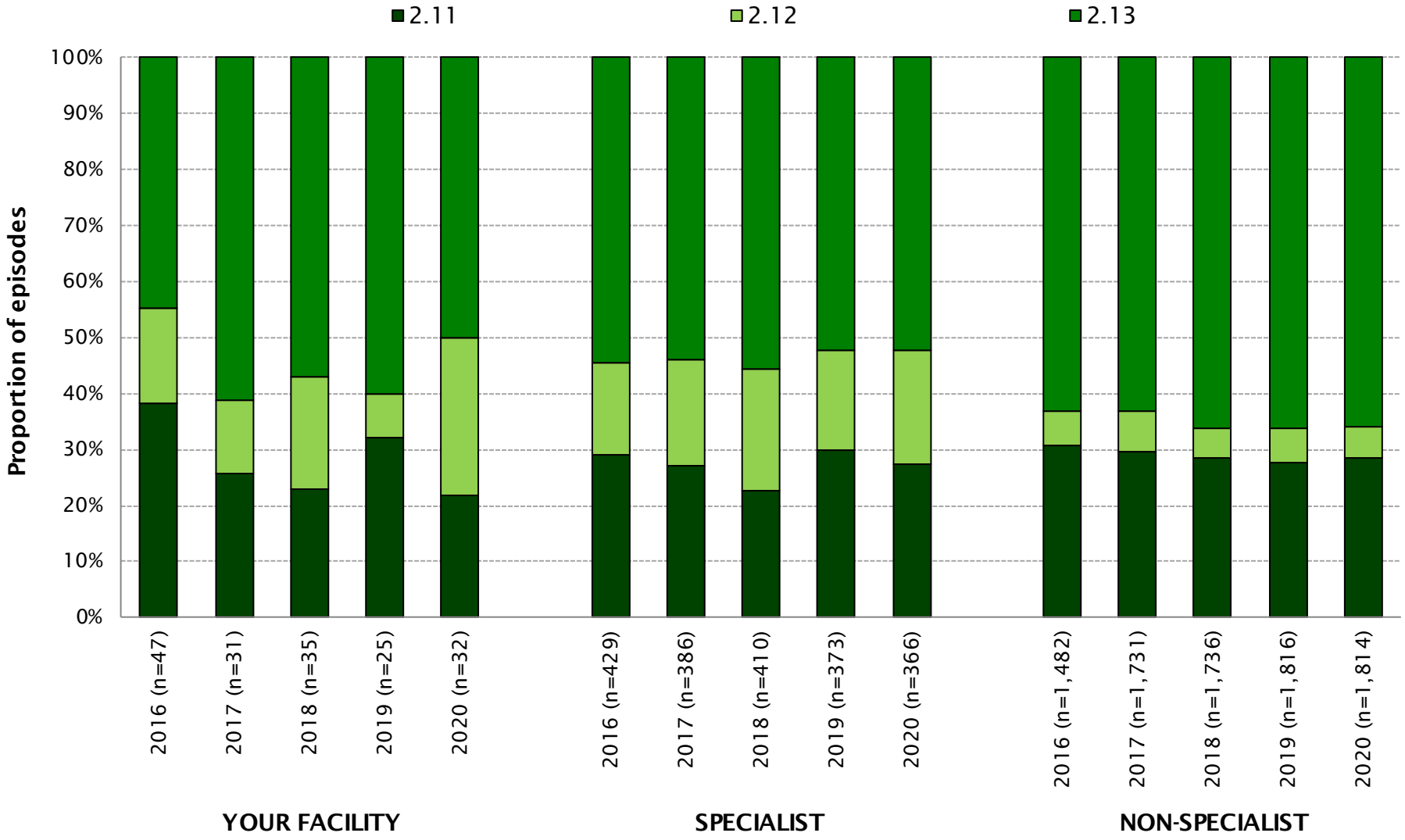
Traumatic	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
AN-SNAP class	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	15	16	11	3	9	140	144	103	89	69	118	140	141	131	109
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	17	14	19	25	14	172	159	197	172	156	91	72	66	77	62
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	1	5	3	5	2	44	40	40	28	27	150	153	190	197	191
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	11	11	9	6	10	77	96	101	83	85	149	154	170	170	169
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	2	7	12	5	8	56	72	107	99	83	56	43	58	66	73
4AB6 (BI, weighted FIM motor 29-40)	3	5	7	4	5	48	37	33	44	41	67	76	79	88	77
4AB7 (BI, weighted FIM motor 19-28)	4	6	4	1	5	28	50	38	32	39	45	62	49	59	48
4AP1 (MMT, weighted FIM motor 19-91)	23	22	16	26	24	208	223	230	250	216	181	238	198	228	204
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	3	10	15	3	12	52	71	91	71	74	38	45	51	49	48
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	13	14	19	11	8	101	142	124	136	110	16	20	21	16	7
All Brain AN-SNAP classes	**92**	**110**	**115**	**89**	**97**	**926**	**1,034**	**1,064**	**1,004**	**900**	**911**	**1,003**	**1,023**	**1,081**	**988**

Non-traumatic	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
AN-SNAP class	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	12	6	5	6	2	92	72	65	50	51	263	320	299	303	278
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	7	3	5	4	6	77	79	91	72	63	146	152	134	177	161
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	4	4	5	2	7	48	47	44	39	42	320	395	401	363	403
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	7	4	5	3	5	51	36	44	31	50	257	296	304	310	341
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	3	3	4	4	4	32	34	41	53	43	106	127	126	185	150
4AB6 (BI, weighted FIM motor 29-40)	2	1	3	1	2	35	28	41	28	24	149	160	193	179	178
4AB7 (BI, weighted FIM motor 19-28)	2	7	2	3	2	32	33	28	41	29	112	135	134	139	149
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	4	2	2	1	1	30	24	28	31	34	96	107	114	131	127
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	5	1	4	1	3	21	33	27	28	30	26	37	28	22	21
All Brain AN-SNAP classes	**46**	**31**	**35**	**25**	**32**	**418**	**386**	**409**	**373**	**366**	**1,475**	**1,729**	**1,733**	**1,809**	**1,808**

Proportion of traumatic episodes by impairment over time



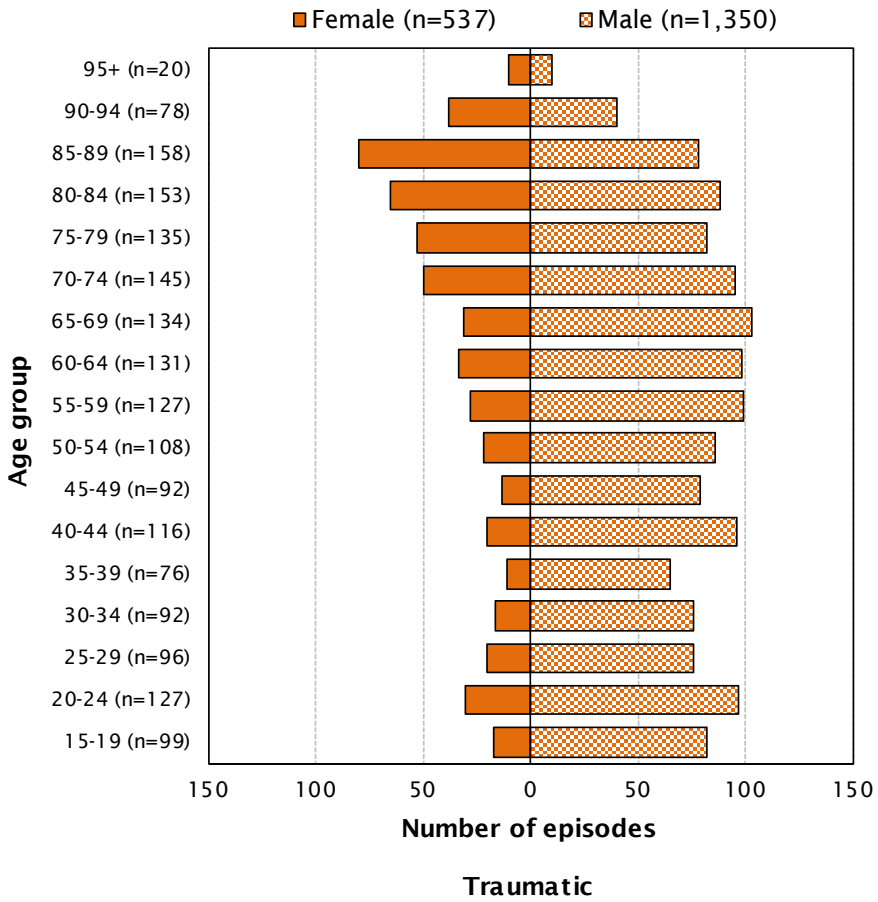
Proportion of non-traumatic episodes by impairment over time

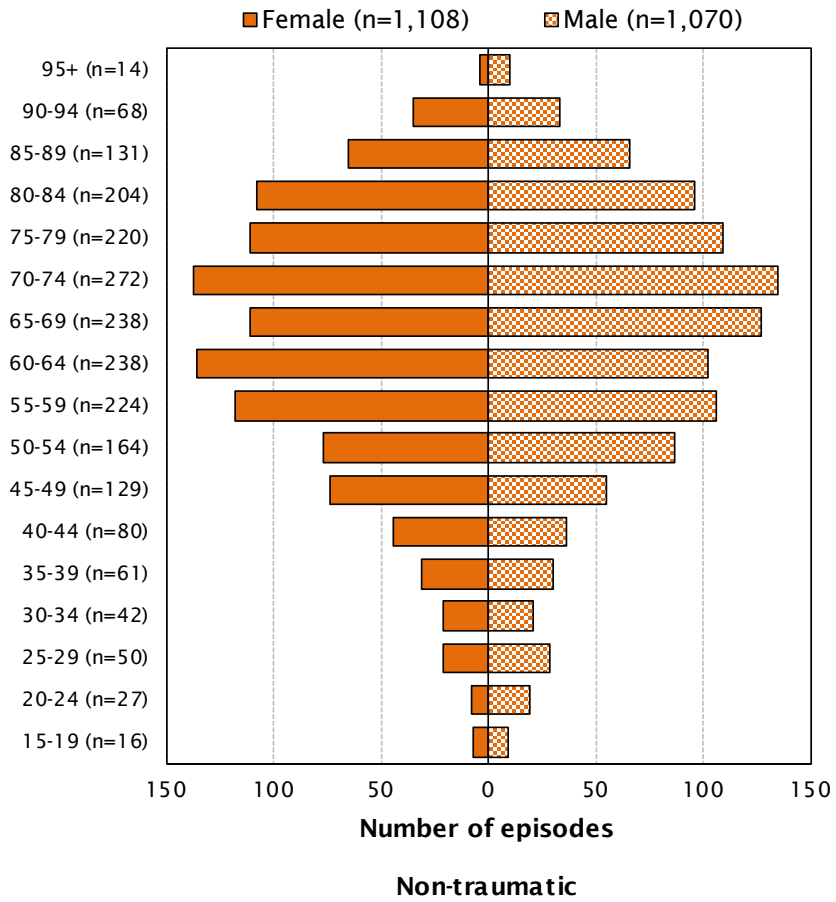


Traumatic and non-traumatic episodes by impairment over time

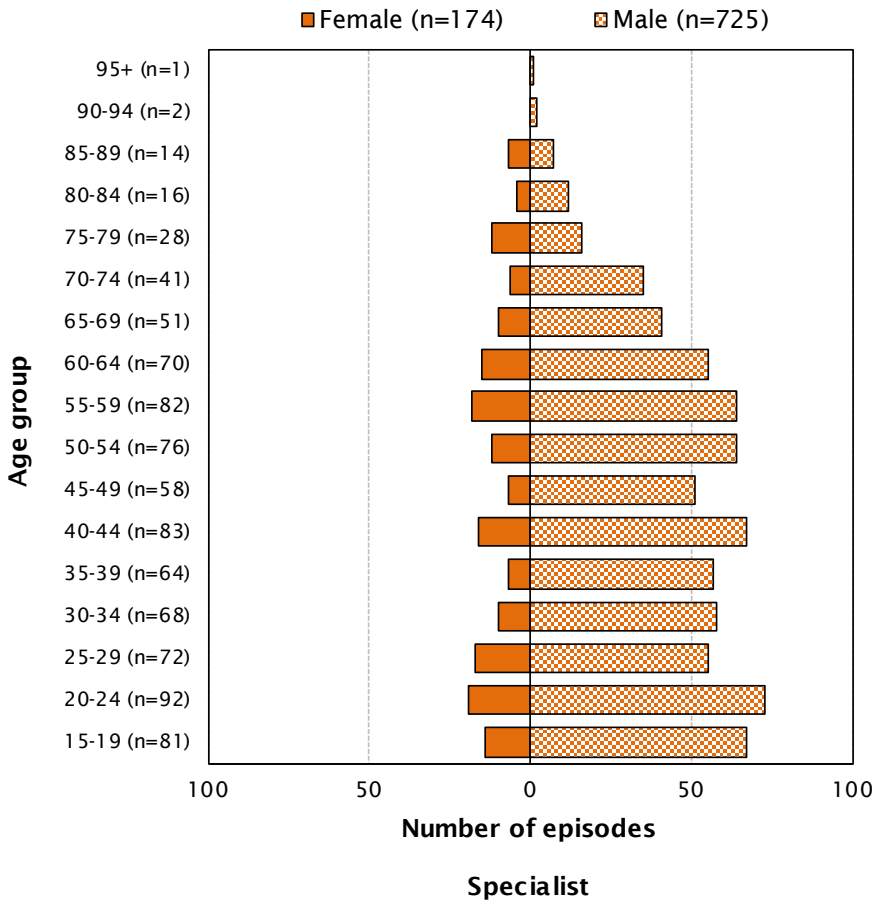
	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
Impairment	**2016**	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**
Traumatic impairments															
2.21 Open injury	5	6	3	4	5	72	73	50	30	44	68	65	73	82	64
2.22 Closed injury	55	72	80	52	57	591	633	681	610	550	645	678	729	758	713
14.1 MMT: brain+spine	4	2	1	1	1	22	17	18	16	11	22	19	19	32	12
14.2 MMT: brain+other	29	30	31	32	34	260	311	315	348	295	179	241	203	212	200
Total TBI	**93**	**110**	**115**	**89**	**97**	**945**	**1,034**	**1,064**	**1,004**	**900**	**914**	**1,003**	**1,024**	**1,084**	**989**
Non-traumatic impairments															
2.11 Sub-arachnoid haemorrhage	18	8	8	8	7	125	105	93	112	100	456	512	493	503	516
2.12 Anoxic brain damage	8	4	7	2	9	70	73	89	66	75	92	127	95	111	102
2.13 Other NTBI	21	19	20	15	16	234	208	228	195	191	934	1,092	1,148	1,202	1,196
Total NTBI	**47**	**31**	**35**	**25**	**32**	**429**	**386**	**410**	**373**	**366**	**1,482**	**1,731**	**1,736**	**1,816**	**1,814**
Total BI	**140**	**141**	**150**	**114**	**129**	**1,374**	**1,420**	**1,474**	**1,377**	**1,266**	**2,396**	**2,734**	**2,760**	**2,900**	**2,803**

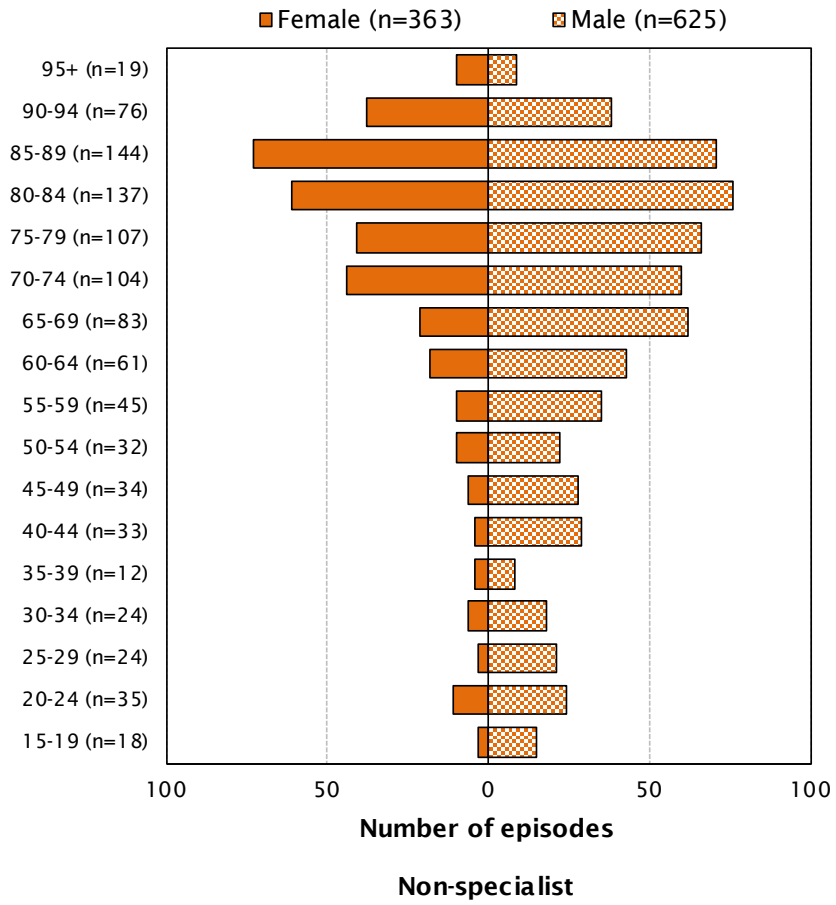
Number of episodes by age group and sex – TBI and NTBI



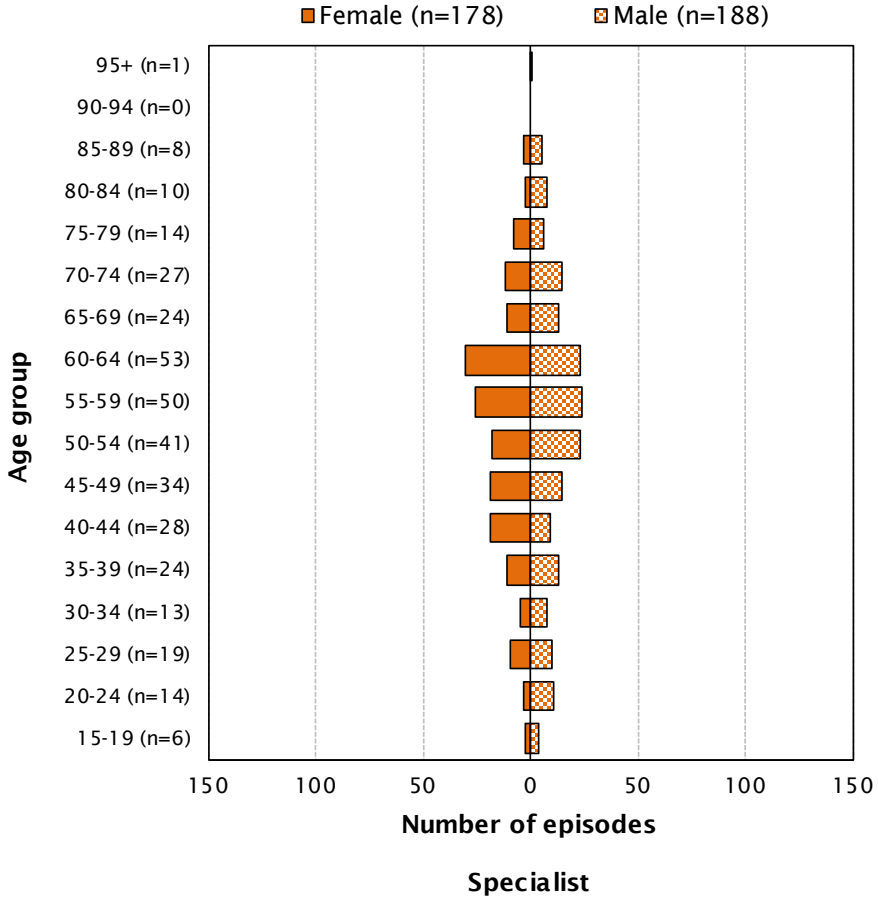


Number of TBI episodes by age group and sex – specialist and non-specialist

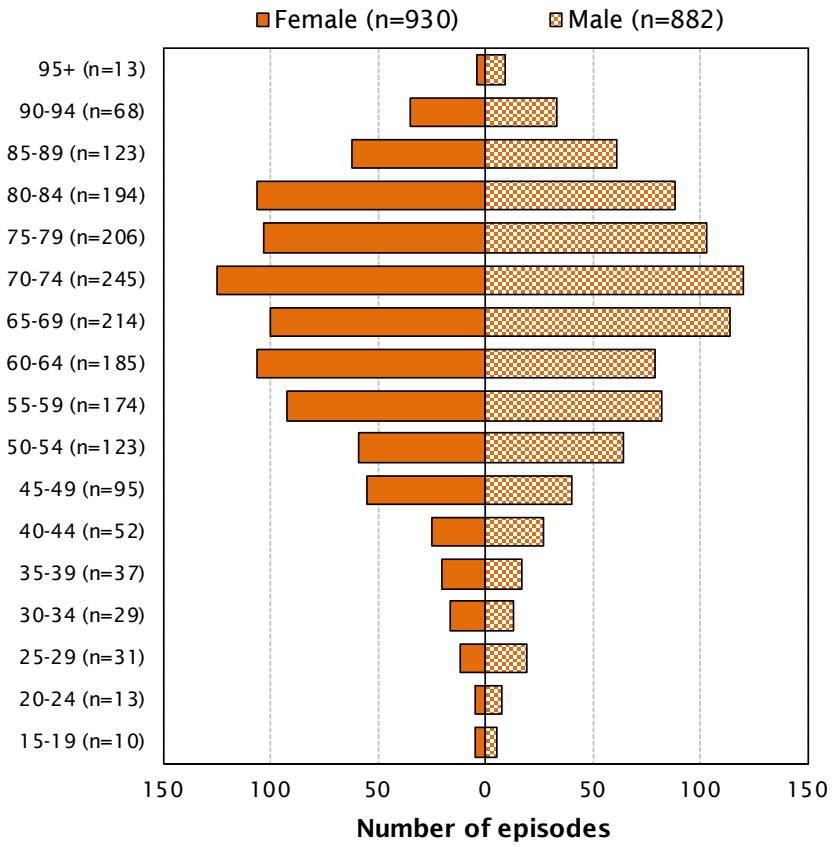




Number of NTBI episodes by age group and sex – specialist and non-specialist

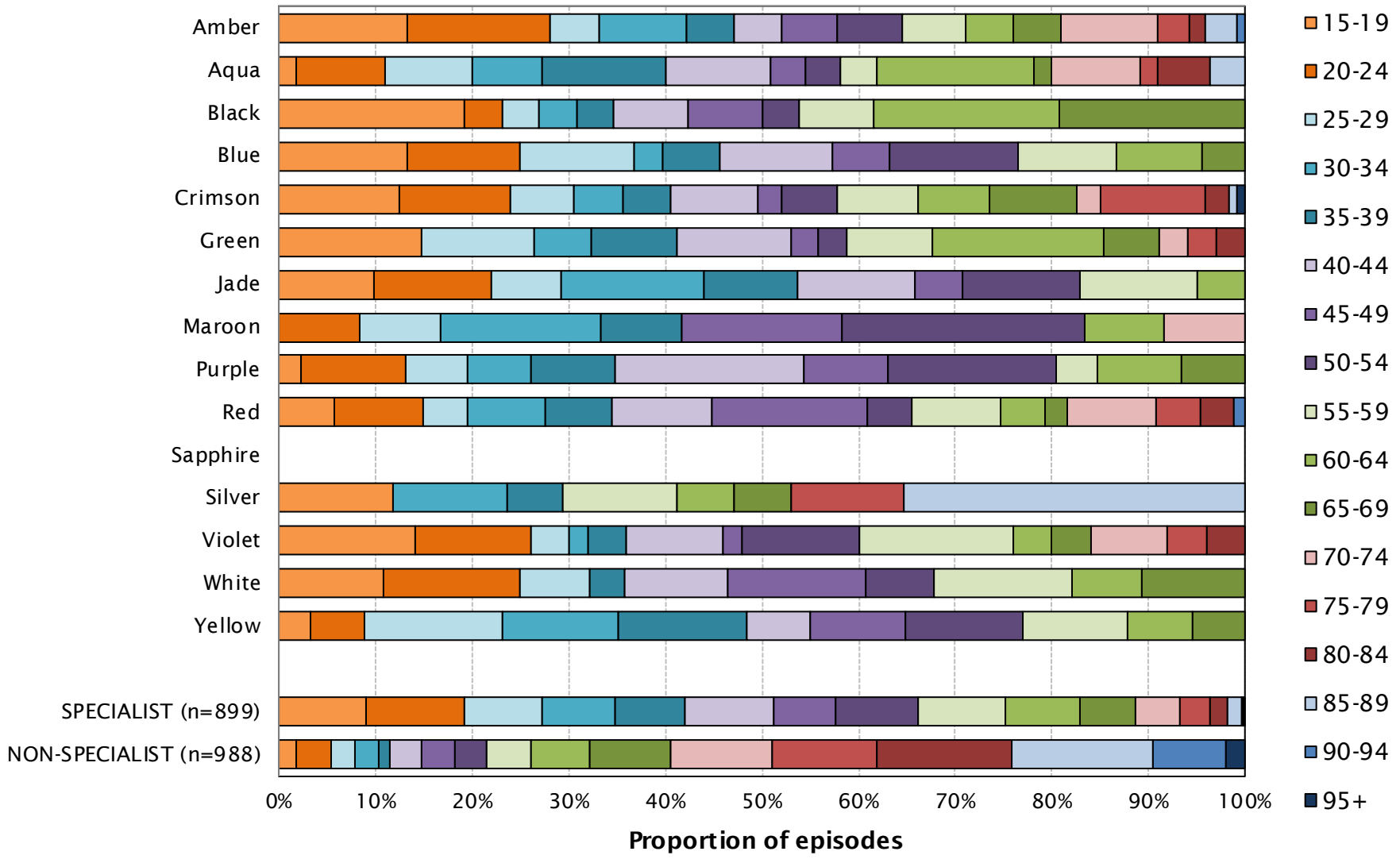


Specialist

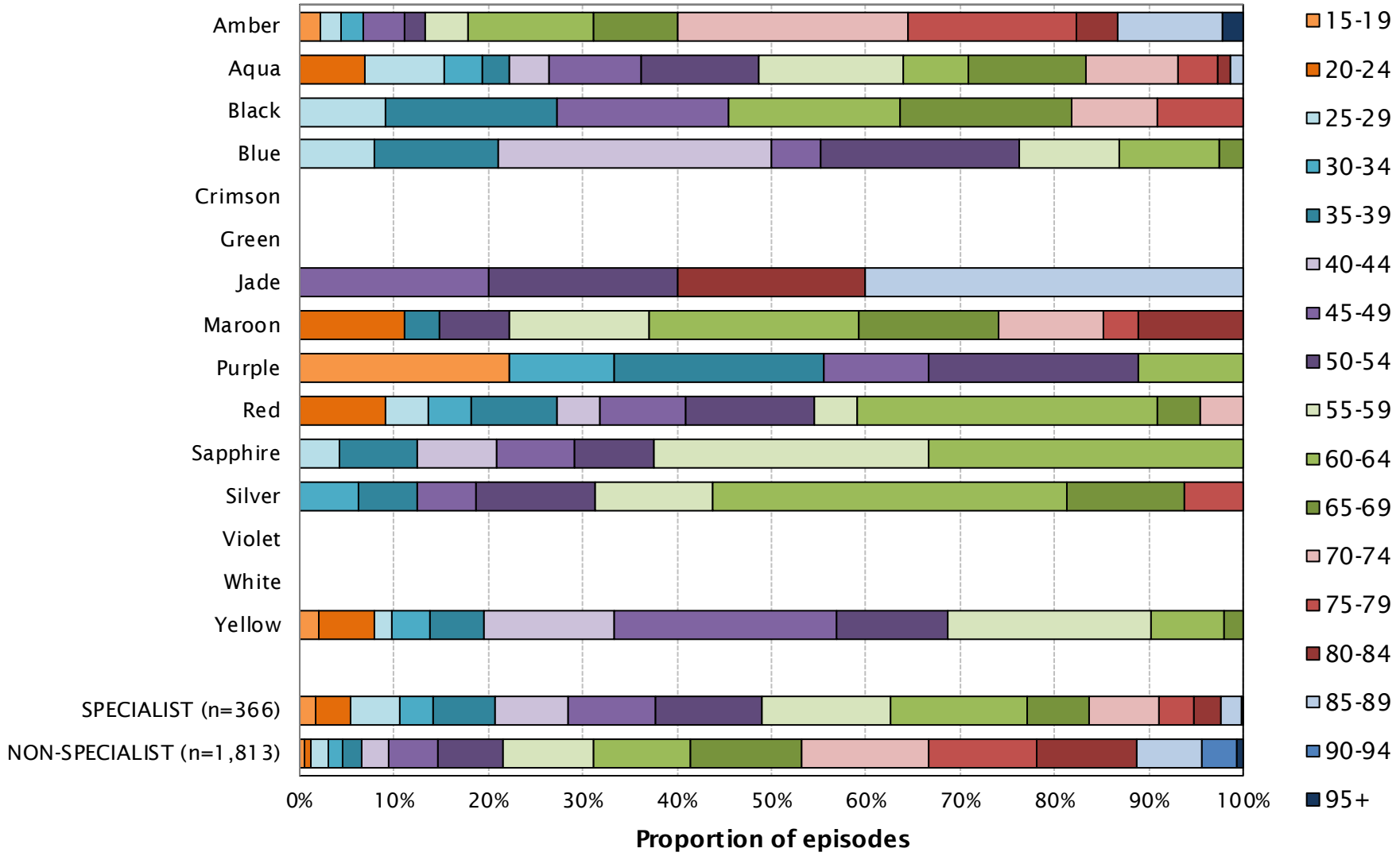


Non-specialist

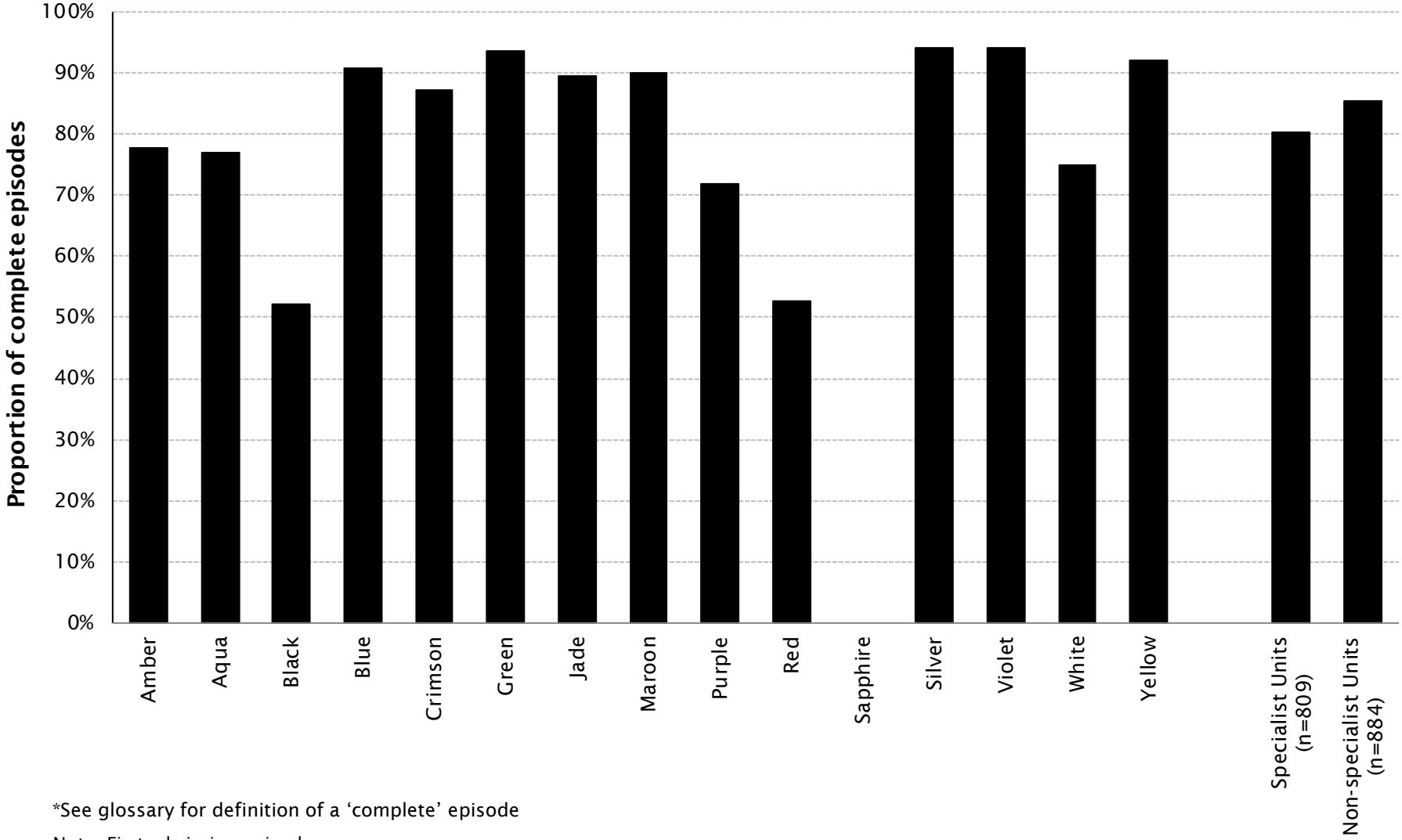
Traumatic episodes by age group and specialist facility



Non-traumatic episodes by age group and specialist facility



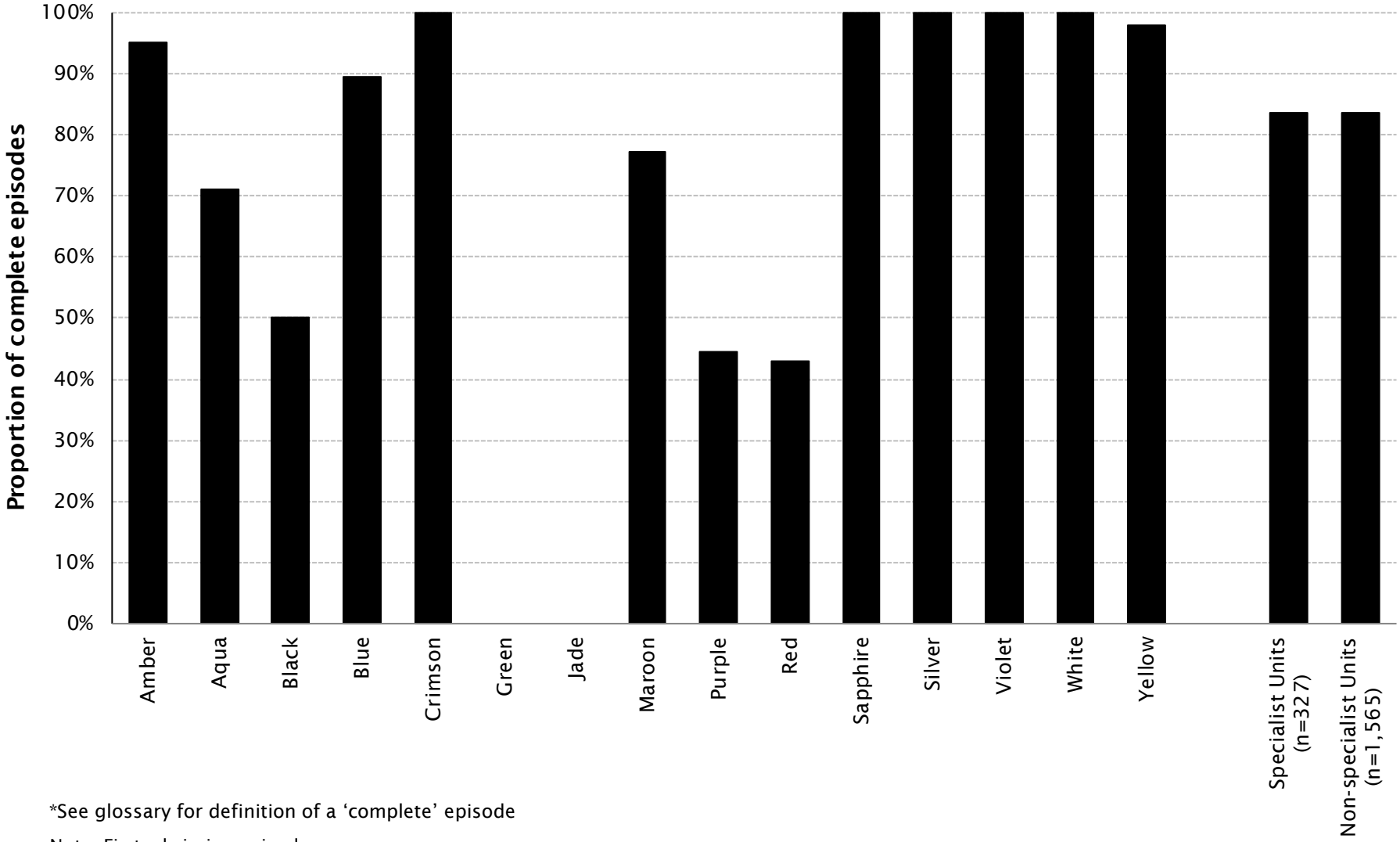
Proportion of complete* first admission traumatic episodes by specialist facility



*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

	YOUR FACILITY			SPECIALIST			NON-SPECIALIST		
AN-SNAP class	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)	11	11	100.0	108	100	92.6	346	326	94.2
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	20	20	100.0	200	190	95.0	178	158	88.8
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	8	6	75.0	65	59	90.8	520	465	89.4
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	13	10	76.9	125	104	83.2	456	399	87.5
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	11	10	90.9	121	97	80.2	187	142	75.9
4AB6 (BI, weighted FIM motor 29-40)	4	4	100.0	59	46	78.0	228	169	74.1
4AB7 (BI, weighted FIM motor 19-28)	4	1	25.0	54	37	68.5	166	122	73.5
4AP1 (MMT, weighted FIM motor 19-91)	22	14	63.6	206	164	79.6	187	167	89.3
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	10	5	50.0	83	53	63.9	152	102	67.1
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	8	6	75.0	115	72	62.6	22	12	54.5
All Brain AN-SNAP classes	**111**	**87**	**78.4**	**1,136**	**922**	**81.2**	**2,442**	**2,062**	**84.4**

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

	YOUR FACILITY			SPECIALIST			NON-SPECIALIST		
Impairment	All episodes	Completed episodes	%Complete	All episodes	Completed episodes	%Complete	All episodes	Completed episodes	%Complete
Traumatic impairments									
2.21 Open injury	3	2	66.7	36	26	72.2	53	46	86.8
2.22 Closed injury	49	43	87.8	493	415	84.2	637	536	84.1
14.1 MMT: brain+spine	0	0	—	8	6	75.0	10	9	90.0
14.2 MMT: brain+other	30	17	56.7	272	202	74.3	184	163	88.6
Total TBI	**82**	**62**	**75.6**	**809**	**649**	**80.2**	**884**	**754**	**85.3**
Non-traumatic impairments									
2.11 Sub-arachnoid haemorrhage	5	5	100.0	89	73	82.0	454	379	83.5
2.12 Anoxic brain damage	8	7	87.5	68	61	89.7	81	69	85.2
2.13 Other NTBI	13	13	100.0	170	139	81.8	1,030	862	83.7
Total NTBI	**26**	**25**	**96.2**	**327**	**273**	**83.5**	**1,565**	**1,310**	**83.7**
Total BI	**108**	**87**	**80.6**	**1,136**	**922**	**81.2**	**2,449**	**2,064**	**84.3**

Note: First Admission Only

Summary of incomplete episodes

	YOUR FACILITY		SPECIALIST		NON-SPECIALIST		ALL BRAIN	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Total reporting episodes	129		1,266		2,803		4,069	
Incomplete episodes	31	(24.0)	270	(21.3)	473	(16.9)	743	(18.3)
Reason for incomplete:								
Discharged home with end FIM=18	1	(3.2)	5	(1.9)	11	(2.3)	16	(2.2)
Discharged home with no end FIM	0	(0.0)	1	(0.4)	13	(2.7)	14	(1.9)
Discharged to another hospital	15	(48.4)	96	(35.6)	229	(48.4)	325	(43.7)
Care type change - same hospital	14	(45.2)	107	(39.6)	172	(36.4)	279	(37.6)
Discharged at own risk	1	(3.2)	38	(14.1)	18	(3.8)	56	(7.5)
Change of care type (LOS<1 week)	0	(0.0)	0	(0.0)	3	(0.6)	3	(0.4)
Died	0	(0.0)	2	(0.7)	13	(2.7)	15	(2.0)
Other/Unknown Discharge	0	(0.0)	21	(7.8)	14	(3.0)	35	(4.7)

	YOUR FACILITY			
	Incomplete Episodes		Complete episodes	
Impairment Code:				
2.11 Sub-arachnoid haemorrhage	1	(3.2)	6	(6.1)
2.12 Anoxic brain damage	2	(6.5)	7	(7.1)
2.13 Other NTBI	3	(9.7)	13	(13.3)
2.21 Open injury	2	(6.5)	3	(3.1)
2.22 Closed injury	9	(29.0)	48	(49.0)
14.1 MMT: brain+spine	0	(0.0)	1	(1.0)
14.2 MMT: brain+other	14	(45.2)	20	(20.4)
AN-SNAP Class:				
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	0	(0.0)	11	(11.2)
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	0	(0.0)	20	(20.4)
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	2	(6.5)	7	(7.1)
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	4	(12.9)	11	(11.2)
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	1	(3.2)	11	(11.2)
4AB6 (BI, weighted FIM motor 29-40)	1	(3.2)	6	(6.1)
4AB7 (BI, weighted FIM motor 19-28)	5	(16.1)	2	(2.0)
4AP1 (MMT, weighted FIM motor 19-91)	8	(25.8)	16	(16.3)
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	6	(19.4)	7	(7.1)
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	4	(12.9)	7	(7.1)

Review of FIM item scoring by AN-SNAP class

Interpreting the comparative FIM item scoring charts

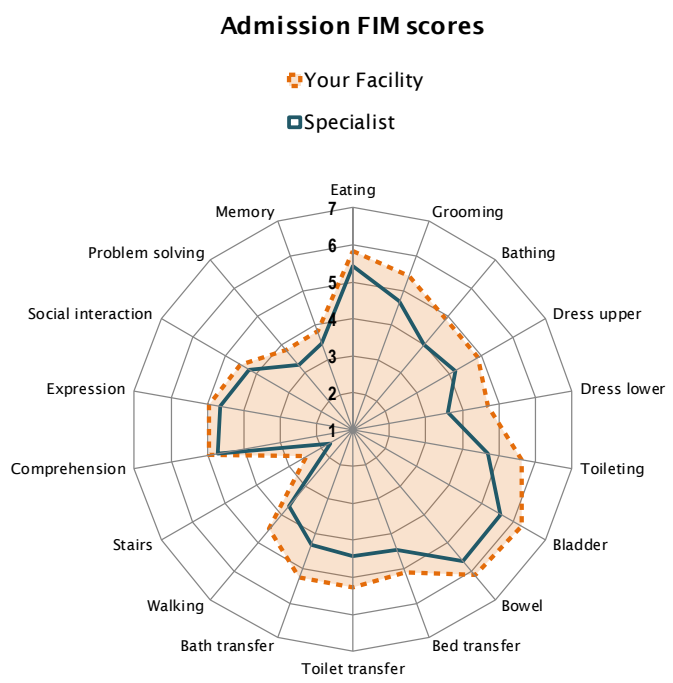


Figure A

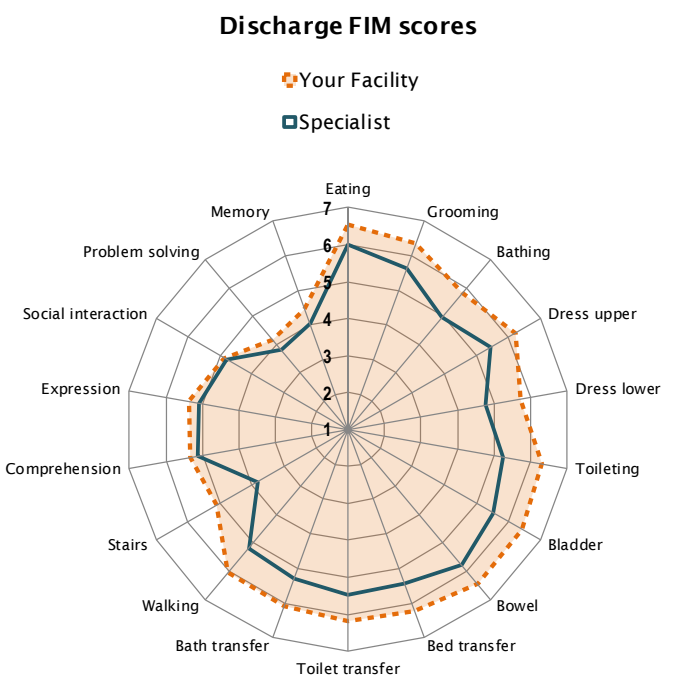
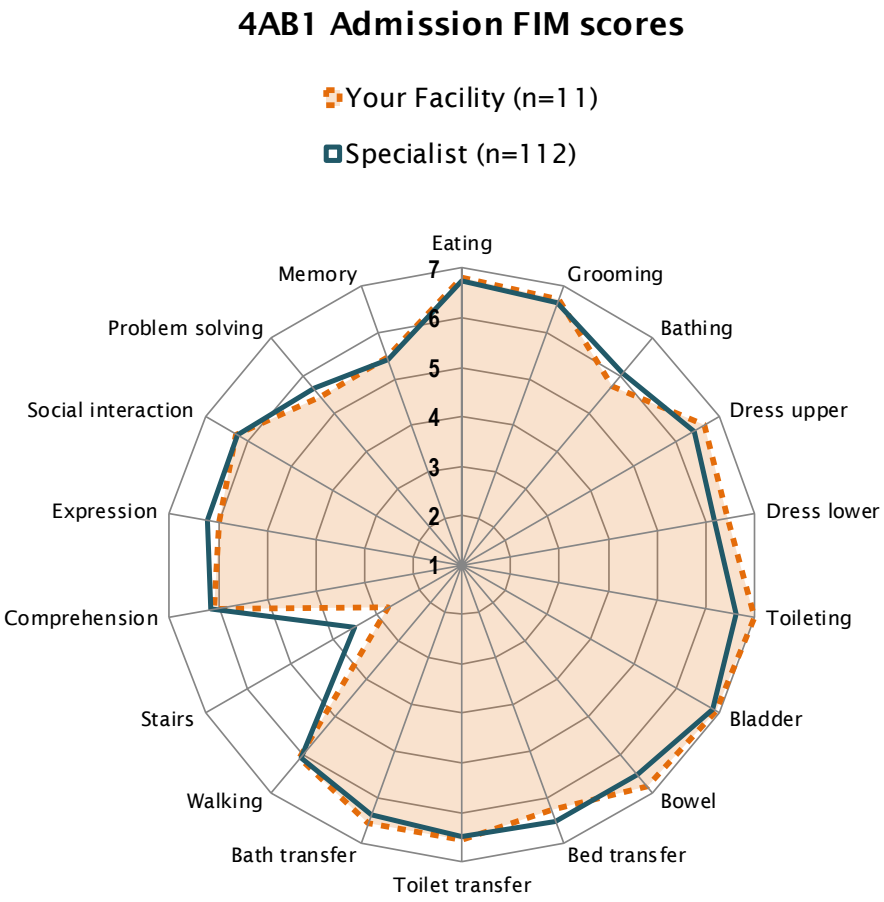
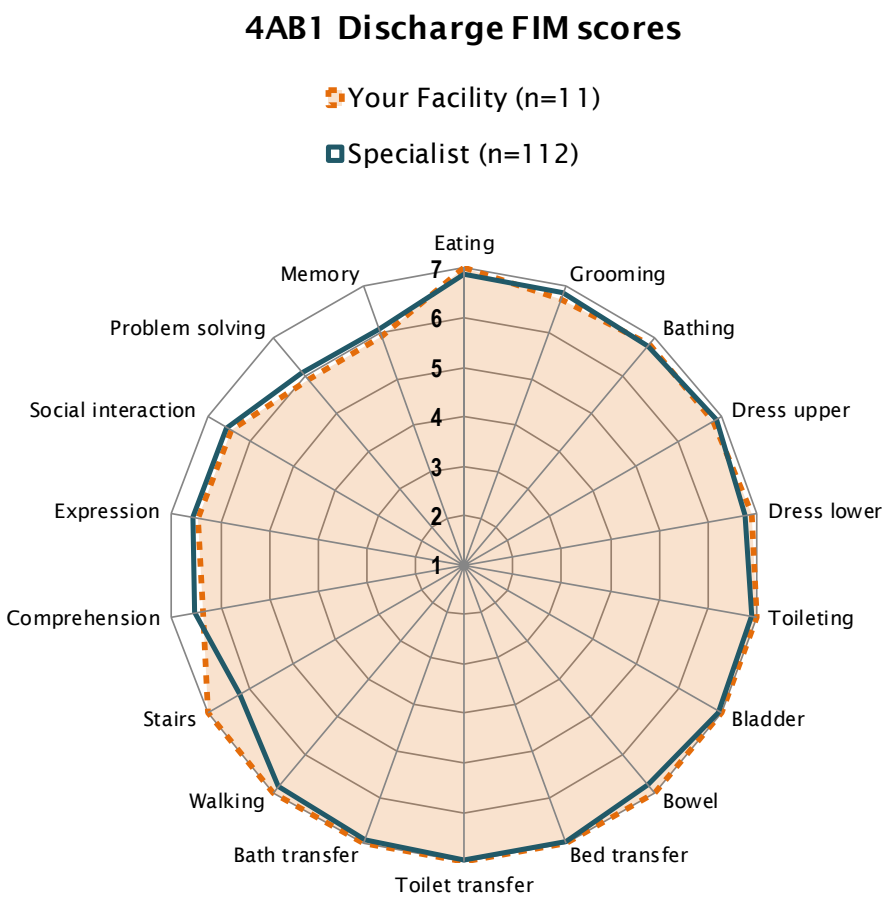


Figure B

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.

