

# AROC Impairment Specific Report

## Orthopaedic Replacements

### INPATIENT – PATHWAY 3

July 2022 – June 2023

Anywhere Hospital



**Australasian  
Faculty of  
Rehabilitation  
Medicine**



**UNIVERSITY  
OF WOLLONGONG  
AUSTRALIA**

# Table of contents

Orthopaedic replacements dashboard.....	4
Data used in this report.....	7
Orthopaedic replacements impairment codes.....	8
Orthopaedic replacements AN-SNAP classes.....	9
The BIG picture.....	10
Review of FIM item scoring by AN-SNAP class.....	21
Outcomes analysis.....	26
Explanatory data.....	46
Appendix 1: Glossary.....	97
Appendix 2: AROC impairment codes.....	107
Appendix 3: AN-SNAP classes.....	109
Acknowledgements.....	110
AROC contact details.....	111

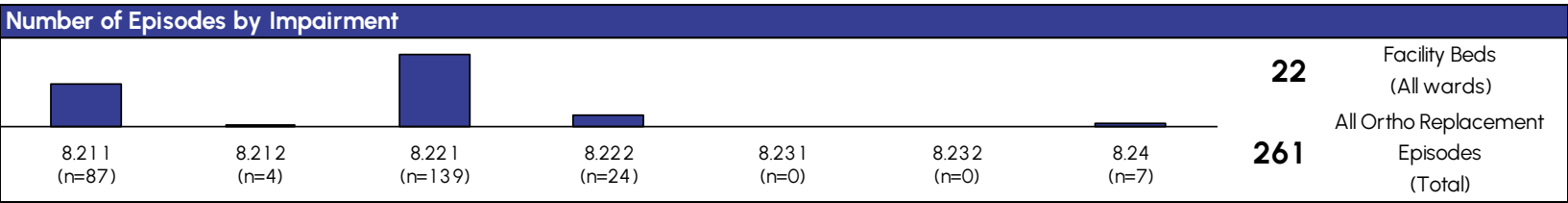
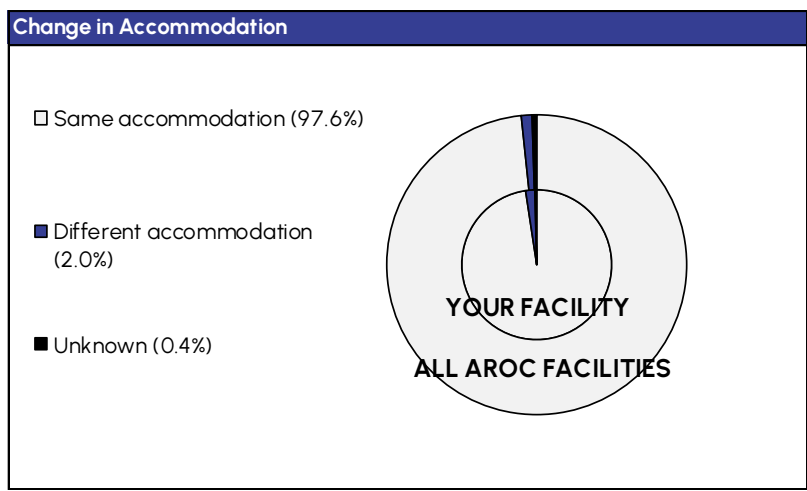
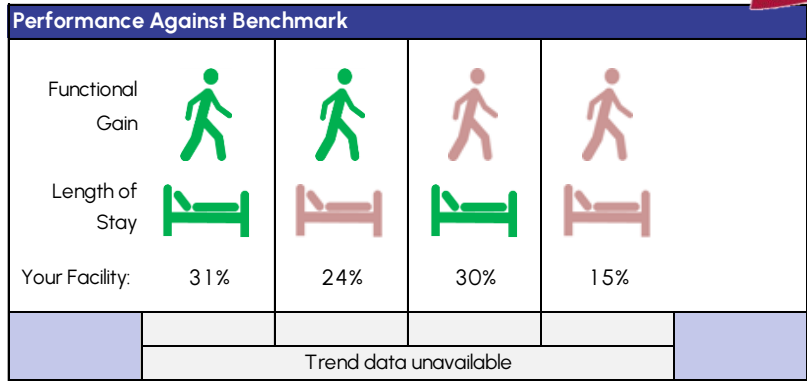
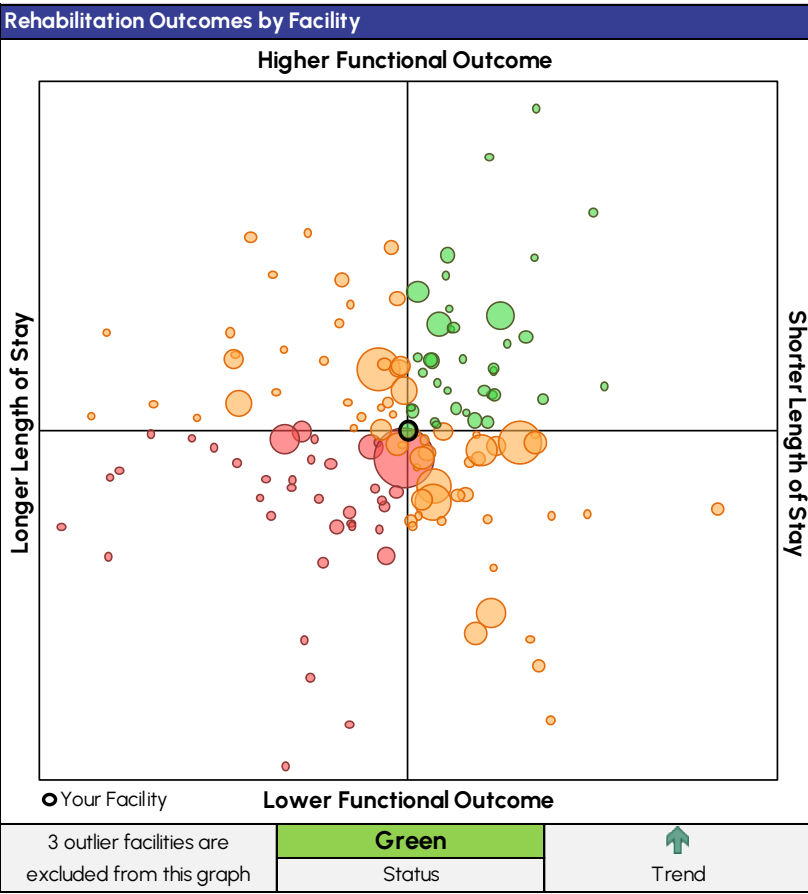
## AN-SNAP Changes

- This is the third AROC report to use the Australian National Sub-Acute and Non-Acute Patient (AN-SNAP) Version 5 Classification, introduced by Independent Health and Aged Care Pricing Authority (IHACPA) in July 2022.
- Like previous AN-SNAP classification versions, Version 5 uses impairment, age, weighted FIM motor admission score and FIM cognition score to determine which rehabilitation class an episode should be assigned to. AN-SNAP Version 5 has 48 inpatient admitted overnight adult classes (the full list of classes can be found in Appendix 3).
- Information about how the **AN-SNAP class** has changed since Version 4 and a description of **Impairment specific weighted FIM scores** can be found in Appendix 1. Further information about AN-SNAP Version 5 is available on the IHACPA and AROC websites.

## What does using AN-SNAP V5 mean for this report?

- **DASHBOARD:** Where you are positioned in the quadrant graph from 2022 onwards is based on V5 casemix-adjusted data, however comparison data from years prior to 2022 uses V4 casemix-adjusted data.
- **OUTCOMES ANALYSIS:** All years' data presented in time-series analysis is casemix-adjusted using AN-SNAP V5 with 2023 as the base year.