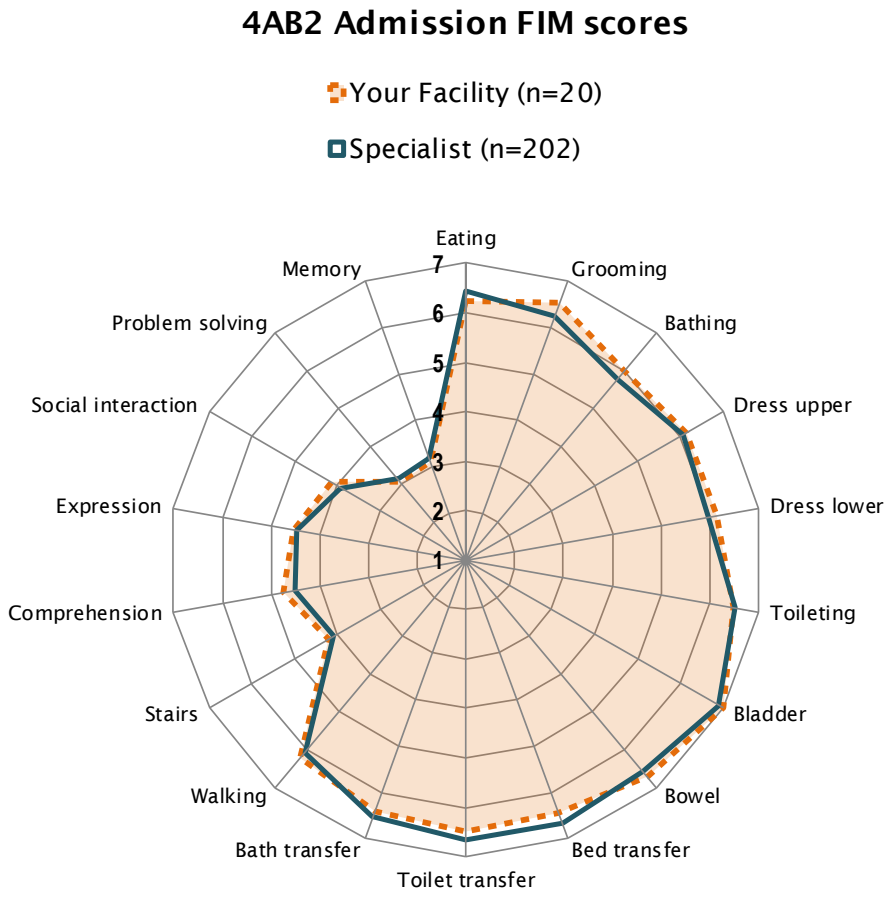
Comparative FIM item scoring
AN-SNAP class 4AB1

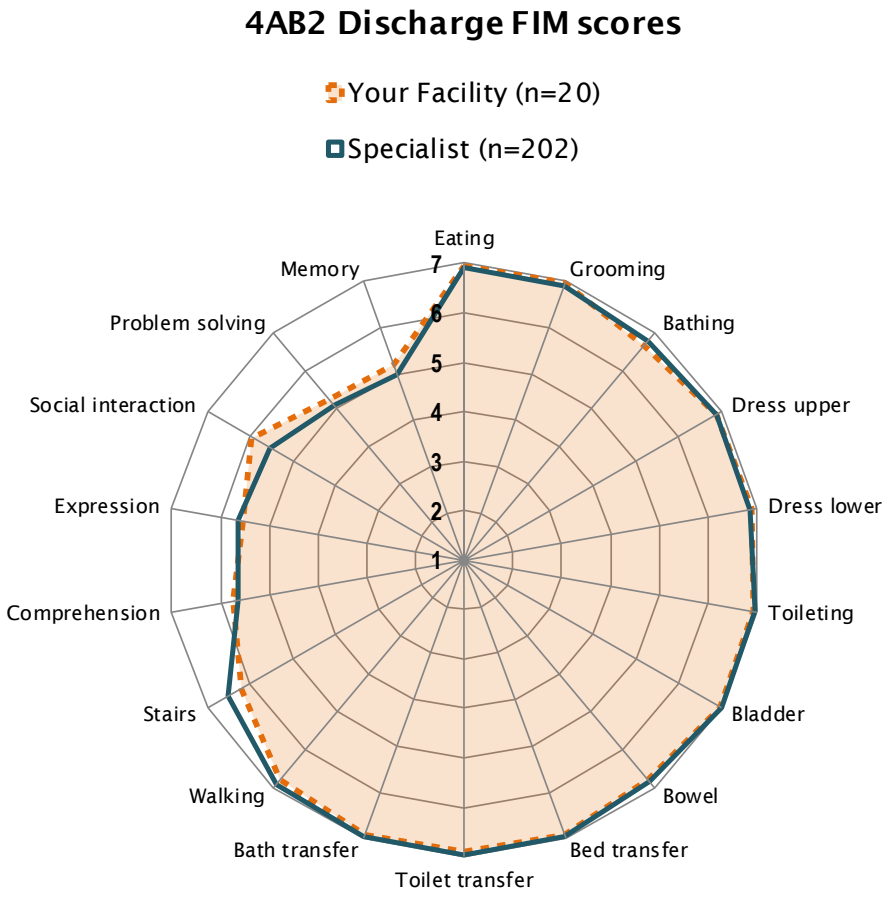




Note: Includes only completed episodes with valid FIM scores

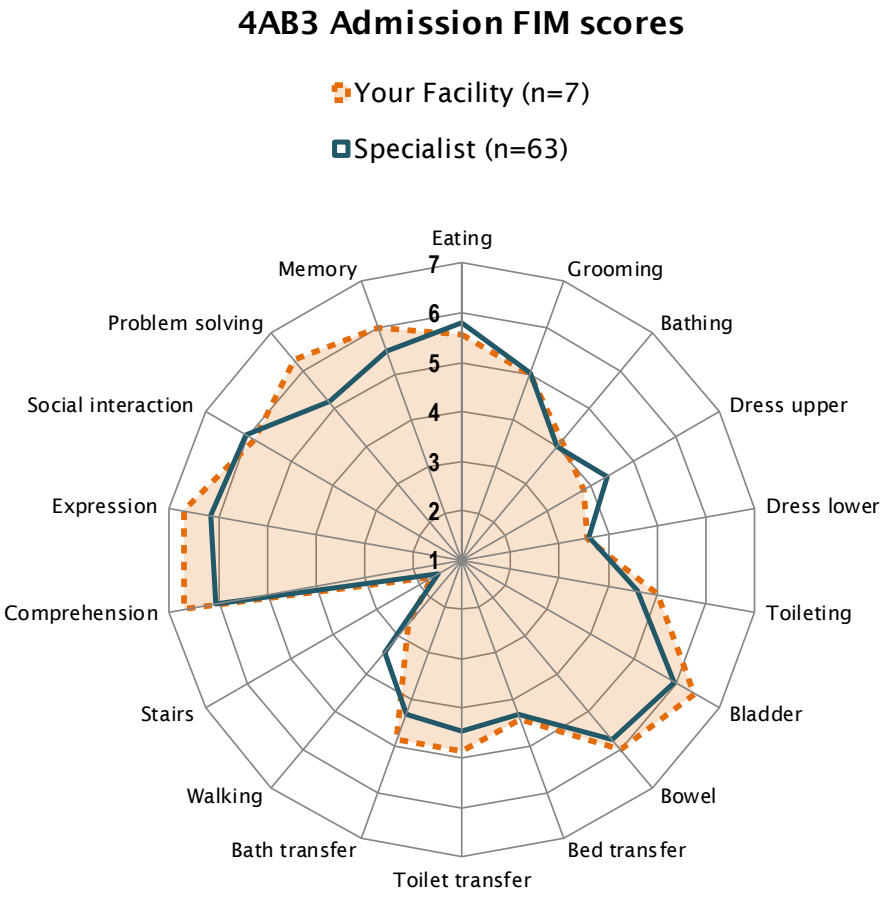
Comparative FIM item scoring
AN-SNAP class 4AB2

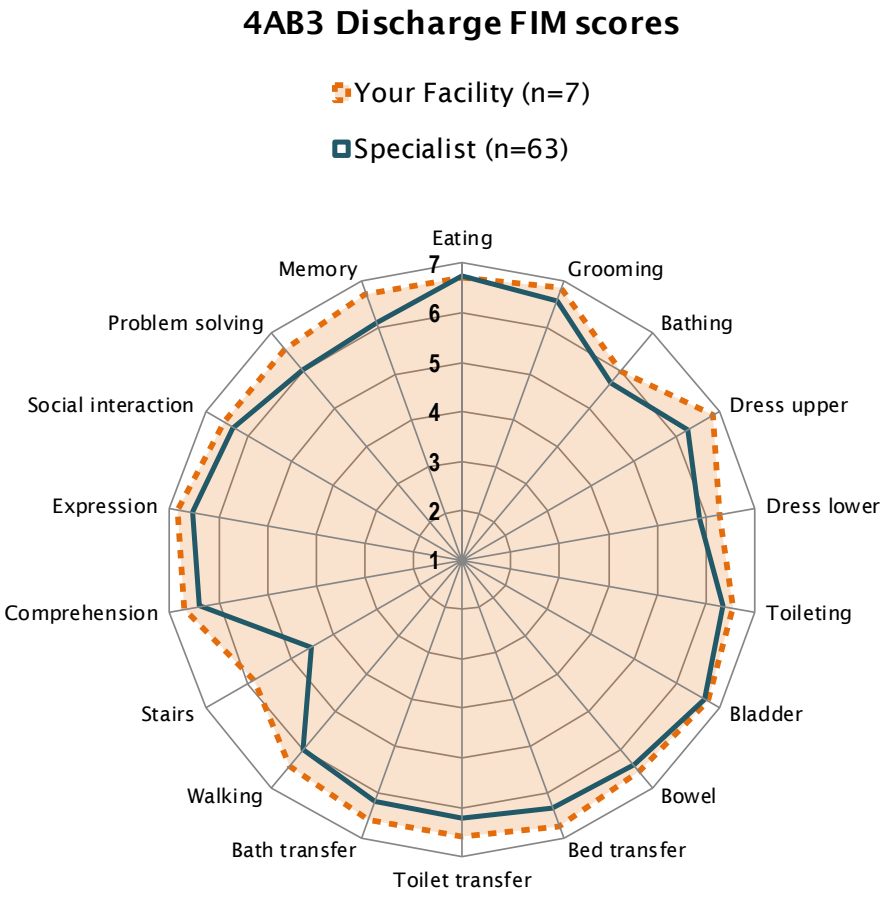




Note: Includes only completed episodes with valid FIM scores

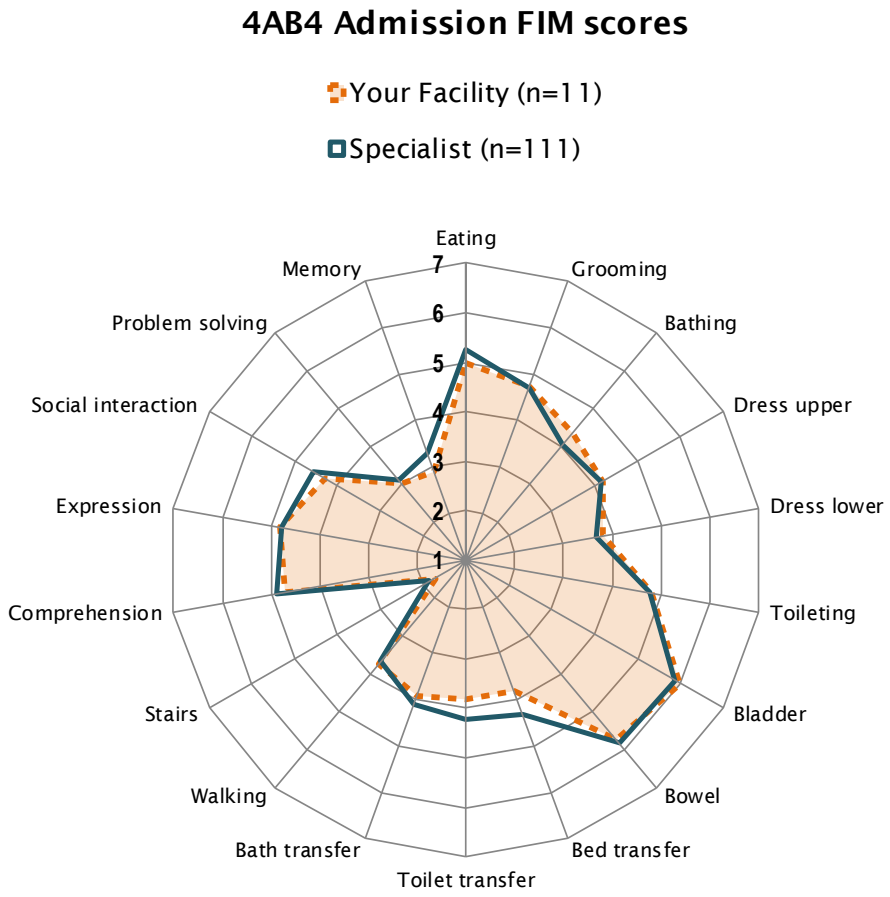
Comparative FIM item scoring
AN-SNAP class 4AB3

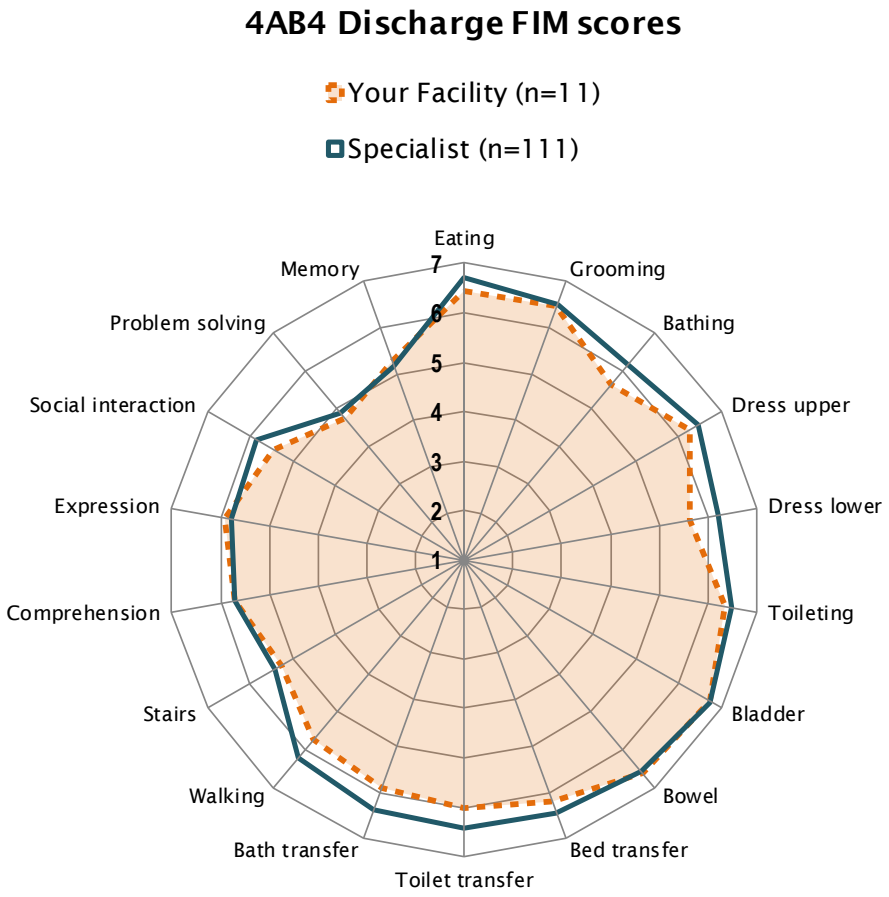




Note: Includes only completed episodes with valid FIM scores

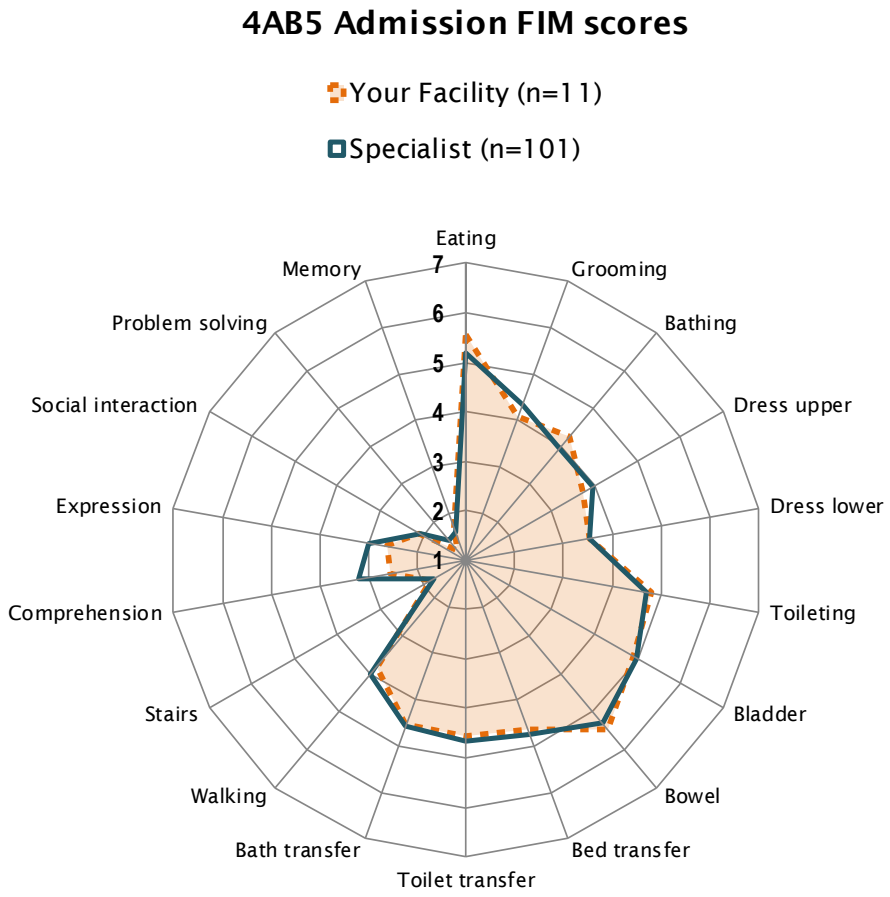
Comparative FIM item scoring
AN-SNAP class 4AB4

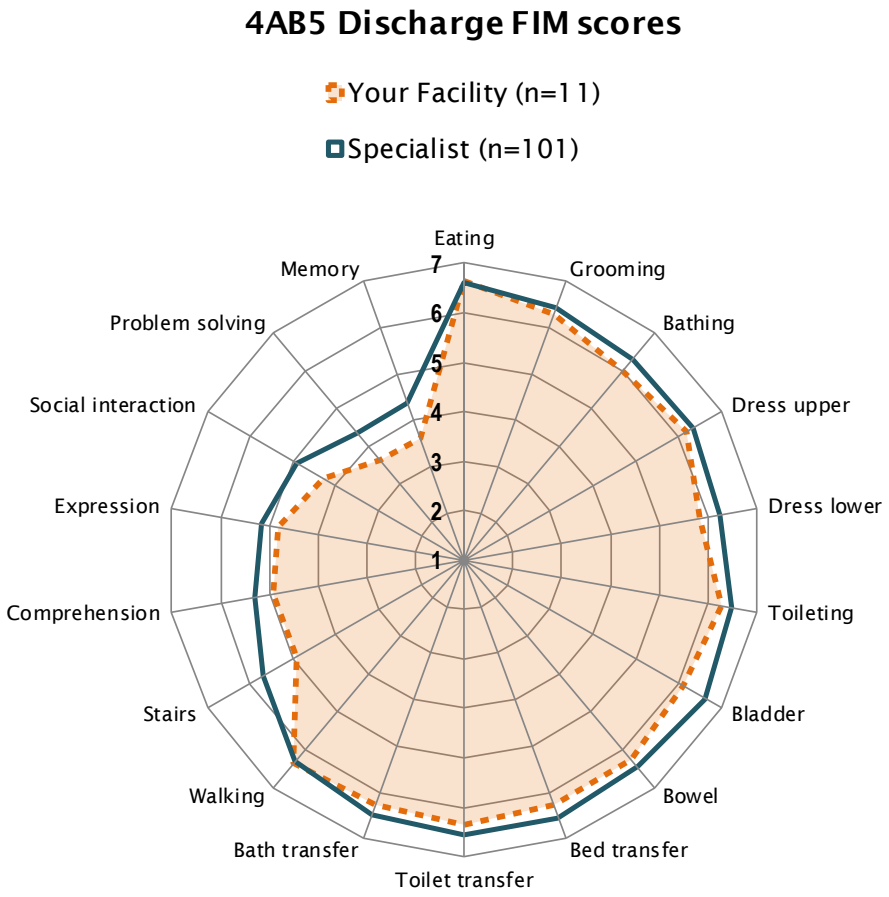




Note: Includes only completed episodes with valid FIM scores

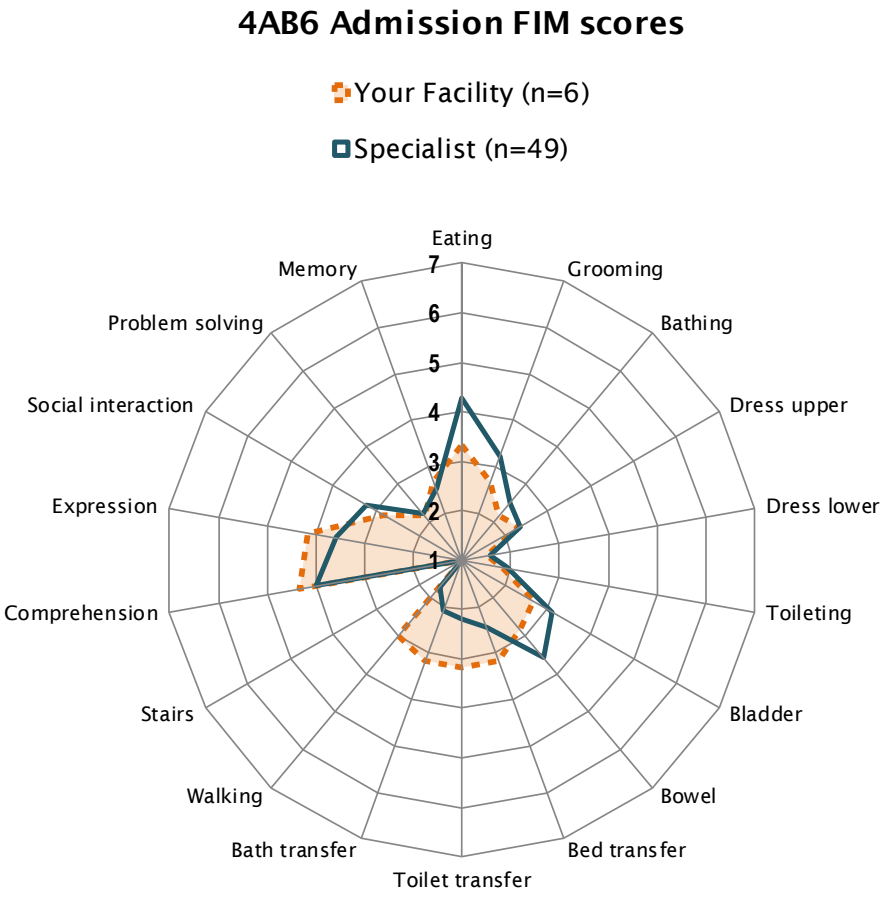
Comparative FIM item scoring
AN-SNAP class 4AB5

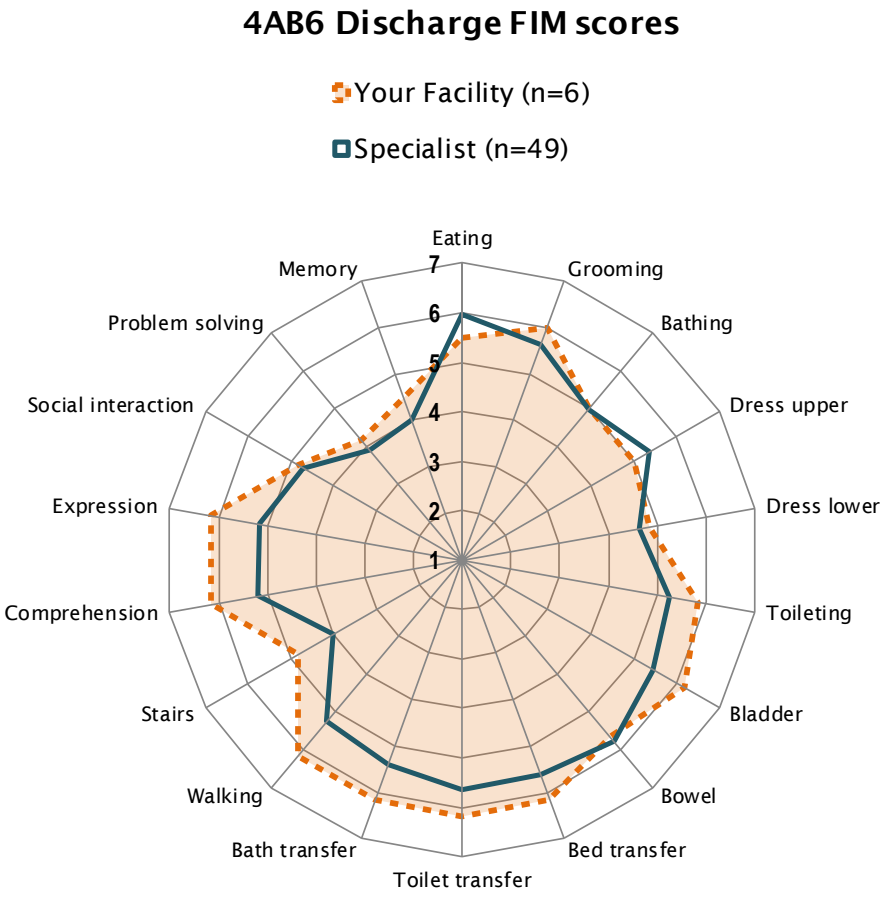




Note: Includes only completed episodes with valid FIM scores

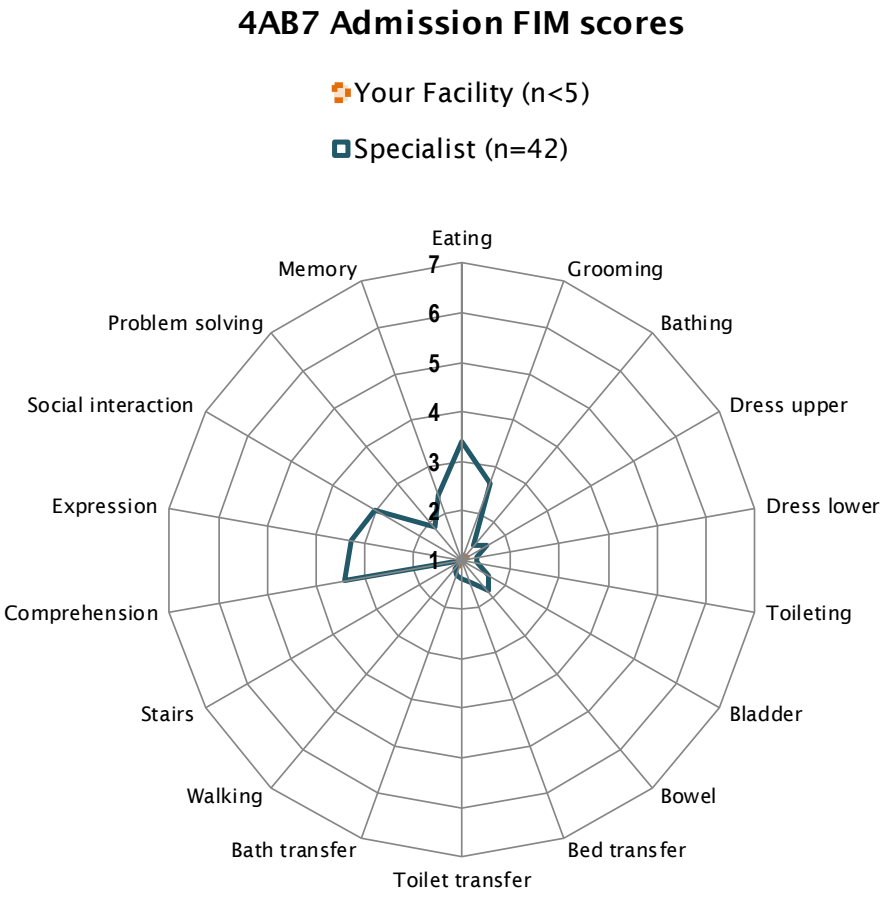
Comparative FIM item scoring
AN-SNAP class 4AB6

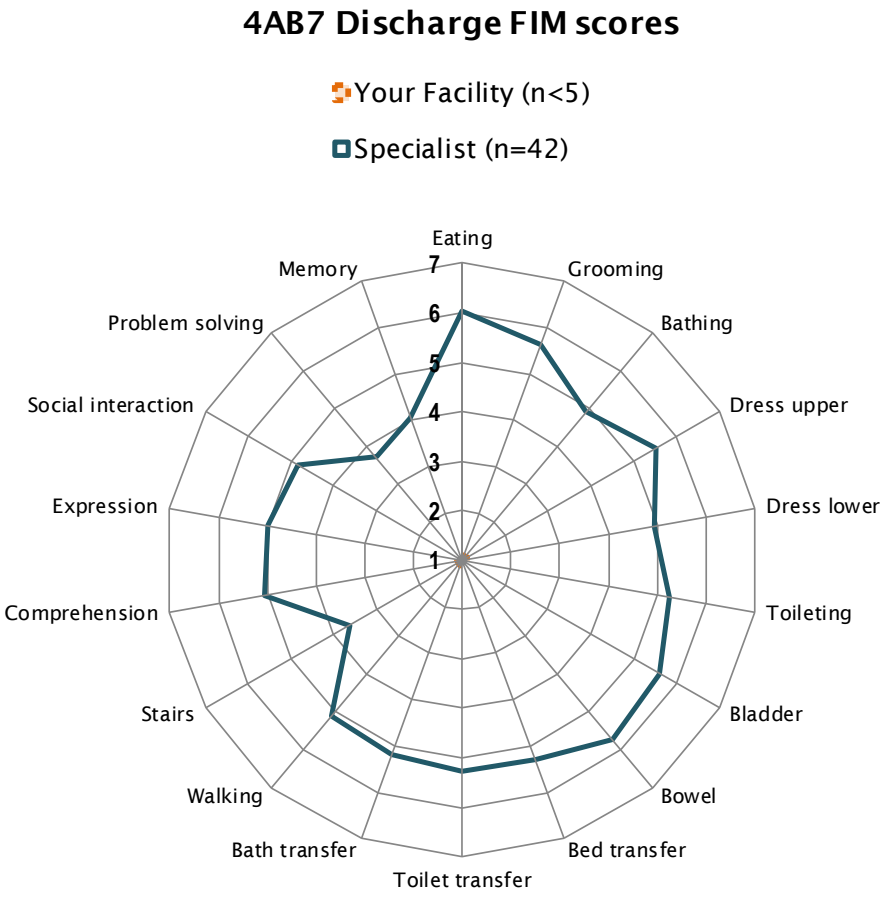




Note: Includes only completed episodes with valid FIM scores

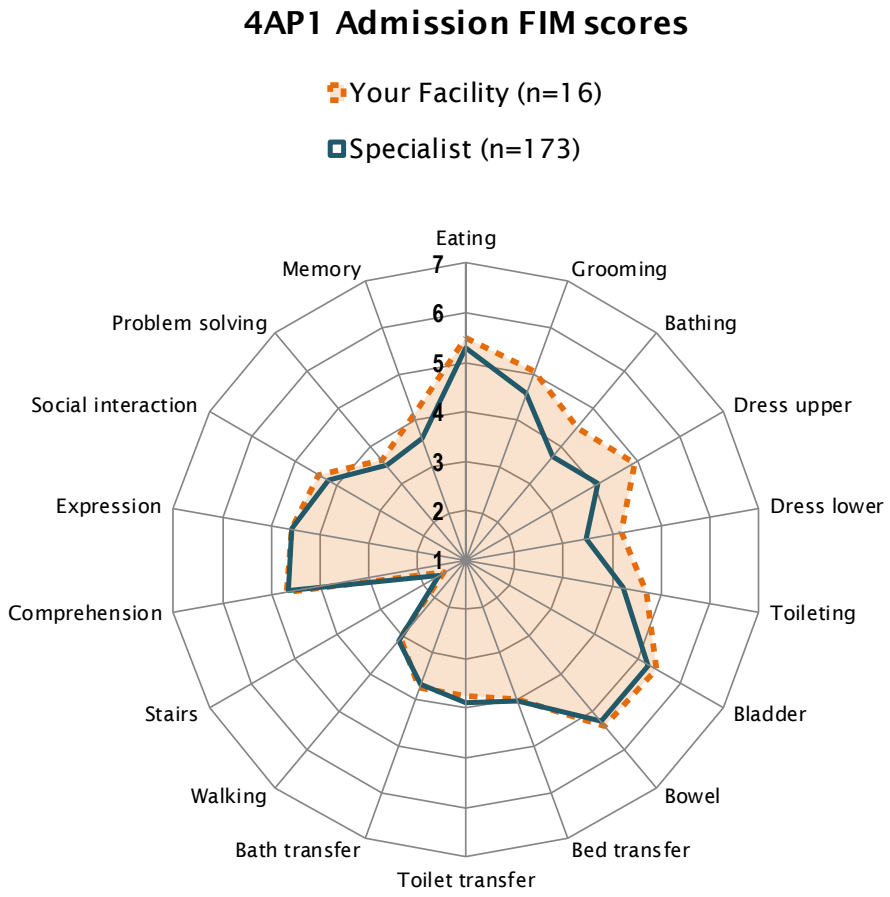
Comparative FIM item scoring
AN-SNAP class 4AB7

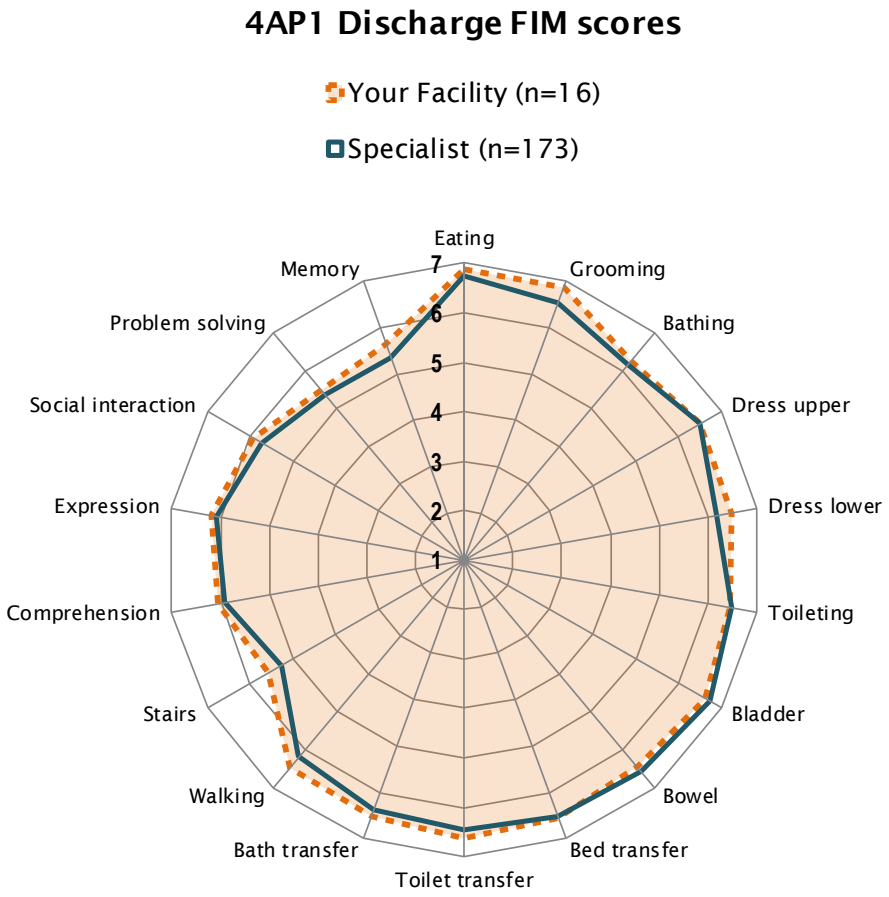




Note: Includes only completed episodes with valid FIM scores

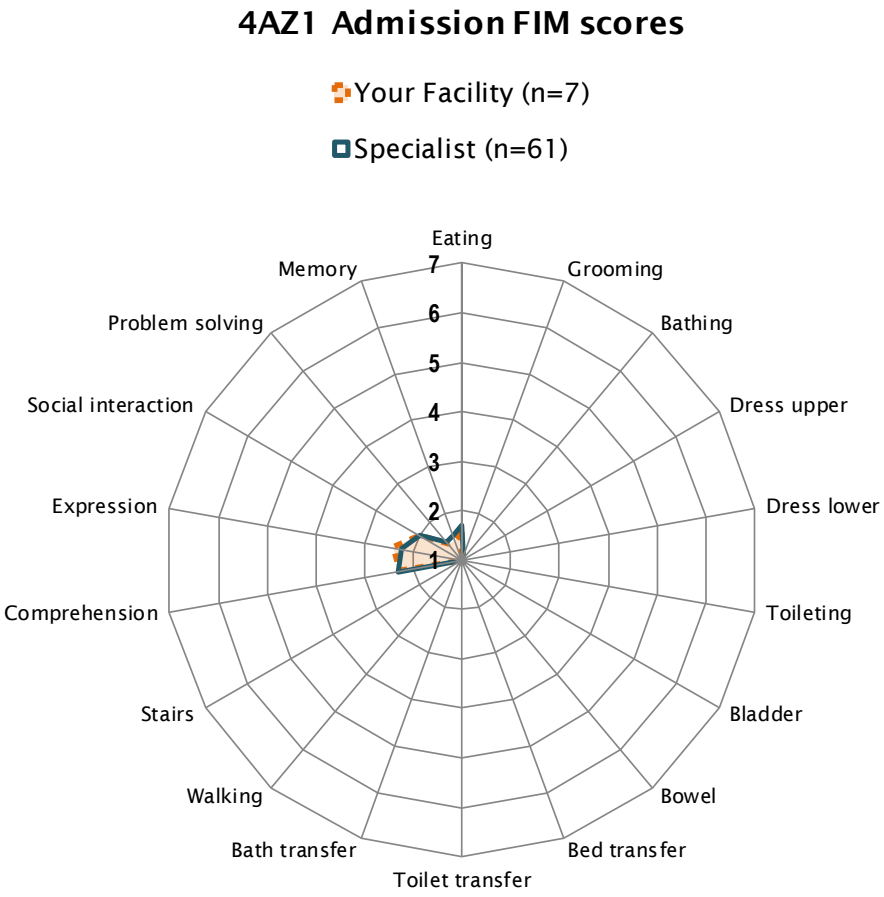
Comparative FIM item scoring
AN-SNAP class 4AP1