# Orthopaedic Replacements Dashboard



# Orthopaedic Replacements Dashboard

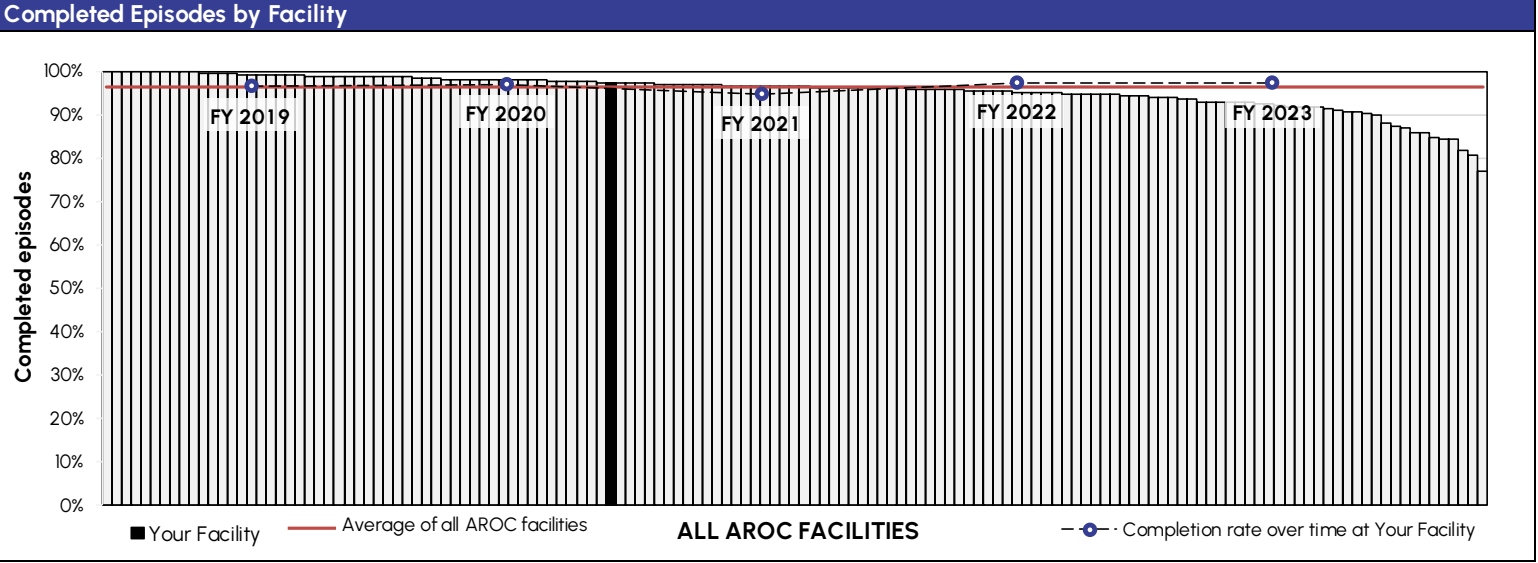


Key Indicators*	
YOUR FACILITY	ALL AROC FACILITIES
Average Age: 72.6	Average Age: 72.4
Mortality Rate: 0.0%	Mortality Rate: 0.0%
% with at least one comorbidity: 34%	% with at least one comorbidity: 35%
% with at least one complication: 9%	% with at least one complication: 10%
% episodes with start delays: 6%	% episodes with start delays: 6%
Days between onset and rehab episode: 6.8	Days between onset and rehab episode: 6.0
Days between clinically rehab ready & start date: 0.9	Days between clinically rehab ready & start date: 0.1

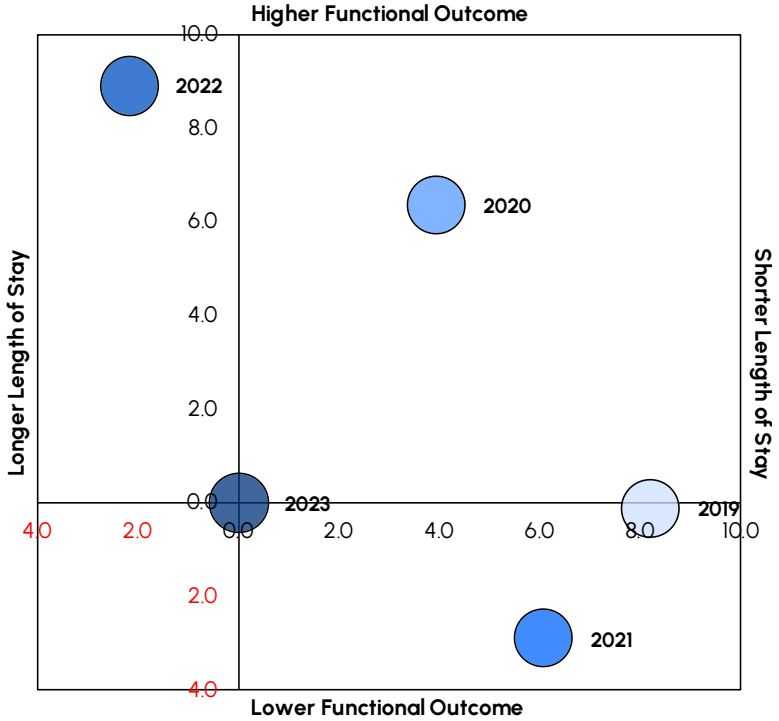
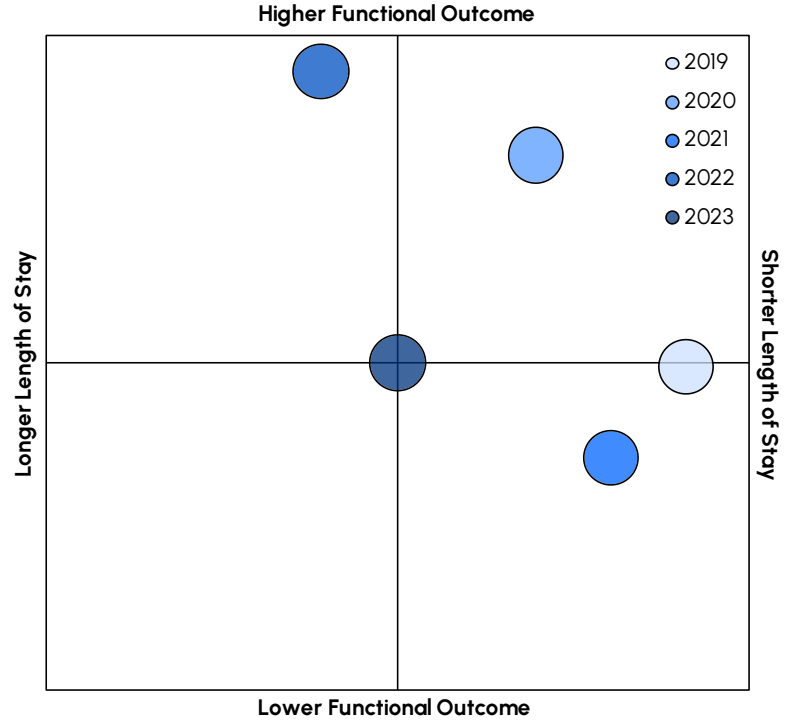
\* Mean value provided unless otherwise specified

Facility FIM Training*	
FIM Credentialed Staff per 100 Episodes	FIM Credentialed Facility Trainers
7.8 Your Facility	3 Your Facility
6.9 ALL AROC FACILITIES (Mean)	2 AROC Suggested Minimum

\*This includes all impairments from all wards



# Quadrant Positions – last 5 years



**NB: Data from before FY22 is benchmarked using AN-SNAP V4 classes. FY22 onwards benchmarked using AN-SNAP V5 classes.**

NOTE: Includes only completed episodes with valid FIM & LOS; where n<20 no dot will be shown

# Data used in this report



- Orthopaedic replacement episodes discharged during the reporting period (July 2022 – June 2023) and time series data covering five years.
- Benchmark group is ALL AROC FACILITIES.
- Casemix analysis uses version 5 AN-SNAP classes (Appendix 3). Casemix adjustment is calculated against ALL AROC FACILITIES' data.
- 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.
- Facilities will only receive this report when the facility reports a minimum of 20 completed orthopaedic replacement episodes.

The immediate impact of COVID-19 in 2020 on rehabilitation was a 12% decline in the number of rehabilitation episodes following temporary suspension of elective surgeries, ward re-assignments and closures, and fewer traumatic accidents. There is still an ongoing impact of COVID-19 on rehabilitation in the form of reduced inpatient beds, increased patient complexity and staffing issues. See **COVID-19** in Appendix 1 glossary for information about the collection of data for COVID patients.

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.

Orthopaedic replacement episodes were identified as those with the following AROC impairment codes:

- 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

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



Levels of functioning for orthopaedic replacements are categorised by the following version 5 AN-SNAP classes:

- 5A41 – Orthopaedic conditions, replacement (knee, hip, shoulder), Weighted FIM Motor 61 - 91
- 5A42 – Orthopaedic conditions, replacement (knee, hip, shoulder), Weighted FIM Motor 45 - 60
- 5A43 – Orthopaedic conditions, replacement (knee, hip, shoulder), Weighted FIM Motor 19 - 44
- 5AZ3 – Weighted FIM Motor score 13-18, All other impairments, Age  $\geq$  79
- 5AZ4 – Weighted FIM Motor score 13-18, All other impairments, Age 18 - 78

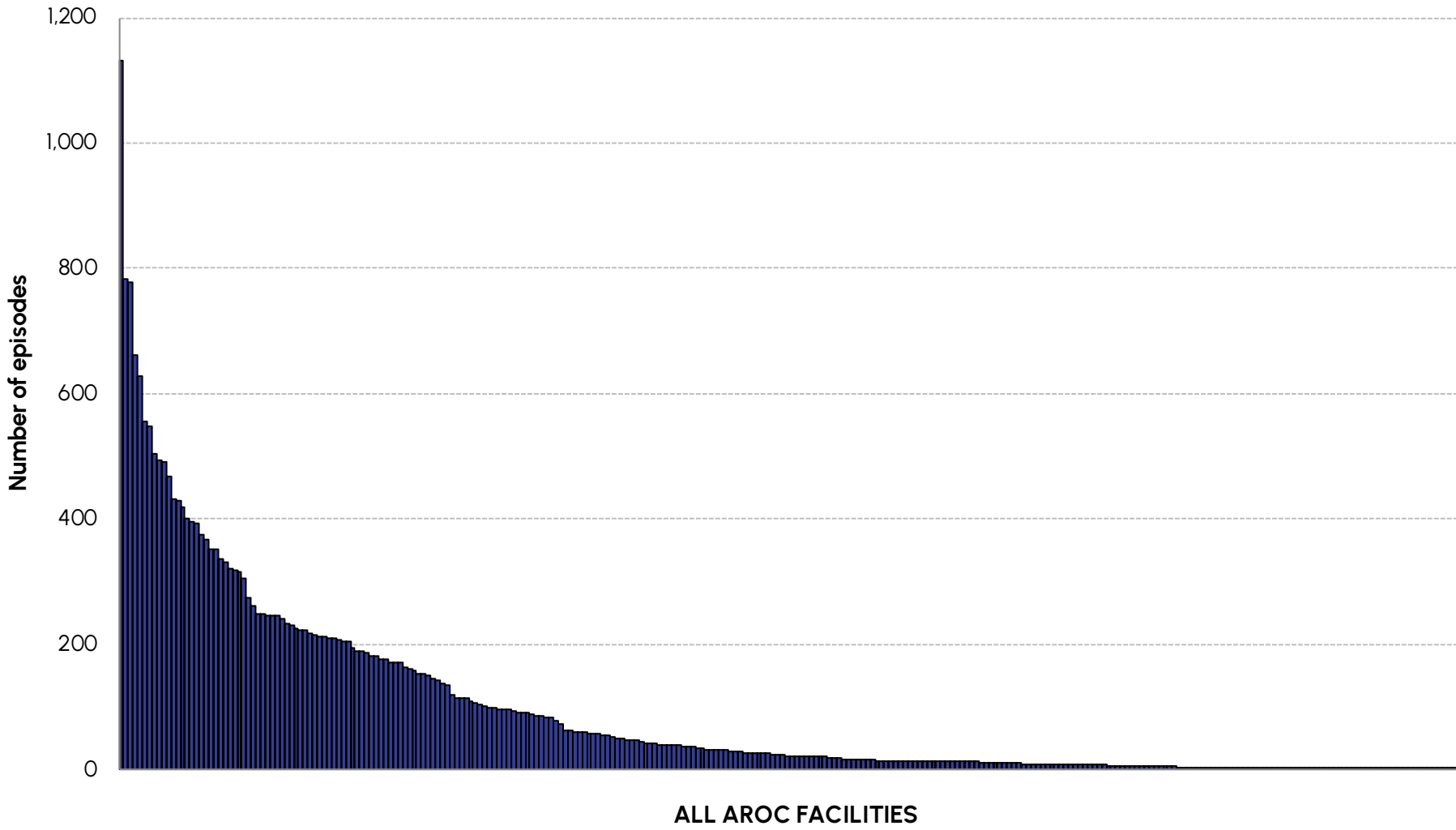
NOTE: A list of all AN-SNAP classes can be found in Appendix 3.



# The BIG picture

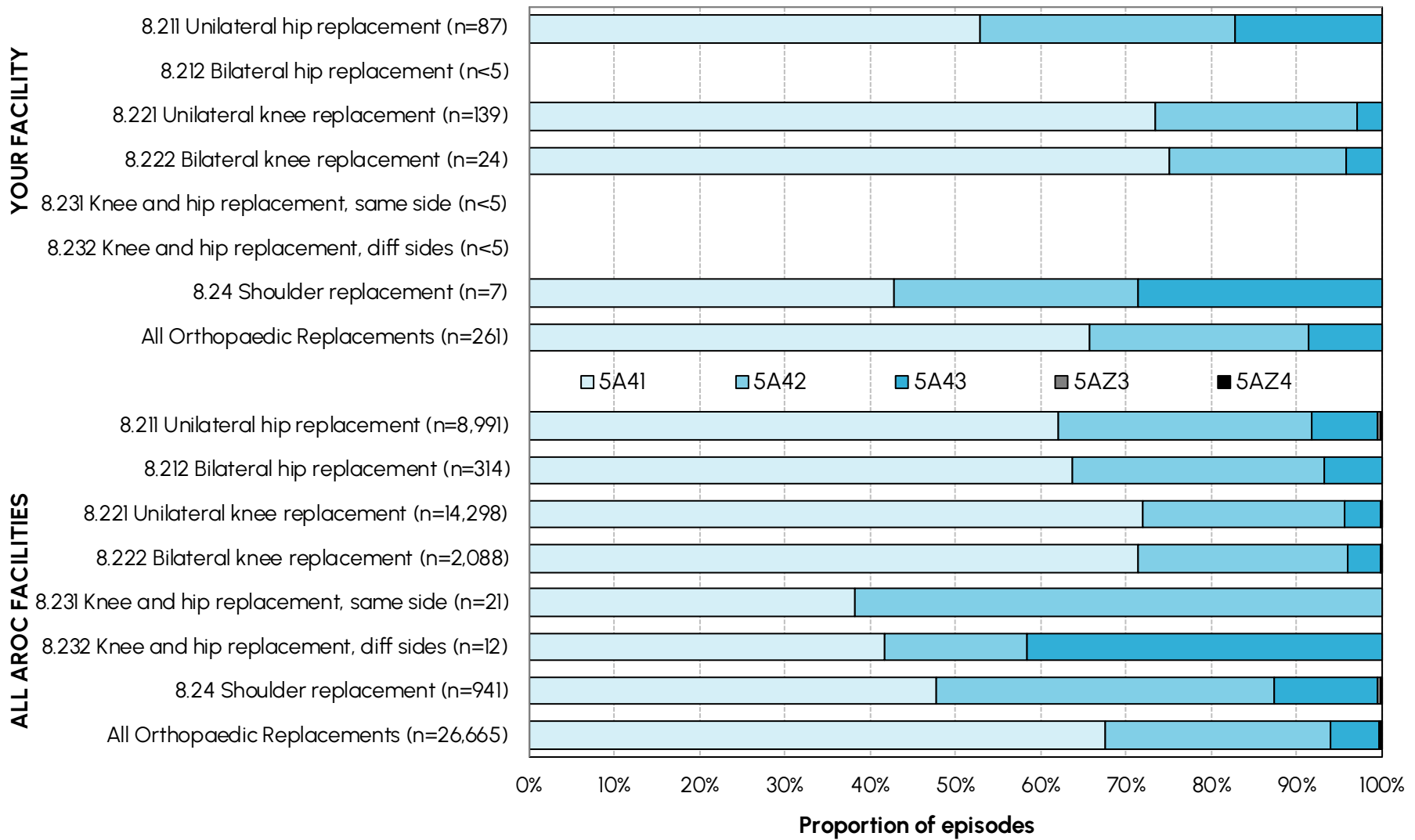


# Volume of episodes by facilities treating orthopaedic replacements



NOTE: 283 facilities reported at least one orthopaedic replacement episode, with 150 facilities reporting between 20 and 1,132 episodes in this reporting period

# Proportion of episodes by impairment code and AN-SNAP class



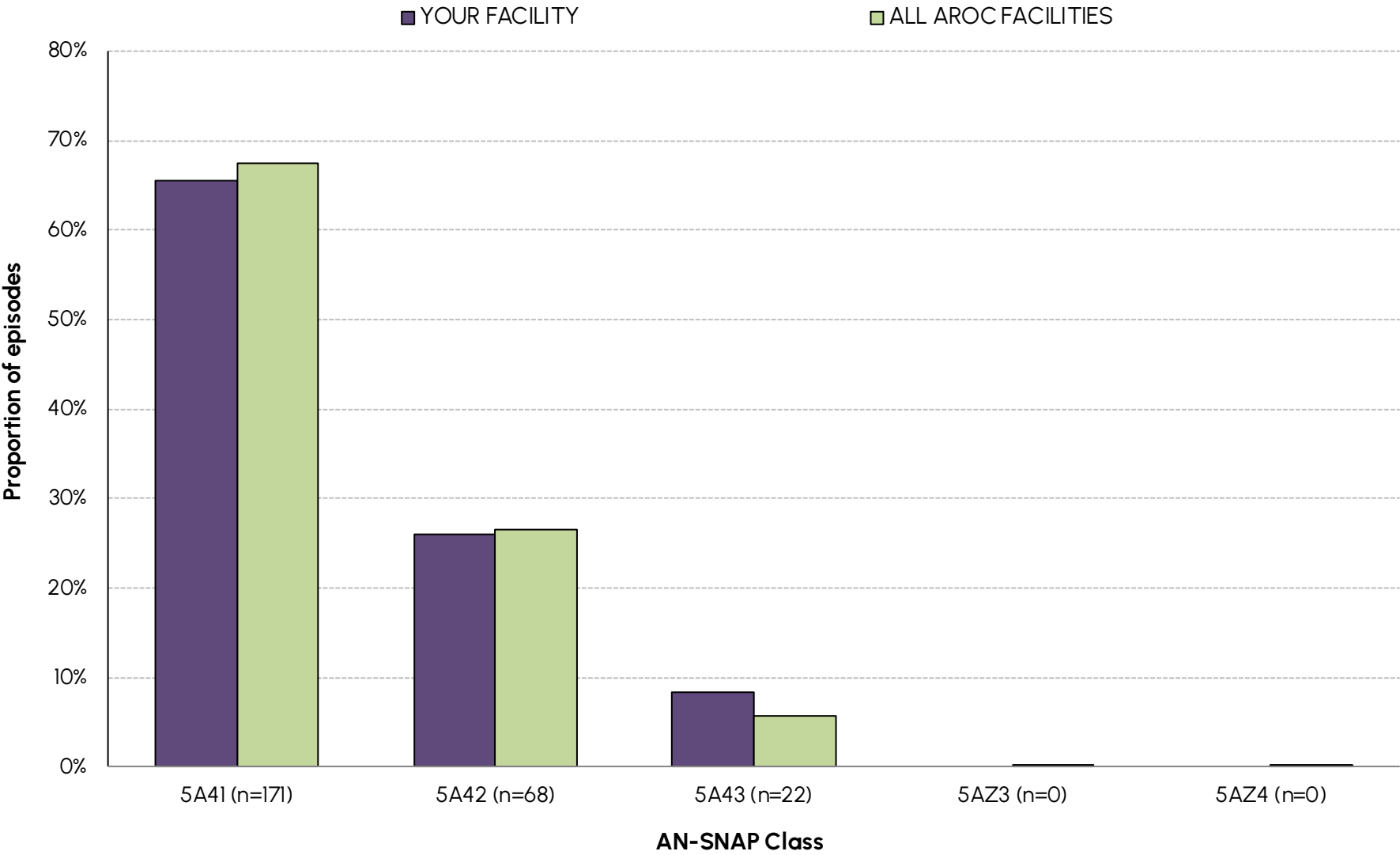
# Episodes by impairment code and AN-SNAP class