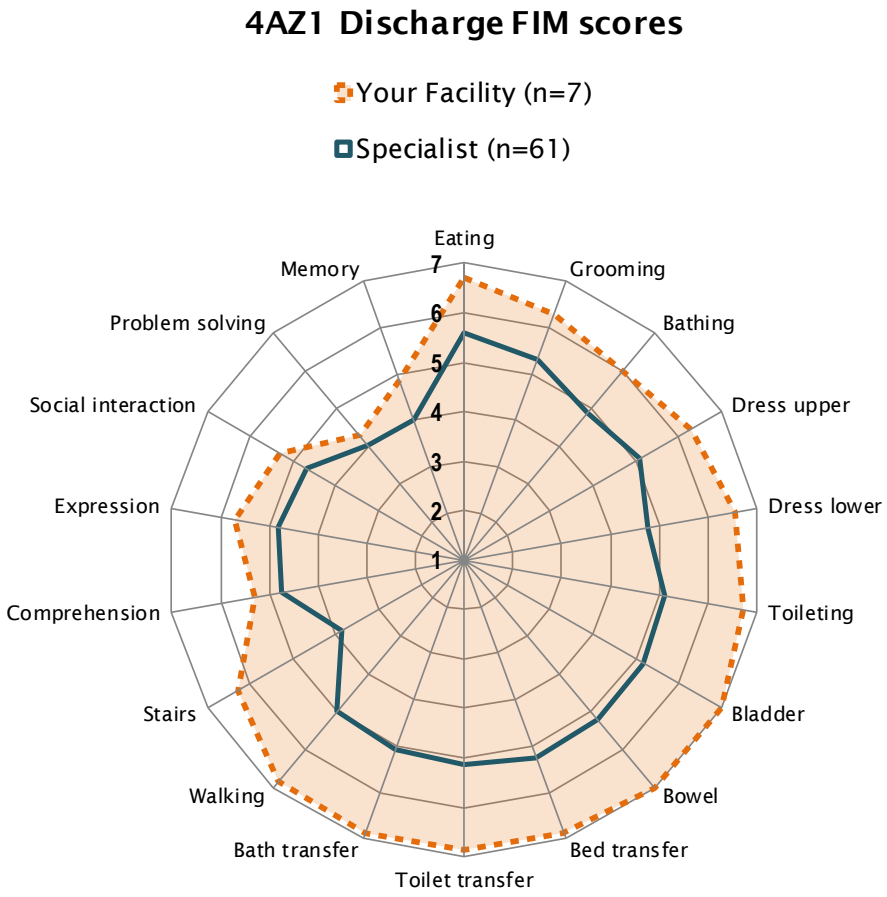




Note: Includes only completed episodes with valid FIM scores

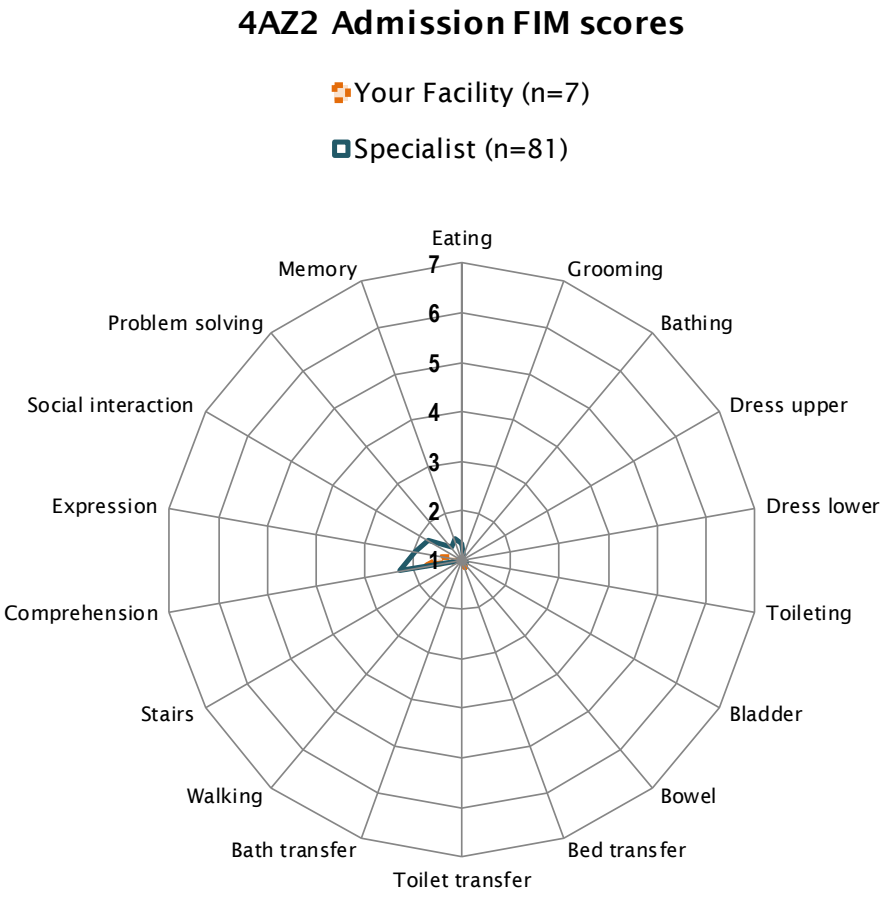
Comparative FIM item scoring
AN-SNAP class 4AZ1

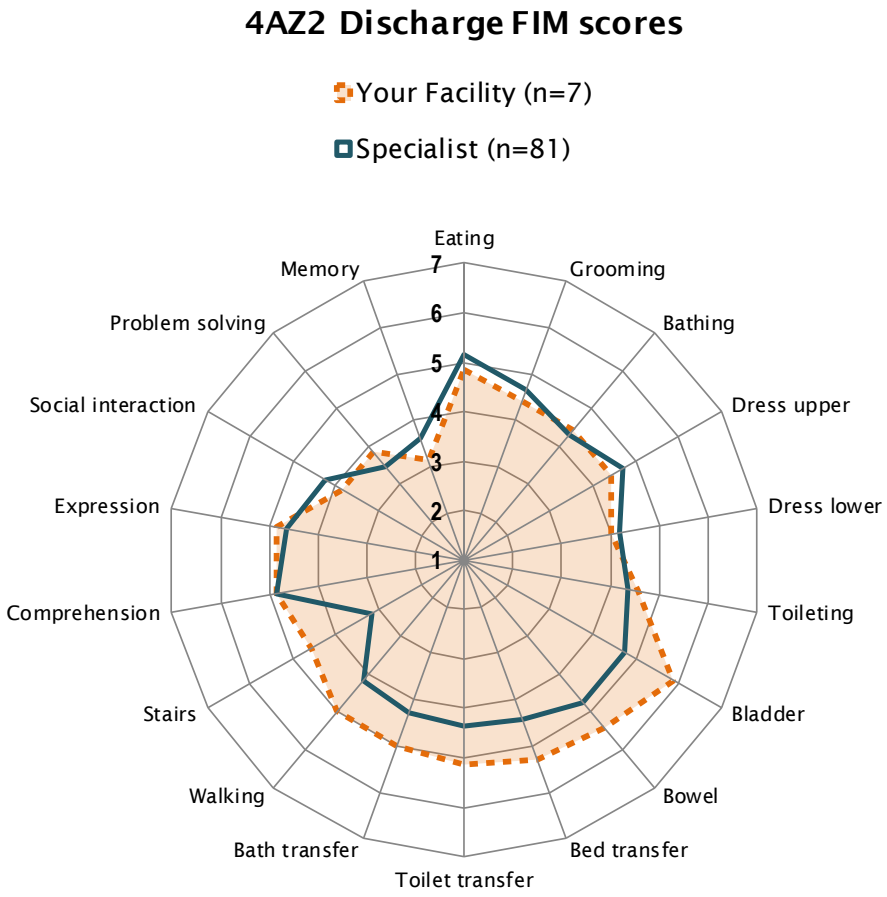




Note: Includes only completed episodes with valid FIM scores

Comparative FIM item scoring
AN-SNAP class 4AZ2

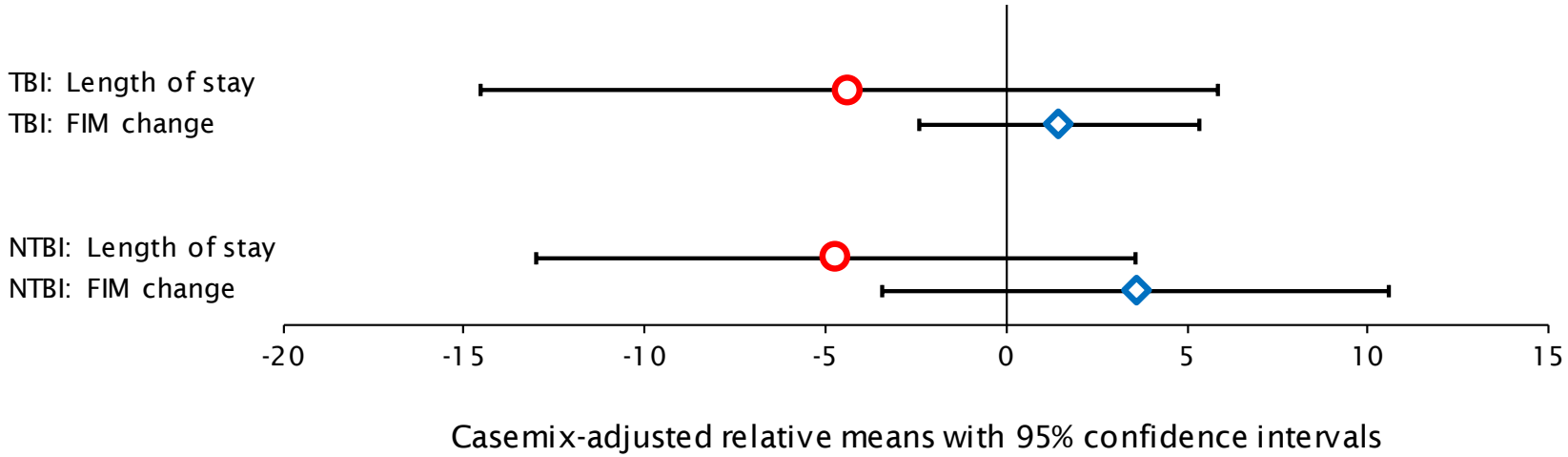




Note: Includes only completed episodes with valid FIM scores

Outcome analysis

Casemix-adjusted* relative means

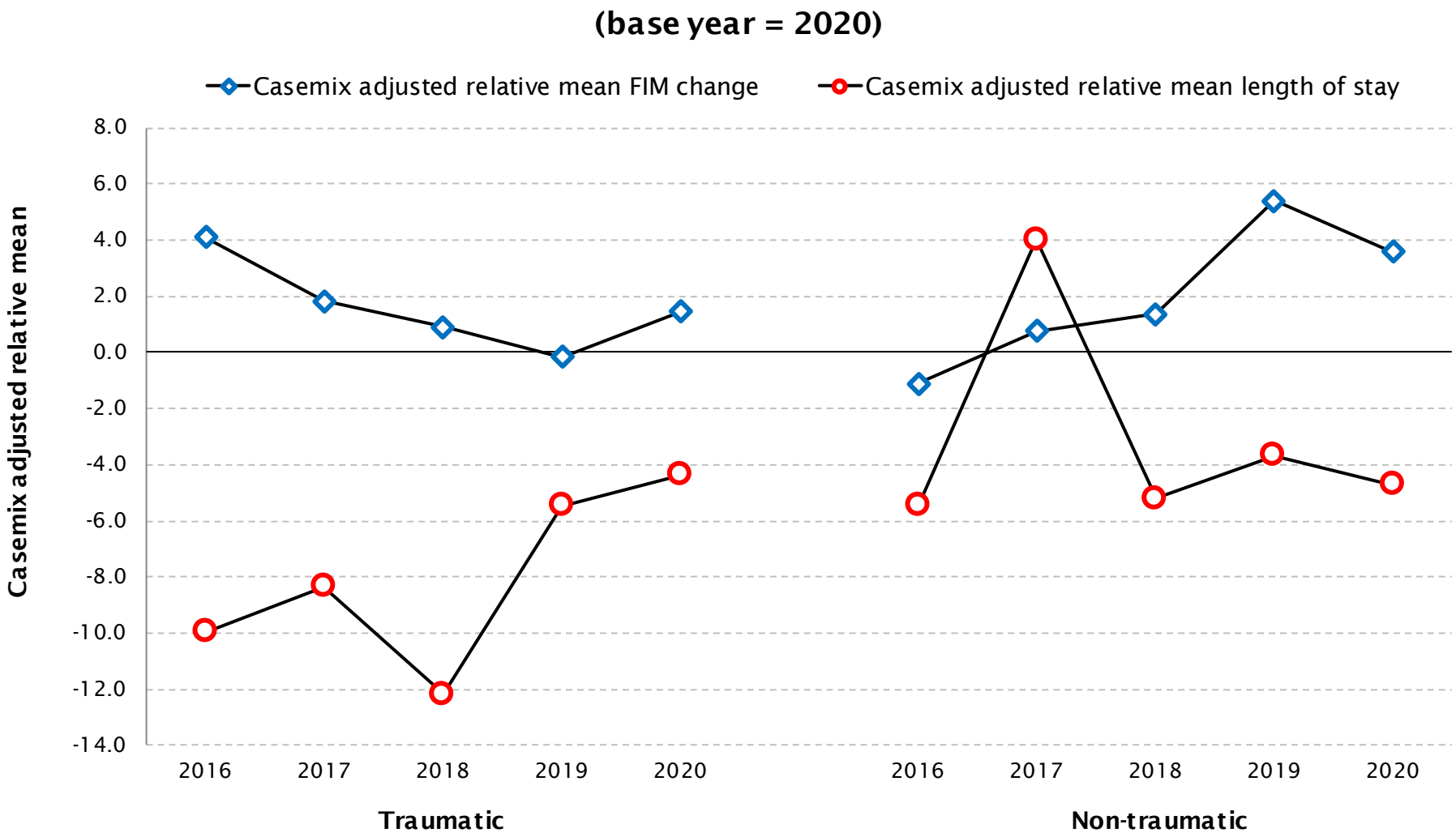


	Traumatic		YOUR FACILITY	Non-traumatic	
Outcome measures	Casemix-adjusted* relative mean	95% CI		Casemix-adjusted* relative mean	95% CI
Length of stay	-4.4	-14.6 to 5.8		-4.7	-13.0 to 3.6
FIM change	1.5	-2.4 to 5.3		3.6	-3.4 to 10.6

Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

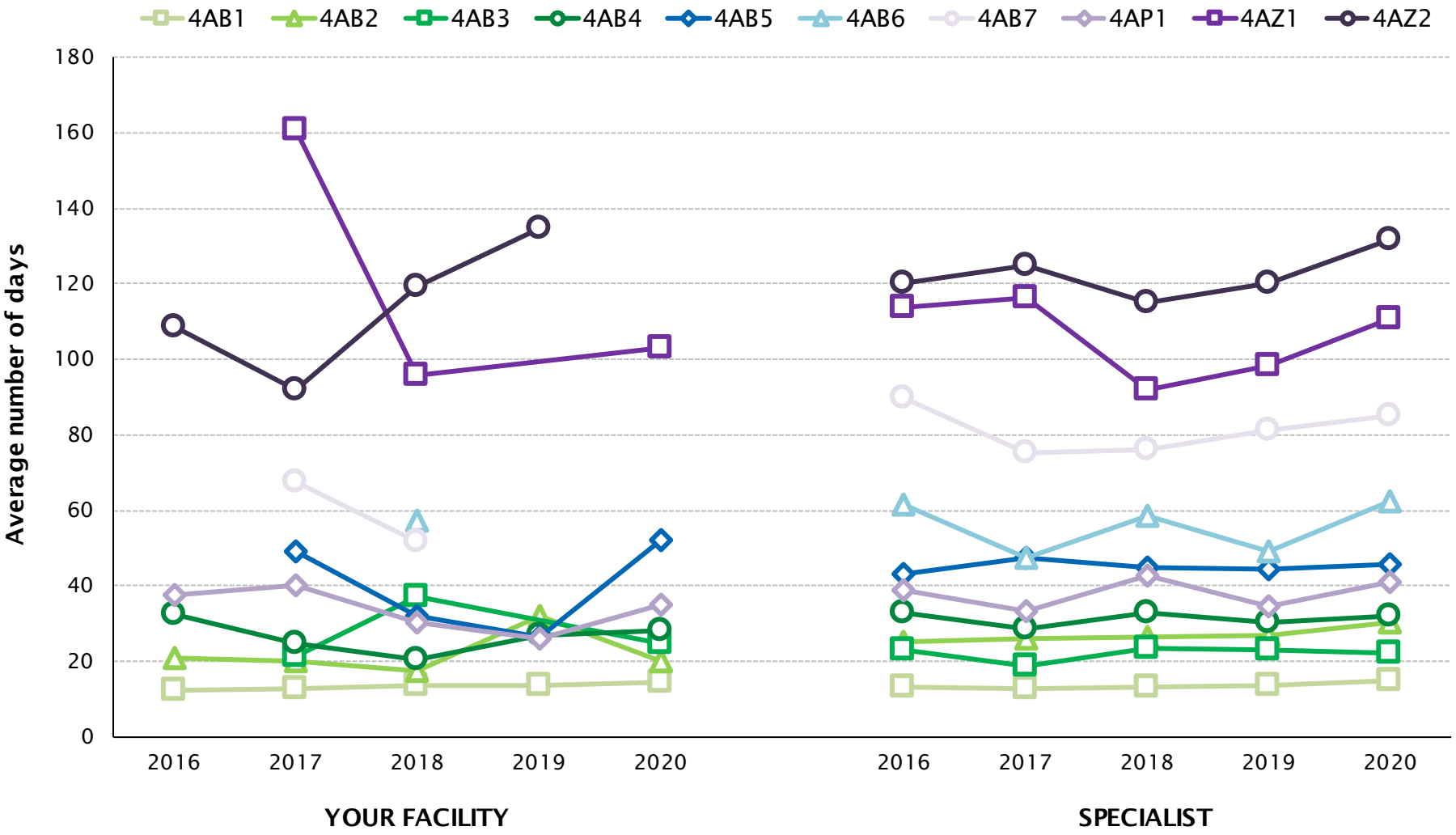
Traumatic and non-traumatic brain injury casemix-adjusted* relative means over time



Note: First admission, completed episodes.

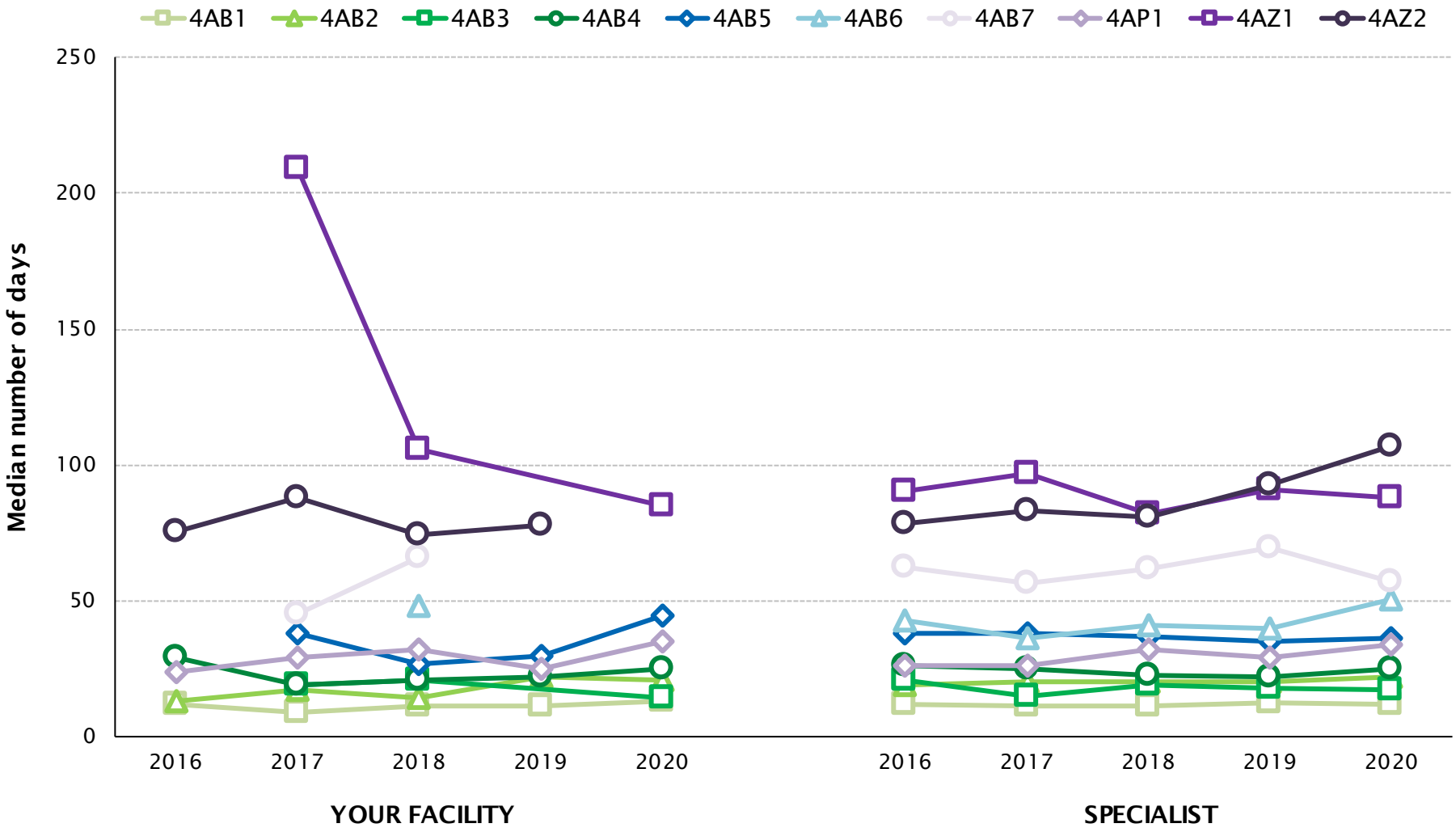
*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

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

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AVERAGE

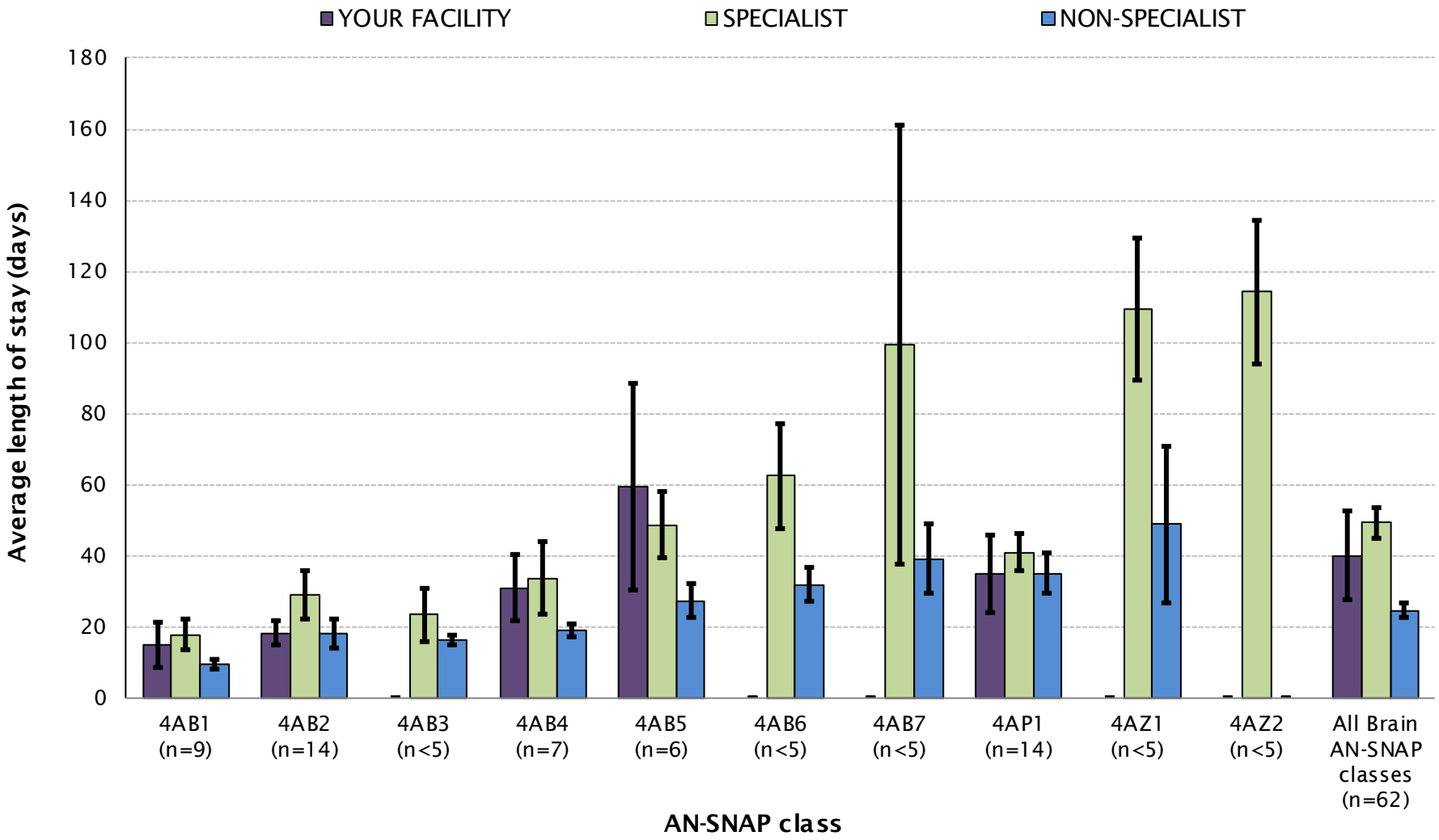
	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
AN-SNAP class	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	12.2	13.0	13.6	13.9	14.7	13.3	12.6	13.1	13.5	15.0	12.2	12.5	11.3	12.1	10.9
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	20.8	19.9	17.6	31.9	20.3	25.3	26.0	26.5	27.0	30.2	22.5	19.6	19.0	19.3	17.3
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	21.4	37.0	—	25.0	23.2	19.0	23.6	23.0	22.2	17.9	17.9	18.0	16.9	16.8
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	32.3	24.8	20.6	26.8	28.1	32.9	28.6	32.7	30.5	32.1	21.9	22.0	22.8	21.6	20.6
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	49.1	31.9	26.7	52.2	43.1	47.4	45.0	44.6	45.6	25.4	28.2	25.7	28.6	28.7
4AB6 (BI, weighted FIM motor 29-40)	—	—	57.3	—	—	61.6	47.3	58.6	49.2	62.6	30.2	31.1	29.2	30.2	31.3
4AB7 (BI, weighted FIM motor 19-28)	—	67.8	51.8	—	—	89.9	75.1	76.0	81.3	85.1	37.9	37.5	38.4	37.1	40.7
4AP1 (MMT, weighted FIM motor 19-91)	37.6	40.4	30.3	26.2	35.1	39.0	33.3	42.9	34.5	41.1	35.3	35.7	36.9	38.5	35.2
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	160.8	95.8	—	103.2	113.8	116.3	92.2	98.4	110.7	59.2	51.6	46.0	45.3	53.5
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	108.6	91.9	119.2	134.8	—	120.2	124.8	115.0	120.0	131.6	87.9	84.3	89.3	152.3	130.4
All Brain AN-SNAP classes	**42.4**	**42.1**	**44.0**	**36.8**	**37.7**	**41.7**	**42.2**	**43.1**	**44.7**	**48.0**	**24.5**	**24.4**	**23.9**	**24.0**	**24.0**

MEDIAN

	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
AN-SNAP class	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	12.0	9.0	11.5	11.0	13.0	12.0	11.0	11.0	12.5	12.0	10.0	12.0	10.0	10.0	10.0
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	13.0	17.5	14.0	22.0	20.5	19.0	20.0	20.0	20.0	22.0	14.0	14.0	16.0	15.0	15.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	19.0	21.0	—	14.0	21.0	15.0	19.0	18.0	17.0	15.0	15.0	14.0	14.0	15.0
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	29.0	19.0	21.0	22.0	25.0	26.0	25.0	22.5	22.0	25.0	20.0	18.5	20.0	18.0	17.0
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	38.0	26.5	29.5	44.5	38.0	38.0	37.0	35.0	36.0	22.0	23.0	22.0	22.0	22.0
4AB6 (BI, weighted FIM motor 29-40)	—	—	48.0	—	—	43.0	36.0	41.0	40.0	50.5	28.0	27.0	28.0	26.0	24.0
4AB7 (BI, weighted FIM motor 19-28)	—	45.0	66.0	—	—	62.5	56.5	62.0	69.5	57.0	35.0	33.0	31.0	33.5	31.5
4AP1 (MMT, weighted FIM motor 19-91)	23.5	29.0	32.0	25.0	35.0	26.0	26.0	32.0	29.0	34.0	26.0	29.0	22.0	27.0	21.0
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	209.0	105.5	—	85.0	90.5	97.0	82.0	91.0	88.0	49.5	42.0	37.0	33.0	43.0
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	75.5	88.0	74.0	78.0	—	78.5	83.0	80.5	92.5	107.0	84.0	59.5	76.0	164.0	114.5
All Brain AN-SNAP classes	**25.0**	**26.0**	**26.0**	**26.0**	**25.0**	**24.0**	**25.0**	**27.0**	**28.0**	**29.0**	**18.0**	**18.0**	**17.0**	**17.0**	**17.0**

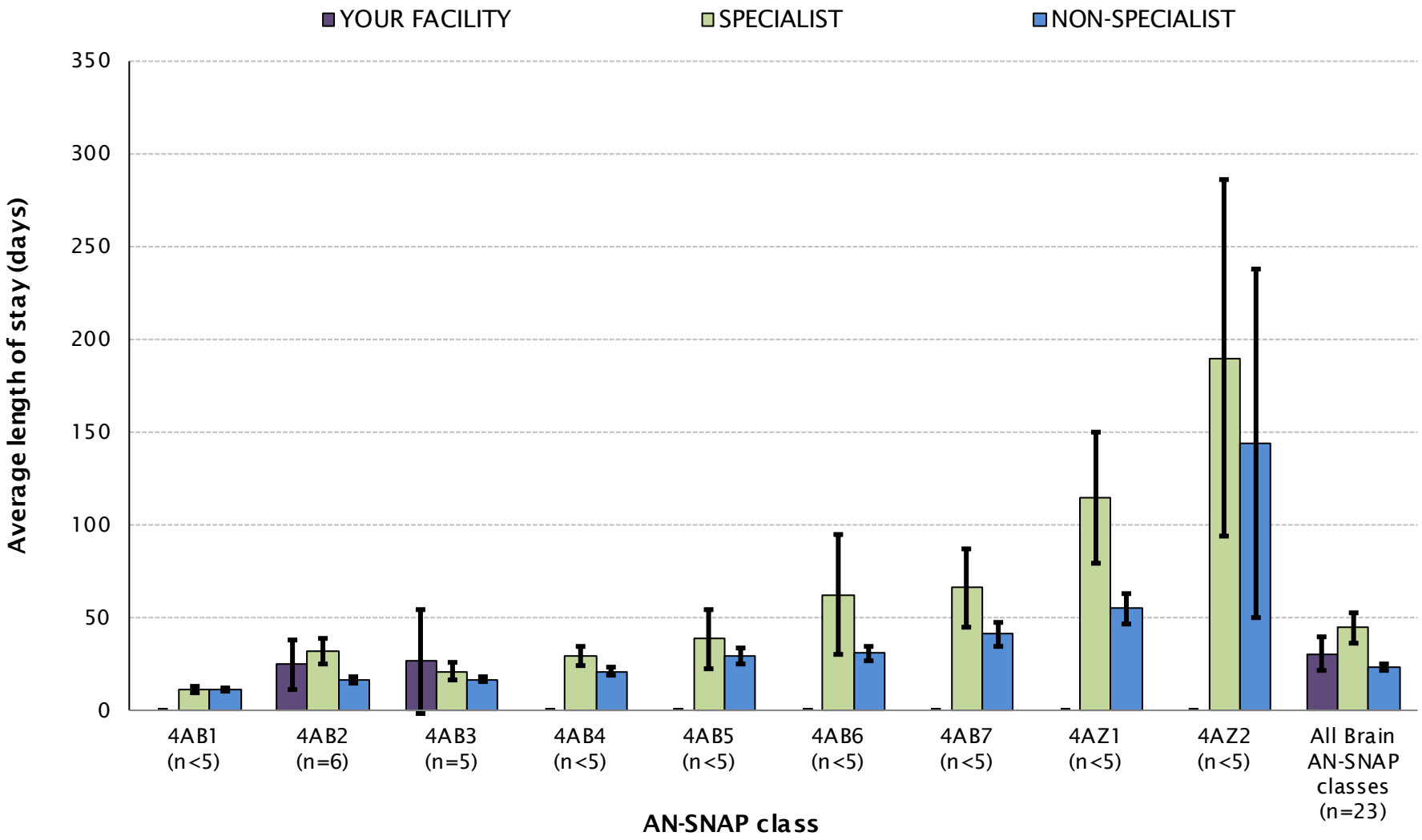
Note: First admission, completed episodes.

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



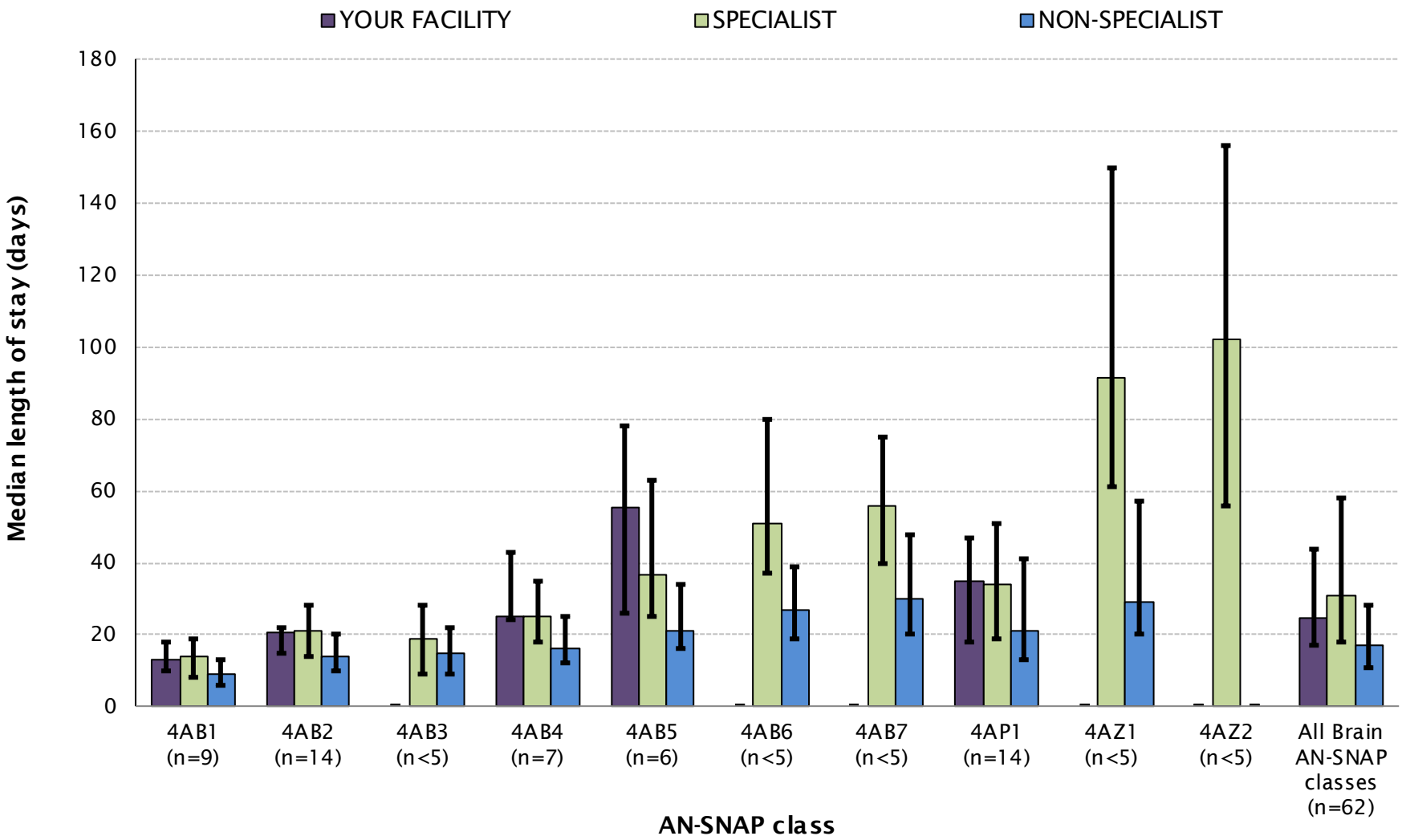
Note: First admission, completed episodes.

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



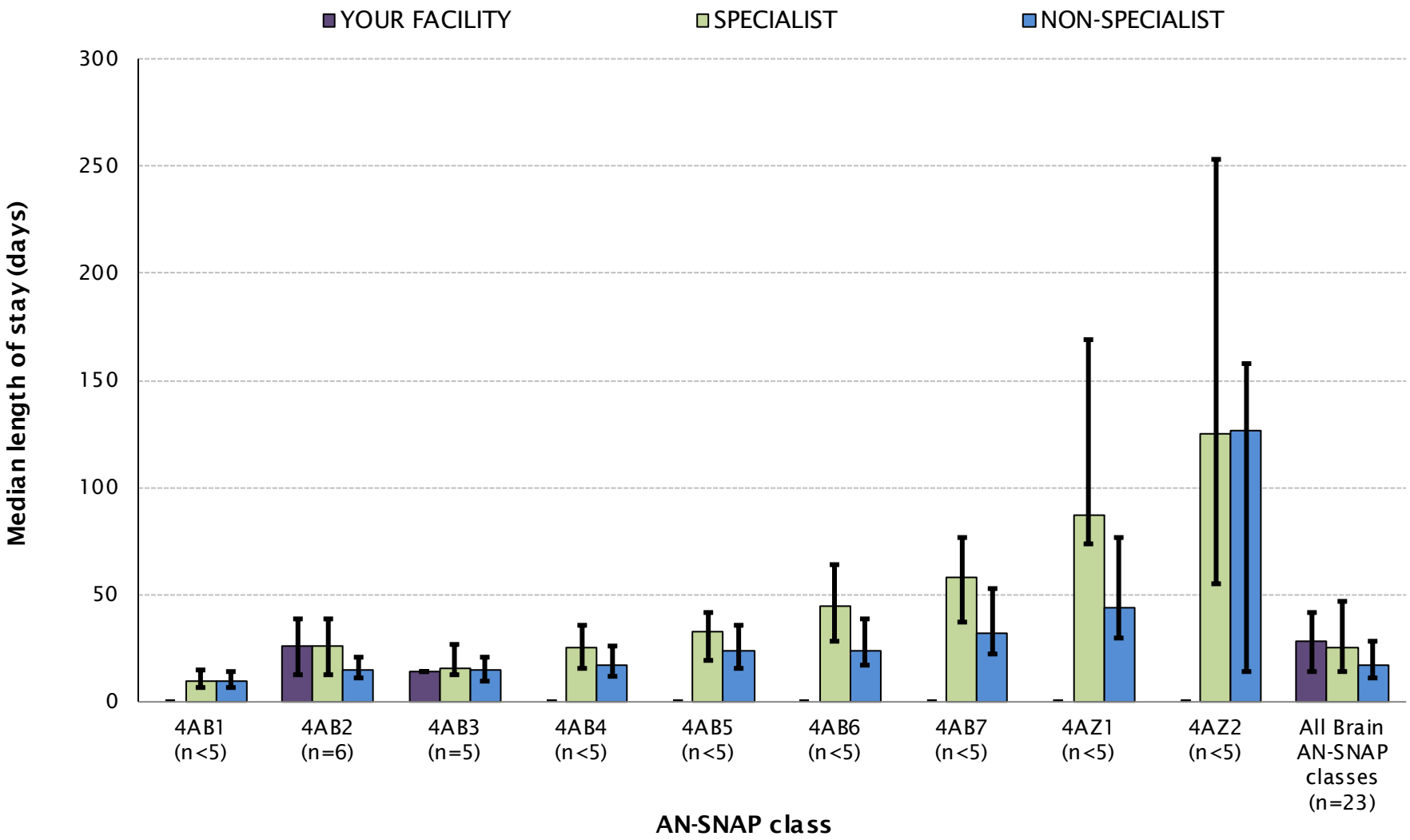
Note: First admission, completed episodes.

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



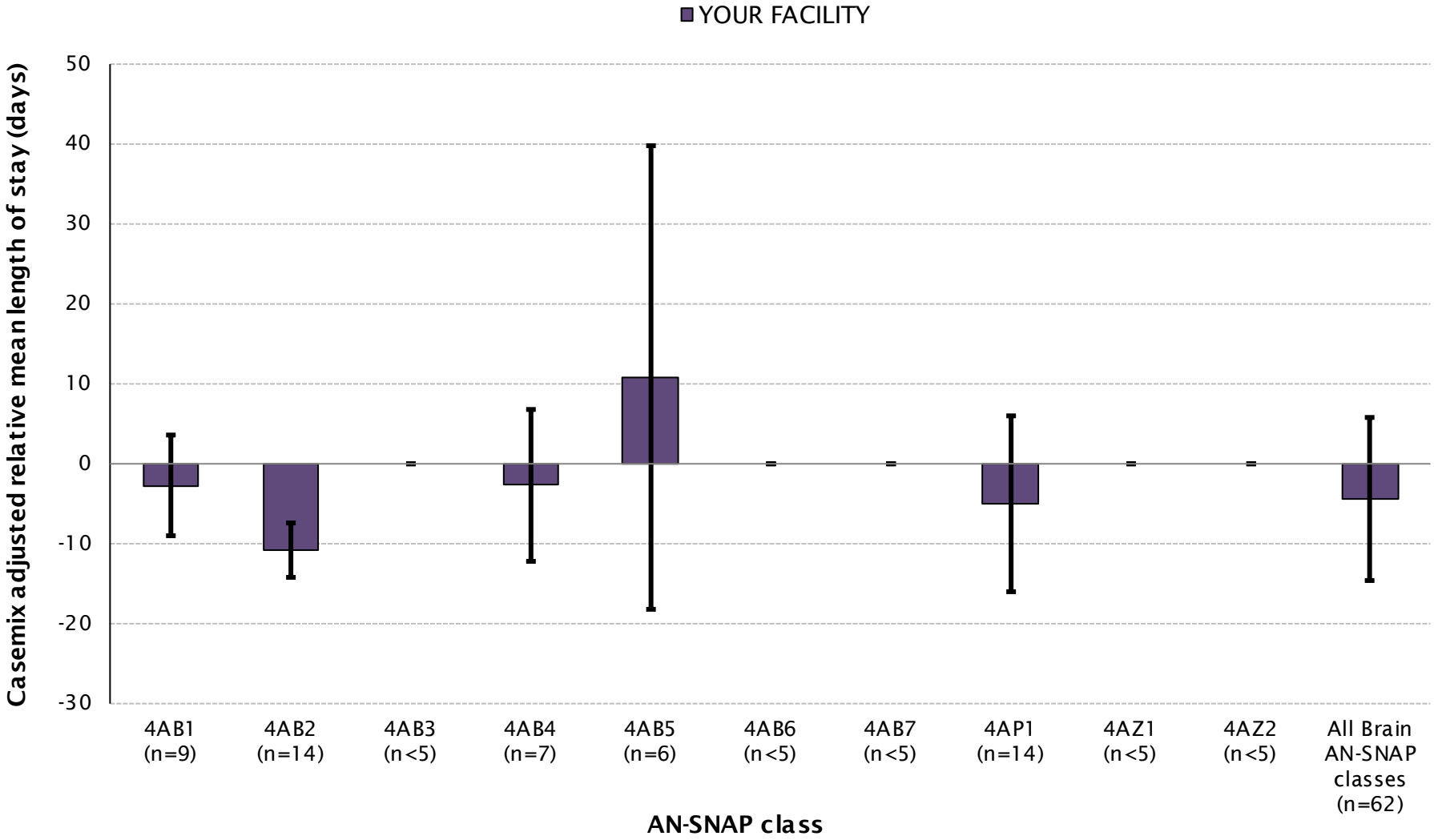
Note: First admission, completed episodes.

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



Note: First admission, completed episodes.

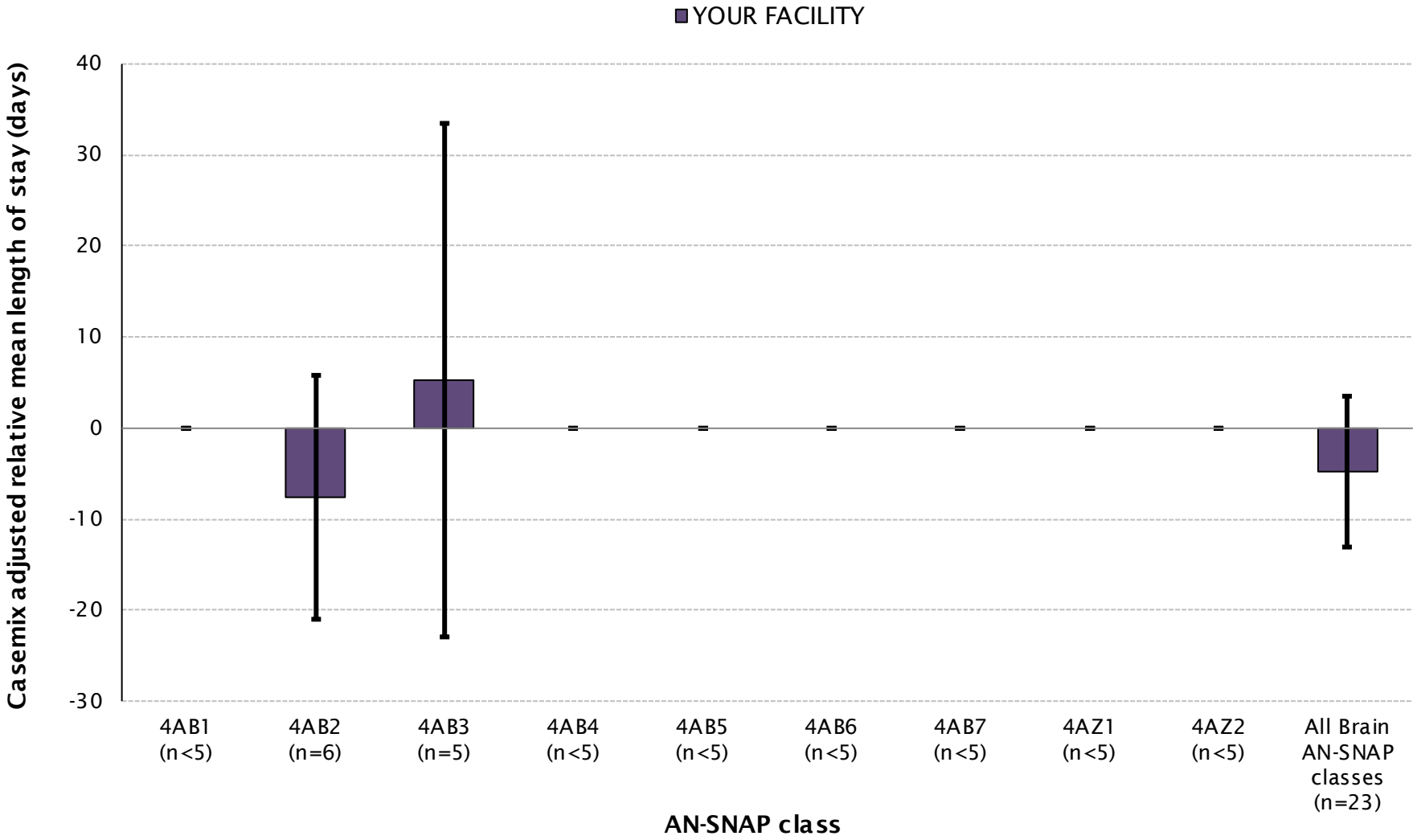
TBI casemix-adjusted* relative mean length of stay by AN-SNAP class



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

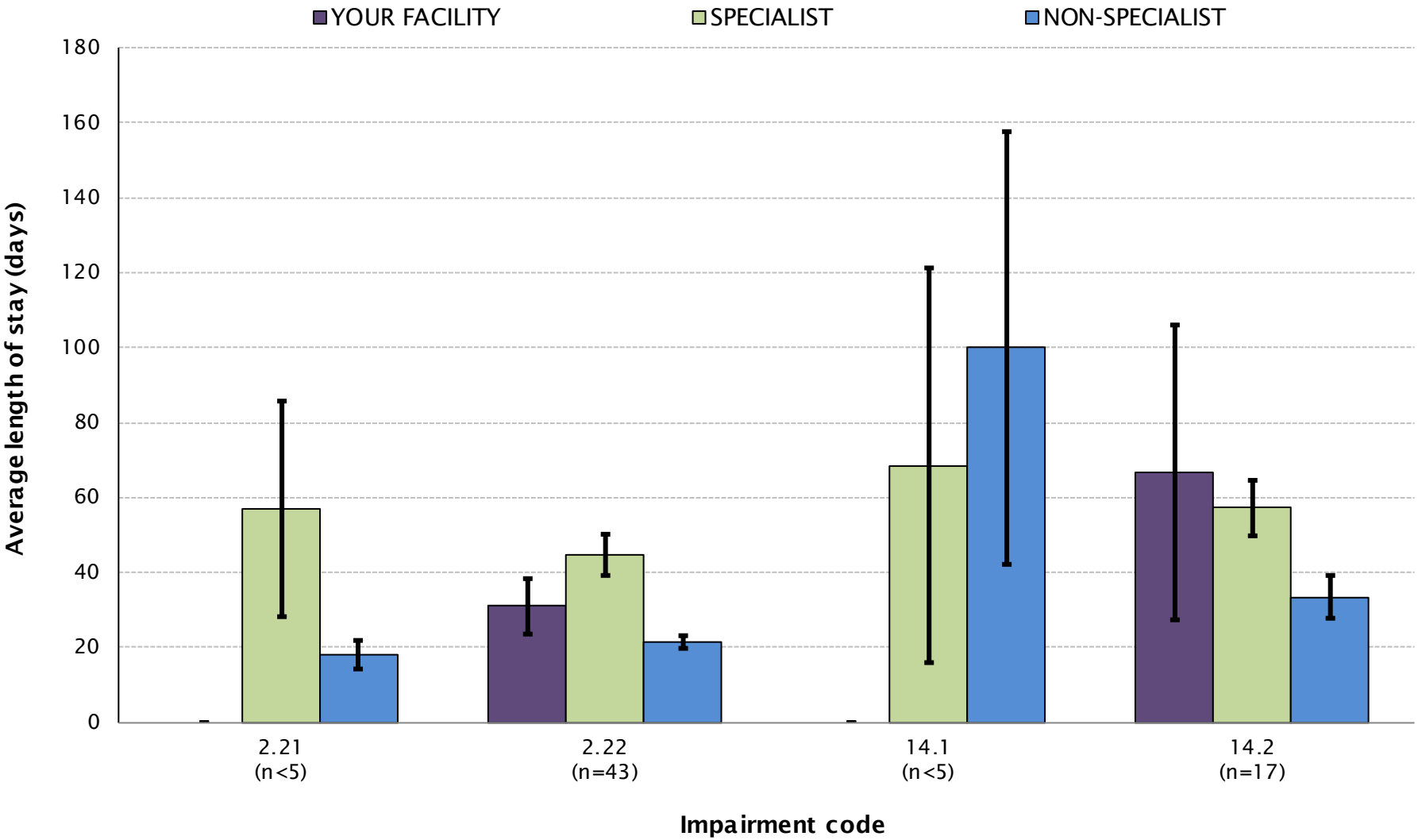
NTBI casemix-adjusted* relative mean length of stay by AN-SNAP class



Note: First admission, completed episodes.

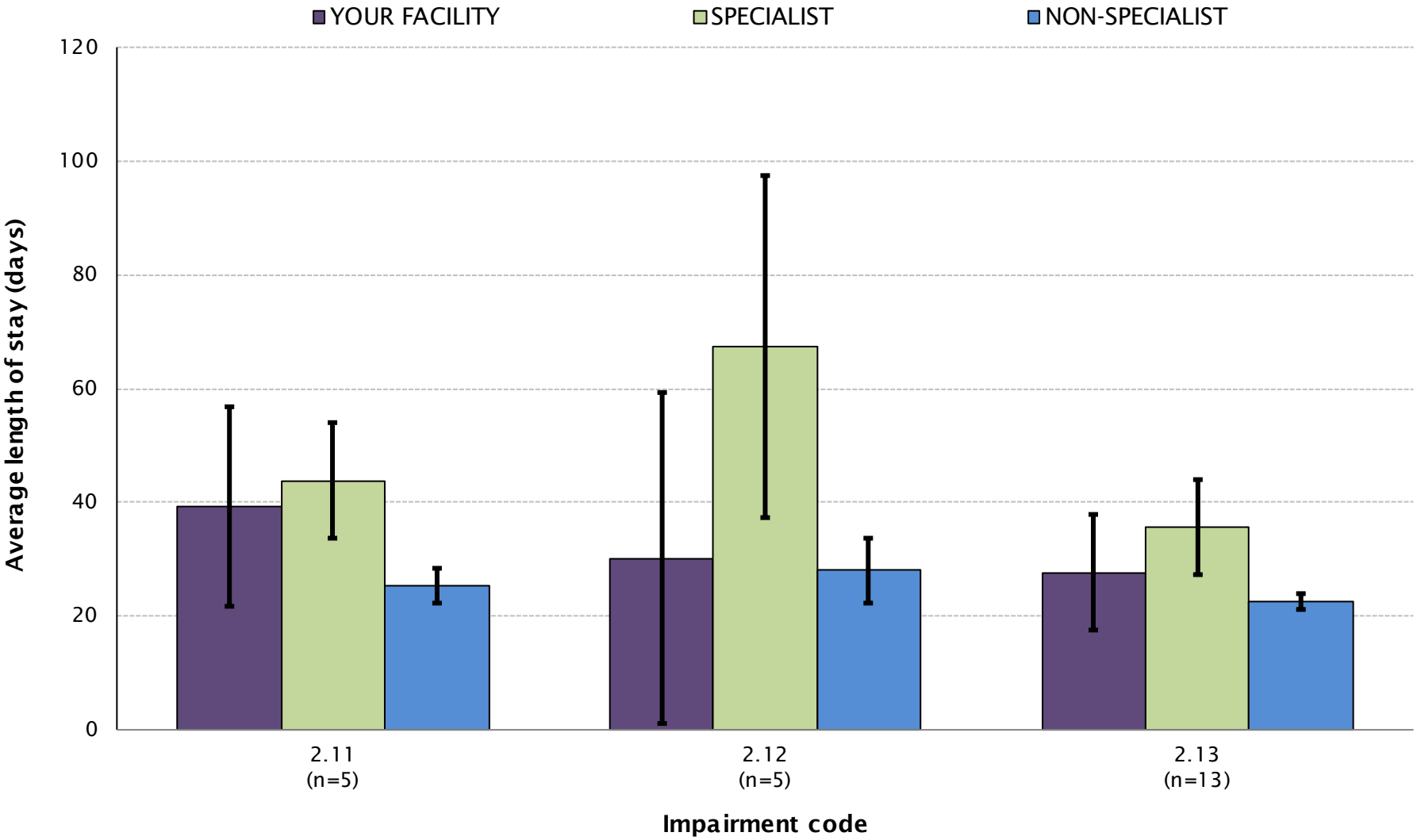
*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

Traumatic brain injury average length of stay by impairment



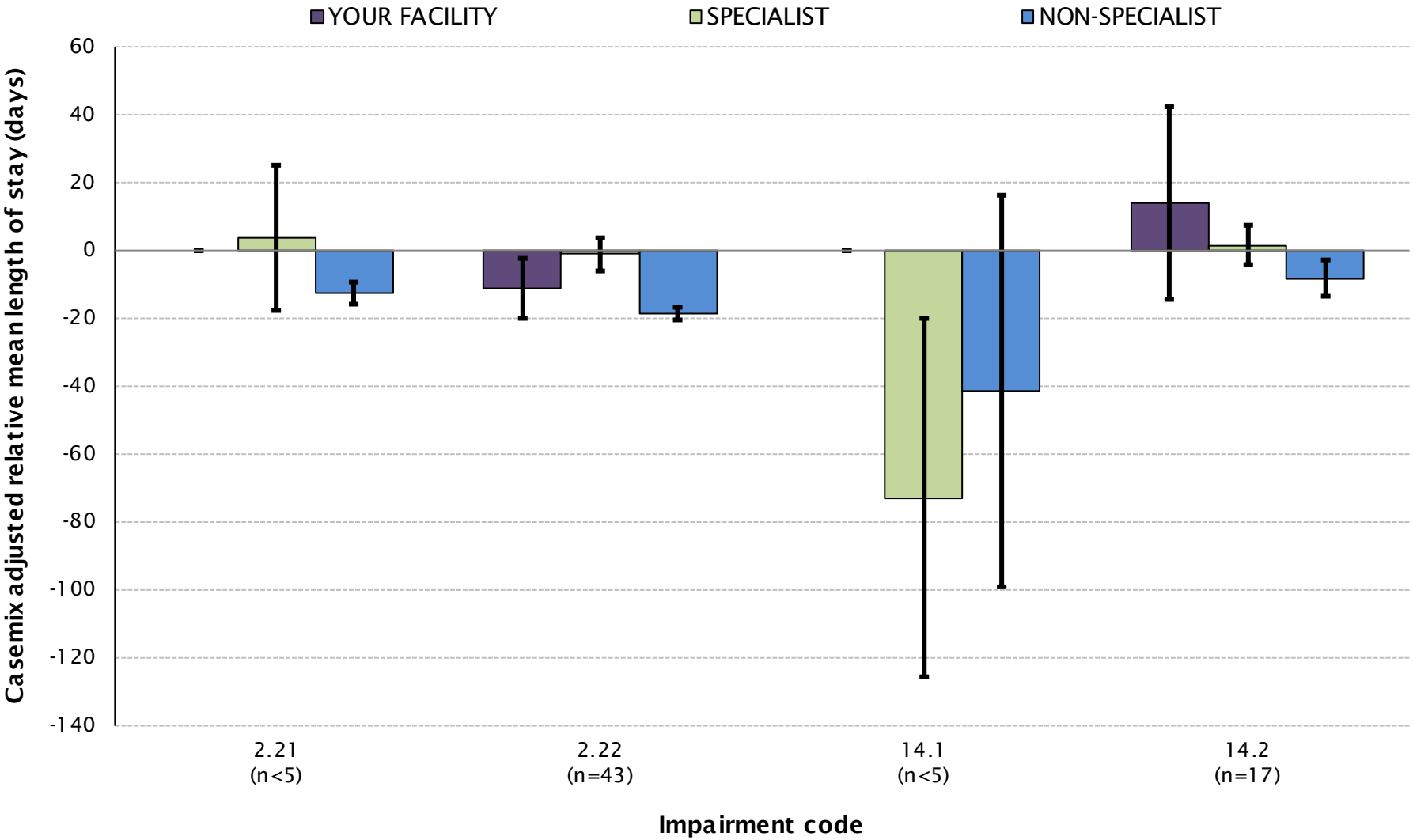
Note: First admission, completed episodes.

Non-traumatic brain injury average length of stay by impairment



Note: First admission, completed episodes.

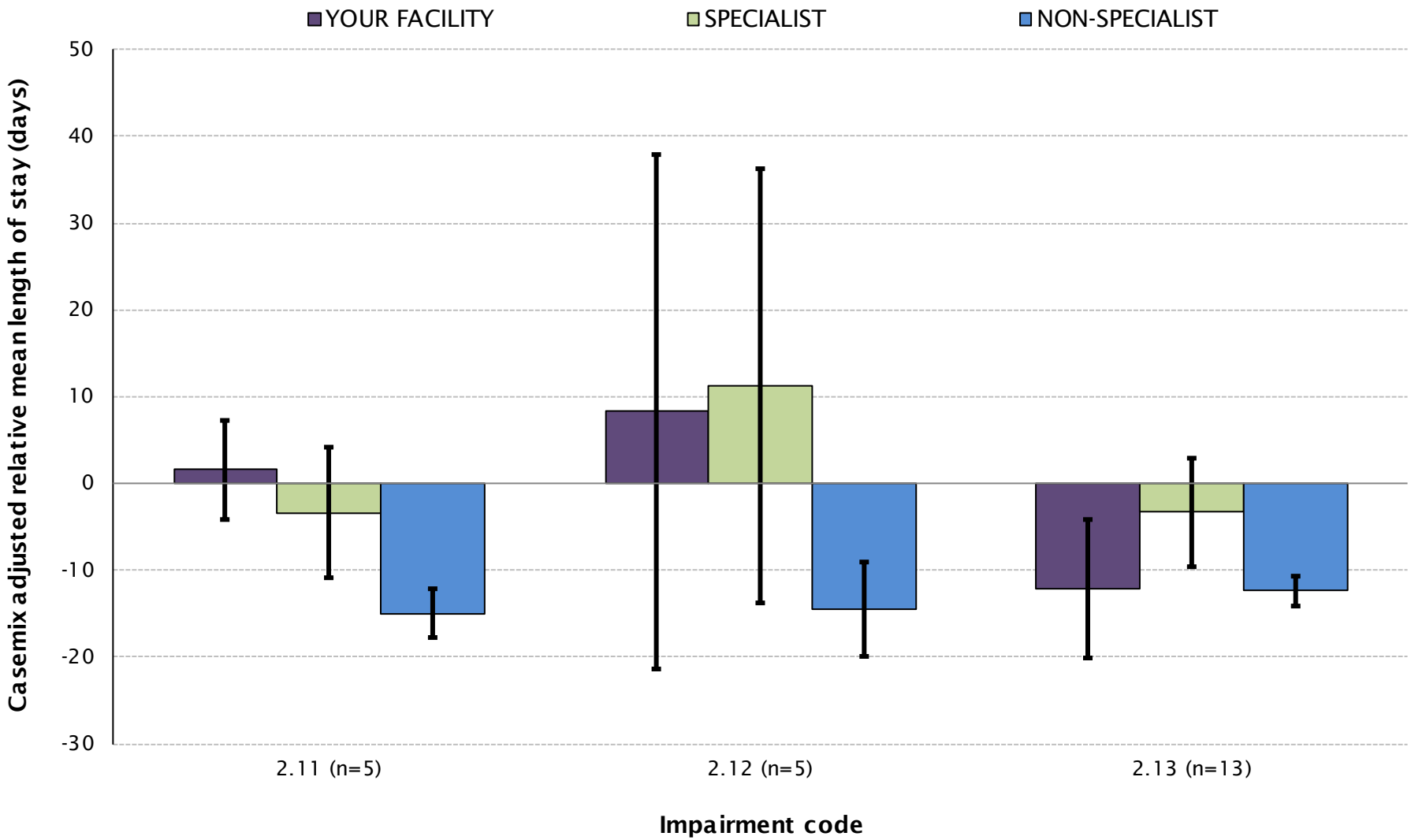
TBI casemix-adjusted* relative mean length of stay by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

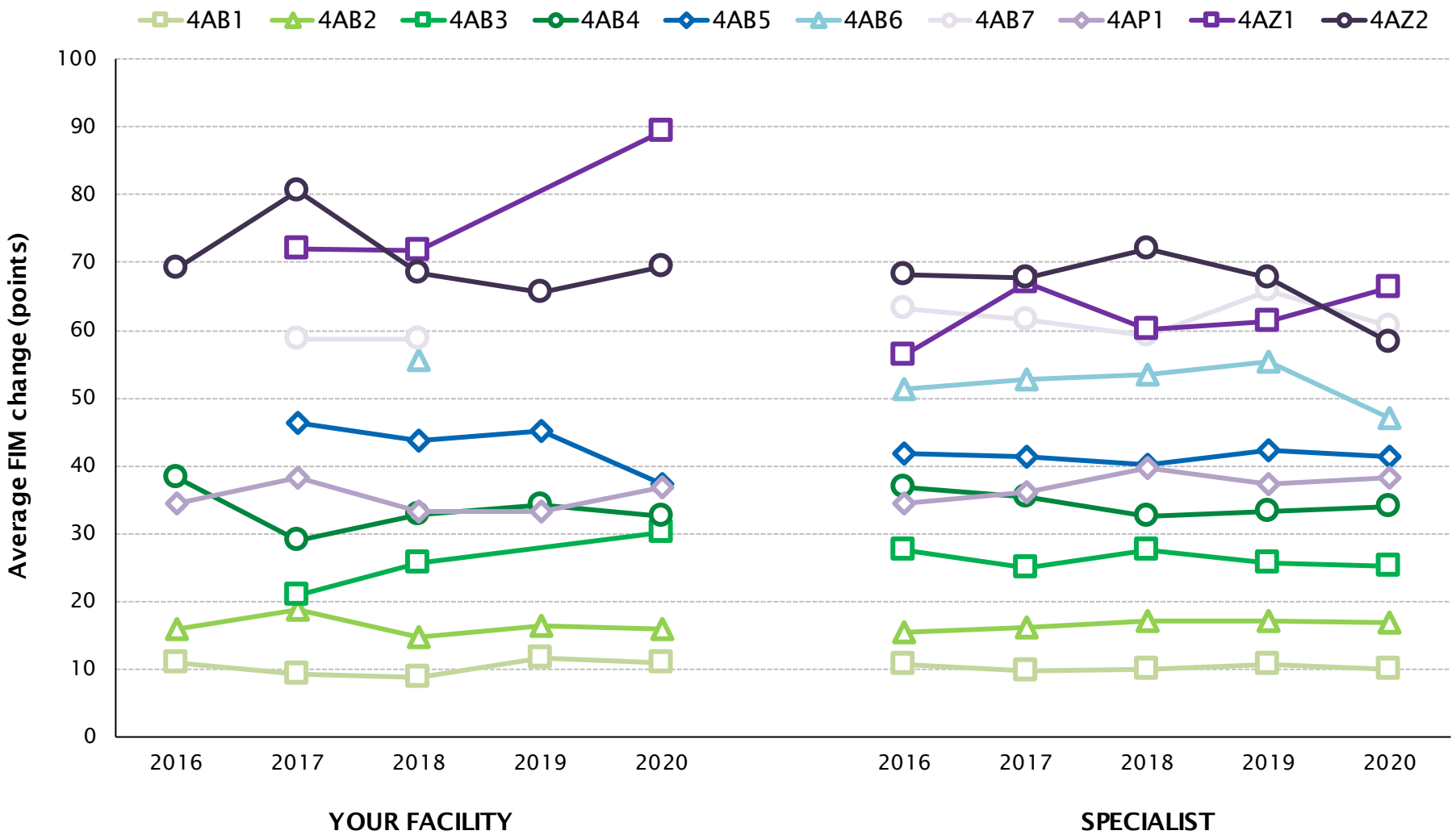
NTBI casemix-adjusted* relative mean length of stay by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

Average FIM change by AN-SNAP class over time



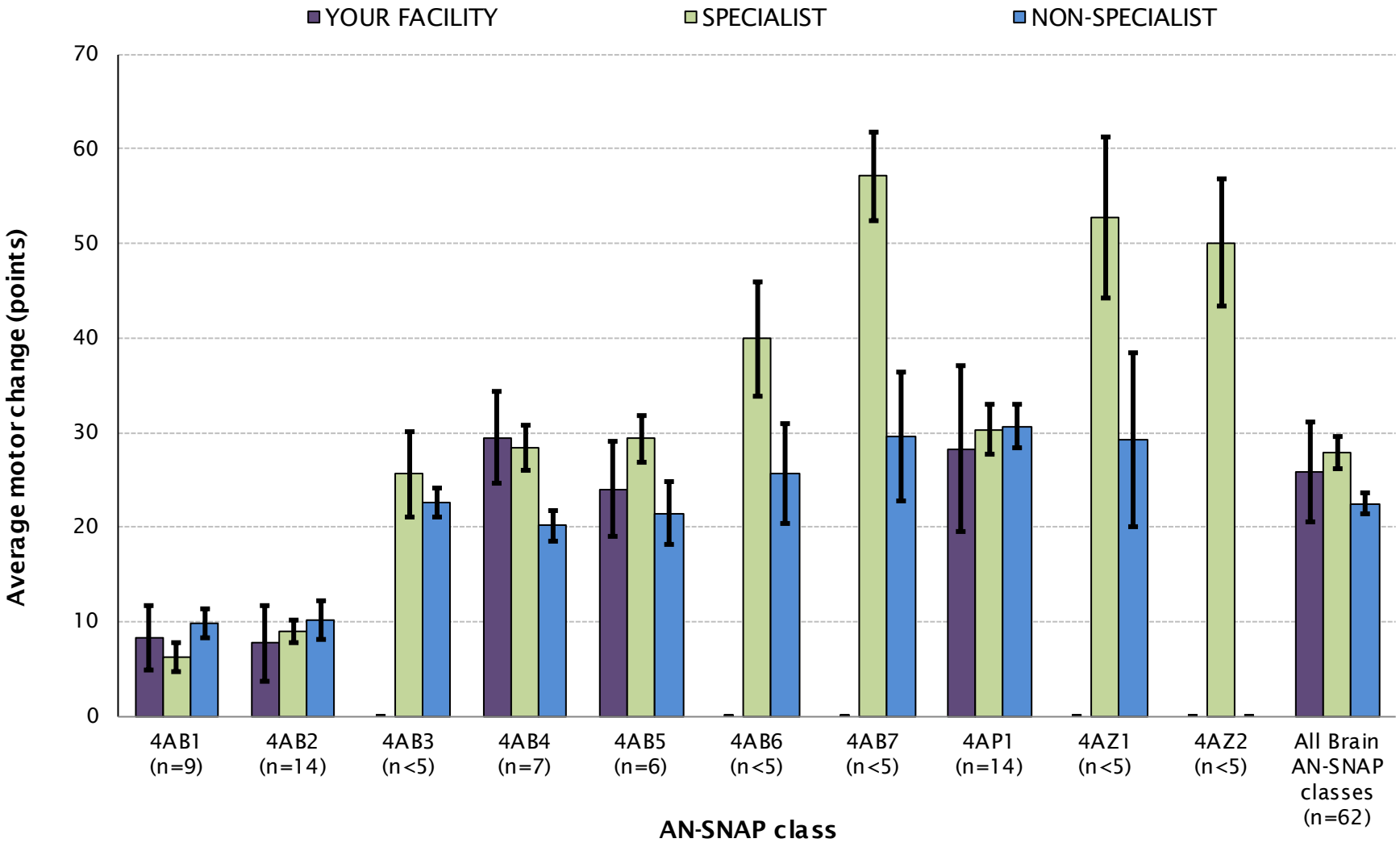
Note: First admission, completed episodes.

Average FIM change by AN-SNAP class over time

	YOUR FACILITY					SPECIALIST					NON-SPECIALIST				
AN-SNAP class	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
4AB1 (BI, weighted FIM motor 71-91, FIM cog 26-35)	10.9	9.3	8.8	11.6	10.8	10.7	9.6	10.0	10.6	10.1	10.9	11.1	10.8	11.1	11.2
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	15.9	18.7	14.8	16.4	15.8	15.3	16.1	17.0	17.2	16.9	13.2	14.4	13.8	12.5	14.3
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	—	20.9	25.6	—	30.2	27.6	25.0	27.6	25.6	25.3	22.3	22.8	22.8	22.6	23.6
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	38.3	29.1	32.7	34.3	32.5	36.7	35.5	32.5	33.3	34.0	24.4	25.0	24.9	24.8	24.4
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	46.3	43.7	45.2	37.3	41.9	41.4	40.2	42.2	41.2	30.3	28.7	25.8	23.3	26.3
4AB6 (BI, weighted FIM motor 29-40)	—	—	55.6	—	—	51.3	52.7	53.4	55.5	47.0	32.4	34.4	30.6	30.4	32.7
4AB7 (BI, weighted FIM motor 19-28)	—	58.6	58.6	—	—	63.3	61.5	59.2	65.9	60.5	37.2	36.3	32.5	32.9	37.1
4AP1 (MMT, weighted FIM motor 19-91)	34.6	38.2	33.3	33.4	36.9	34.6	36.2	39.7	37.2	38.4	34.5	36.1	28.7	33.3	34.1
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	72.0	71.8	—	89.4	56.3	67.0	60.2	61.4	66.2	35.8	31.6	36.1	35.9	35.0
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	69.2	80.5	68.4	65.6	69.5	68.2	67.7	71.9	67.7	58.3	58.5	50.1	51.0	18.1	51.8
All Brain AN-SNAP classes	**33.3**	**36.2**	**37.2**	**32.9**	**34.0**	**31.3**	**33.4**	**34.1**	**35.8**	**34.3**	**23.7**	**24.2**	**23.2**	**22.8**	**24.4**

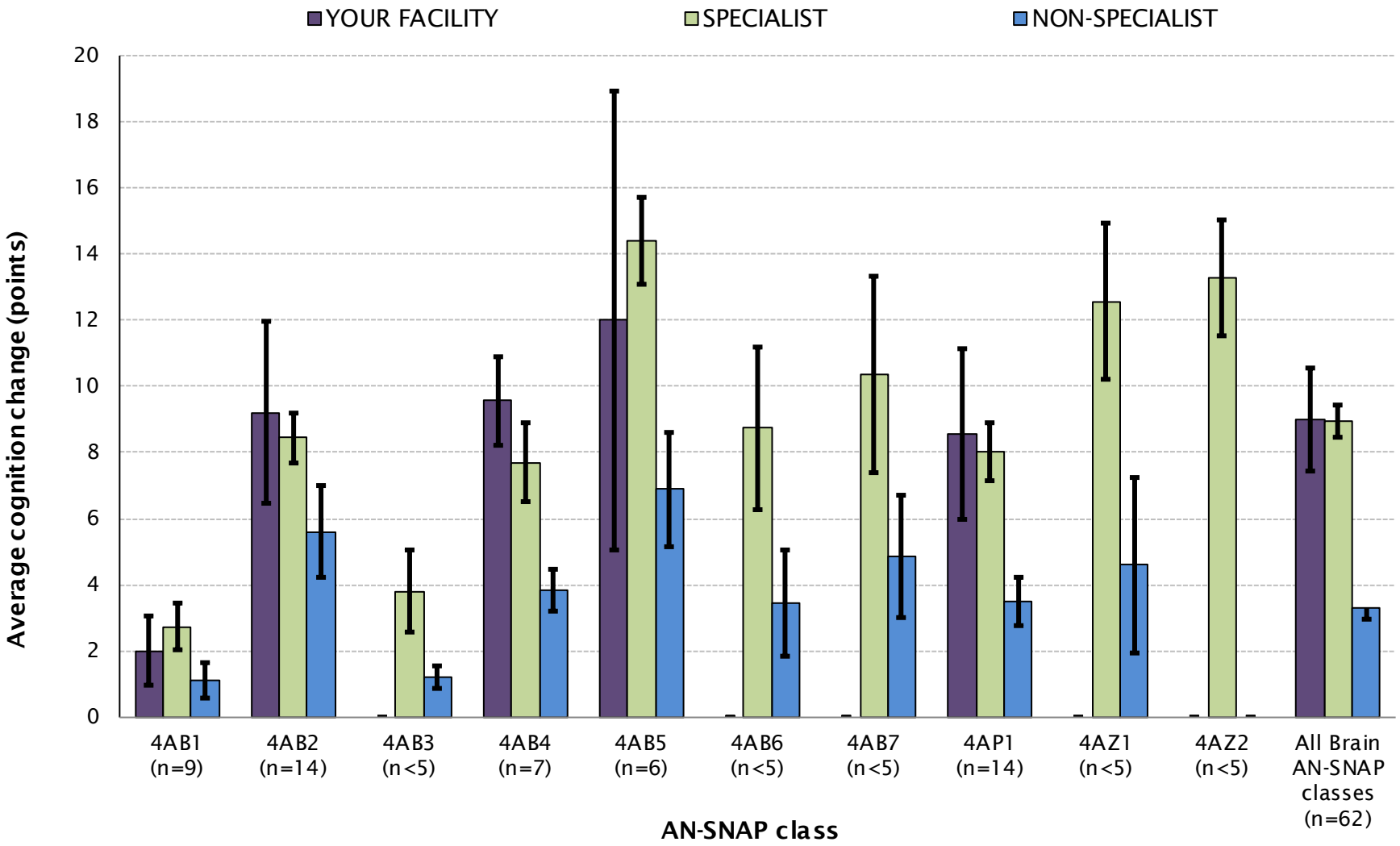
Note: First admission, completed episodes.

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



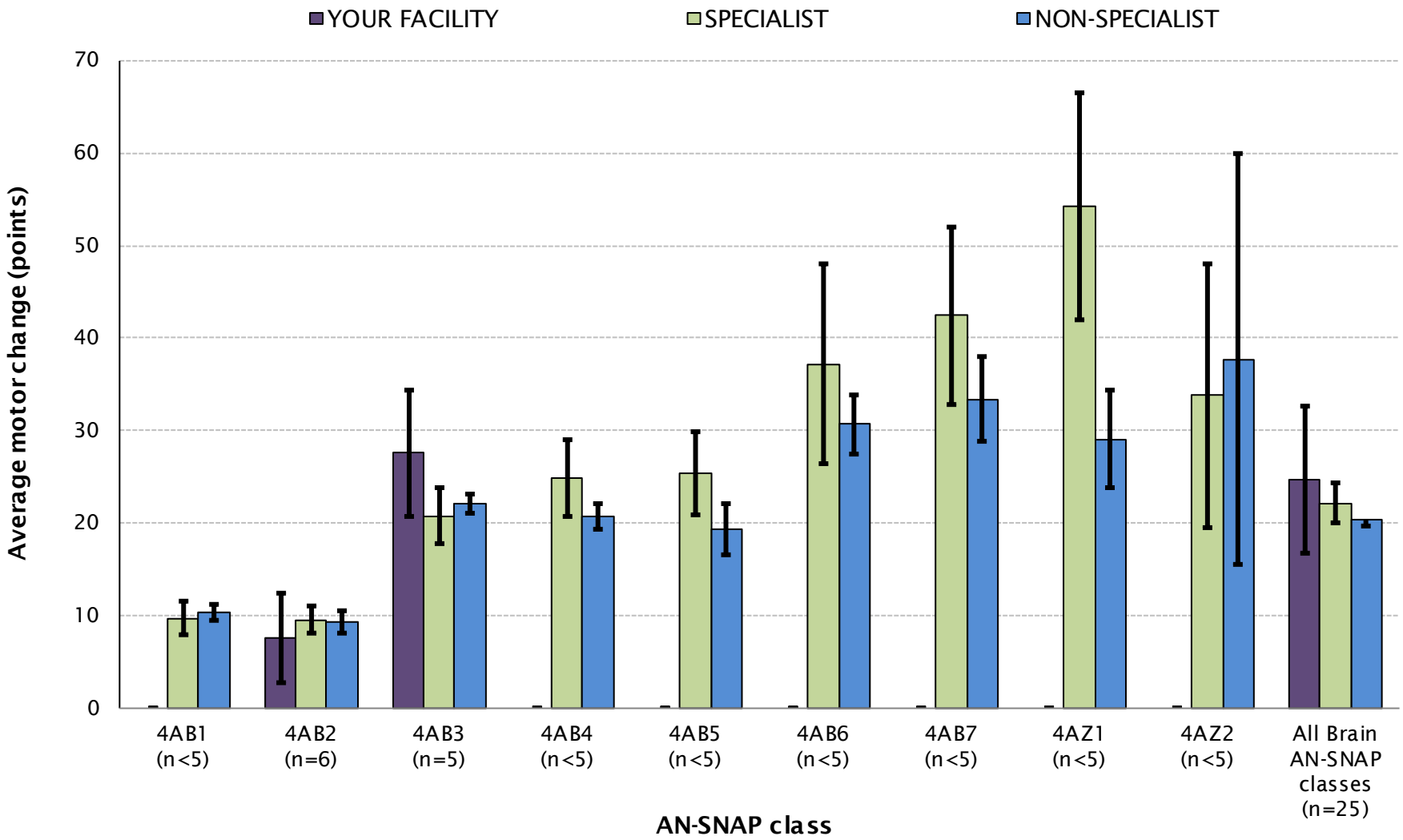
Note: First admission, completed episodes.

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



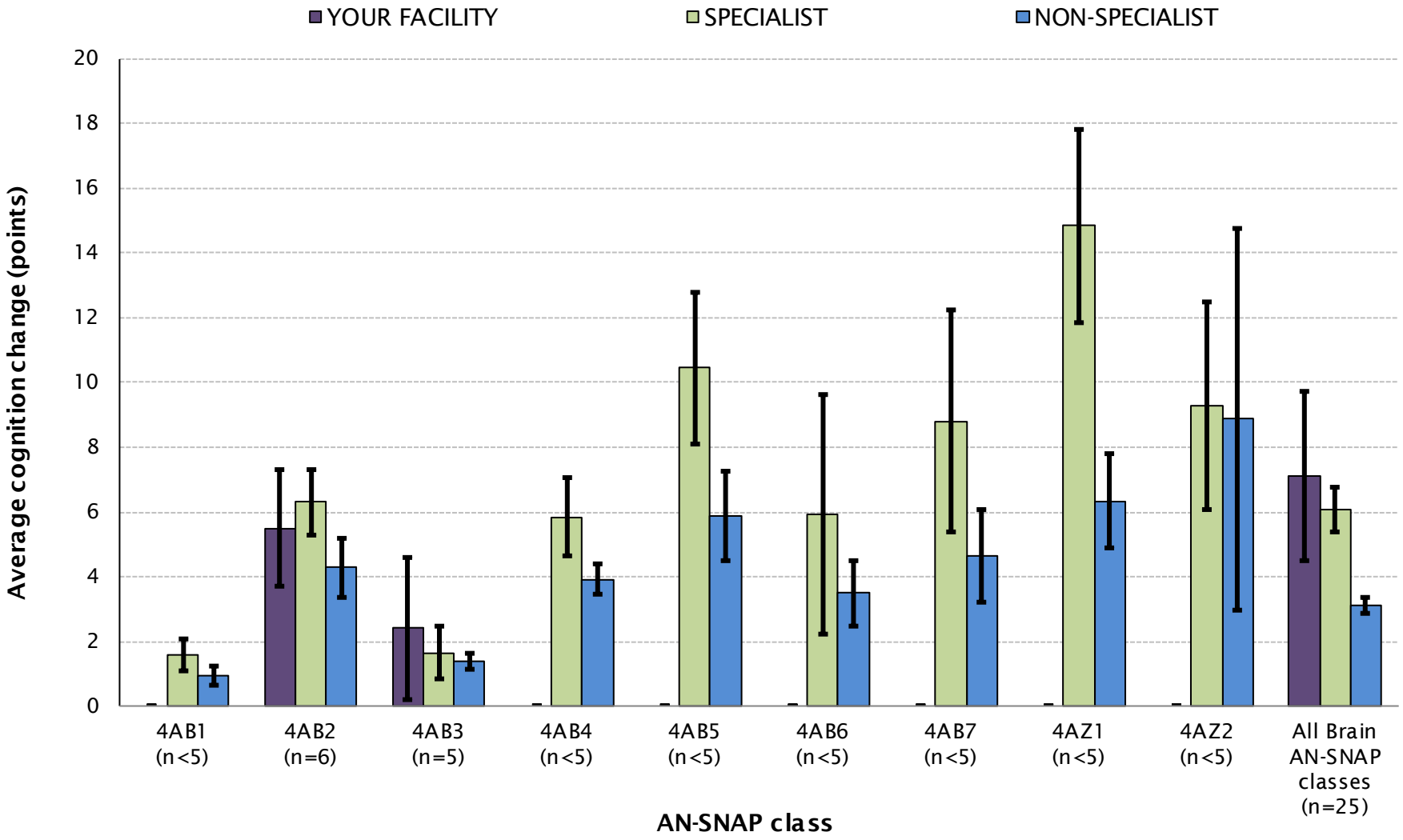
Note: First admission, completed episodes.

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



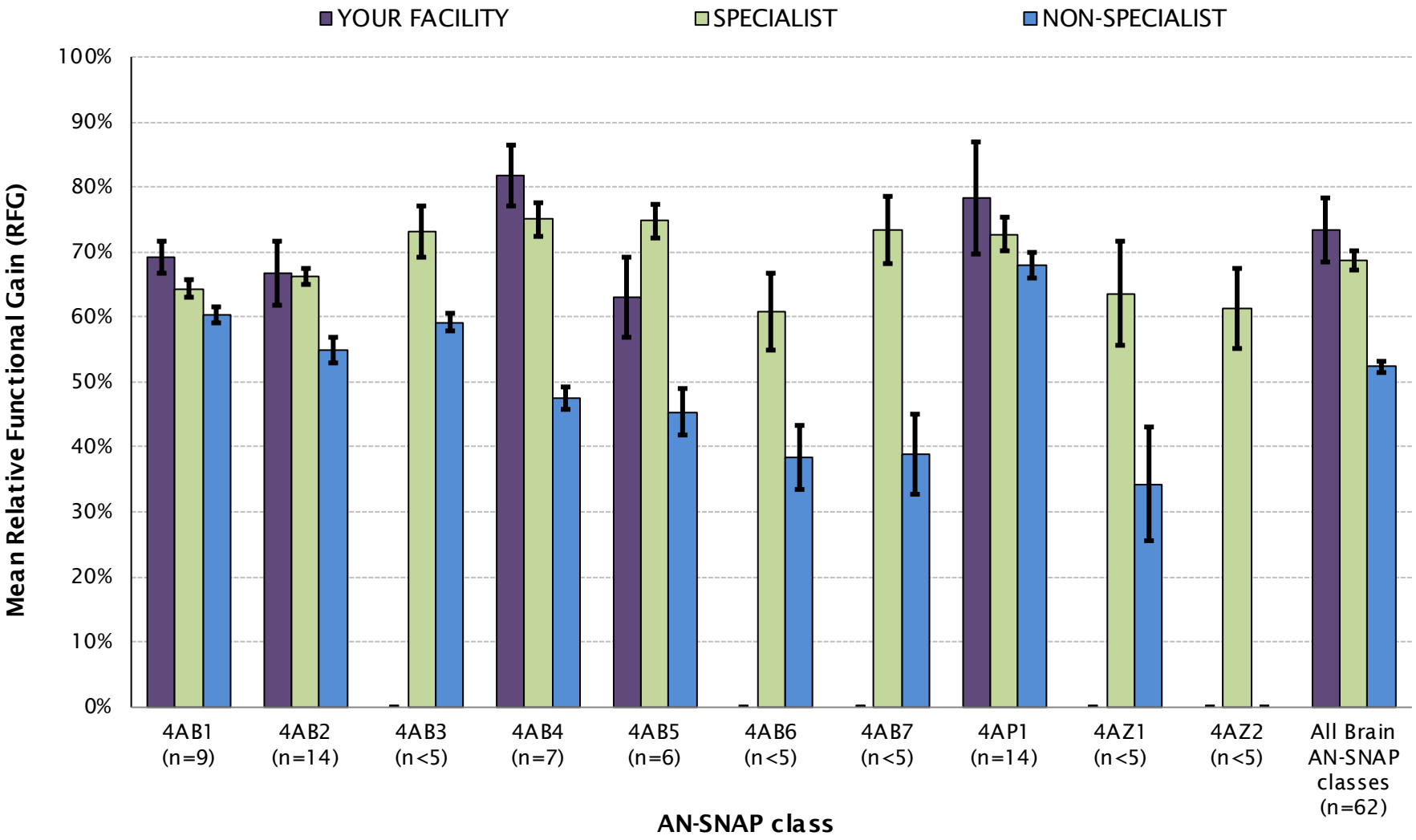
Note: First admission, completed episodes.

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



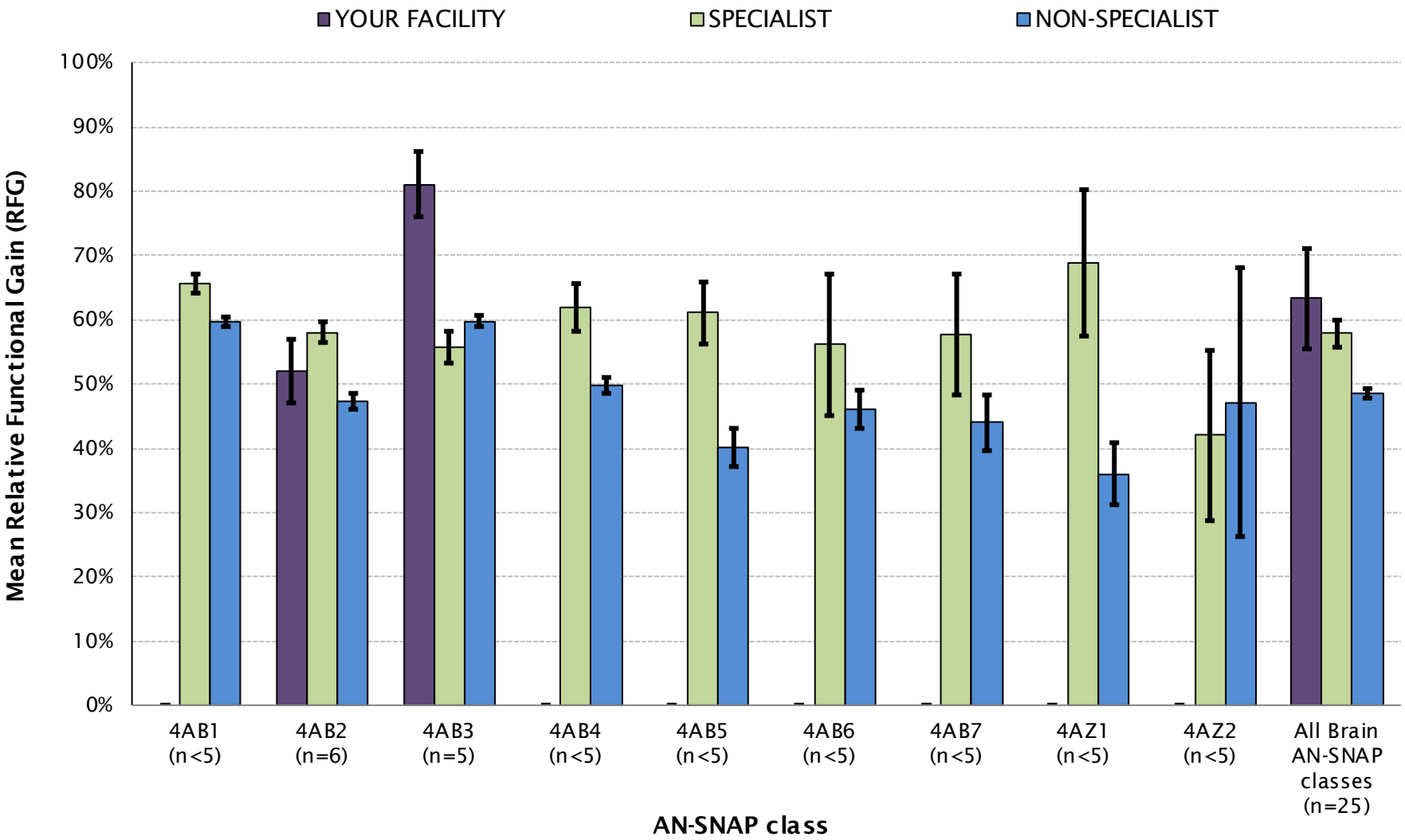
Note: First admission, completed episodes.

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



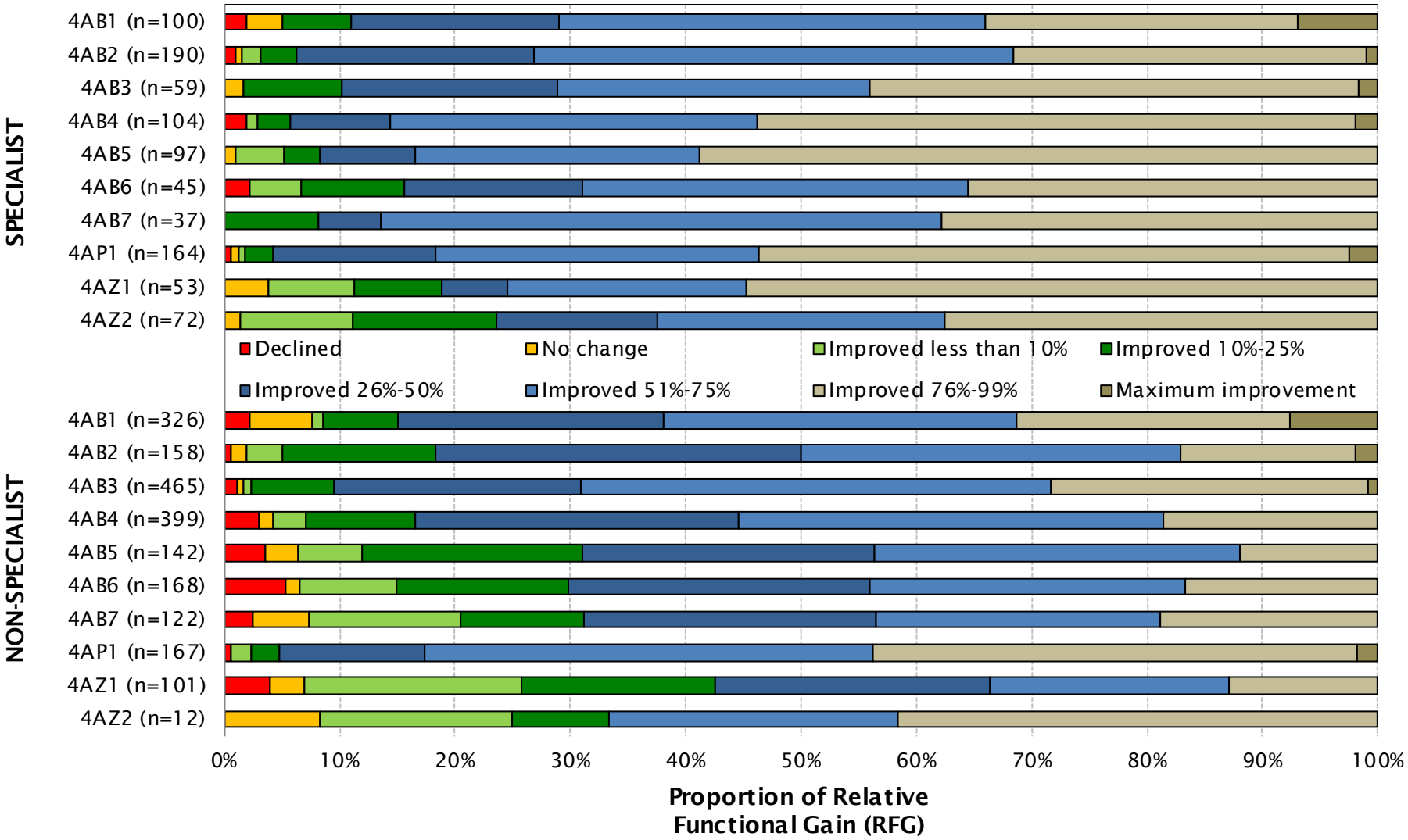
Note: First admission, completed episodes.