YOUR FACILITY — N (%)						
Impairment	5A41	5A42	5A43	5AZ3	5AZ4	All Replacement AN-SNAP classes*
8.211 Unilateral hip replacement	46 (52.9)	26 (29.9)	15 (17.2)	0 (0.0)	0 (0.0)	87 (100.0)
8.212 Bilateral hip replacement	2 (50.0)	2 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (100.0)
8.221 Unilateral knee replacement	102 (73.4)	33 (23.7)	4 (2.9)	0 (0.0)	0 (0.0)	139 (100.0)
8.222 Bilateral knee replacement	18 (75.0)	5 (20.8)	1 (4.2)	0 (0.0)	0 (0.0)	24 (100.0)
8.231 Knee and hip replacement, same side	0 —	0 —	0 —	0 —	0 —	0 —
8.232 Knee and hip replacement, diff sides	0 —	0 —	0 —	0 —	0 —	0 —
8.24 Shoulder replacement	3 (42.9)	2 (28.6)	2 (28.6)	0 (0.0)	0 (0.0)	7 (100.0)
<b>All Orthopaedic Replacements</b>	<b>171 (65.5)</b>	<b>68 (26.1)</b>	<b>22 (8.4)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>261 (100.0)</b>

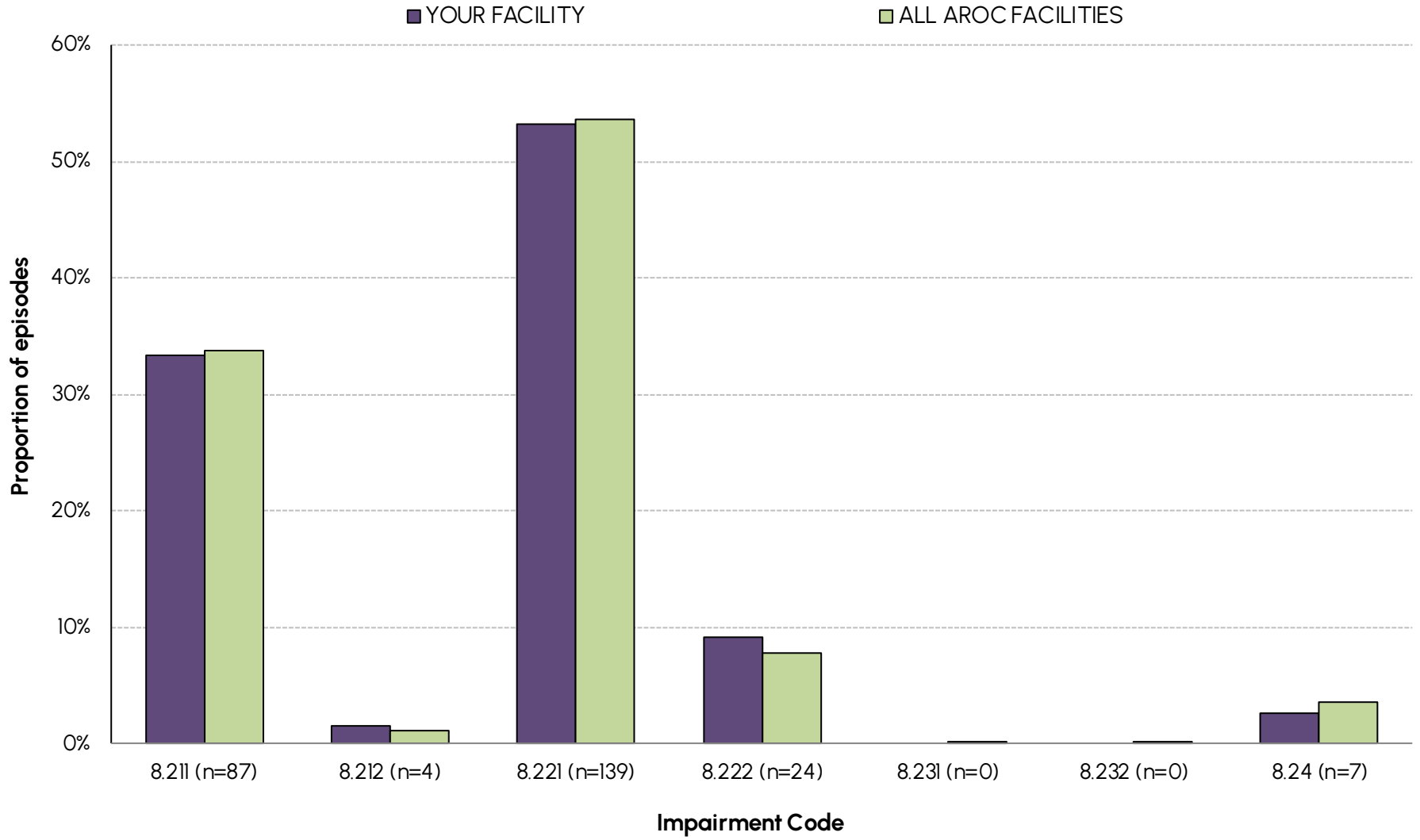
ALL AROC FACILITIES — N (%)						
Impairment	5A41	5A42	5A43	5AZ3	5AZ4	All Replacement AN-SNAP classes*
8.211 Unilateral hip replacement	5,571 (62.0)	2,680 (29.8)	702 (7.8)	24 (0.3)	14 (0.2)	8,991 (100.0)
8.212 Bilateral hip replacement	200 (63.7)	93 (29.6)	21 (6.7)	0 (0.0)	0 (0.0)	314 (100.0)
8.221 Unilateral knee replacement	10,279 (71.9)	3,407 (23.8)	592 (4.1)	10 (0.1)	10 (0.1)	14,298 (100.0)
8.222 Bilateral knee replacement	1,490 (71.4)	513 (24.6)	81 (3.9)	1 (0.0)	3 (0.1)	2,088 (100.0)
8.231 Knee and hip replacement, same side	8 (38.1)	13 (61.9)	0 (0.0)	0 (0.0)	0 (0.0)	21 (100.0)
8.232 Knee and hip replacement, diff sides	5 (41.7)	2 (16.7)	5 (41.7)	0 (0.0)	0 (0.0)	12 (100.0)
8.24 Shoulder replacement	449 (47.7)	374 (39.7)	113 (12.0)	4 (0.4)	1 (0.1)	941 (100.0)
<b>All Orthopaedic Replacements</b>	<b>18,002 (67.5)</b>	<b>7,082 (26.6)</b>	<b>1,514 (5.7)</b>	<b>39 (0.1)</b>	<b>28 (0.1)</b>	<b>26,665 (100.0)</b>

\*There were 0 episodes in YOUR FACILITY and 23 episodes in ALL AROC FACILITIES with AN-SNAP class 599A