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



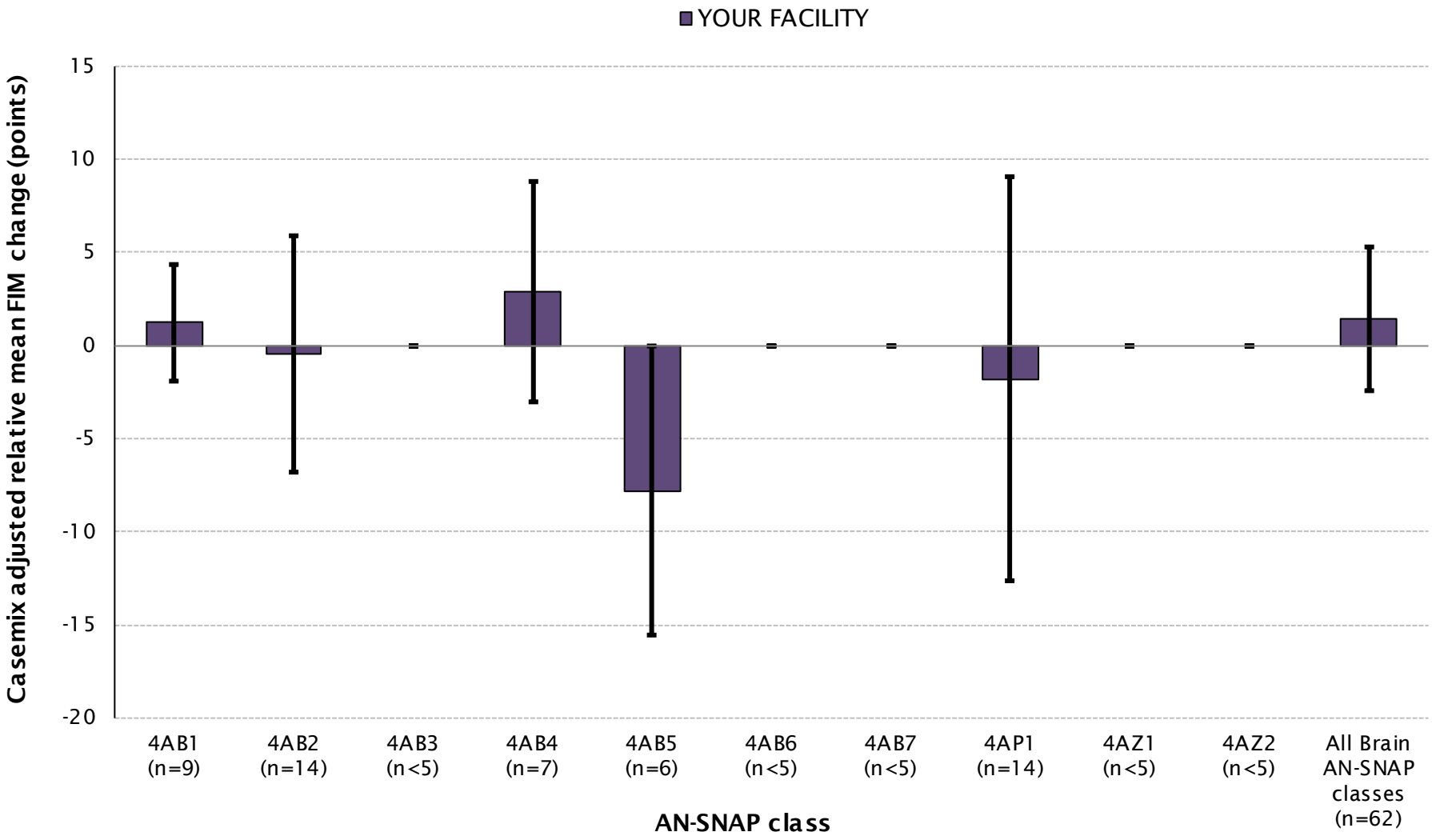
Note: First admission, completed episodes.

Relative functional gain by AN-SNAP class



Note: First admission, completed episodes.

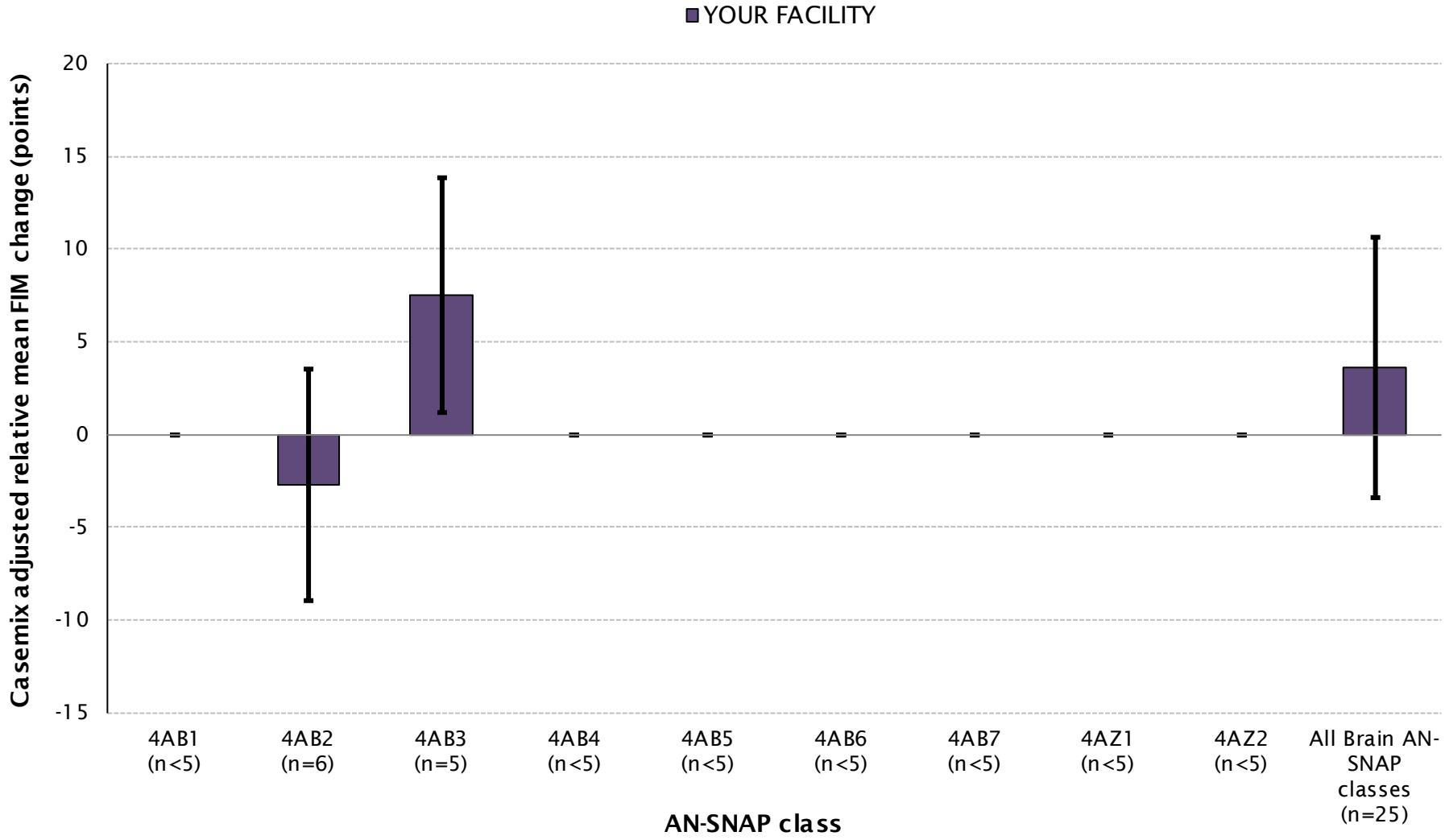
TBI casemix-adjusted* relative mean FIM change by AN-SNAP class



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

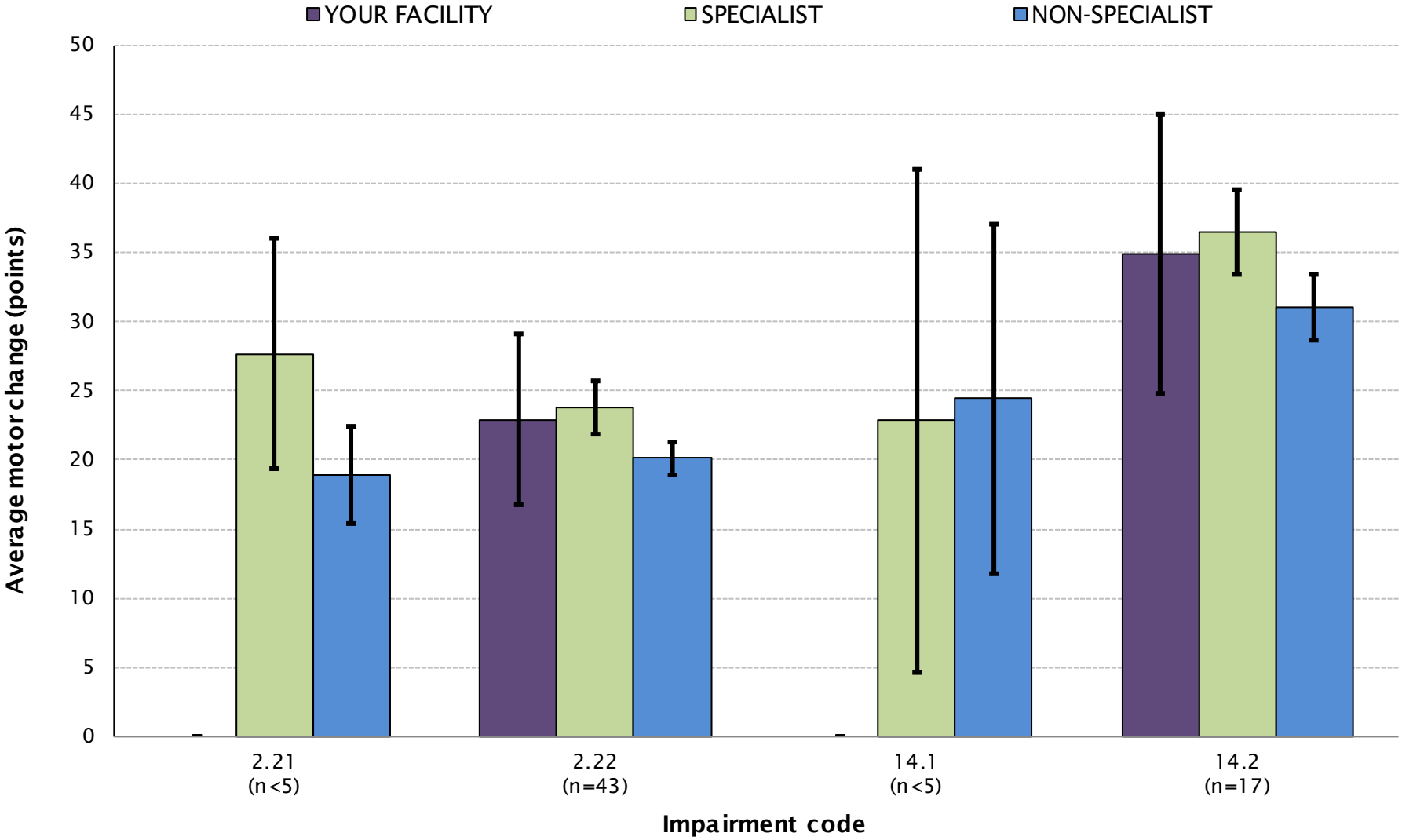
NTBI casemix-adjusted* relative mean FIM change by AN-SNAP class



Note: First admission, completed episodes.

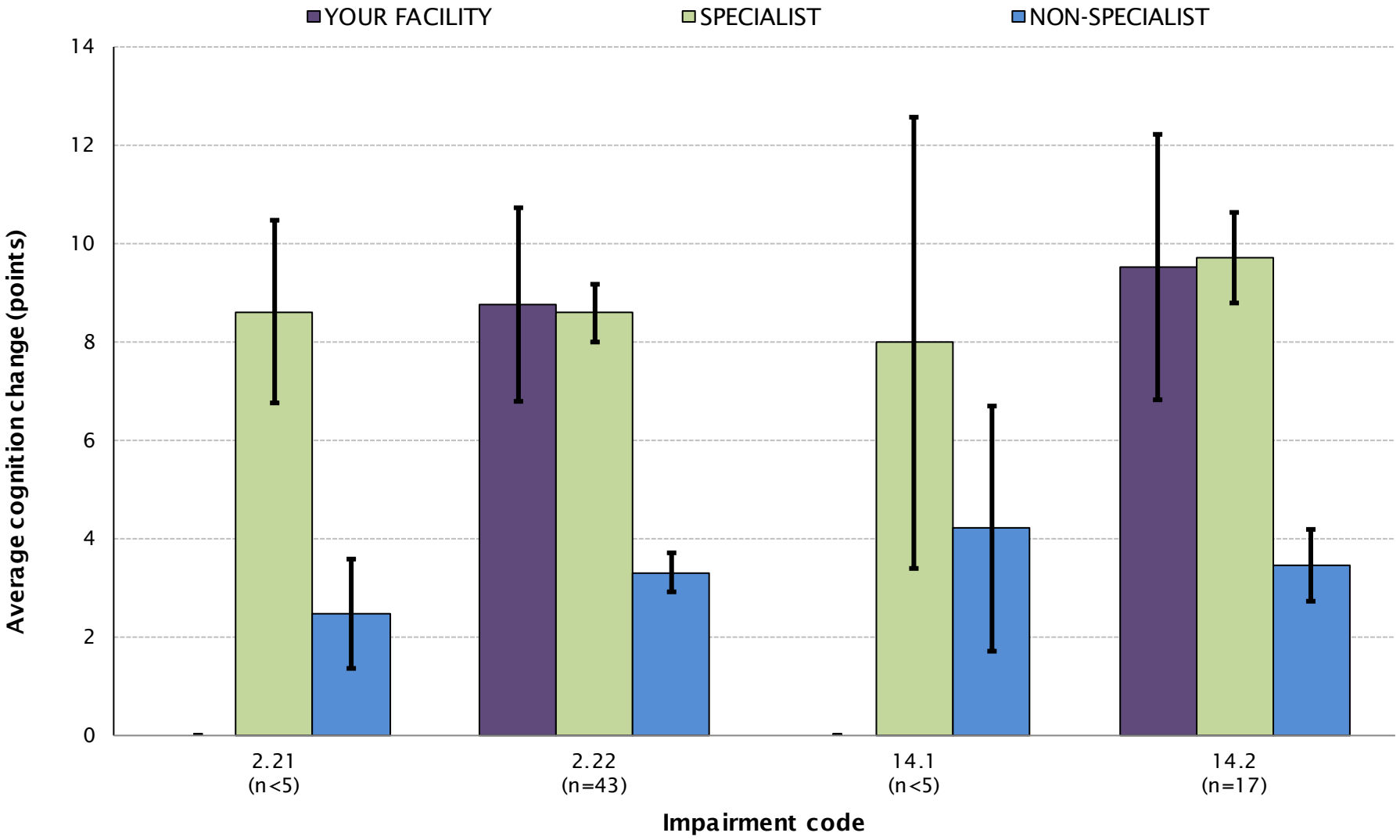
*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

Traumatic brain injury average FIM motor change by impairment



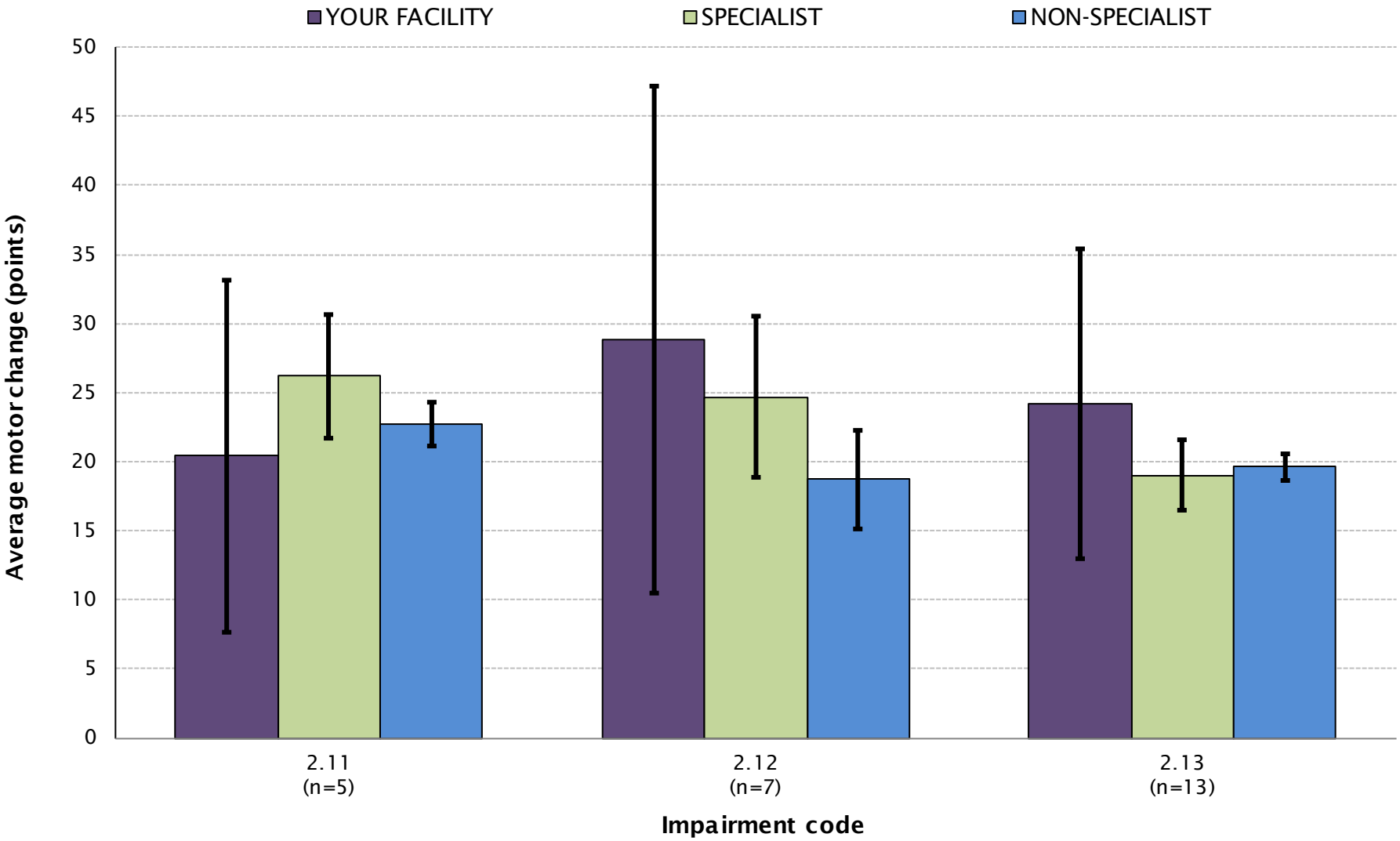
Note: First admission, completed episodes.

Traumatic brain injury average FIM cognition change by impairment



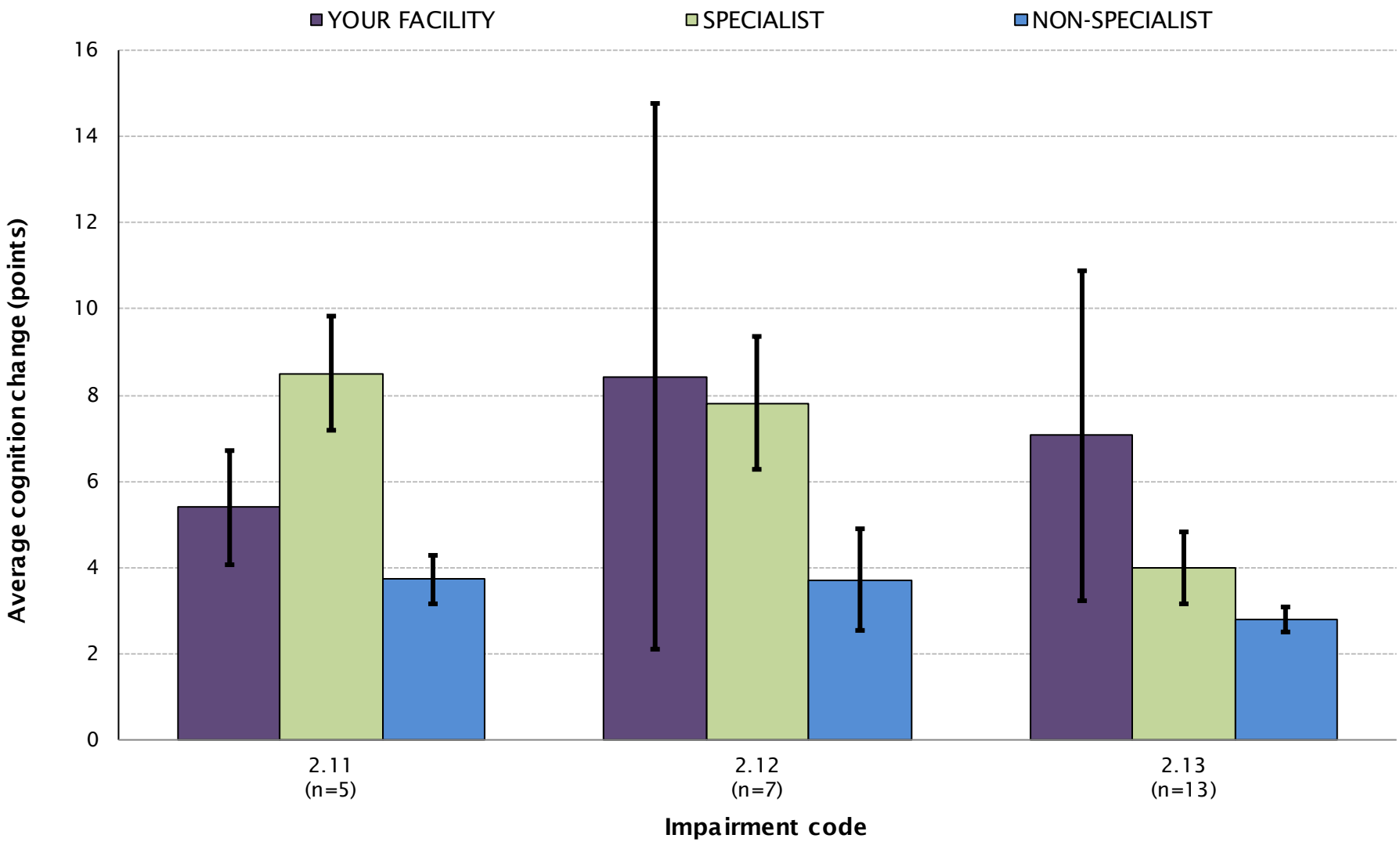
Note: First admission, completed episodes.

Non-traumatic brain injury average FIM motor change by impairment



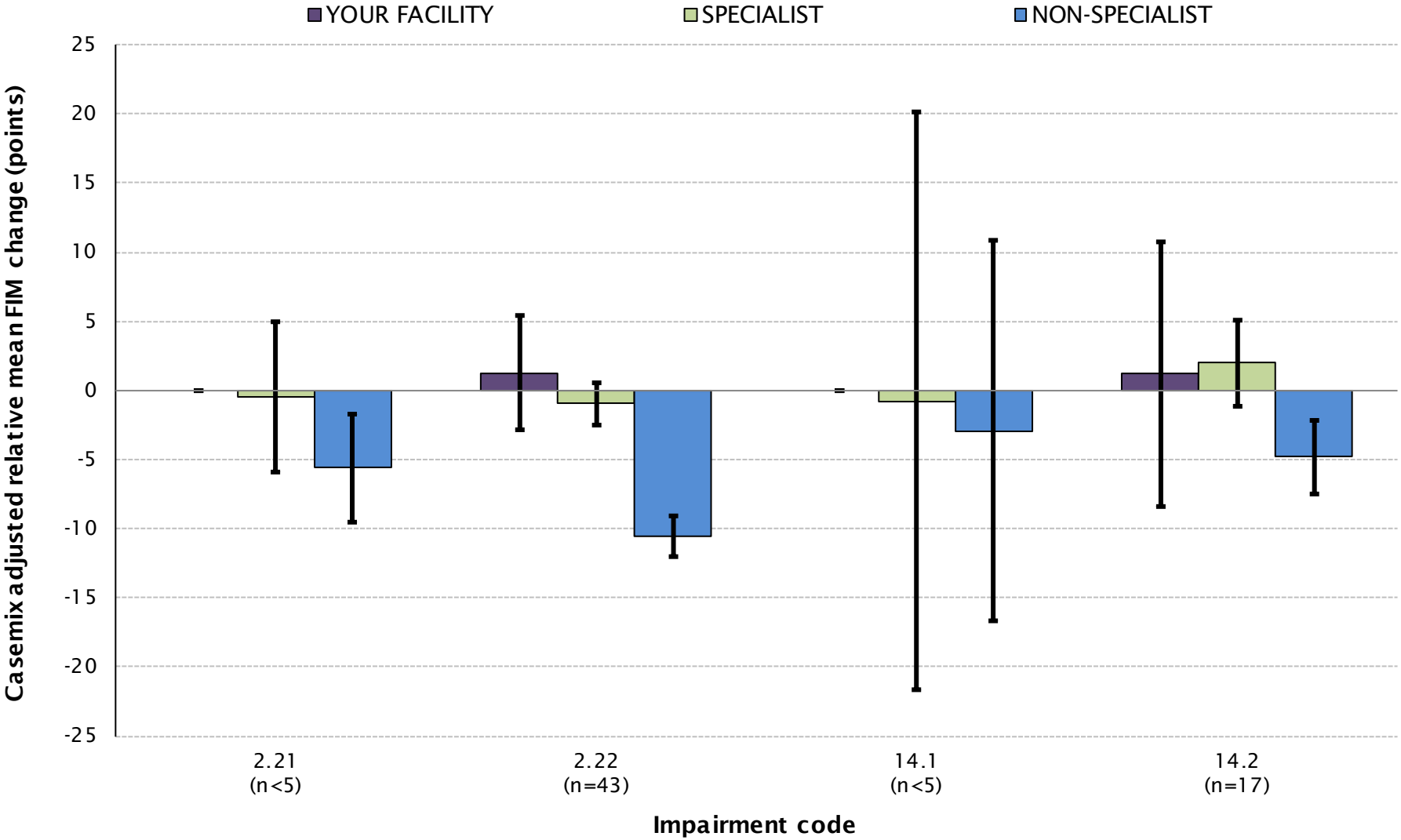
Note: First admission, completed episodes.

Non-traumatic brain injury average FIM cognition change by impairment



Note: First admission, completed episodes.

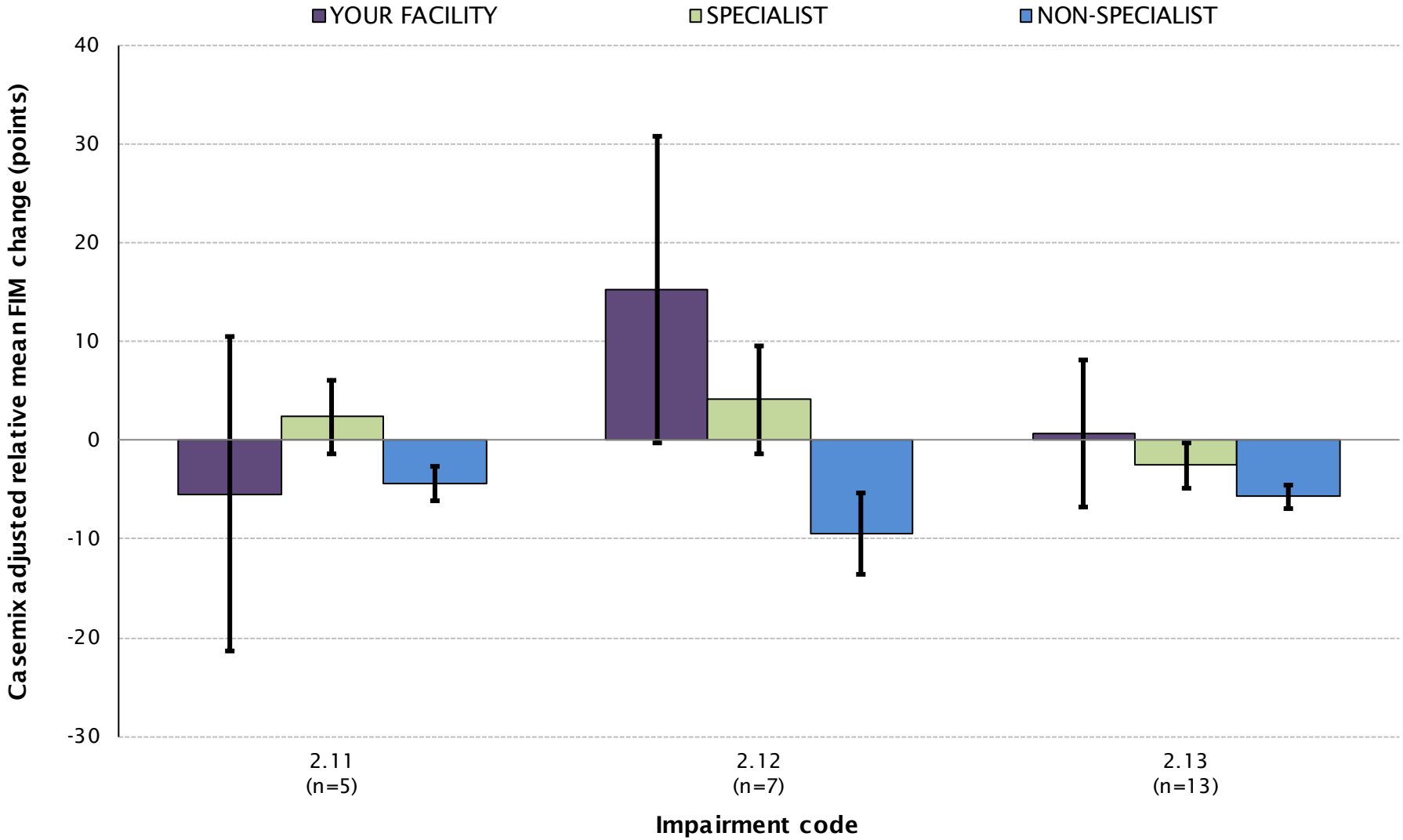
TBI casemix-adjusted* relative mean FIM change by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

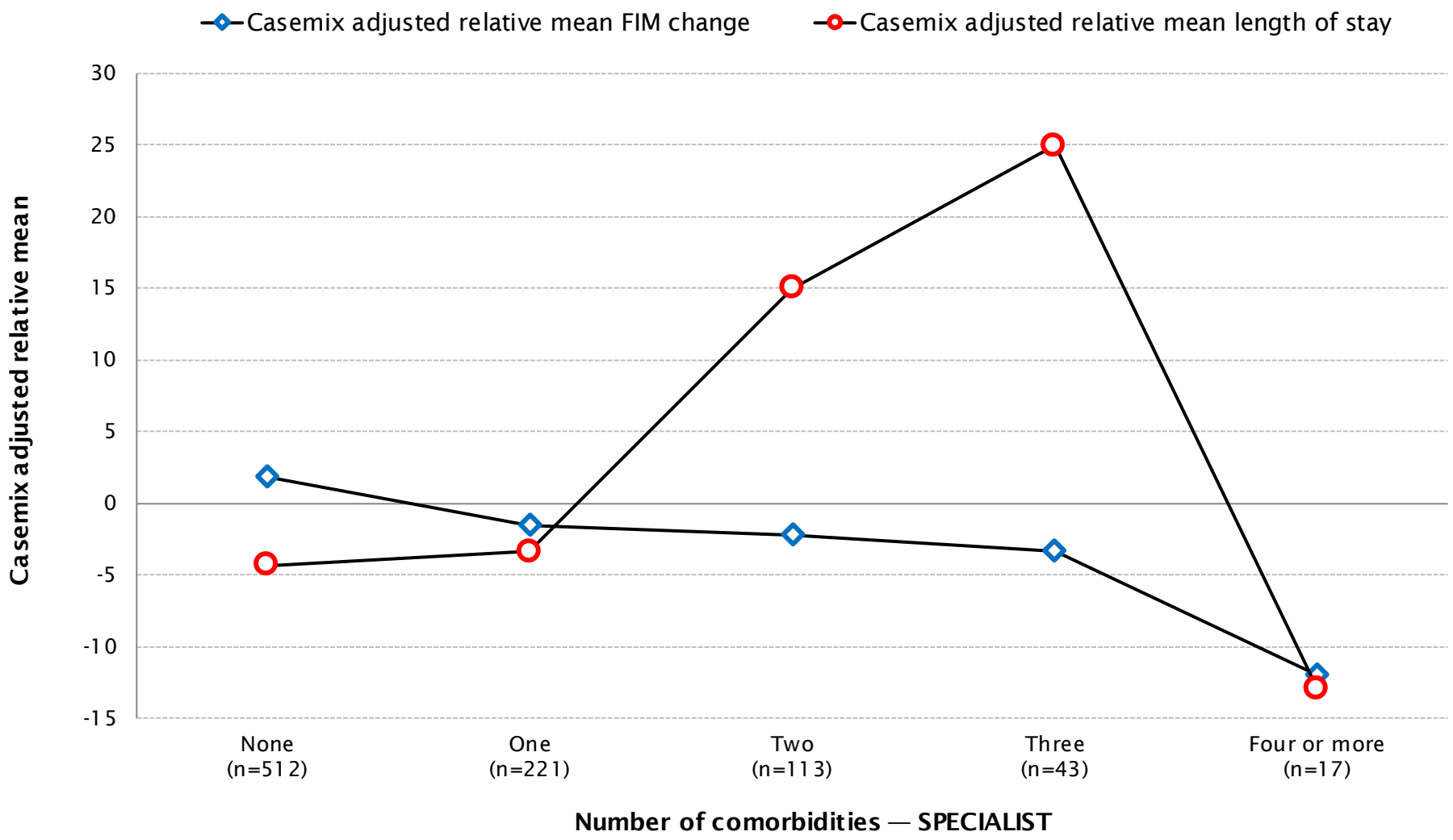
NTBI casemix-adjusted* relative mean FIM change by impairment



Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

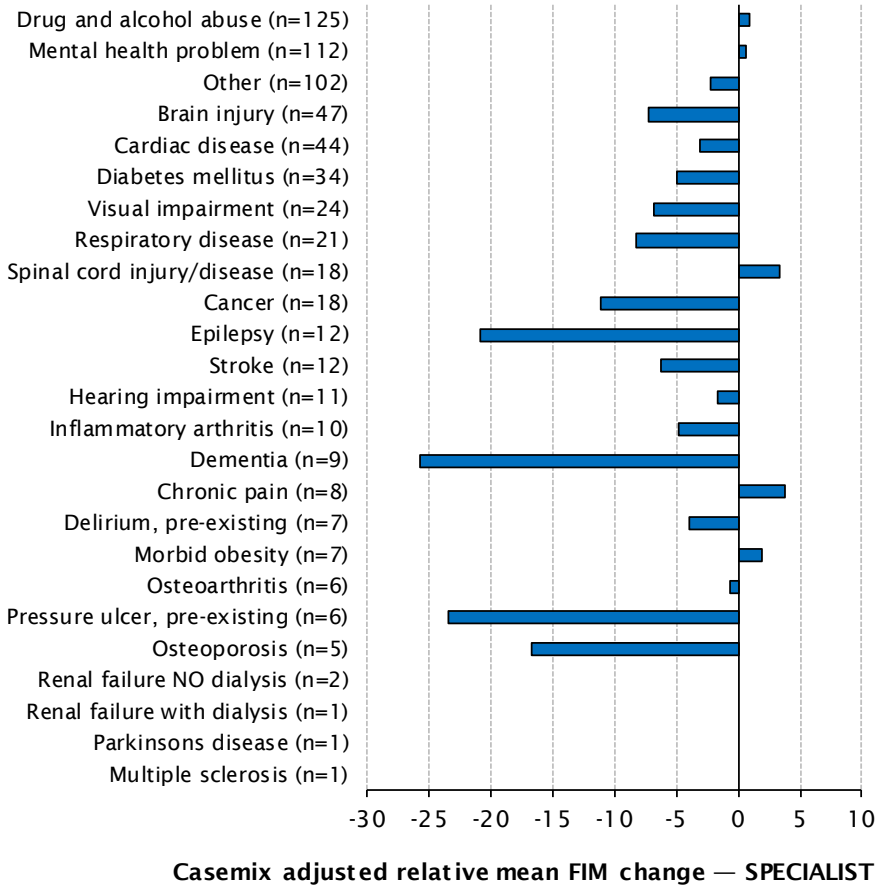
Casemix-adjusted* relative mean length of stay and FIM change by number of comorbidities

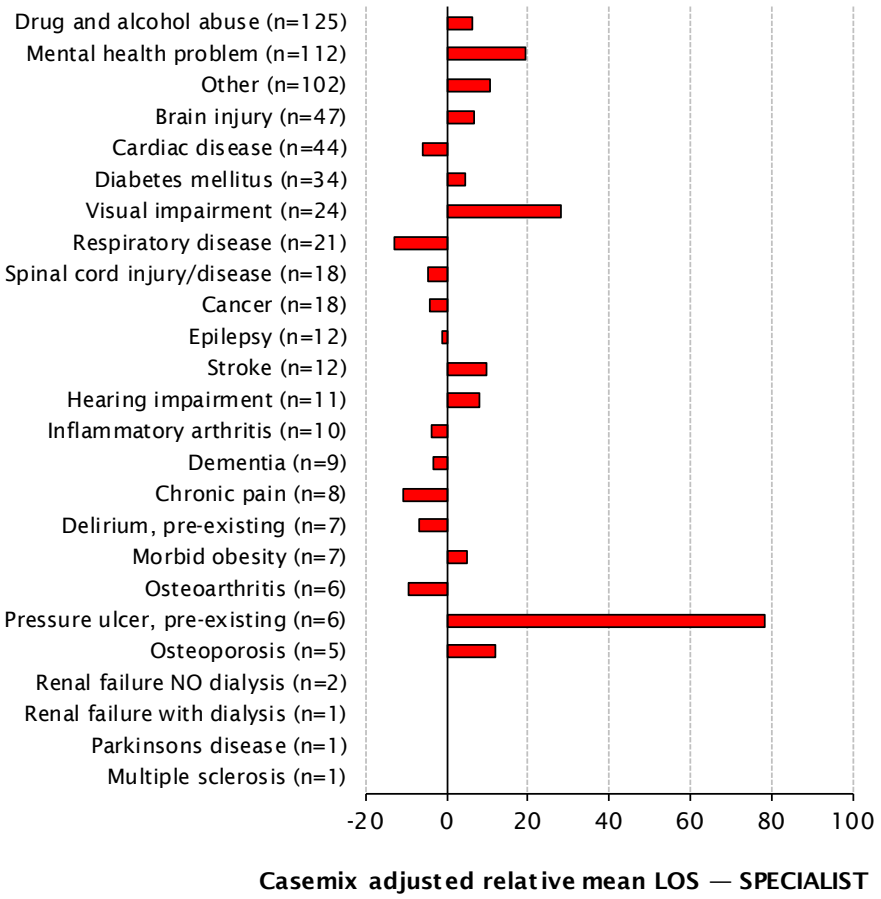


Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

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

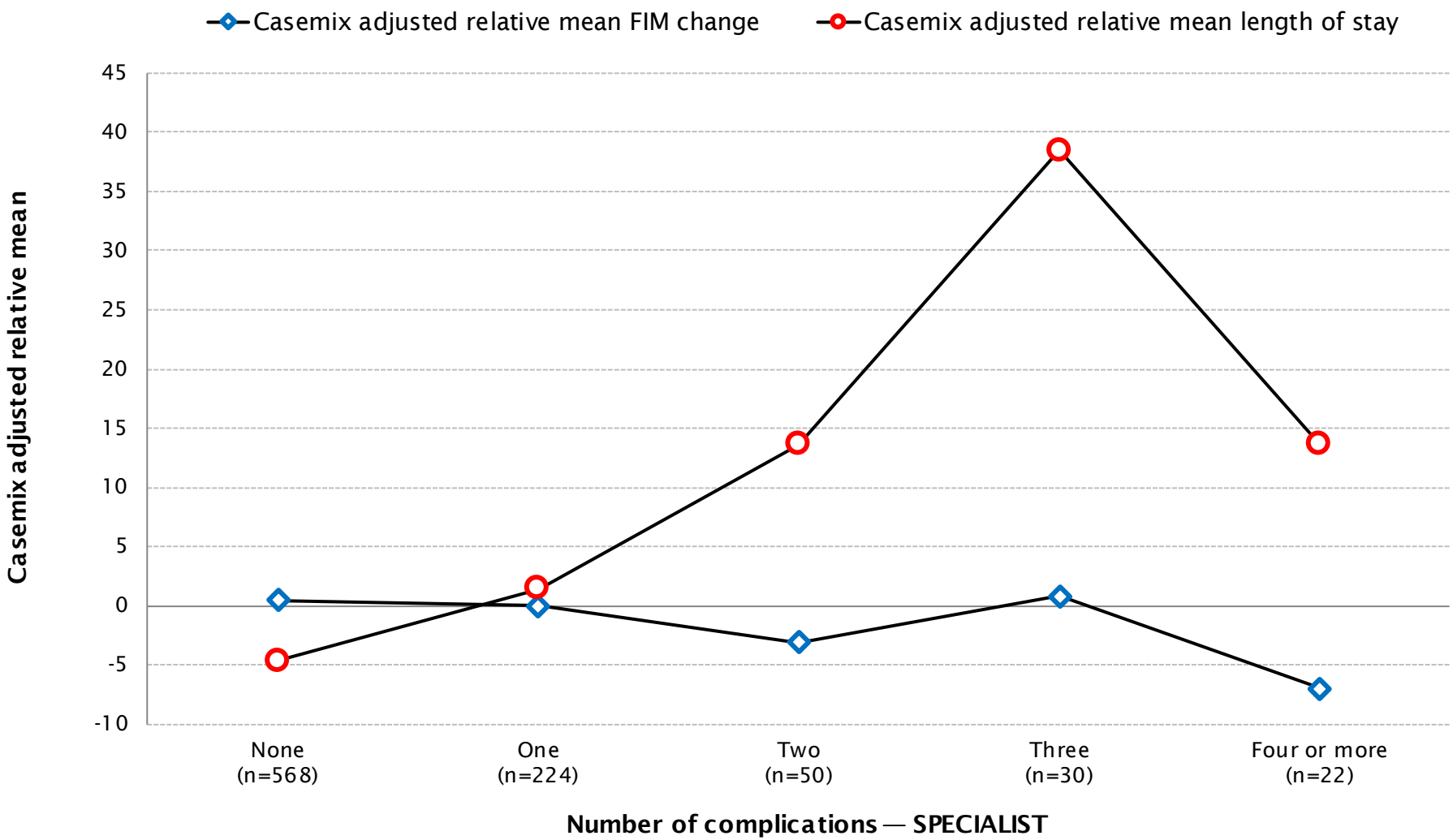




Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

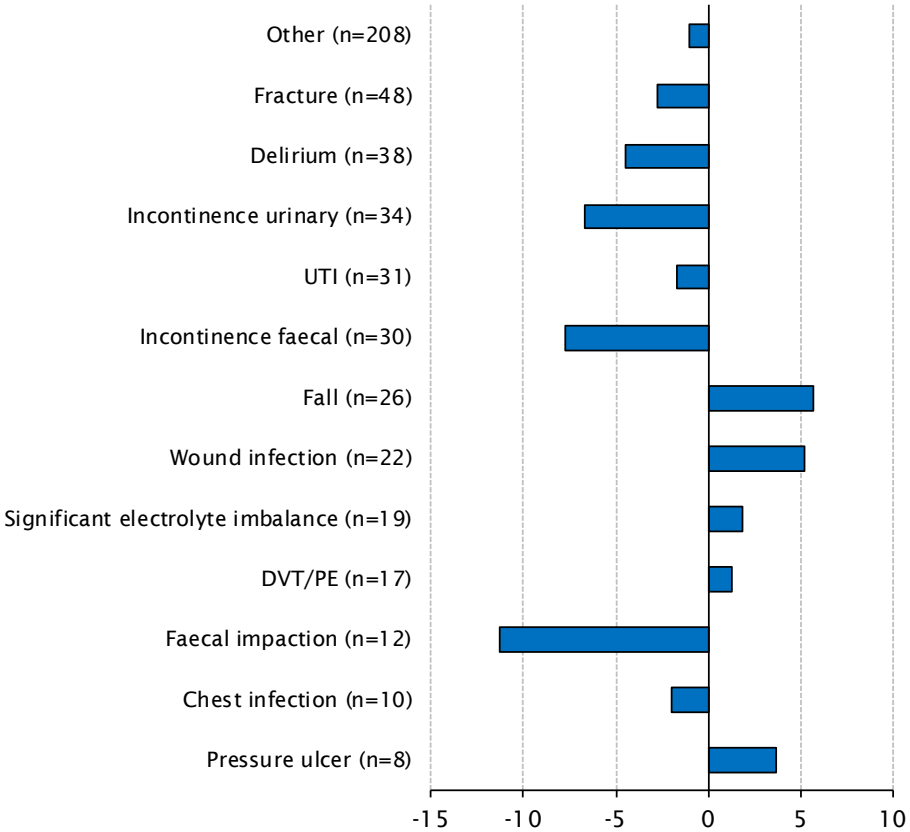
Casemix-adjusted* relative mean length of stay and FIM change by number of complications



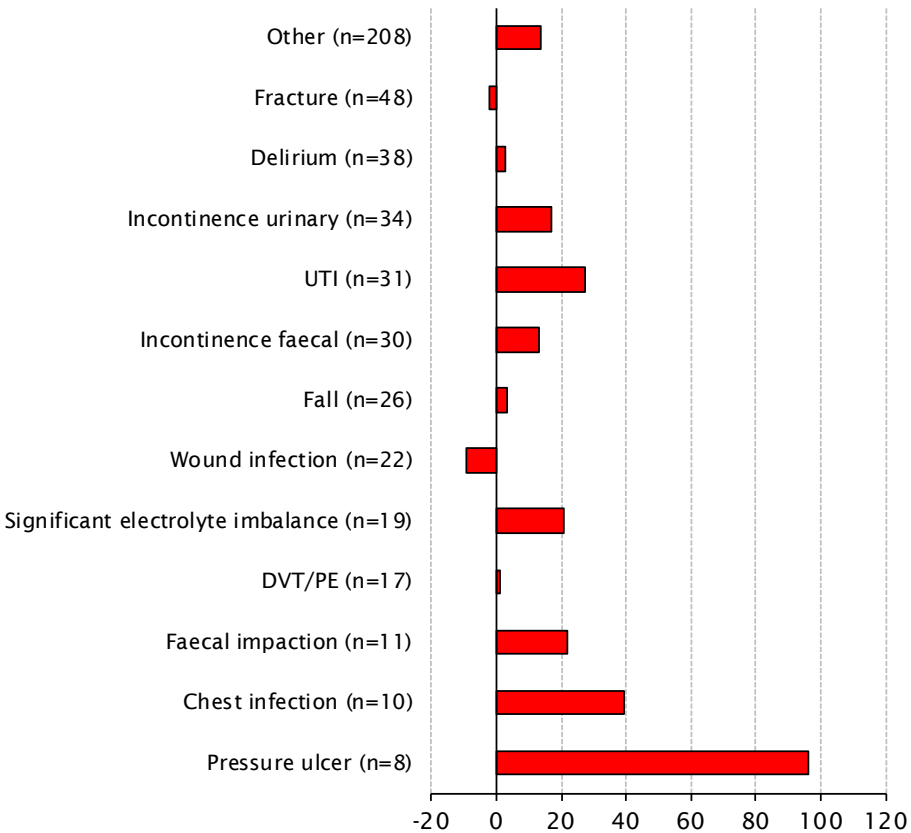
Note: First admission, completed episodes.

*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

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



Casemix adjusted relative mean FIM change — SPECIALIST



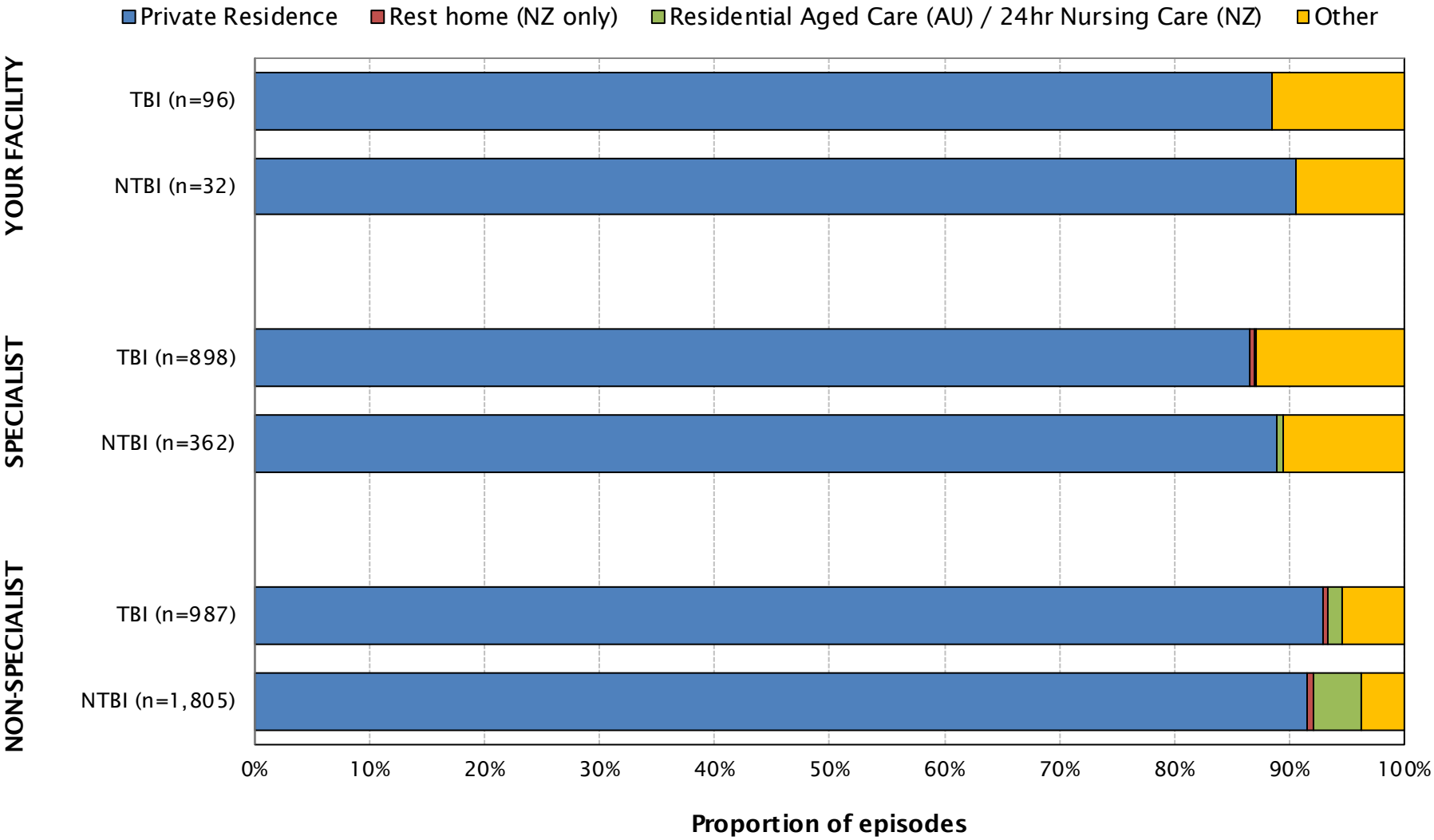
Casemix adjusted relative mean LOS — SPECIALIST

Note: First admission, completed episodes.

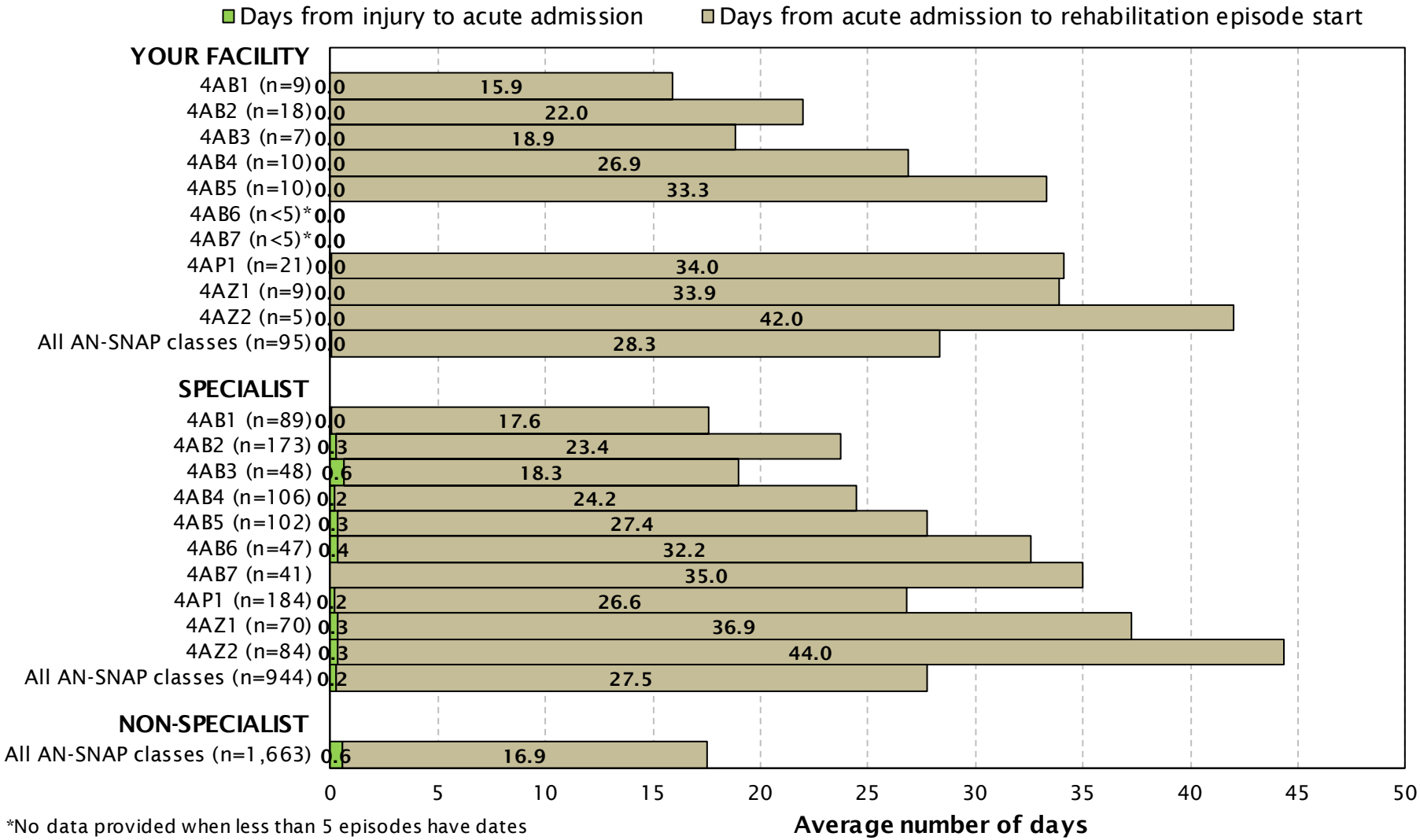
*Casemix-adjustment uses FY2020 specialist unit first admissions calculated separately for TBI and NTBI

Explanatory data

Type of accommodation prior to impairment



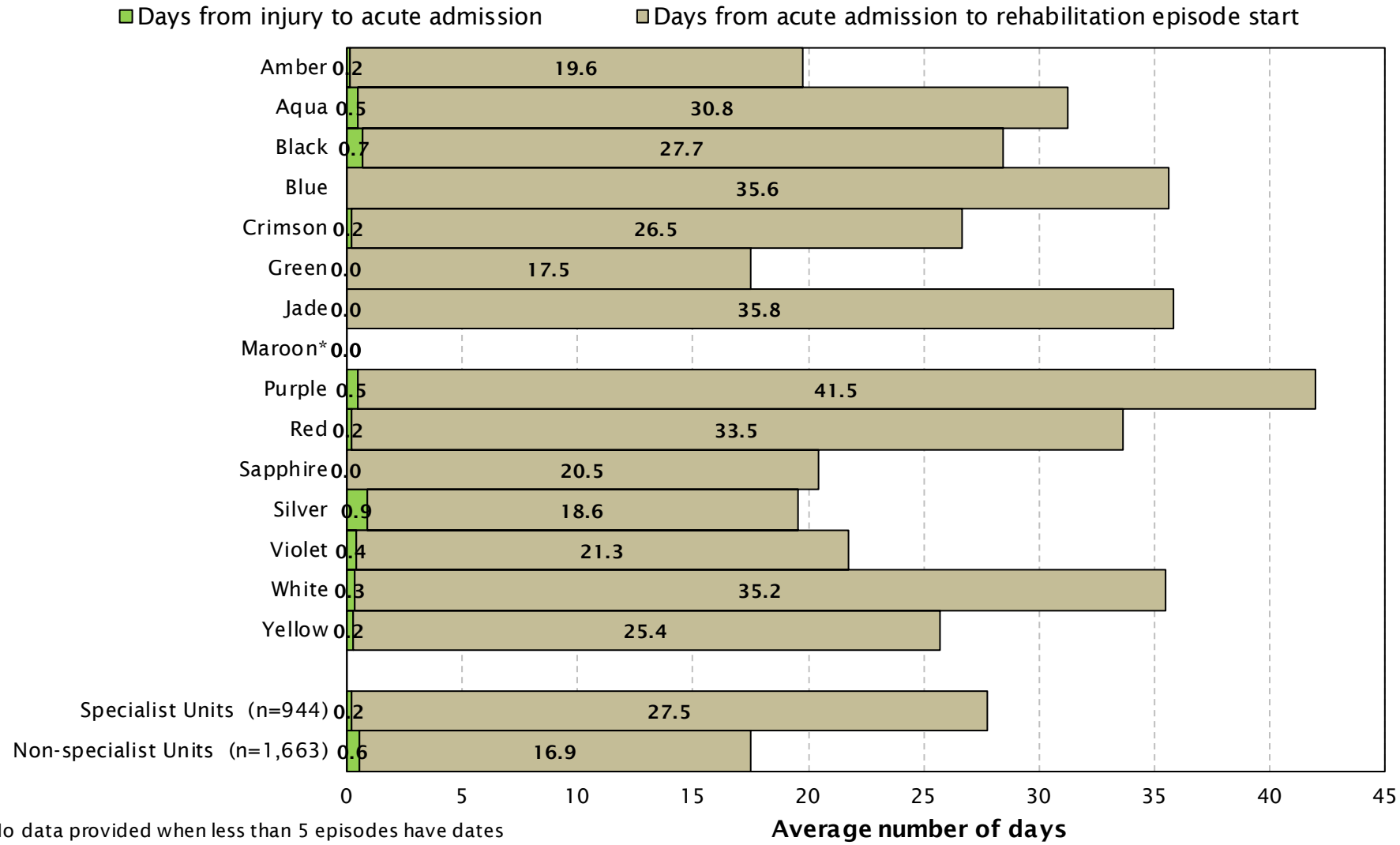
Days from injury to episode start with an acute admission by AN-SNAP class



*No data provided when less than 5 episodes have dates

Note: First admission episodes.

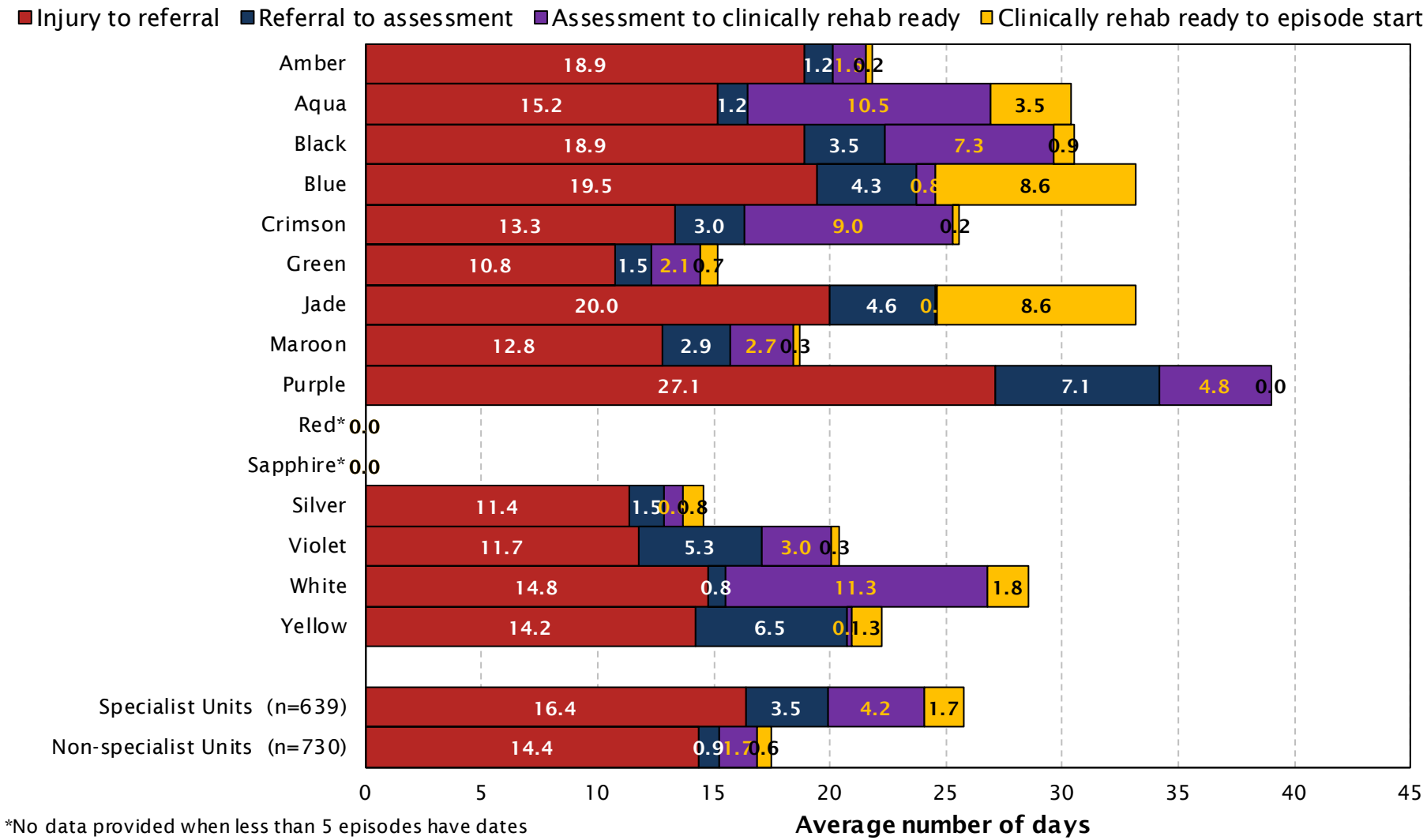
Days from injury to episode start with an acute admission by specialist facility



*No data provided when less than 5 episodes have dates

Note: First admission episodes.

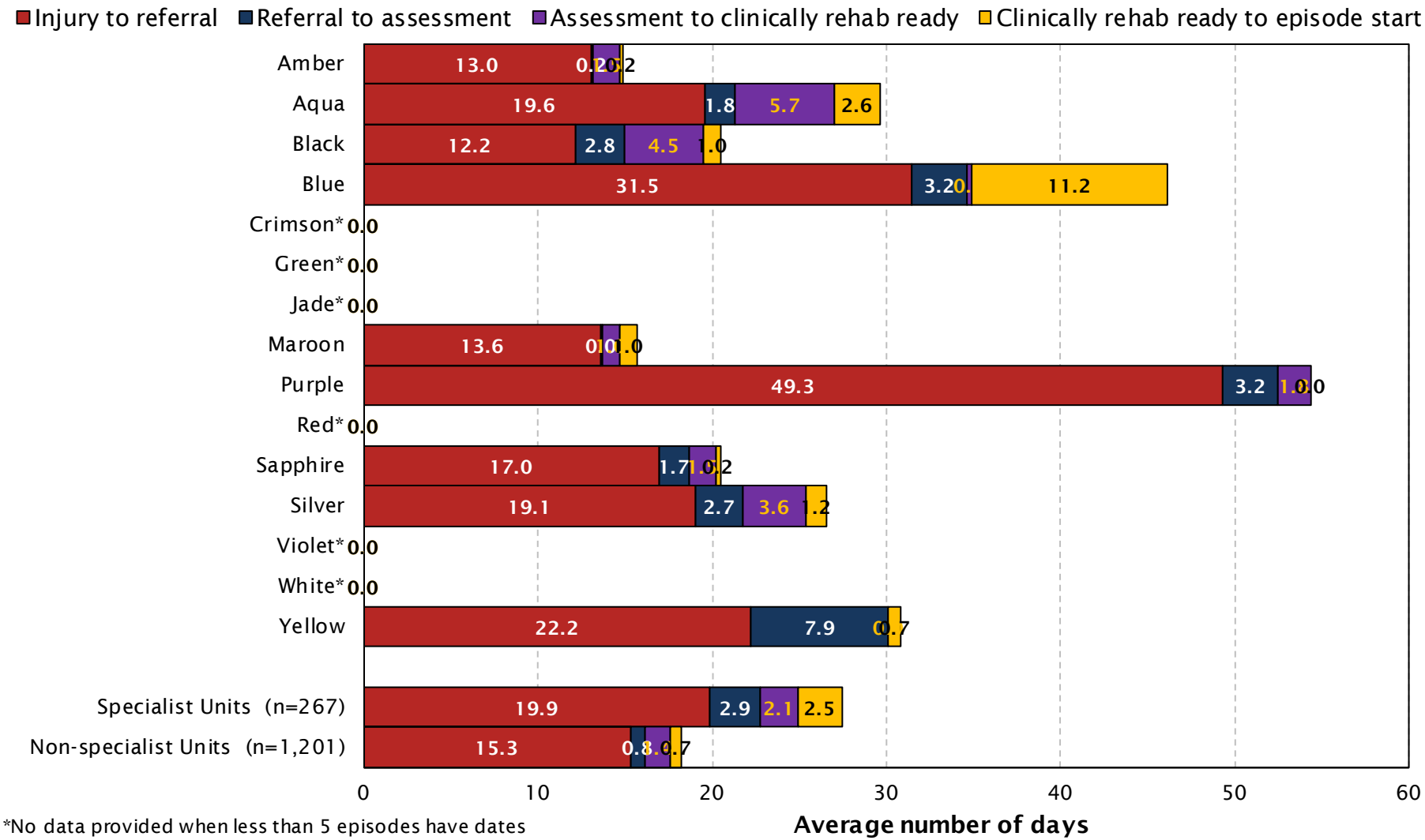
Days from brain injury to episode start by specialist facility - TBI



*No data provided when less than 5 episodes have dates

Note: First admission episodes.

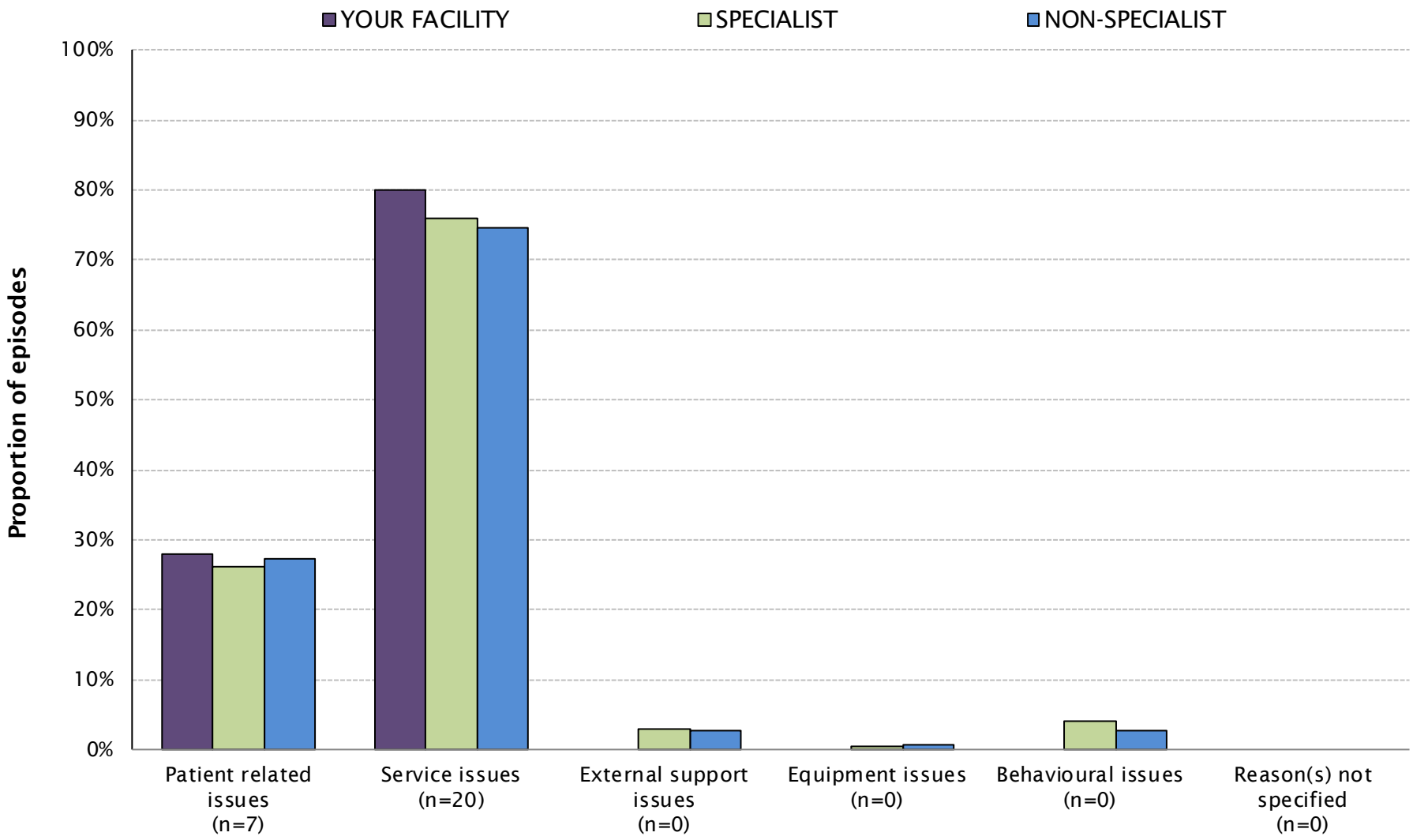
Days from brain injury to episode start by specialist facility - NTBI



*No data provided when less than 5 episodes have dates

Note: First admission episodes.

Reason for delay in episode start

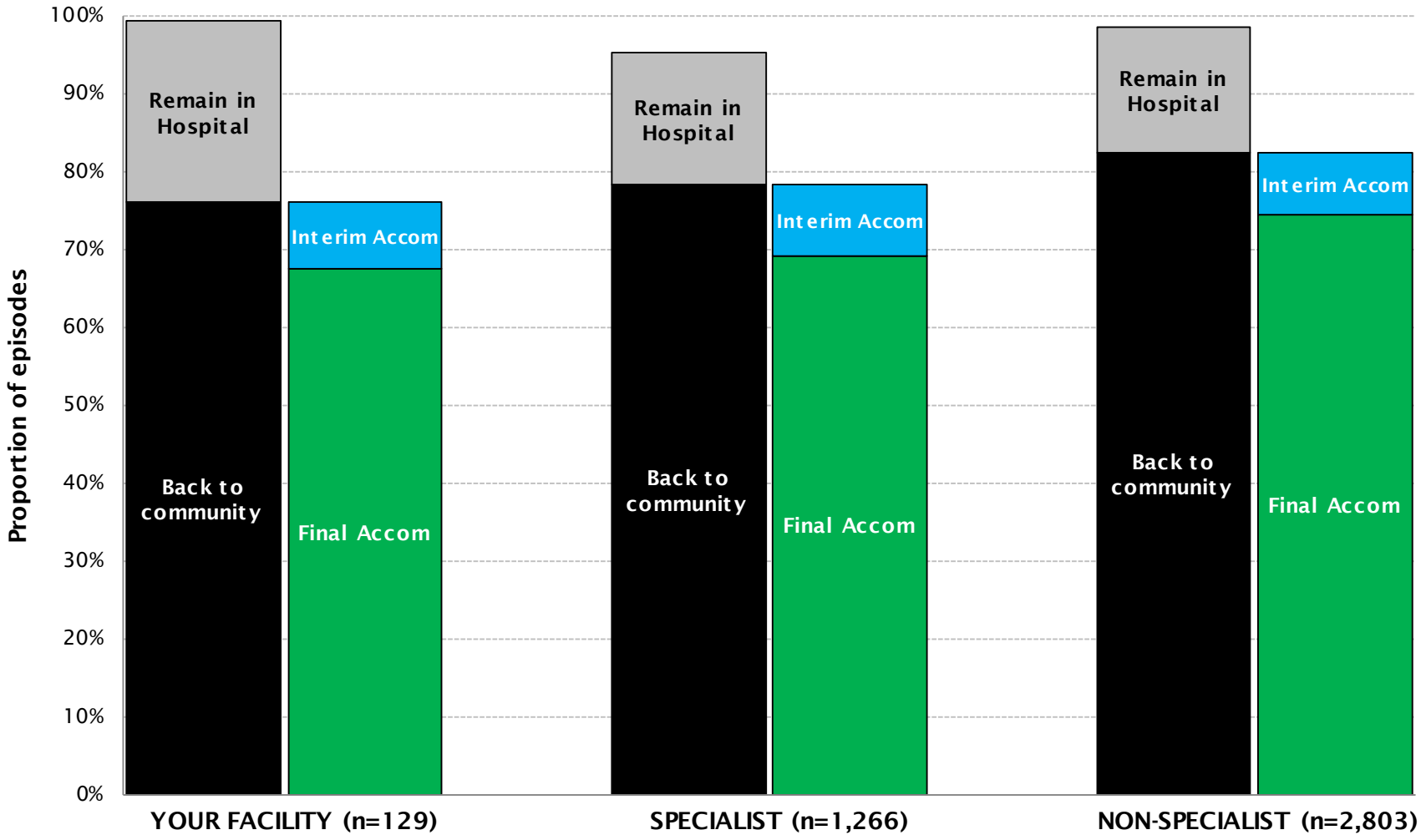


Delays in episode start

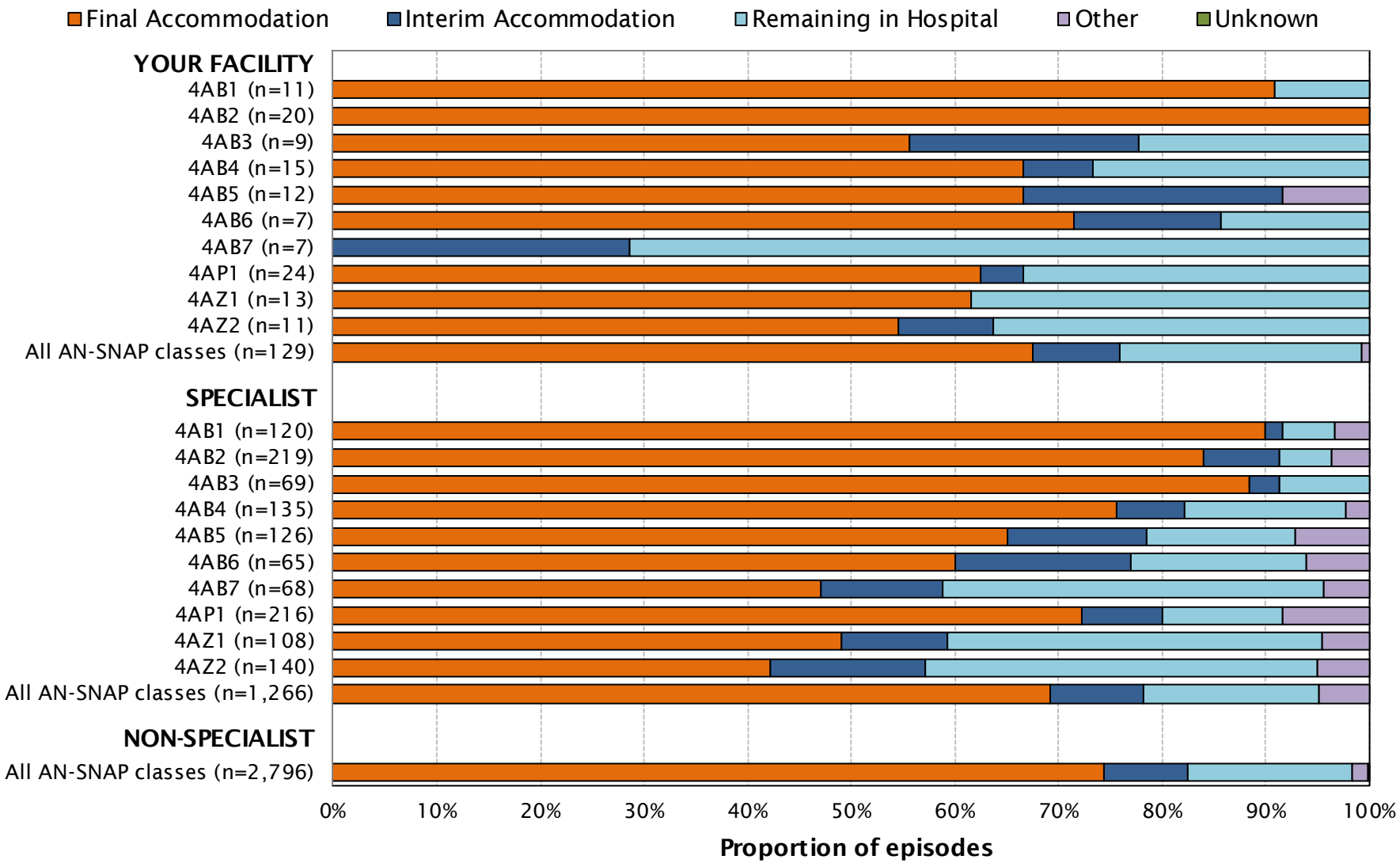
	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
Delay in episode start	**No.**	**%**	**No.**	**%**	**No.**	**%**
No delay	92	78.6	901	79.0	2,269	85.1
Delay in episode start	25	21.4	240	21.0	397	14.9
Missing	12		125		137	
All episodes	**129**	**100.0**	**1,266**	**100.0**	**2,803**	**100.0**

	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
Delay in episode start	**No.**	**%**	**No.**	**%**	**No.**	**%**
Patient related issues	7	28.0	63	26.3	108	27.2
Service issues	20	80.0	182	75.8	296	74.6
External support issues	0	0.0	7	2.9	11	2.8
Equipment issues	0	0.0	1	0.4	3	0.8
Behavioural issues	0	0.0	10	4.2	11	2.8
Reason(s) not specified	0	0.0	0	0.0	0	0.0

Discharge destination



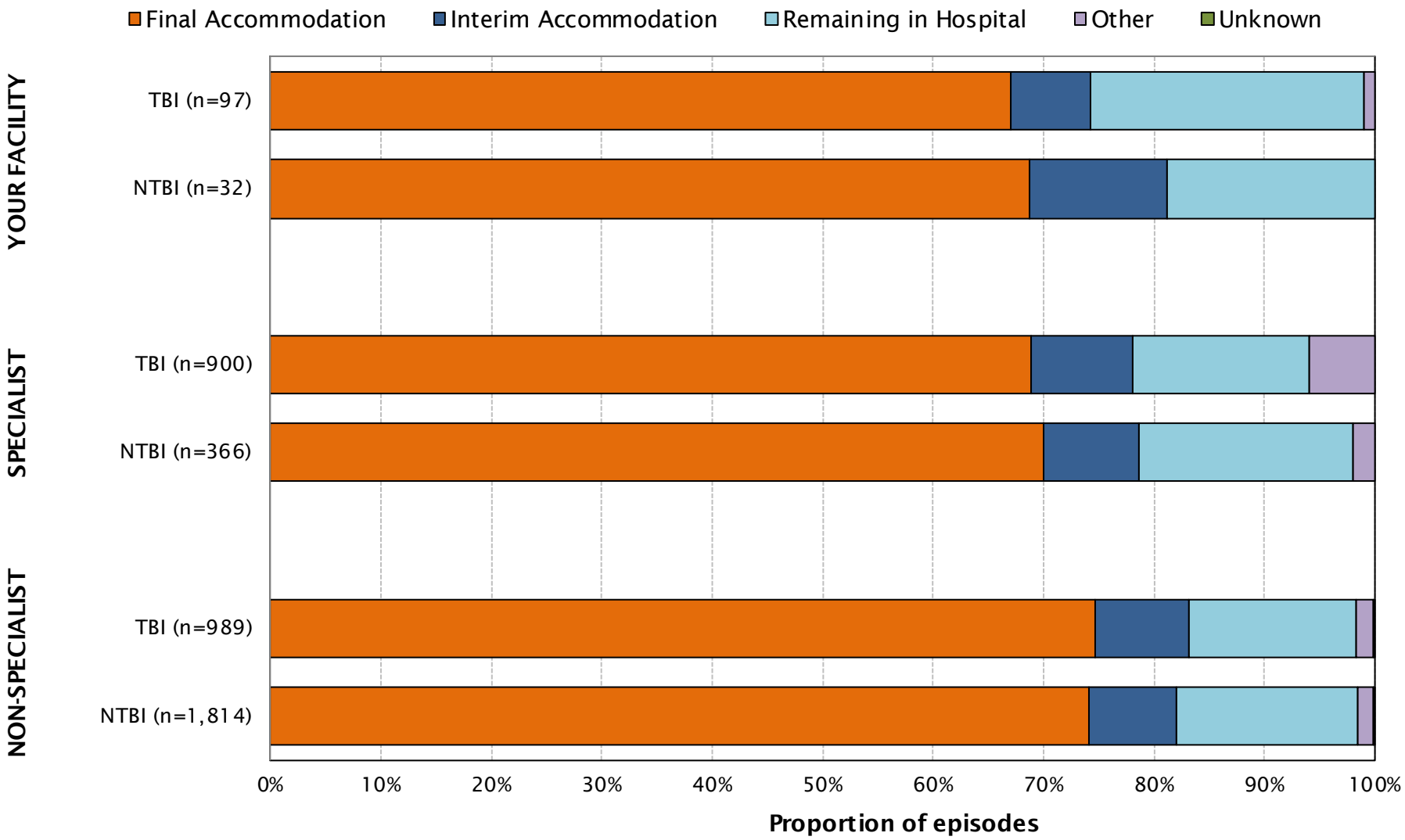
Discharge destination by AN-SNAP class



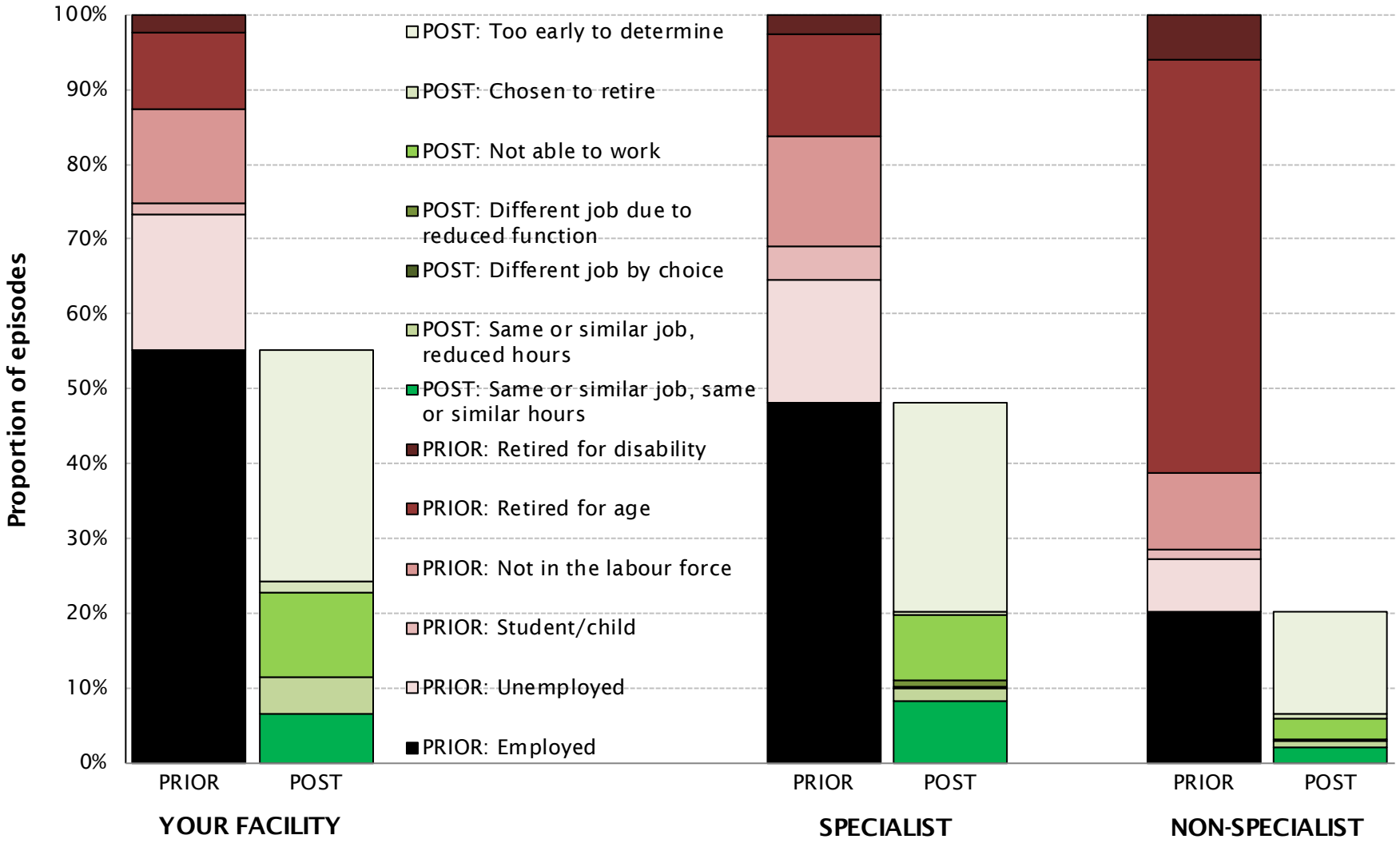
Discharge destination by AN-SNAP class

		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	10	0	1	0	0	90.9	0.0	9.1	0.0	0.0
	4AB2	20	0	0	0	0	100.0	0.0	0.0	0.0	0.0
	4AB3	5	2	2	0	0	55.6	22.2	22.2	0.0	0.0
	4AB4	10	1	4	0	0	66.7	6.7	26.7	0.0	0.0
	4AB5	8	3	0	1	0	66.7	25.0	0.0	8.3	0.0
	4AB6	5	1	1	0	0	71.4	14.3	14.3	0.0	0.0
	4AB7	0	2	5	0	0	0.0	28.6	71.4	0.0	0.0
	4AP1	15	1	8	0	0	62.5	4.2	33.3	0.0	0.0
	4AZ1	8	0	5	0	0	61.5	0.0	38.5	0.0	0.0
	4AZ2	6	1	4	0	0	54.5	9.1	36.4	0.0	0.0
All AN-SNAP classes		**87**	**11**	**30**	**1**	**0**	**67.4**	**8.5**	**23.3**	**0.8**	**0.0**
SPECIALIST units		**876**	**114**	**215**	**61**	**0**	**69.2**	**9.0**	**17.0**	**4.8**	**0.0**
NON-SPECIALIST units		**2,080**	**226**	**445**	**41**	**4**	**74.4**	**8.1**	**15.9**	**1.5**	**0.1**

Discharge destination by traumatic and non-traumatic brain innjury



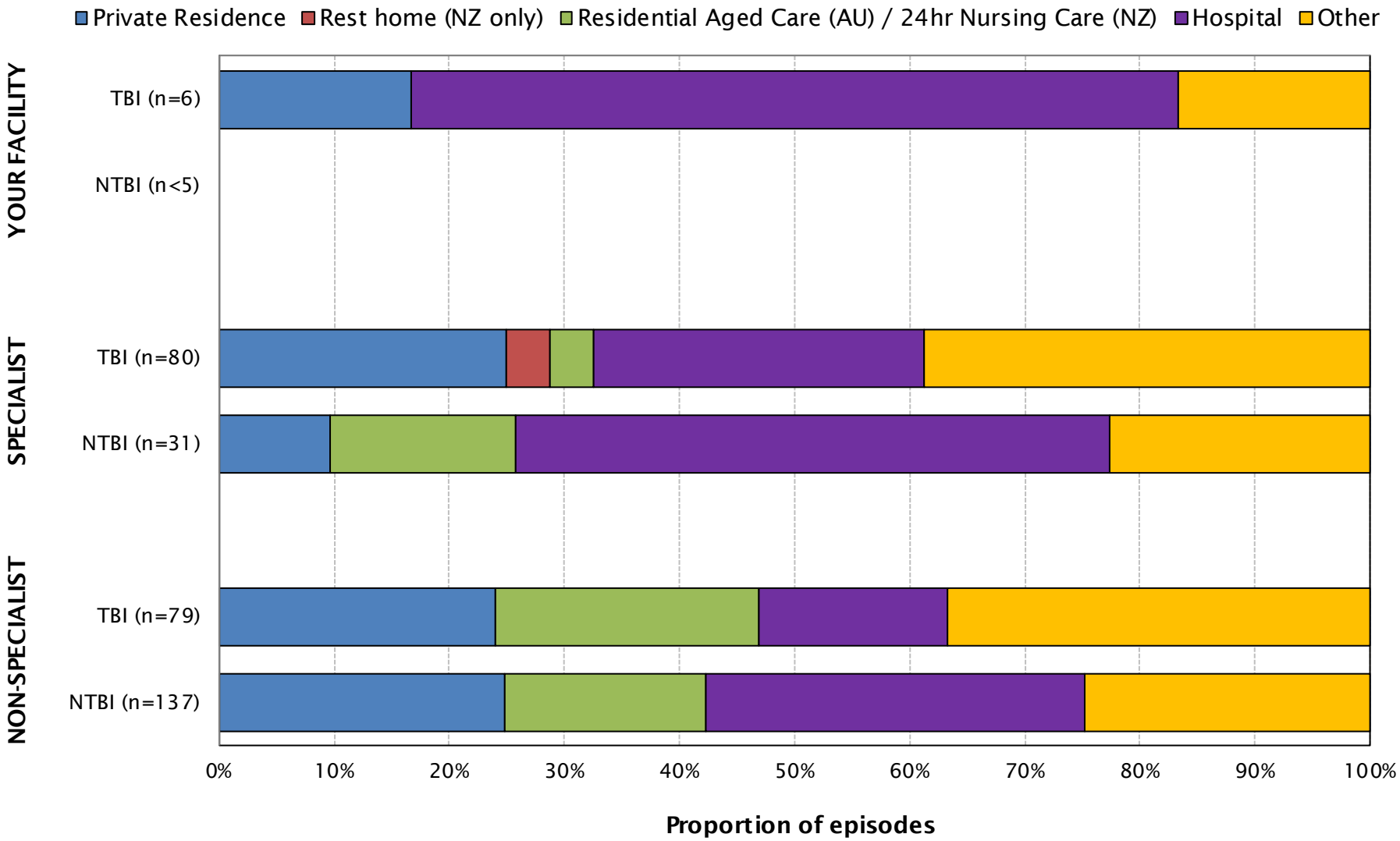
Employment status prior and post brain injury