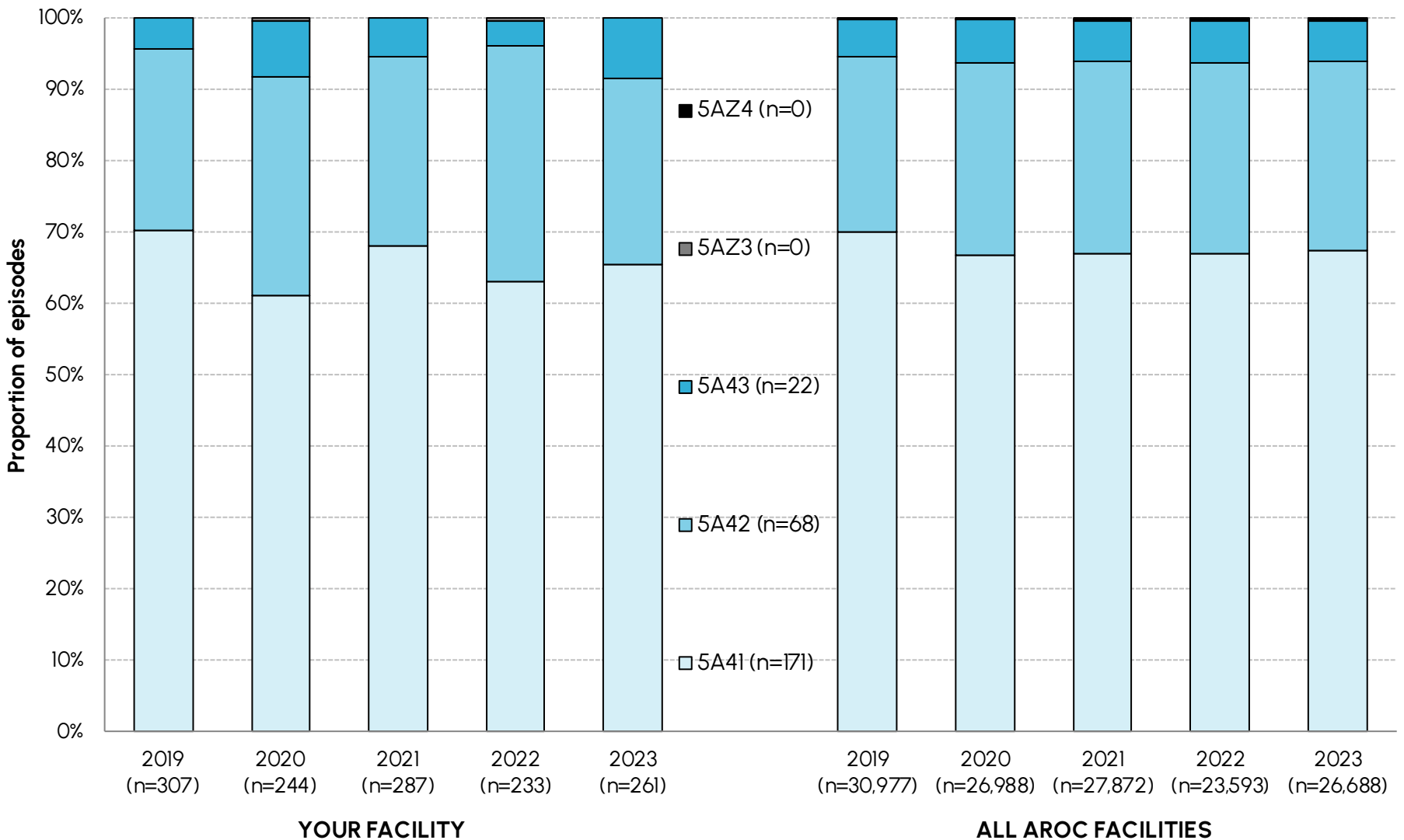
# Proportion of episodes by AN-SNAP class



# Proportion of episodes by impairment code



# Proportion of episodes by AN-SNAP class over time



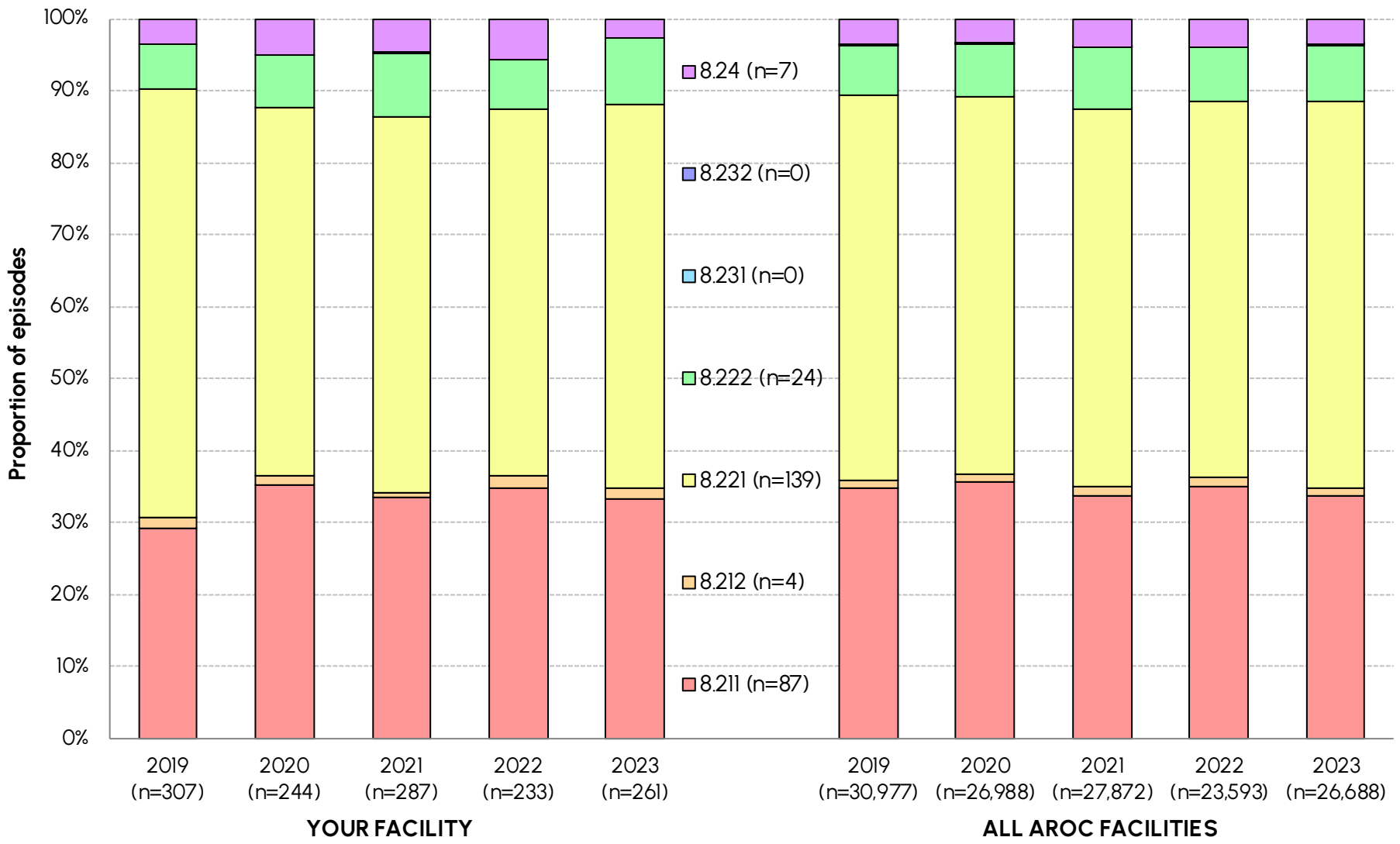


# Episodes by AN-SNAP class over time

AN-SNAP class V5	YOUR FACILITY — N					ALL AROC FACILITIES — N				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
5A41 (weighted motor 61-91)	216	149	195	147	171	21,691	18,031	18,688	15,794	18,002
5A42 (weighted motor 45-60)	78	75	76	77	68	7,581	7,289	7,492	6,312	7,082
5A43 (weighted motor 19-44)	13	19	15	8	22	1,617	1,588	1,604	1,385	1,514
5AZ3 (motor 13-18, Age ≥ 79)	0	1	0	1	0	43	31	48	36	39
5AZ4 (motor 13-18, Age ≤ 78)	0	0	0	0	0	28	31	23	25	28
Ungroupable	0	0	1	0	0	17	18	17	41	23
<b>All Replacement AN-SNAP classes</b>	<b>307</b>	<b>244</b>	<b>287</b>	<b>233</b>	<b>261</b>	<b>30,977</b>	<b>26,988</b>	<b>27,872</b>	<b>23,593</b>	<b>26,688</b>

AN-SNAP class V5	YOUR FACILITY — %					ALL AROC FACILITIES — %				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
5A41 (weighted motor 61-91)	70.4	61.1	67.9	63.1	65.5	70.0	66.8	67.0	66.9	67.5
5A42 (weighted motor 45-60)	25.4	30.7	26.5	33.0	26.1	24.5	27.0	26.9	26.8	26.5
5A43 (weighted motor 19-44)	4.2	7.8	5.2	3.4	8.4	5.2	5.9	5.8	5.9	5.7
5AZ3 (motor 13-18, Age ≥ 79)	0.0	0.4	0.0	0.4	0.0	0.1	0.1	0.2	0.2	0.1
5AZ4 (motor 13-18, Age ≤ 78)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Ungroupable	0.0	0.0	0.3	0.0	0.0	0.1	0.1	0.1	0.2	0.1
<b>All Replacement AN-SNAP classes</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

# Proportion of episodes by impairment code over time



# Episodes by impairment code over time

Impairment	YOUR FACILITY — N					ALL AROC FACILITIES — N				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
8.211 Unilateral hip replacement	90	86	96	81	87	10,776	9,629	9,393	8,285	8,999
8.212 Bilateral hip replacement	4	3	2	4	4	305	274	356	294	314
8.221 Unilateral knee replacement	183	125	150	119	139	16,583	14,162	14,624	12,293	14,311
8.222 Bilateral knee replacement	19	18	25	16	24	2,171	1,985	2,401	1,792	2,089
8.231 Knee and hip replacement, same side	0	0	0	0	0	22	18	17	9	21
8.232 Knee and hip replacement, diff sides	0	0	1	0	0	9	10	12	9	12
8.24 Shoulder replacement	11	12	13	13	7	1,111	910	1,069	911	942
<b>All Orthopaedic Replacements</b>	<b>307</b>	<b>244</b>	<b>287</b>	<b>233</b>	<b>261</b>	<b>30,977</b>	<b>26,988</b>	<b>27,872</b>	<b>23,593</b>	<b>26,688</b>