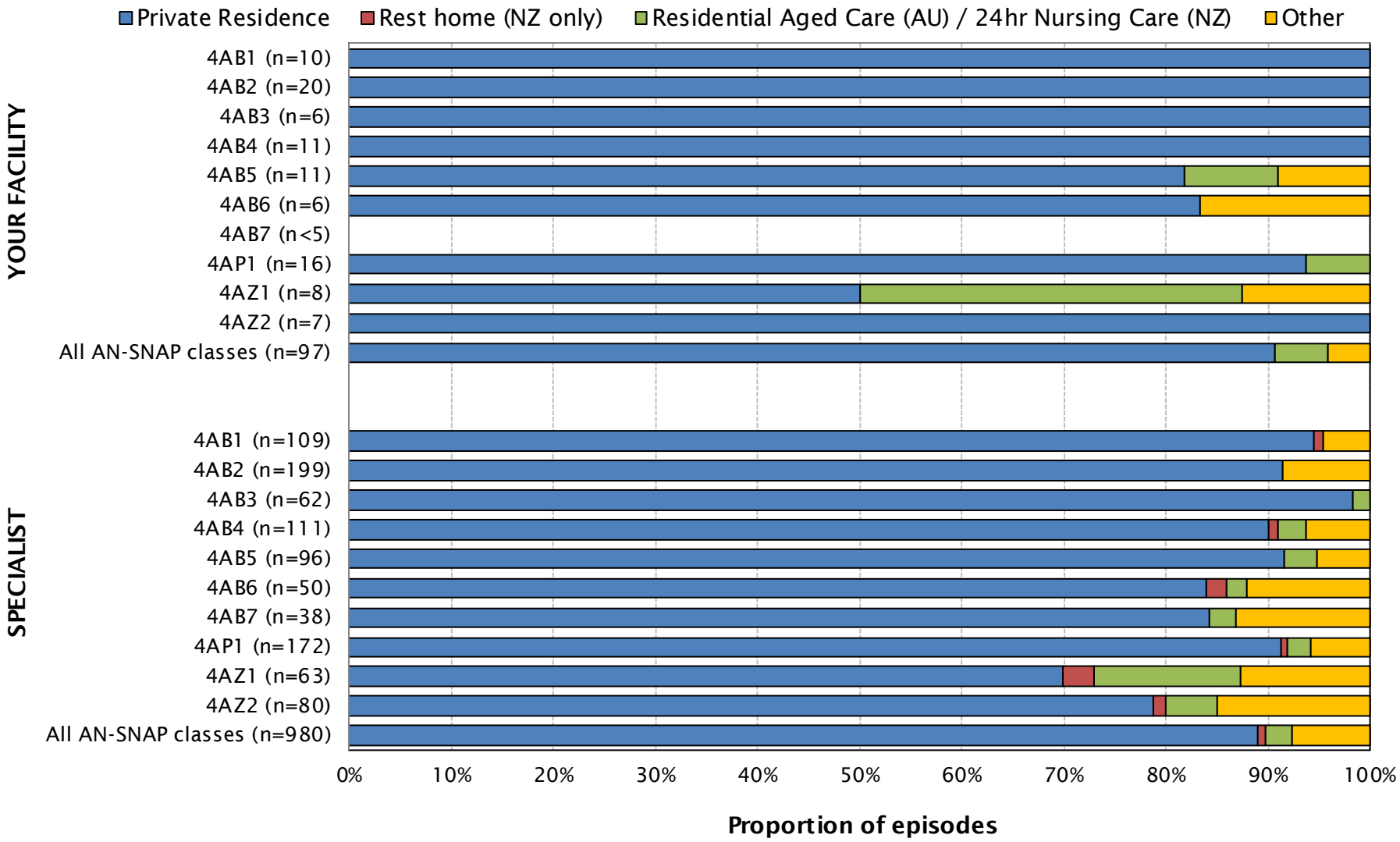
Employment status prior and post brain injury

	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
Employment status	**No.**	**%**	**No.**	**%**	**No.**	**%**
Prior to brain injury:						
Employed	70	55.1	604	48.1	548	20.1
Unemployed	23	18.1	206	16.4	193	7.1
Student/child	2	1.6	57	4.5	32	1.2
Not in the labour force	16	12.6	184	14.7	283	10.4
Retired for age	13	10.2	172	13.7	1504	55.3
Retired for disability	3	2.4	32	2.5	162	6.0
Not answered	2		11		81	
Total	**129**	**100.0**	**1,266**	**100.0**	**2,803**	**100.0**
After discharge (if previously employed):						
Same or similar job, same or similar hours	8	11.8	98	17.1	51	10.3
Same or similar job, reduced hours	6	8.8	21	3.7	20	4.0
Different job by choice	0	0.0	1	0.2	0	0.0
Different job due to reduced function	0	0.0	10	1.7	4	0.8
Not able to work	14	20.6	104	18.2	72	14.5
Chosen to retire	2	2.9	5	0.9	15	3.0
Too early to determine	38	55.9	333	58.2	335	67.4
Not answered	2		32		51	
Total employed prior	**70**	**100.0**	**604**	**100.0**	**548**	**100.0**

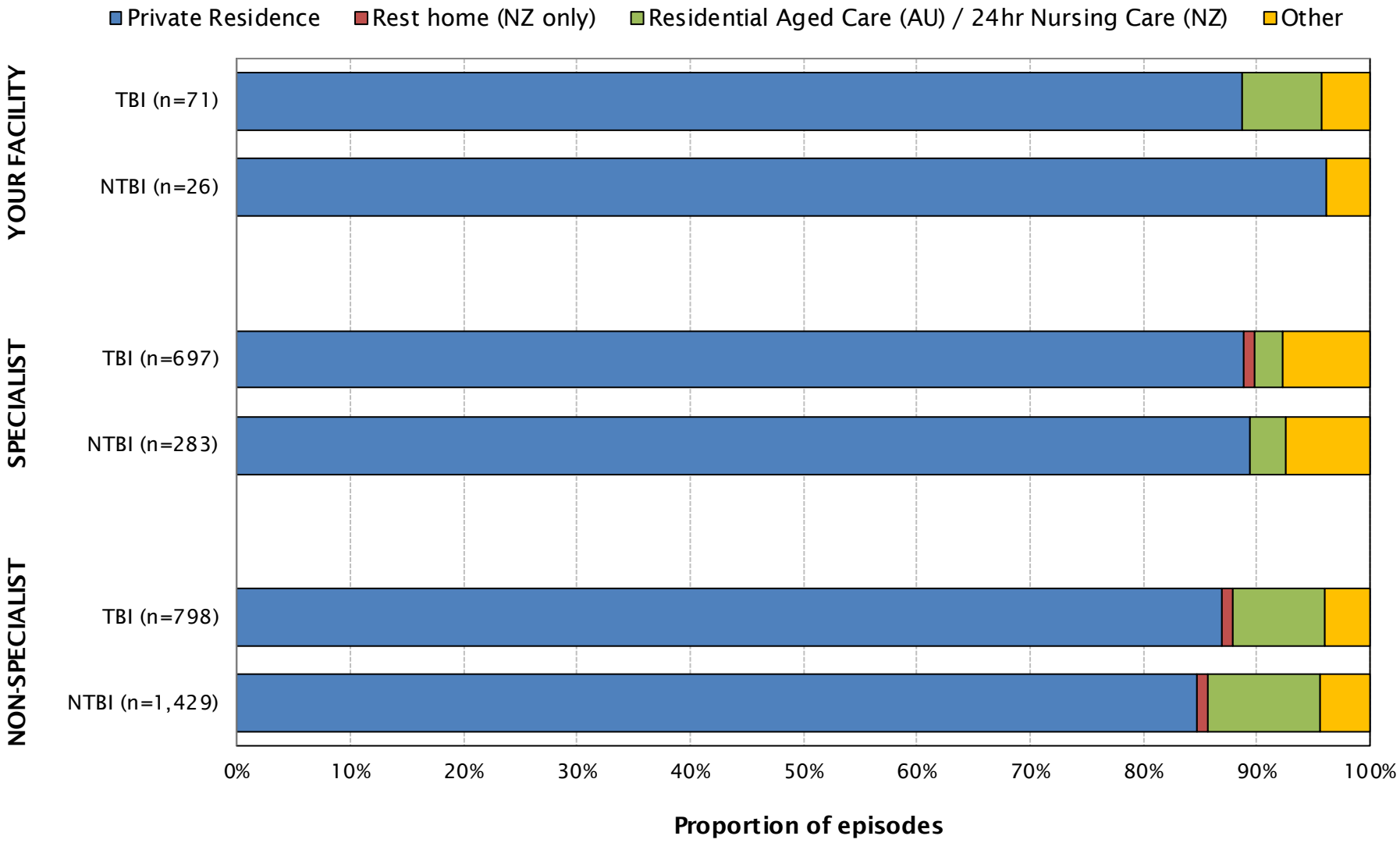
Interim accommodation post discharge by TBI and NTBI



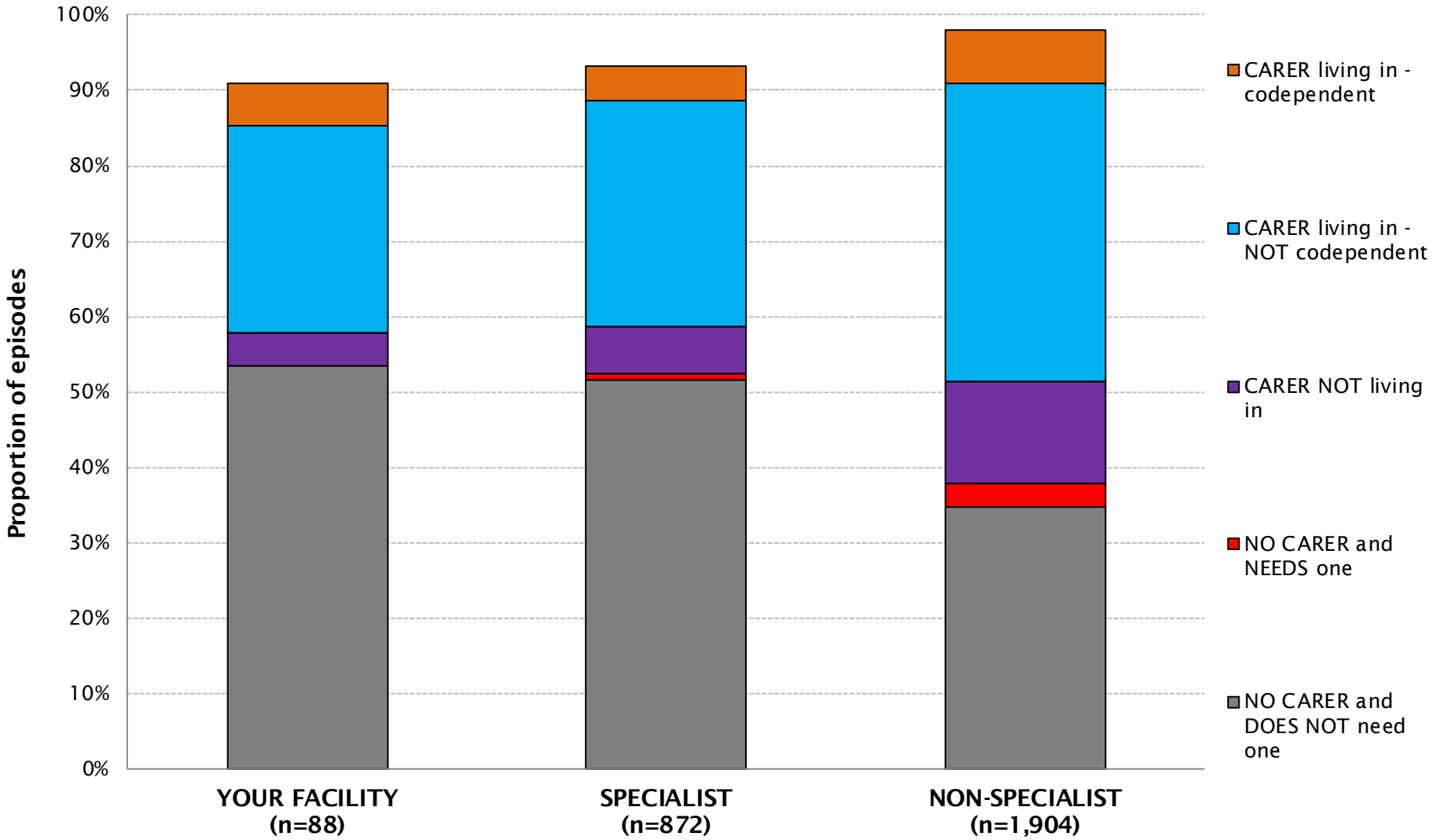
Final accommodation post discharge by AN-SNAP class



Final accommodation post discharge by TBI and NTBI

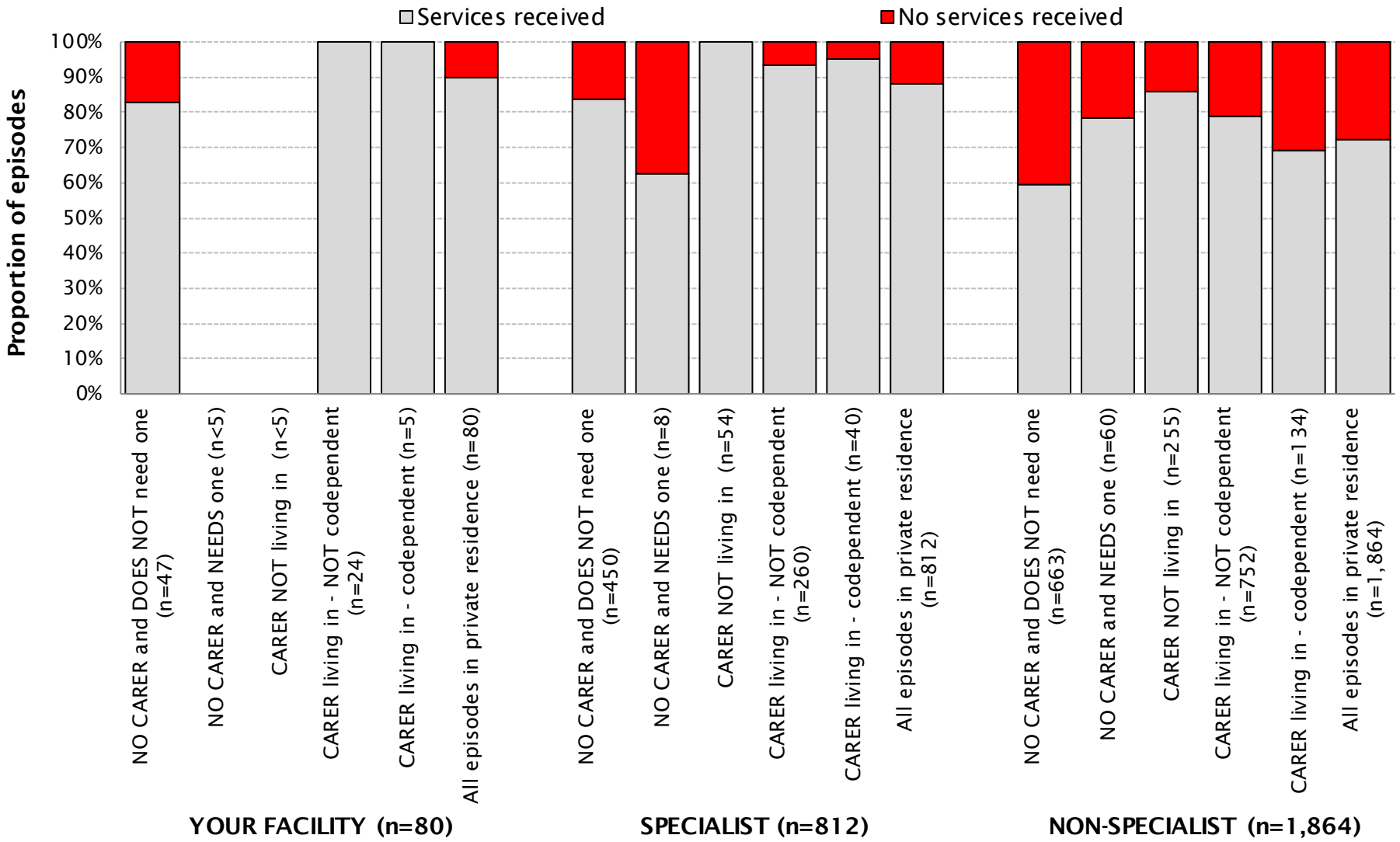


Carer status post discharge



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

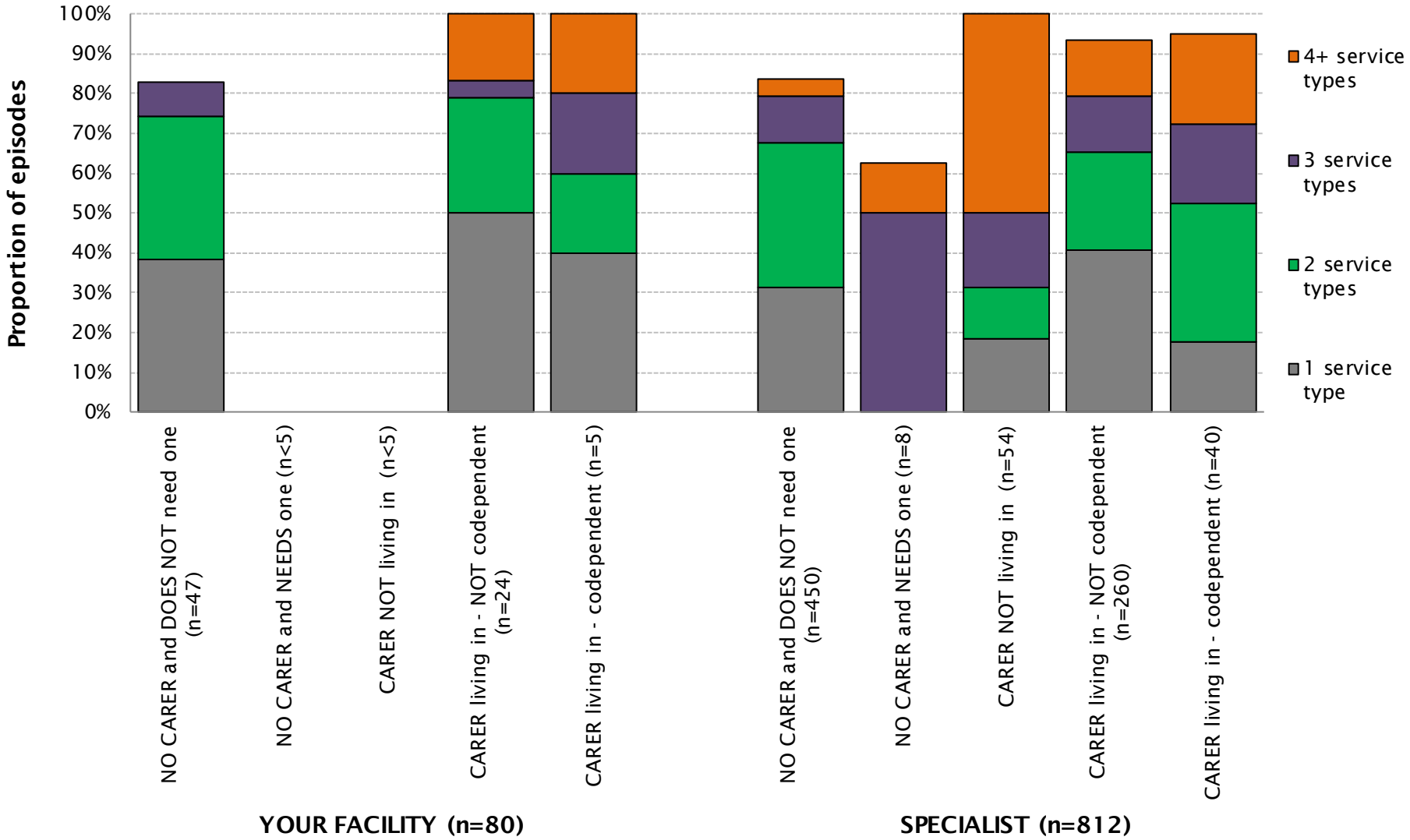
aroc

	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
Carer status post discharge	No.	%	No.	%	No.	%
NO CARER and DOES NOT need one	47	58.8	450	55.4	664	35.6
NO CARER and NEEDS one	0	0.0	8	1.0	60	3.2
CARER NOT living in	4	5.0	54	6.7	255	13.7
CARER living in - NOT codependent	24	30.0	260	32.0	753	40.4
CARER living in - codependent	5	6.3	40	4.9	134	7.2
Missing	8		60		38	
All episodes in private residence	**88**	**100.0**	**872**	**100.0**	**1,904**	**100.0**

	Any services received post discharge?					
	YOUR FACILITY		SPECIALIST		NON-SPECIALIST	
Carer status post discharge	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
NO CARER and DOES NOT need one	83.0	17.0	83.8	16.2	59.3	40.5
NO CARER and NEEDS one	—	—	62.5	37.5	78.3	21.7
CARER NOT living in	100.0	0.0	100.0	0.0	85.9	14.1
CARER living in - NOT codependent	100.0	0.0	93.5	6.5	78.9	21.0
CARER living in - codependent	100.0	0.0	95.0	5.0	69.4	30.6
All episodes in private residence	**90.0**	**10.0**	**88.3**	**11.7**	**72.2**	**27.7**

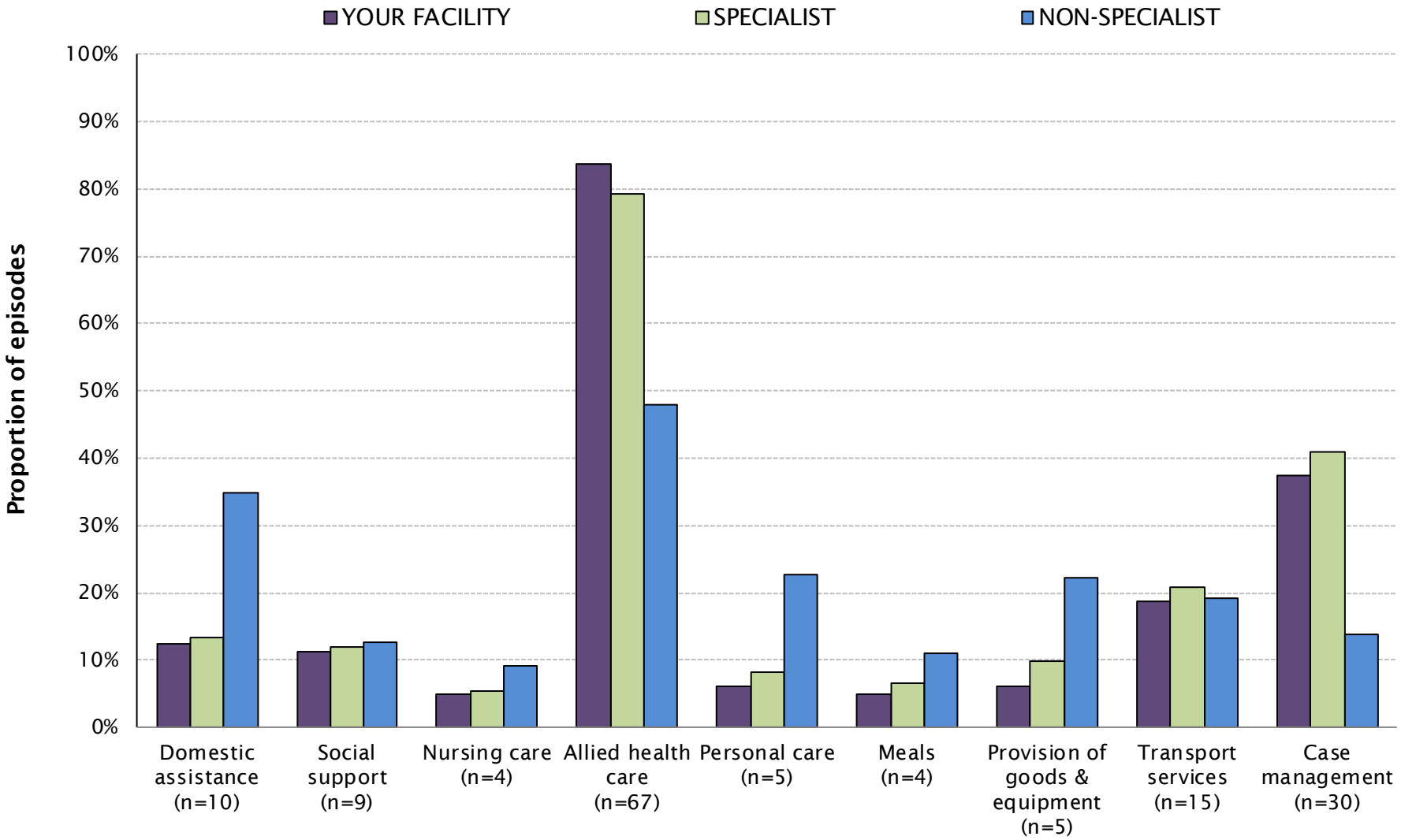
Note: Final accommodation is private residence.

Number of services received post discharge by carer status



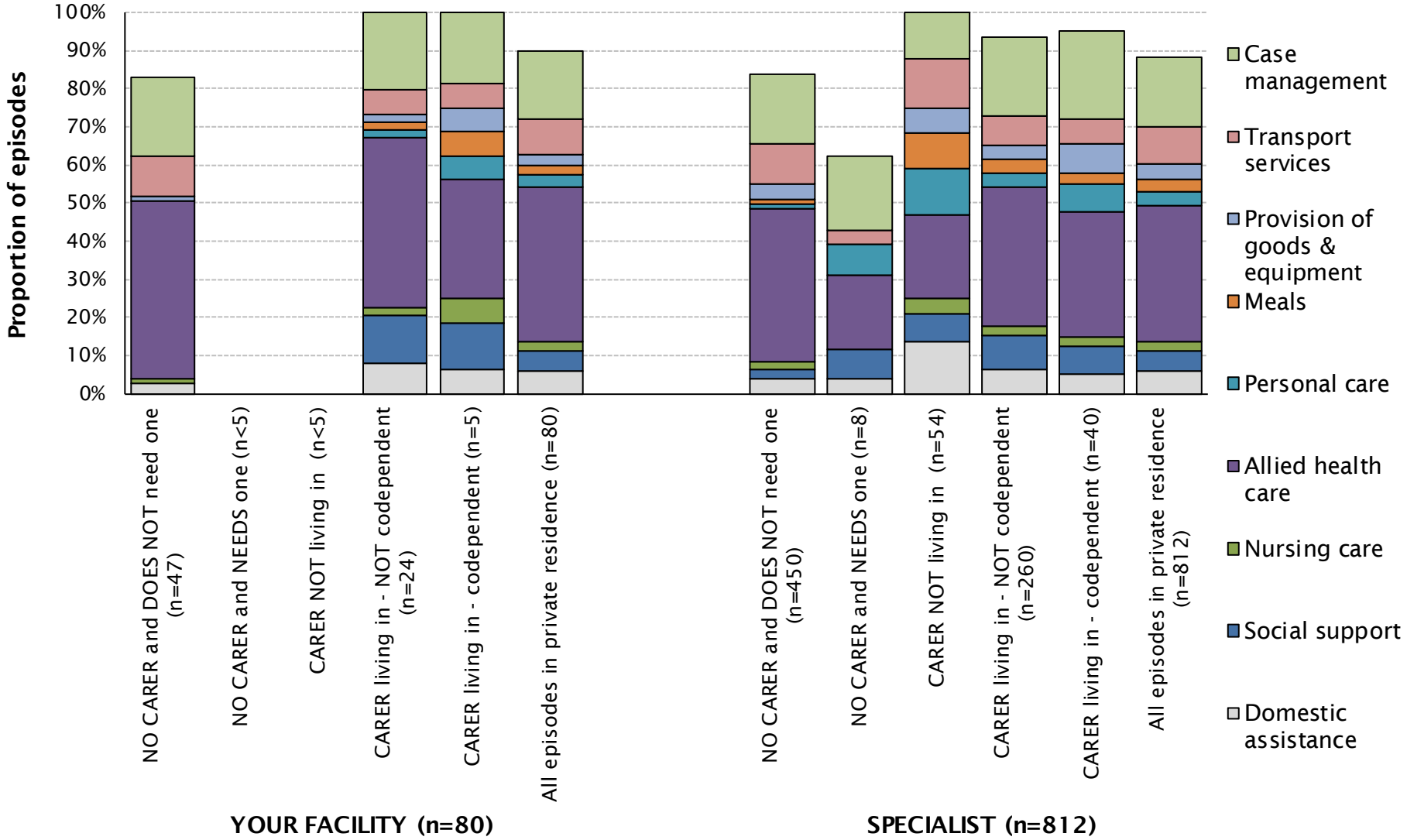
Note: Final accommodation is private residence.

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

aroc

	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	47	0	4	24	5	
Percent of episodes receiving:						
No services	17.0	—	0.0	0.0	0.0	**10.0**
1 service type	38.3	—	25.0	50.0	40.0	**41.3**
2 service types	36.2	—	0.0	29.2	20.0	**31.3**
3 service types	8.5	—	0.0	4.2	20.0	**7.5**
4 or more service types	0.0	—	75.0	16.7	20.0	**10.0**
Service Type received						
Domestic assistance	4.3	—	75.0	16.7	20.0	**12.5**
Social support	0.0	—	25.0	25.0	40.0	**11.3**
Nursing care	2.1	—	25.0	4.2	20.0	**5.0**
Allied health care	76.6	—	100.0	91.7	100.0	**83.8**
Personal care	0.0	—	75.0	4.2	20.0	**6.3**
Meals	0.0	—	50.0	4.2	20.0	**5.0**
Provision of goods & equipment	2.1	—	50.0	4.2	20.0	**6.3**
Transport services	17.0	—	75.0	12.5	20.0	**18.8**
Case management	34.0	—	25.0	41.7	60.0	**37.5**

Note: Final accommodation is private residence.

Number and type of services received post discharge by carer status

aroc

	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	450	8	54	260	40	
Percent of episodes receiving:						
No services	16.2	37.5	0.0	6.5	5.0	**11.7**
1 service type	31.3	0.0	18.5	40.8	17.5	**32.5**
2 service types	36.2	0.0	13.0	24.6	35.0	**30.5**
3 service types	11.8	50.0	18.5	13.8	20.0	**13.7**
4 or more service types	4.4	12.5	50.0	14.2	22.5	**11.6**
Service Type received						
Domestic assistance	7.8	12.5	53.7	14.2	15.0	**13.3**
Social support	4.4	25.0	27.8	20.0	20.0	**11.9**
Nursing care	4.0	0.0	16.7	5.4	7.5	**5.4**
Allied health care	76.4	62.5	85.2	81.2	92.5	**79.2**
Personal care	2.0	25.0	48.1	8.5	20.0	**8.3**
Meals	2.2	0.0	35.2	8.1	7.5	**6.5**
Provision of goods & equipment	7.8	0.0	25.9	8.5	22.5	**9.9**
Transport services	20.0	12.5	50.0	16.9	17.5	**20.8**
Case management	34.9	62.5	48.1	45.8	65.0	**41.0**

Note: Final accommodation is private residence.

Number and type of services received post discharge by carer status

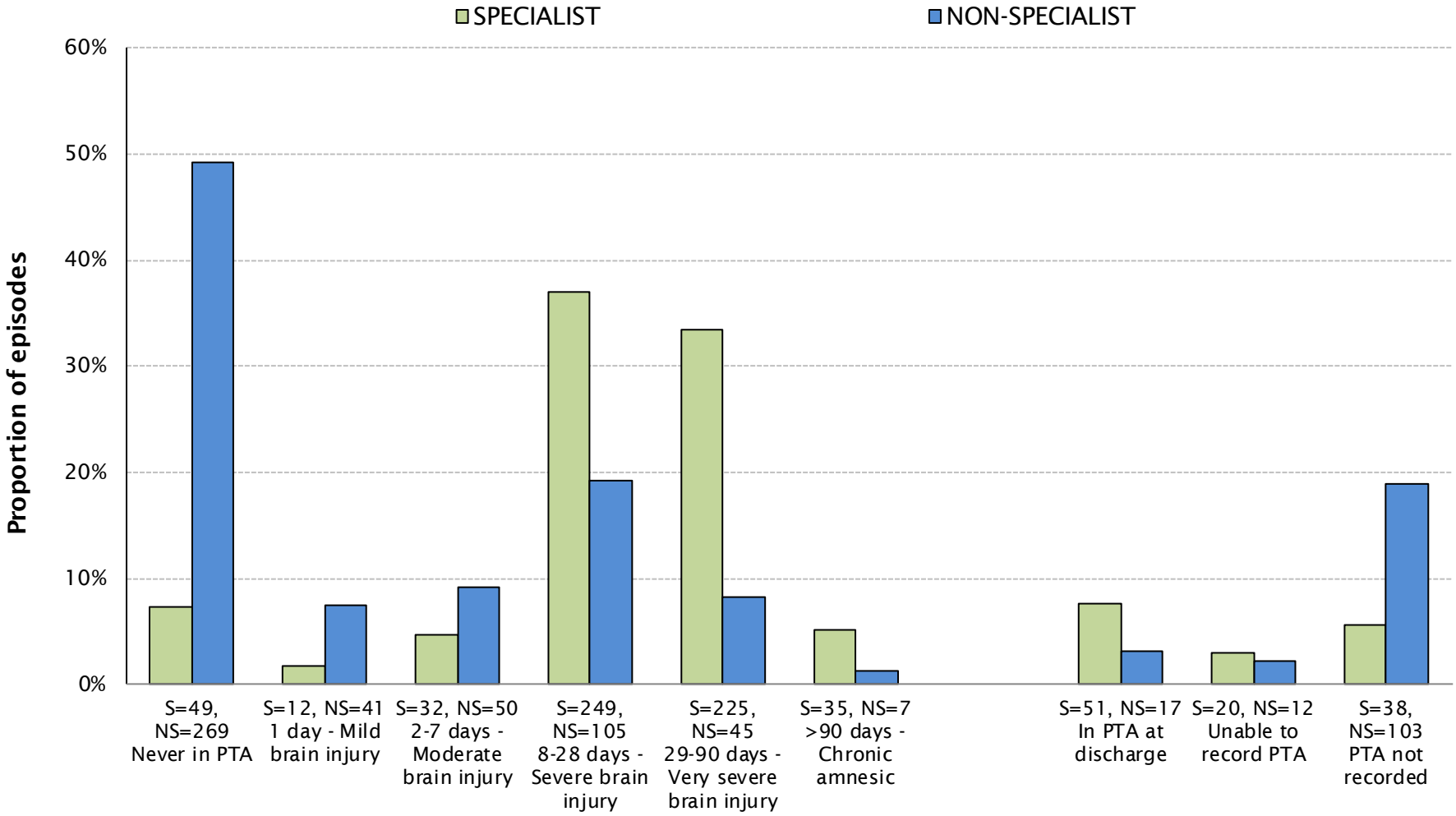
aroc

	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	664	60	255	753	134	
Percent of episodes receiving:						
No services	40.5	21.7	14.1	21.0	30.6	**27.7**
1 service type	27.3	31.7	11.4	26.2	21.6	**24.4**
2 service types	14.3	15.0	21.2	16.6	12.7	**16.1**
3 service types	9.6	15.0	20.4	11.2	15.7	**12.3**
4 or more service types	8.1	16.7	32.9	25.0	19.4	**19.4**
Service Type received						
Domestic assistance	25.2	31.7	60.4	35.7	32.1	**34.9**
Social support	4.7	23.3	22.0	15.8	11.9	**12.6**
Nursing care	4.4	15.0	15.3	10.4	10.4	**9.1**
Allied health care	40.7	50.0	39.6	57.2	46.3	**48.0**
Personal care	8.4	31.7	47.1	26.4	20.9	**22.6**
Meals	5.3	6.7	16.9	14.6	10.4	**11.0**
Provision of goods & equipment	13.7	11.7	31.0	28.3	17.9	**22.2**
Transport services	11.3	25.0	32.5	21.9	14.9	**19.2**
Case management	8.7	15.0	21.2	15.4	17.2	**13.9**

Note: Final accommodation is private residence.

Brain injury specific data

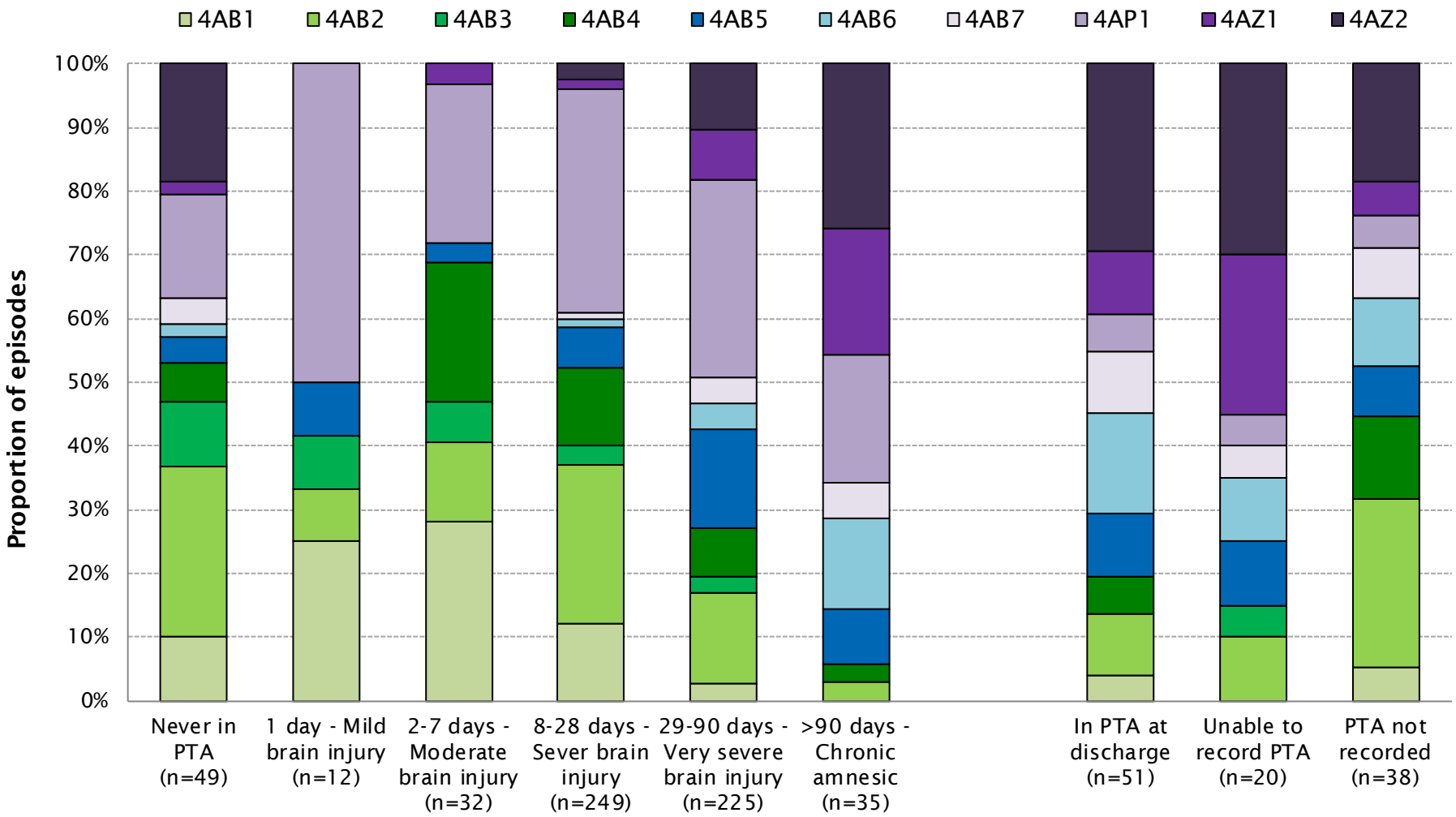
Proportion of episodes by duration of PTA



Note: 98 episodes at SPECIALIST facilities and 235 episodes at NON-SPECIALIST facilities did not collect PTA.

Note: First admission episodes.

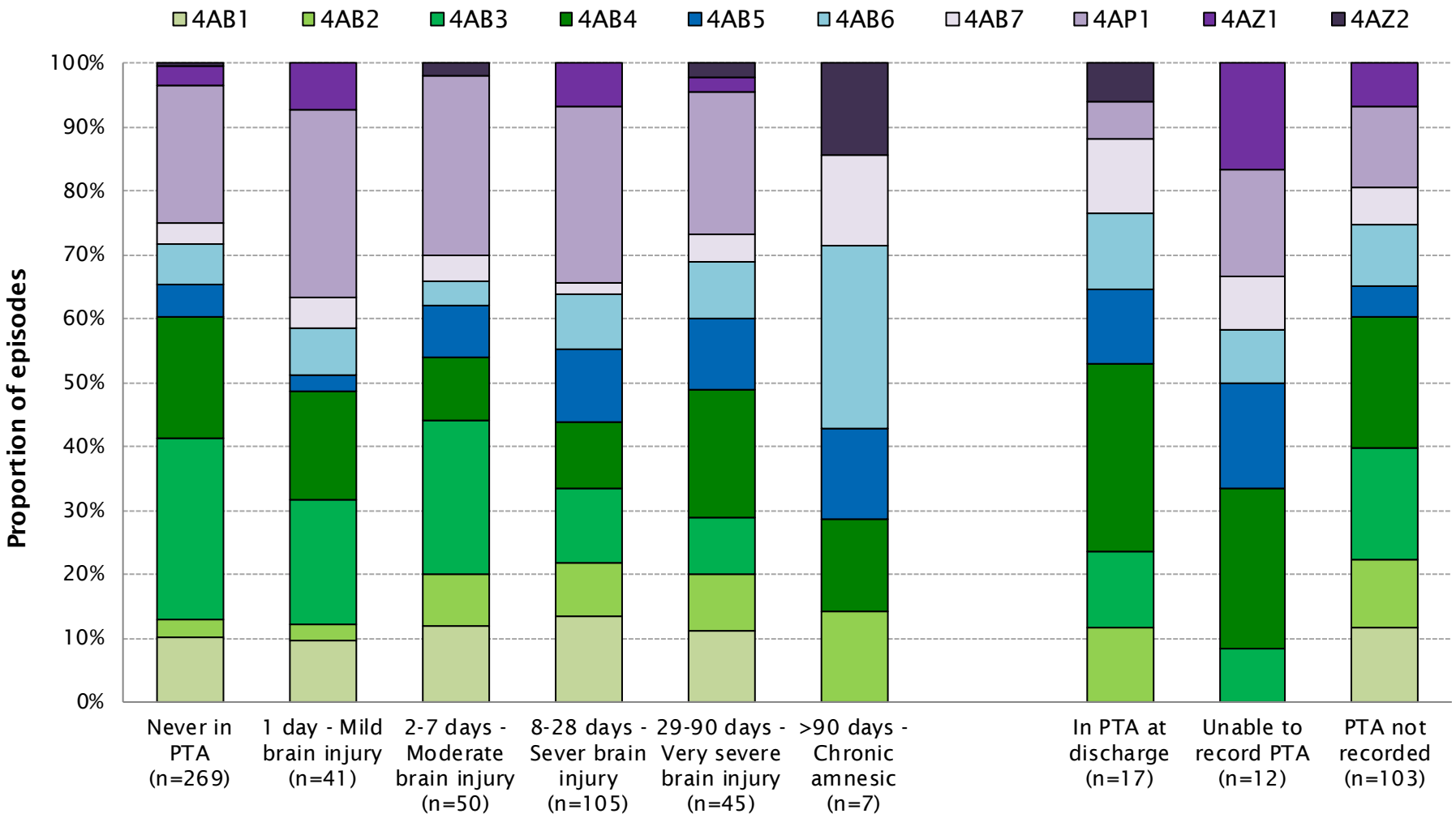
Proportion of specialist facility episodes by AN-SNAP class and duration of PTA



Note: 197 episodes at SPECIALIST facilities did not collect PTA.

Note: First admission episodes.