Impairment	YOUR FACILITY — %					ALL AROC FACILITIES — %				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
8.211 Unilateral hip replacement	29.3	35.2	33.4	34.8	33.3	34.8	35.7	33.7	35.1	33.7
8.212 Bilateral hip replacement	1.3	1.2	0.7	1.7	1.5	1.0	1.0	1.3	1.2	1.2
8.221 Unilateral knee replacement	59.6	51.2	52.3	51.1	53.3	53.5	52.5	52.5	52.1	53.6
8.222 Bilateral knee replacement	6.2	7.4	8.7	6.9	9.2	7.0	7.4	8.6	7.6	7.8
8.231 Knee and hip replacement, same side	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
8.232 Knee and hip replacement, diff sides	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.24 Shoulder replacement	3.6	4.9	4.5	5.6	2.7	3.6	3.4	3.8	3.9	3.5
<b>All Orthopaedic Replacements</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

# Summary of incomplete episodes

Complete episode analysis	YOUR FACILITY		ALL AROC FACILITIES	
	No.	(%)	No.	(%)
Total reporting episodes	261		26,688	
Incomplete episodes	7	(2.7)	973	(3.6)

## Reason for incomplete:

Discharged home with end FIM=18	1	(14.3)	11	(1.1)
Discharged home with no end FIM	0	(0.0)	24	(2.5)
Discharged to another hospital	3	(42.9)	445	(45.7)
Discharged back to acute same hospital	2	(28.6)	326	(33.5)
Discharged at own risk	1	(14.3)	113	(11.6)
Change of care type (LOS<1 week)	0	(0.0)	2	(0.2)
Died	0	(0.0)	3	(0.3)
Other/Unknown Discharge	0	(0.0)	49	(5.0)

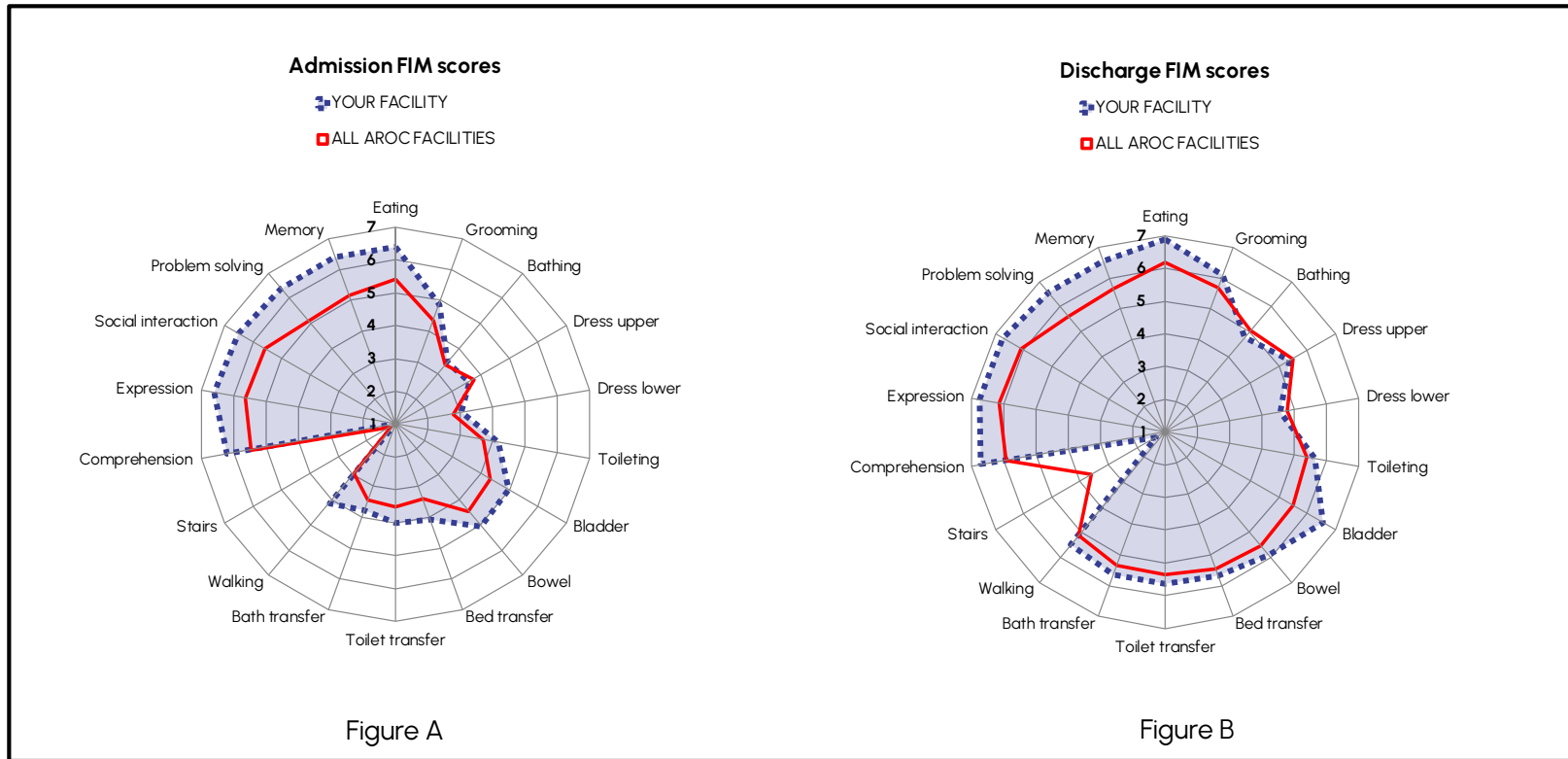
Impairment Code:	YOUR FACILITY	
	Incomplete Episodes	Complete episodes
8.211 Unilateral hip replacement	4 (57.1)	83 (32.7)
8.212 Bilateral hip replacement	0 (0.0)	4 (1.6)
8.221 Unilateral knee replacement	2 (28.6)	137 (53.9)
8.222 Bilateral knee replacement	1 (14.3)	23 (9.1)
8.231 Knee and hip replacement, same side	0 (0.0)	0 (0.0)
8.232 Knee and hip replacement, diff sides	0 (0.0)	0 (0.0)
8.24 Shoulder replacement	0 (0.0)	7 (2.8)

## AN-SNAP Class:

5A41 (weighted motor 61-91)	3 (42.9)	168 (66.1)
5A42 (weighted motor 45-60)	3 (42.9)	65 (25.6)
5A43 (weighted motor 19-44)	1 (14.3)	21 (8.3)
5AZ3 (motor 13-18, Age ≥ 79)	0 (0.0)	0 (0.0)
5AZ4 (motor 13-18, Age ≤ 78)	0 (0.0)	0 (0.0)

# Review of FIM item scoring by AN-SNAP class

# Interpreting the comparative FIM item scoring charts



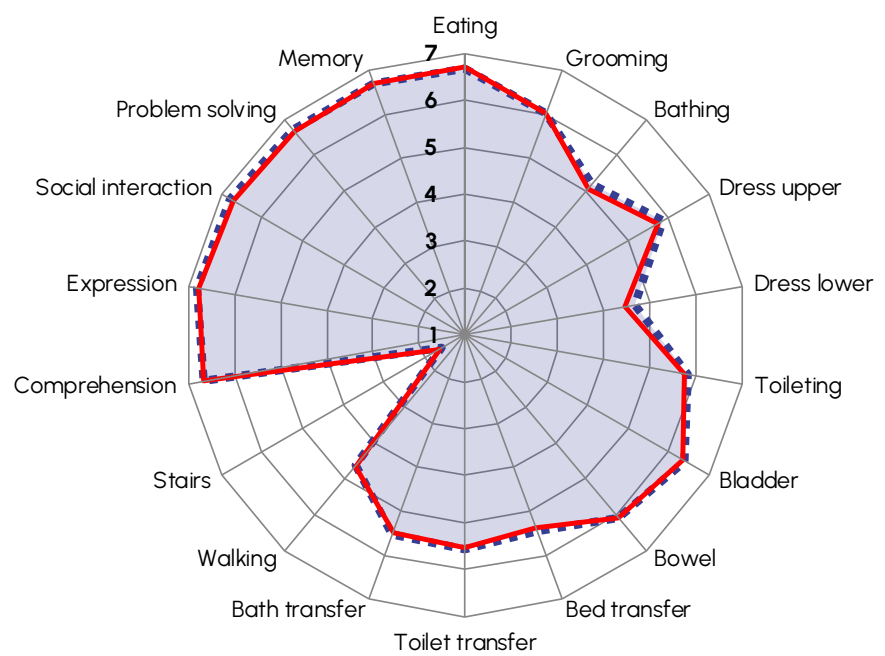
The FIM splat provides a graphic presentation of functional status in a radar chart. The 18 FIM items are arranged in order as 'spokes' of a wheel and the scoring levels from 1 (total dependence) to 7 (total independence) run from the centre outwards. The mean FIM item score for each item is indicated — a perfect score would be demonstrated as a large circle. The two FIM splats compare FIM scoring on admission (Figure A) and discharge (Figure B) between YOUR FACILITY and ALL AROC FACILITIES 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 5A41



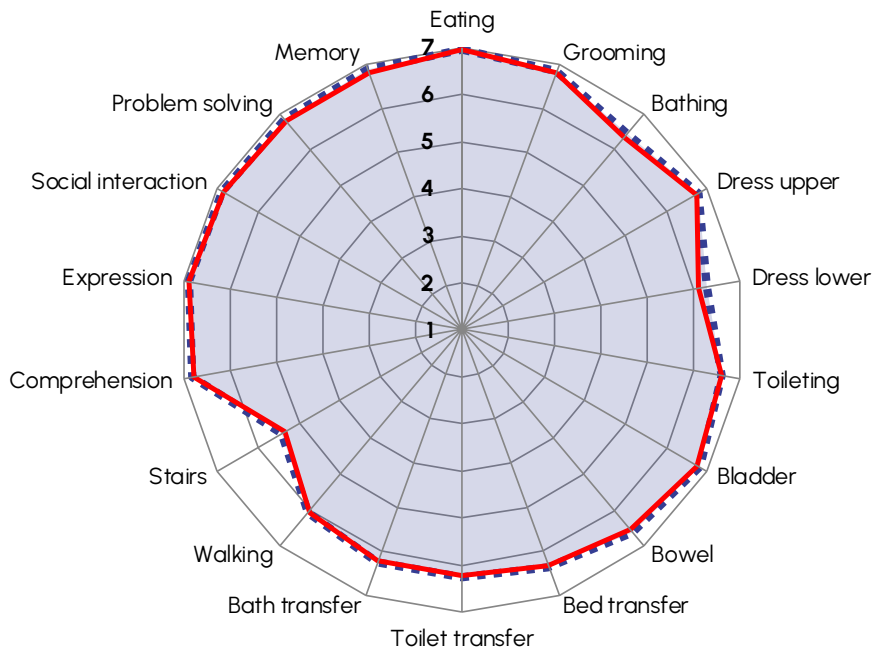
## 5A41 Admission FIM scores

- YOUR FACILITY (n=168)
- ALL AROC FACILITIES (n=17,622)



## 5A41 Discharge FIM scores

- YOUR FACILITY (n=168)
- ALL AROC FACILITIES (n=17,622)



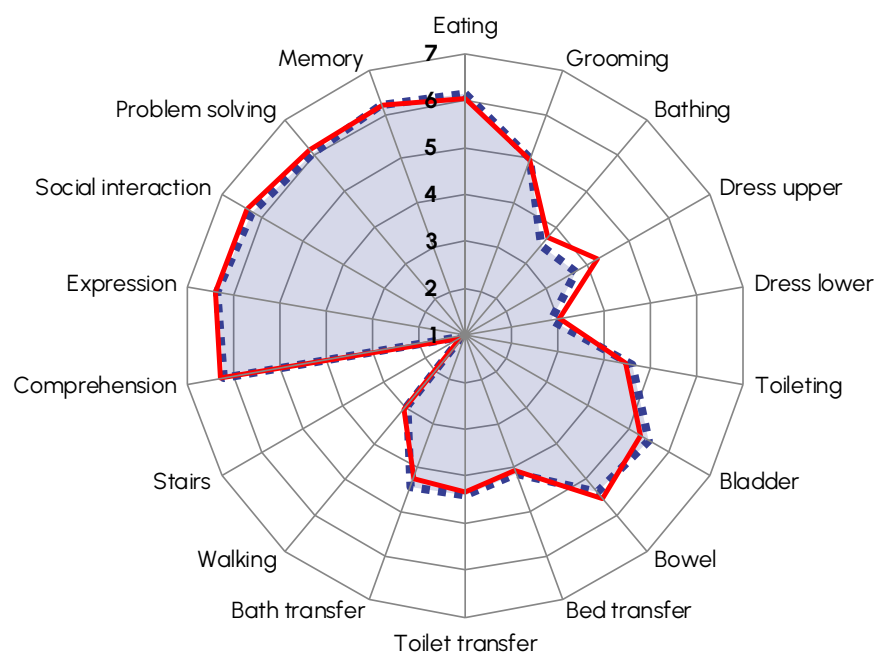
NOTE: Includes only completed episodes with valid FIM scores

# Comparative FIM item scoring AN-SNAP class 5A42



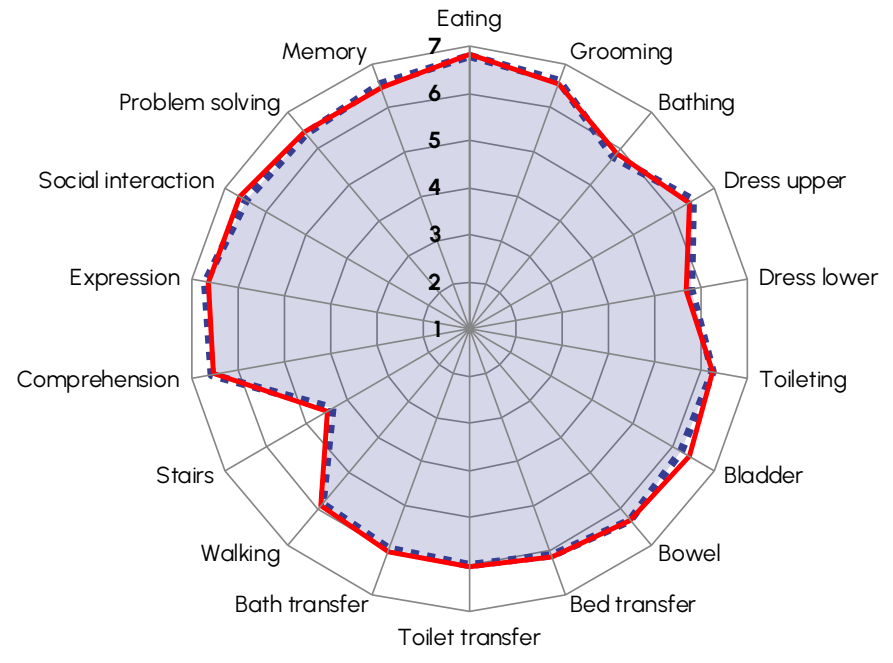
## 5A42 Admission FIM scores

- YOUR FACILITY (n=65)
- ALL AROC FACILITIES (n=6,744)



## 5A42 Discharge FIM scores

- YOUR FACILITY (n=65)
- ALL AROC FACILITIES (n=6,744)



NOTE: Includes only completed episodes with valid FIM scores



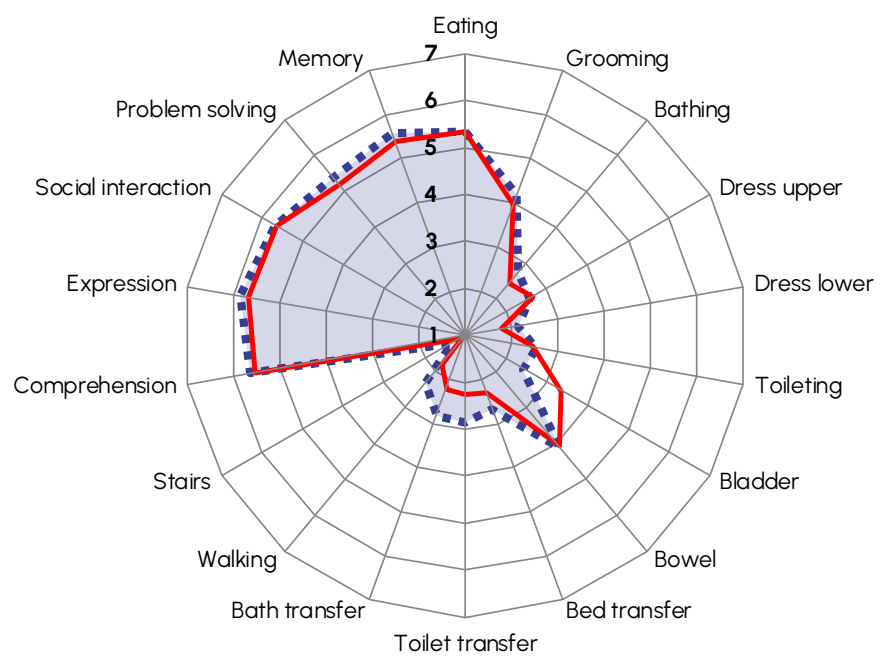
# Comparative FIM item scoring AN-SNAP class 5A43



## 5A43 Admission FIM scores

■ YOUR FACILITY (n=21)

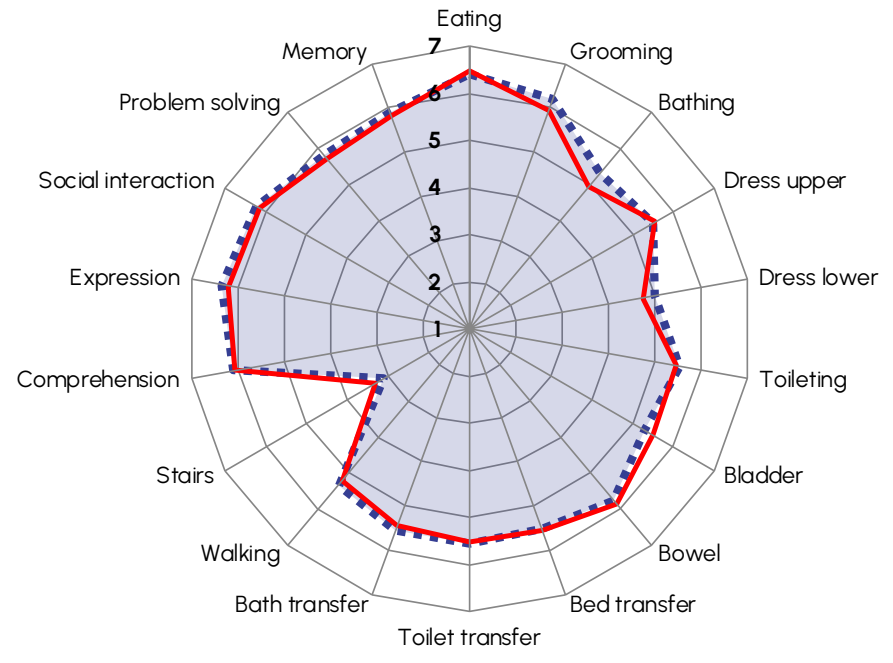
■ ALL AROC FACILITIES (n=1,309)