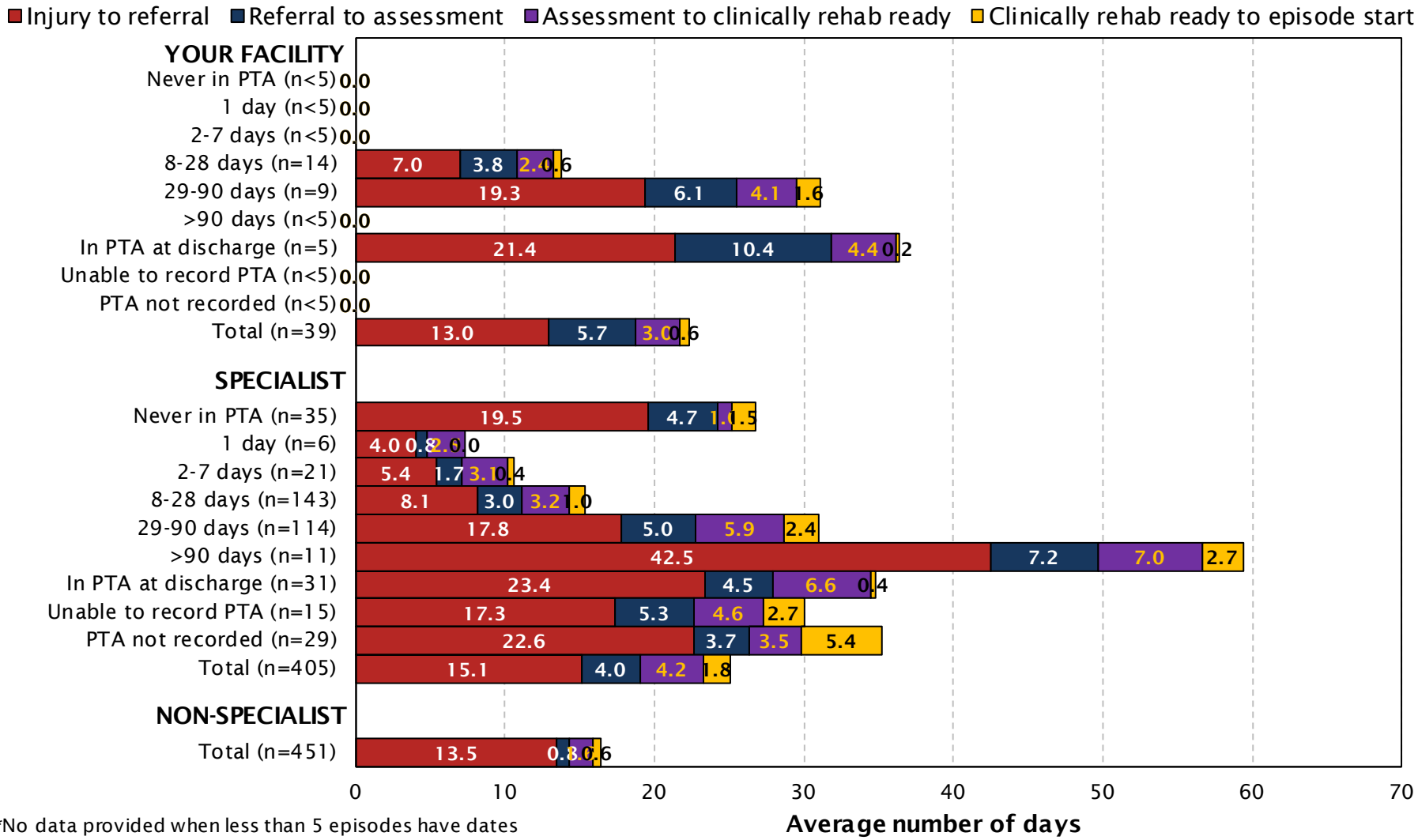
Proportion of non-specialist facility episodes by AN-SNAP class and duration of PTA



Note: 270 episodes at NON-SPECIALIST facilities did not collect PTA.

Note: First admission episodes.

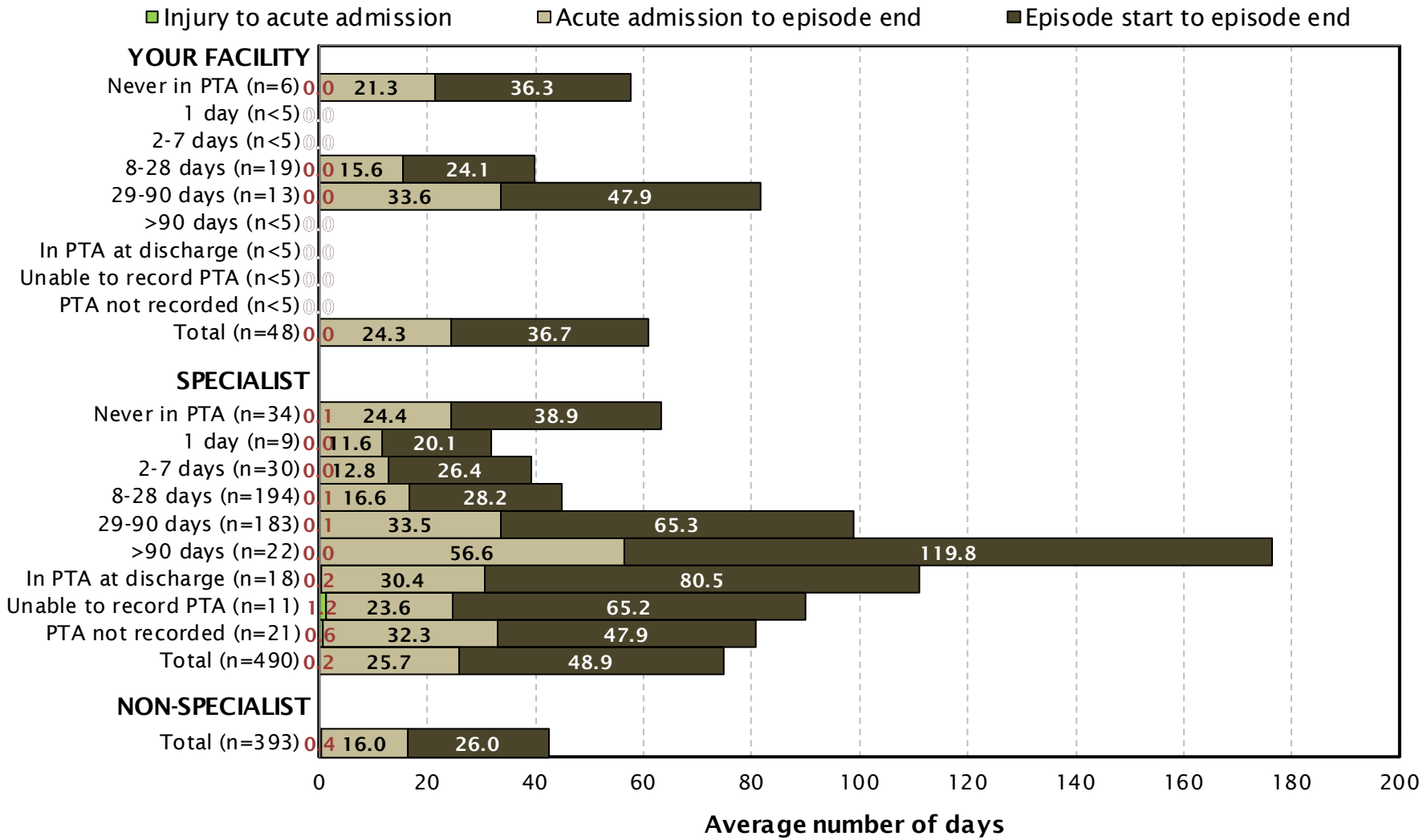
Days from injury to episode start by duration of PTA



*No data provided when less than 5 episodes have dates

Note: First admission episodes.

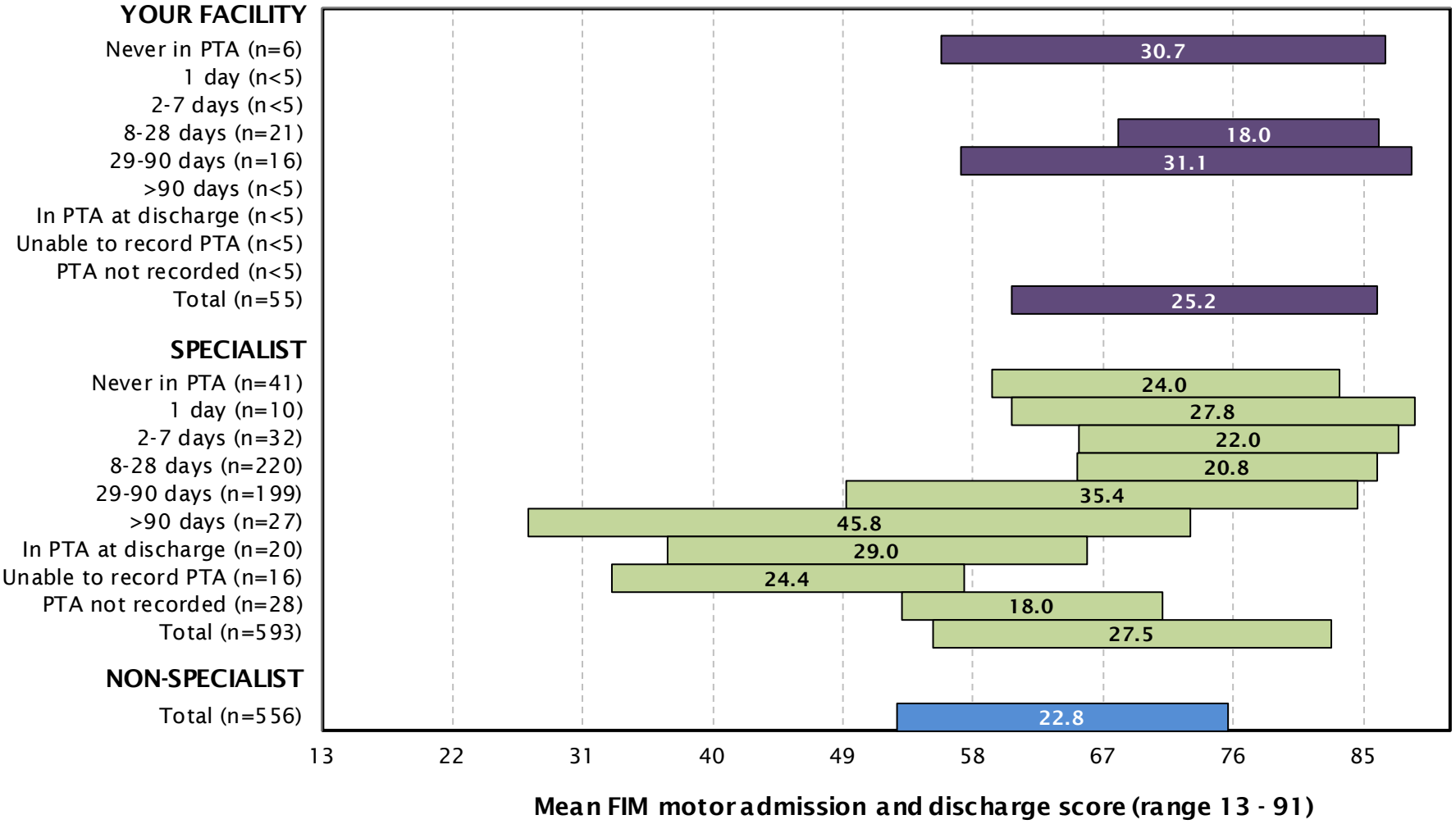
Days from injury to episode start with an acute admission by duration of PTA



Note: 5 episodes at YOUR FACILITY, 39 episodes at SPECIALIST facilities and 139 episodes at NON-SPECIALIST facilities did not collect PTA.

Note: First admission episodes.

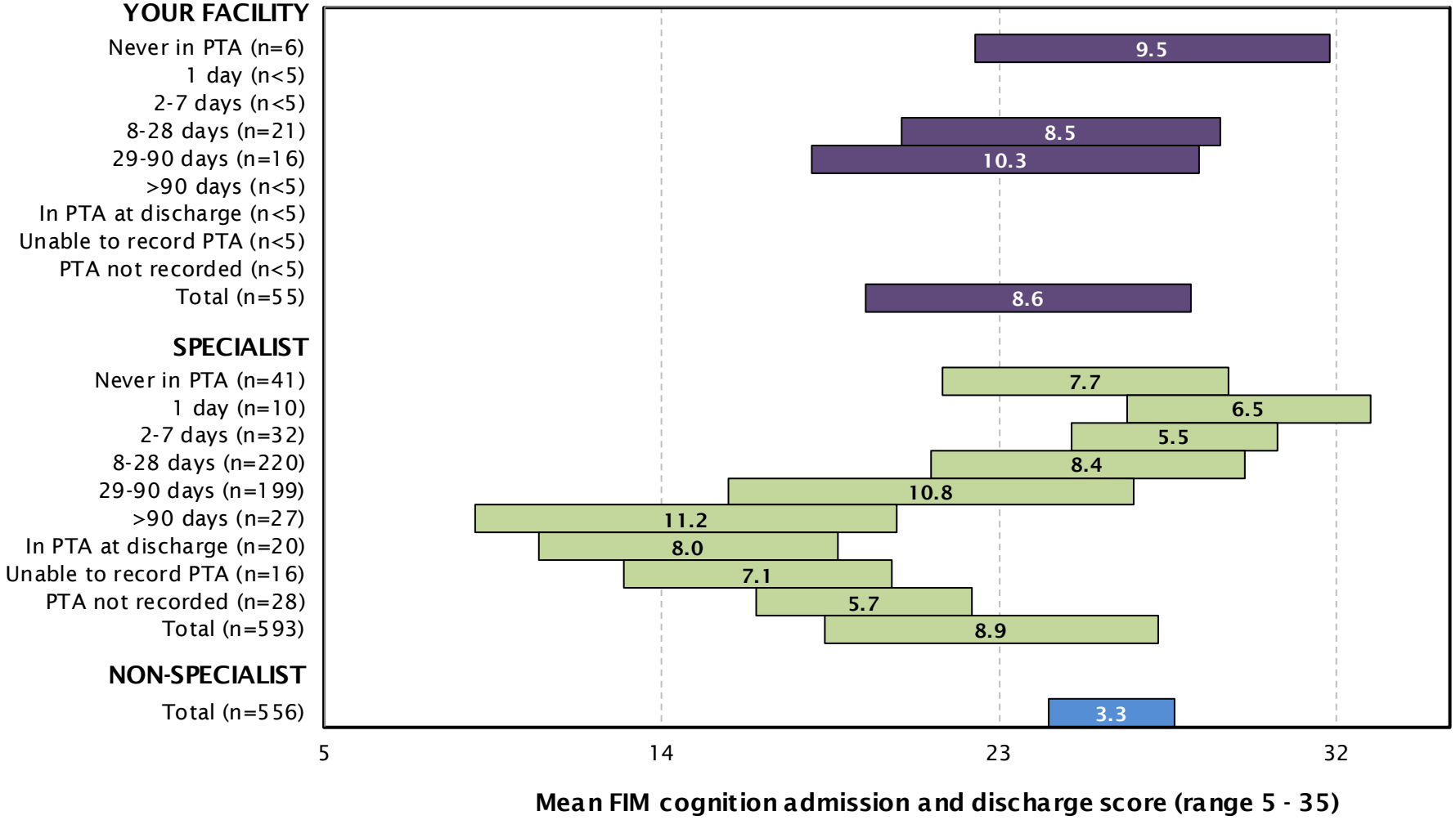
Admission and discharge FIM motor scores by duration of PTA



Note: 7 episodes at YOUR FACILITY, 56 episodes at SPECIALIST facilities and 196 episodes at NON-SPECIALIST facilities did not collect PTA.

Note: First admission episodes.

Admission and discharge FIM cognition scores by duration of PTA



Note: 7 episodes at YOUR FACILITY, 56 episodes at SPECIALIST facilities and 196 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)	—	—	—	20.5	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	—	—	—	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	—	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	—	—	—	31.7	36.2	—	—	—	—
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	**35.5**	—	—	**22.2**	**40.4**	—	—	—	—

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)	14.8	—	10.4	13.5	49.8	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	26.3	—	—	18.2	34.8	—	—	—	34.2
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	12.4	—	—	14.7	47.0	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	—	—	27.6	25.9	61.2	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	—	—	27.3	59.5	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	45.3	97.6	53.3	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	155.6	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	32.3	—	35.1	30.3	44.3	90.0	—	—	—
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	101.5	150.6	—	83.6	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	100.2	—	—	68.8	93.8	153.2	106.4	—	—
All Brain AN-SNAP classes	**34.2**	**18.5**	**24.1**	**25.4**	**60.6**	**126.8**	**84.2**	**92.9**	**49.9**

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)	11.1	—	5.4	7.3	11.8	—	—	—	9.7
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	11.3	—	—	12.4	—	—	—	—	16.4
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	14.5	18.1	21.0	14.7	—	—	—	—	17.4
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	16.3	18.0	—	18.3	23.4	—	—	—	19.5
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	31.5	—	—	25.7	27.4	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	31.5	—	—	24.6	—	—	—	—	30.8
4AB7 (BI, weighted FIM motor 19-28)	33.8	—	—	—	—	—	—	—	71.2
4AP1 (MMT, weighted FIM motor 19-91)	41.5	29.8	21.8	29.3	91.9	—	—	—	34.3
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	31.0	—	—	77.5	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	**22.8**	**21.5**	**19.0**	**24.6**	**43.1**	**104.2**	**30.2**	**25.7**	**24.3**

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)	—	—	—	96.2	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	—	—	—	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	—	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	—	—	—	86.8	77.6	—	—	—	—
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	**78.2**	—	—	**88.4**	**75.2**	—	—	—	—

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)	114.0	—	112.8	111.9	109.3	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	98.7	—	—	101.5	100.2	—	—	—	96.1
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	91.2	—	—	87.6	87.0	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	—	—	77.0	78.9	75.6	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	—	—	65.9	69.6	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	47.5	42.8	45.5	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	34.6	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	81.5	—	83.3	81.2	66.3	39.2	—	—	—
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	24.4	21.6	—	20.0	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	24.2	—	—	25.4	23.9	20.2	19.2	—	—
All Brain AN-SNAP classes	**80.7**	**87.1**	**90.3**	**86.3**	**65.1**	**36.3**	**47.6**	**46.0**	**69.6**

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)	107.7	—	101.2	112.0	104.4	—	—	—	104.3
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	99.1	—	—	97.8	—	—	—	—	94.2
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	87.7	87.3	79.6	88.8	—	—	—	—	86.3
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	75.7	74.8	—	80.0	73.1	—	—	—	78.0
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	60.9	—	—	68.8	66.6	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	52.1	—	—	46.6	—	—	—	—	54.4
4AB7 (BI, weighted FIM motor 19-28)	35.0	—	—	—	—	—	—	—	38.2
4AP1 (MMT, weighted FIM motor 19-91)	73.3	71.5	72.4	78.8	63.9	—	—	—	82.0
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	34.4	—	—	23.3	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	**79.0**	**75.9**	**78.0**	**77.5**	**71.4**	**53.8**	**64.2**	**57.2**	**79.4**

Note: First admission episodes.

Average FIM change 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)	—	—	—	20.3	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	—	—	—	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	—	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	—	—	—	32.0	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	**40.2**	—	—	**26.6**	**41.4**	—	—	—	—

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)	8.8	—	9.8	9.2	5.3	—	—	—	—
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	19.7	—	—	17.3	14.8	—	—	—	20.0
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	26.4	—	—	28.1	27.3	—	—	—	—
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	—	—	37.4	38.3	34.2	—	—	—	—
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	—	—	—	47.7	44.5	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	—	—	—	—	58.0	48.6	43.7	—	—
4AB7 (BI, weighted FIM motor 19-28)	—	—	—	—	68.8	—	—	—	—
4AP1 (MMT, weighted FIM motor 19-91)	35.8	—	29.3	33.3	46.1	36.0	—	—	—
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	—	—	—	—	84.8	77.0	—	35.8	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	66.2	—	—	65.6	79.3	80.7	50.6	—	—
All Brain AN-SNAP classes	**31.7**	**34.3**	**27.5**	**29.2**	**46.2**	**57.0**	**37.0**	**31.5**	**23.8**

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)	10.2	—	15.8	8.9	12.2	—	—	—	15.0
4AB2 (BI, weighted FIM motor 71-91, FIM cog 5-25)	12.1	—	—	19.1	—	—	—	—	17.3
4AB3 (BI, weighted FIM motor 41-70, FIM cog 26-35)	22.3	20.3	29.8	21.2	—	—	—	—	17.6
4AB4 (BI, weighted FIM motor 41-70, FIM cog 17-25)	22.6	27.8	—	29.5	34.1	—	—	—	21.5
4AB5 (BI, weighted FIM motor 41-70, FIM cog 5-16)	25.8	—	—	32.8	25.6	—	—	—	—
4AB6 (BI, weighted FIM motor 29-40)	25.0	—	—	32.4	—	—	—	—	31.8
4AB7 (BI, weighted FIM motor 19-28)	26.2	—	—	—	—	—	—	—	46.8
4AP1 (MMT, weighted FIM motor 19-91)	35.7	44.1	35.7	33.5	40.3	—	—	—	25.0
4AZ1 (BI or MMT, age ≥ 49, weighted FIM motor 13-18)	34.0	—	—	41.7	—	—	—	—	—
4AZ2 (BI or MMT, age ≤ 48, weighted FIM motor 13-18)	—	—	—	—	—	—	—	—	—
All Brain AN-SNAP classes	**24.3**	**28.1**	**29.3**	**28.3**	**32.4**	**44.0**	**31.7**	**17.8**	**22.6**

Note: First admission episodes.

Low FIM score summary report

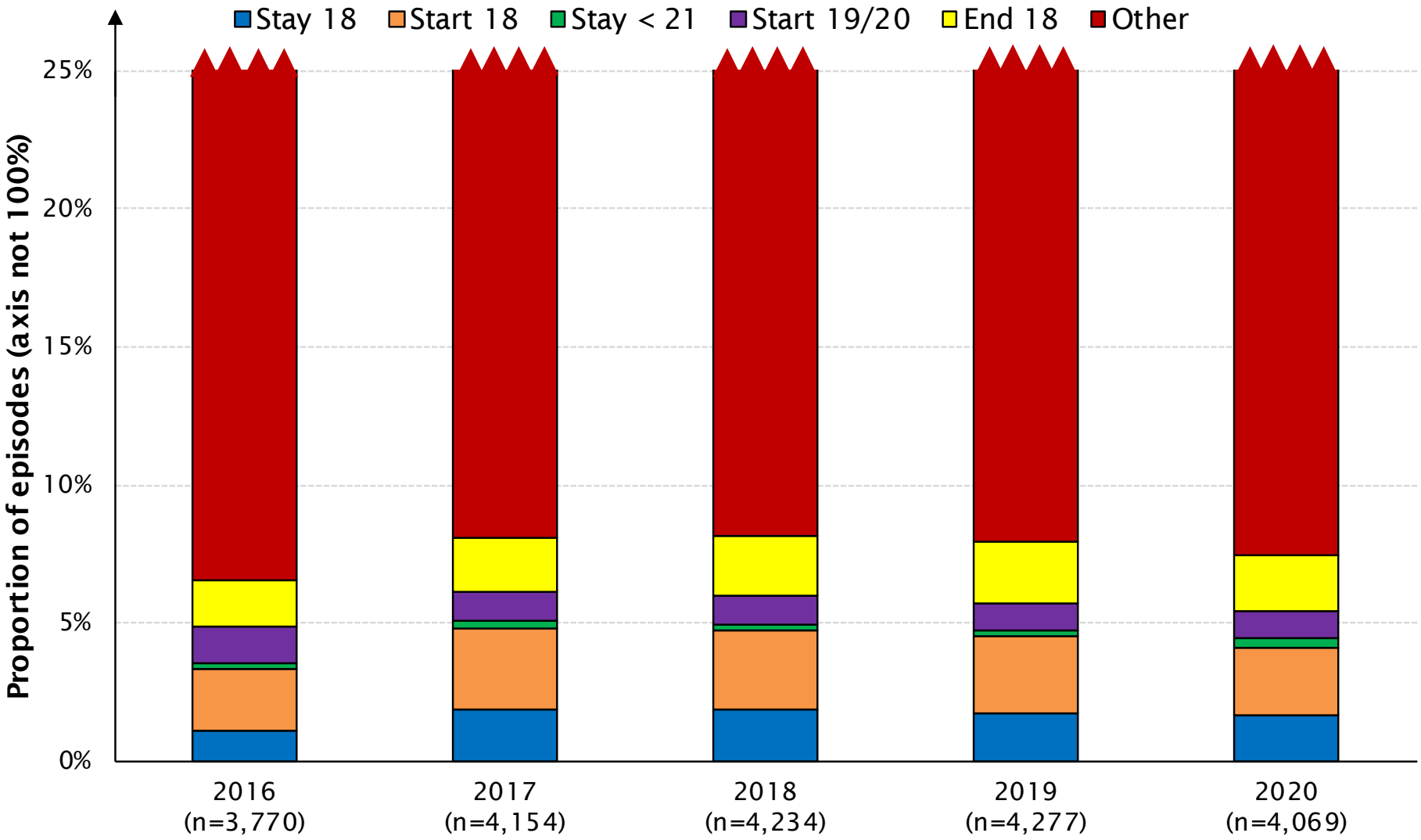
Low FIM score Category Definitions

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.

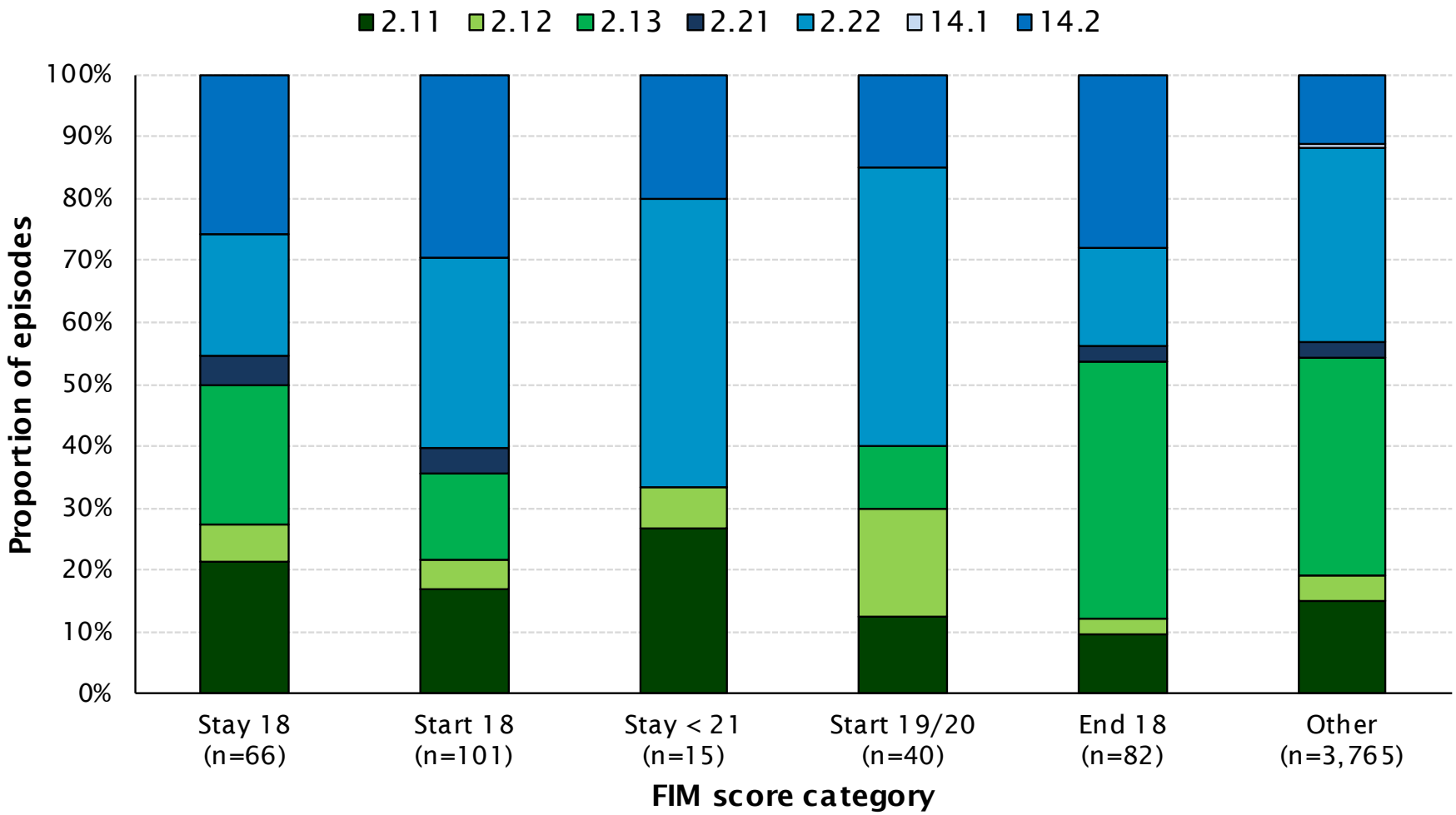
Low FIM score episodes over time



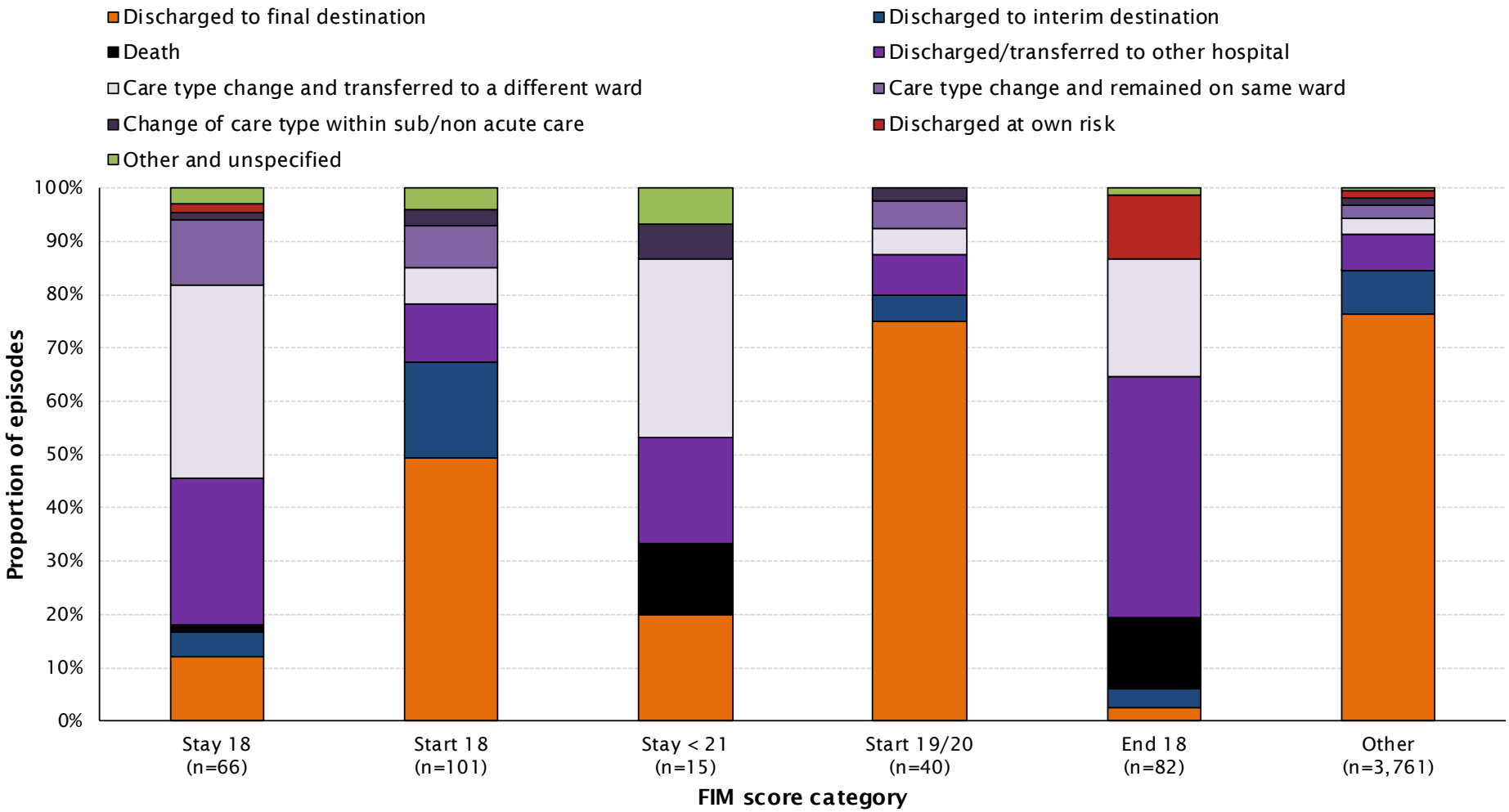
Low FIM score episodes over time

Year	Stay 18	Start 18	Stay < 21	Start 19/20	End 18	Other
YOUR FACILITY						
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
SPECIALIST (ALL FACILITIES)						
2016	24	58	3	28	14	1,247
2017	50	95	5	26	26	1,218
2018	61	87	1	25	37	1,263
2019	41	93	3	23	33	1,184
2020	42	68	10	22	26	1,098
NON-SPECIALIST (ALL FACILITIES)						
2016	18	25	6	22	49	2,276
2017	27	26	7	19	54	2,601
2018	19	33	8	20	54	2,626
2019	32	27	5	20	62	2,754
2020	24	33	5	18	56	2,667

Low FIM score impairment distribution



Low FIM score discharge destination

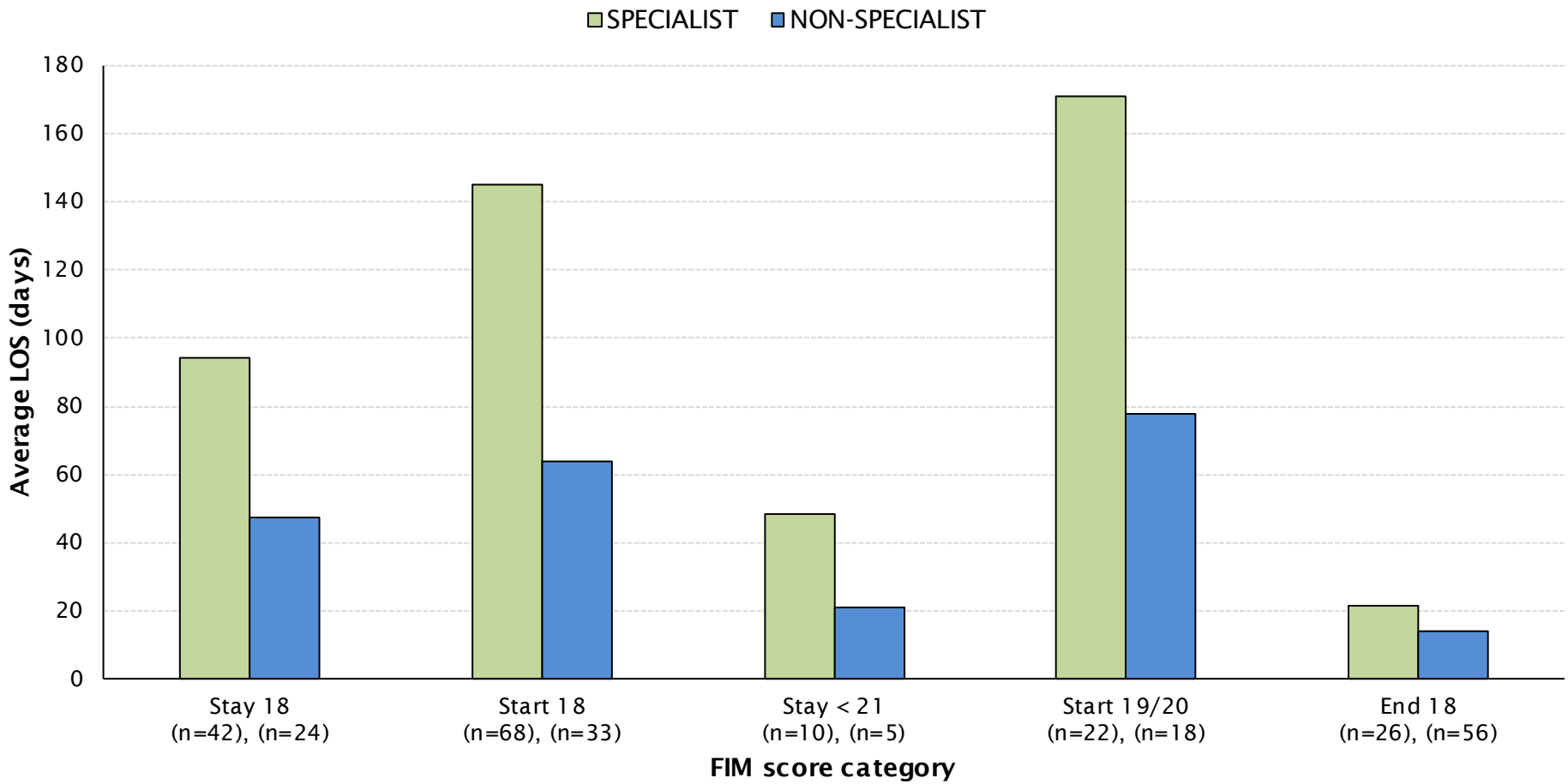


Low FIM score discharge destination

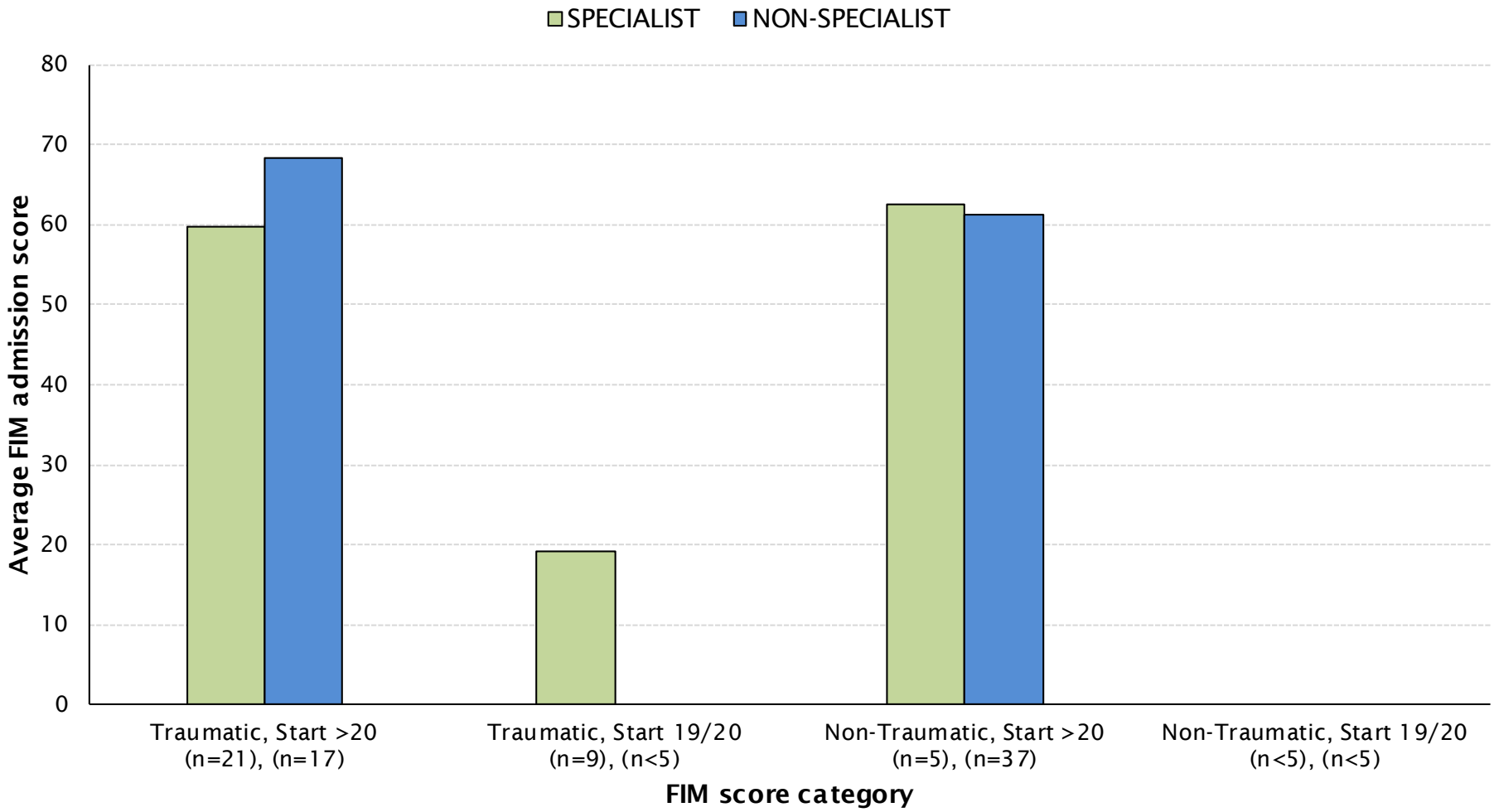
aroc

Discharge Destination	Stay 18	Start 18	Stay < 21	Start 19/20	End 18	Other
YOUR FACILITY						
Discharged to final destination	0	0	0	0	0	0
Discharged to interim destination	0	0	0	0	0	0
Death	0	0	0	0	0	0
Discharged/transferred to other hospital	0	0	0	0	0	0
Care type change and transferred to a different ward	0	0	0	0	0	0
Care type change and remained on same ward	0	0	0	0	0	0
Change of care type within sub/non acute care	0	0	0	0	0	0
Discharged at own risk	0	0	0	0	0	0
Other and unspecified	0	0	0	0	0	0
Total	0	0	0	0	0	0
SPECIALIST (ALL FACILITIES)						
Discharged to final destination	4	28	2	18	0	824
Discharged to interim destination	1	17	0	1	0	95
Death	1	0	1	0	0	0
Discharged/transferred to other hospital	11	5	1	1	14	64
Care type change and transferred to a different ward	19	6	4	1	5	38
Care type change and remained on same ward	3	7	0	1	0	23
Change of care type within sub/non acute care	0	2	1	0	0	9
Discharged at own risk	1	0	0	0	7	30
Other and unspecified	2	3	1	0	0	15
Total	42	68	10	22	26	1,098
NON-SPECIALIST (ALL FACILITIES)						
Discharged to final destination	4	22	1	12	2	2,043
Discharged to interim destination	2	1	0	1	3	219
Death	0	0	1	0	11	1
Discharged/transferred to other hospital	7	6	2	2	23	189
Care type change and transferred to a different ward	5	1	1	1	13	74
Care type change and remained on same ward	5	1	0	1	0	70
Change of care type within sub/non acute care	1	1	0	1	0	44
Discharged at own risk	0	0	0	0	3	15
Other and unspecified	0	1	0	0	1	8
Total	24	33	5	18	56	2,663

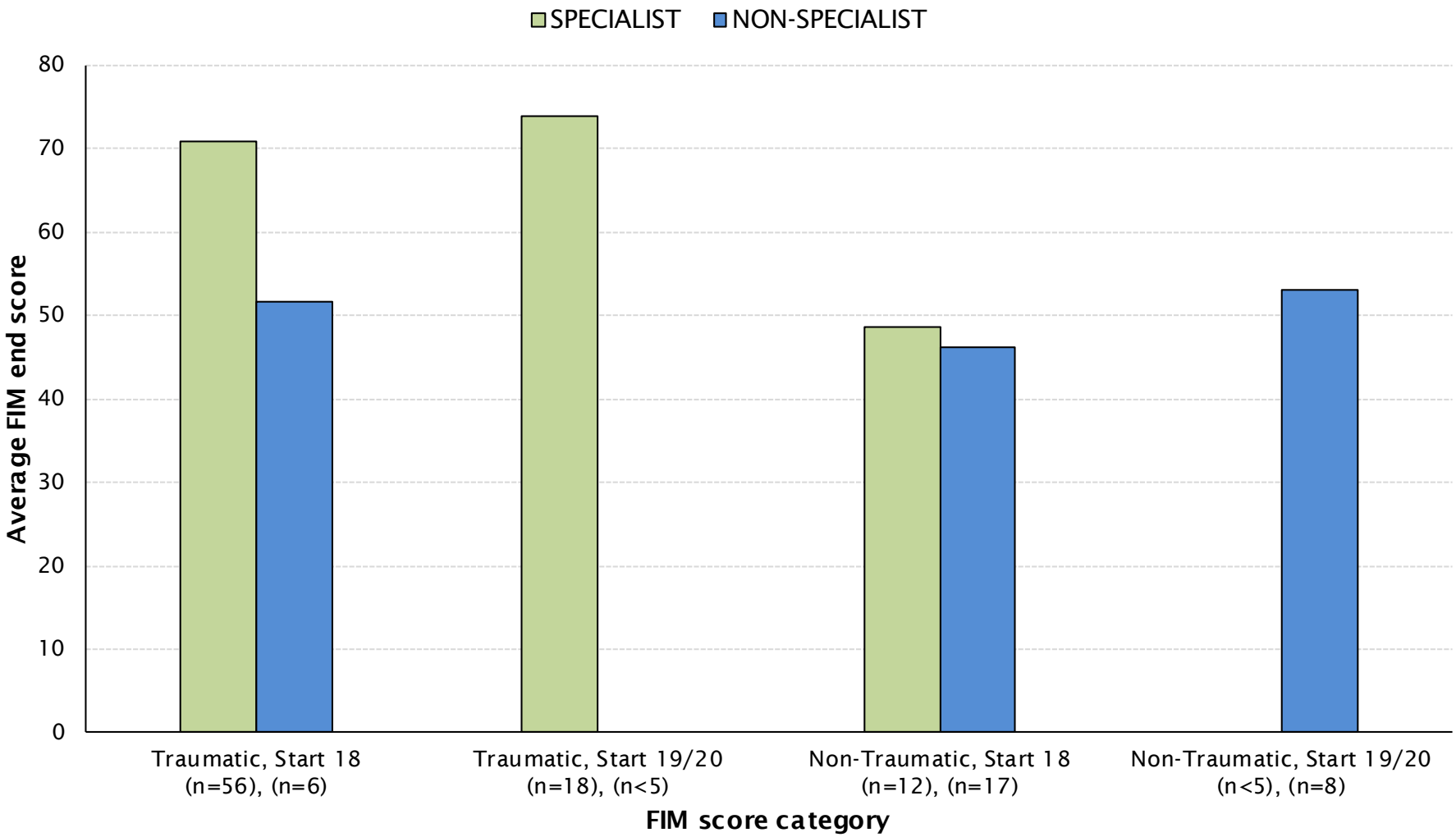
Low FIM score average LOS



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



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



Appendix 1: Glossary

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.

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**

Appendix 1: Glossary

Data completeness score

The data completeness 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.

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.

Appendix 1: Glossary

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

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- **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.

- **Suggested acknowledgement**

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