## 5A43 Discharge FIM scores

■ YOUR FACILITY (n=21)

■ ALL AROC FACILITIES (n=1,309)



NOTE: Includes only completed episodes with valid FIM scores



# Outcome analysis

# Completed episodes by AN-SNAP class and impairment code

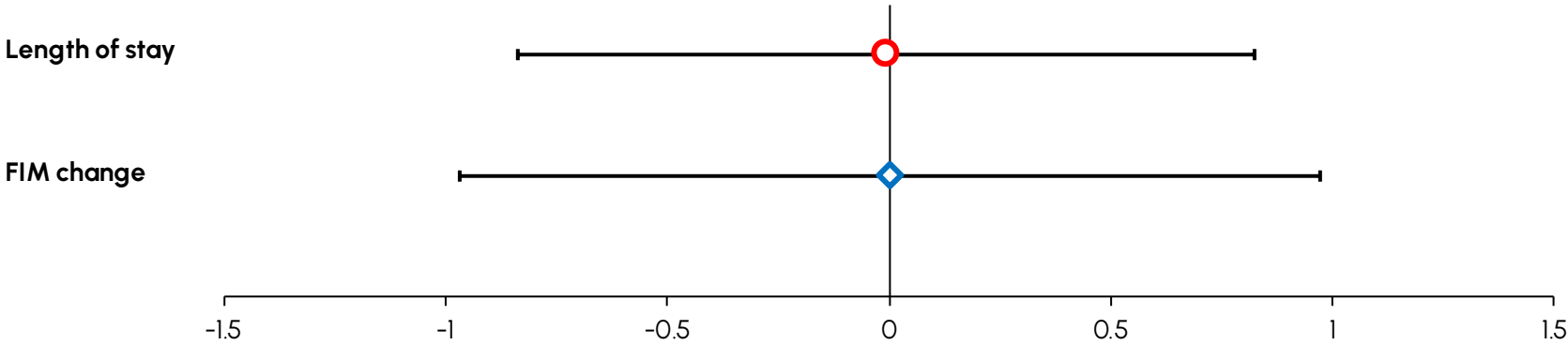


AN-SNAP class V5	YOUR FACILITY			ALL AROC FACILITIES		
	All episodes	Completed episodes	% Complete	All episodes	Completed episodes	% Complete
5A41 (weighted motor 61-91)	171	168	98.2	18,002	17,622	97.9
5A42 (weighted motor 45-60)	68	65	95.6	7,082	6,744	95.2
5A43 (weighted motor 19-44)	22	21	95.5	1,514	1,309	86.5
5AZ3 (motor 13-18, Age ≥ 79)	0	0	—	39	21	53.8
5AZ4 (motor 13-18, Age ≤ 78)	0	0	—	28	15	53.6
Ungroupable	0	0	—	23	4	17.4
<b>All Replacement AN-SNAP classes</b>	<b>261</b>	<b>254</b>	<b>97.3</b>	<b>26,688</b>	<b>25,715</b>	<b>96.4</b>

Impairment	YOUR FACILITY			ALL AROC FACILITIES		
	All episodes	Completed episodes	% Complete	All episodes	Completed episodes	% Complete
8.211 Unilateral hip replacement	87	83	95.4	8,999	8,535	94.8
8.212 Bilateral hip replacement	4	4	100.0	314	303	96.5
8.221 Unilateral knee replacement	139	137	98.6	14,311	13,898	97.1
8.222 Bilateral knee replacement	24	23	95.8	2,089	2,038	97.6
8.231 Knee and hip replacement, same side	0	0	—	21	20	95.2
8.232 Knee and hip replacement, diff sides	0	0	—	12	11	91.7
8.24 Shoulder replacement	7	7	100.0	942	910	96.6
<b>All Replacement AN-SNAP classes</b>	<b>261</b>	<b>254</b>	<b>97.3</b>	<b>26,688</b>	<b>25,715</b>	<b>96.4</b>

NOTE: All outcomes analysis are based on completed episodes. A definition of completed episodes can be found in Appendix 1 (Glossary).

# Casemix-adjusted\* relative means

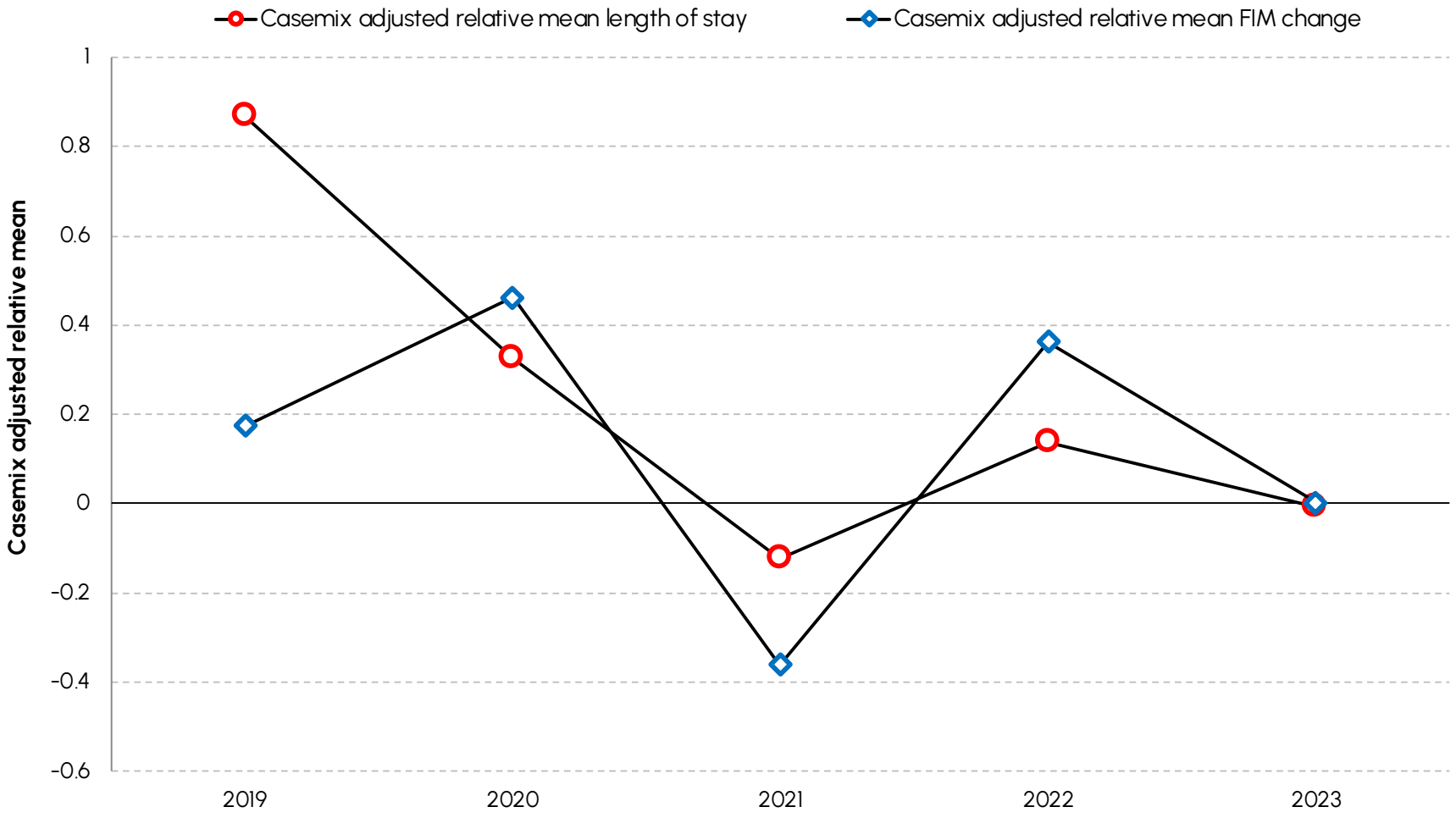


Casemix-adjusted relative means with 95% confidence intervals

Outcome measures	YOUR FACILITY		ALL AROC FACILITIES
	Casemix-adjusted* relative mean	95% CI	IQR
Length of stay	0.0	-0.8 to 0.8	-3.4 to 2.3
FIM change	0.0	-1.0 to 1.0	-4.8 to 4.2

\*Includes only completed episodes with valid FIM scores and LOS

# Casemix-adjusted\* relative means over time



\*Casemix adjusted values based on FY 2023

YOUR FACILITY

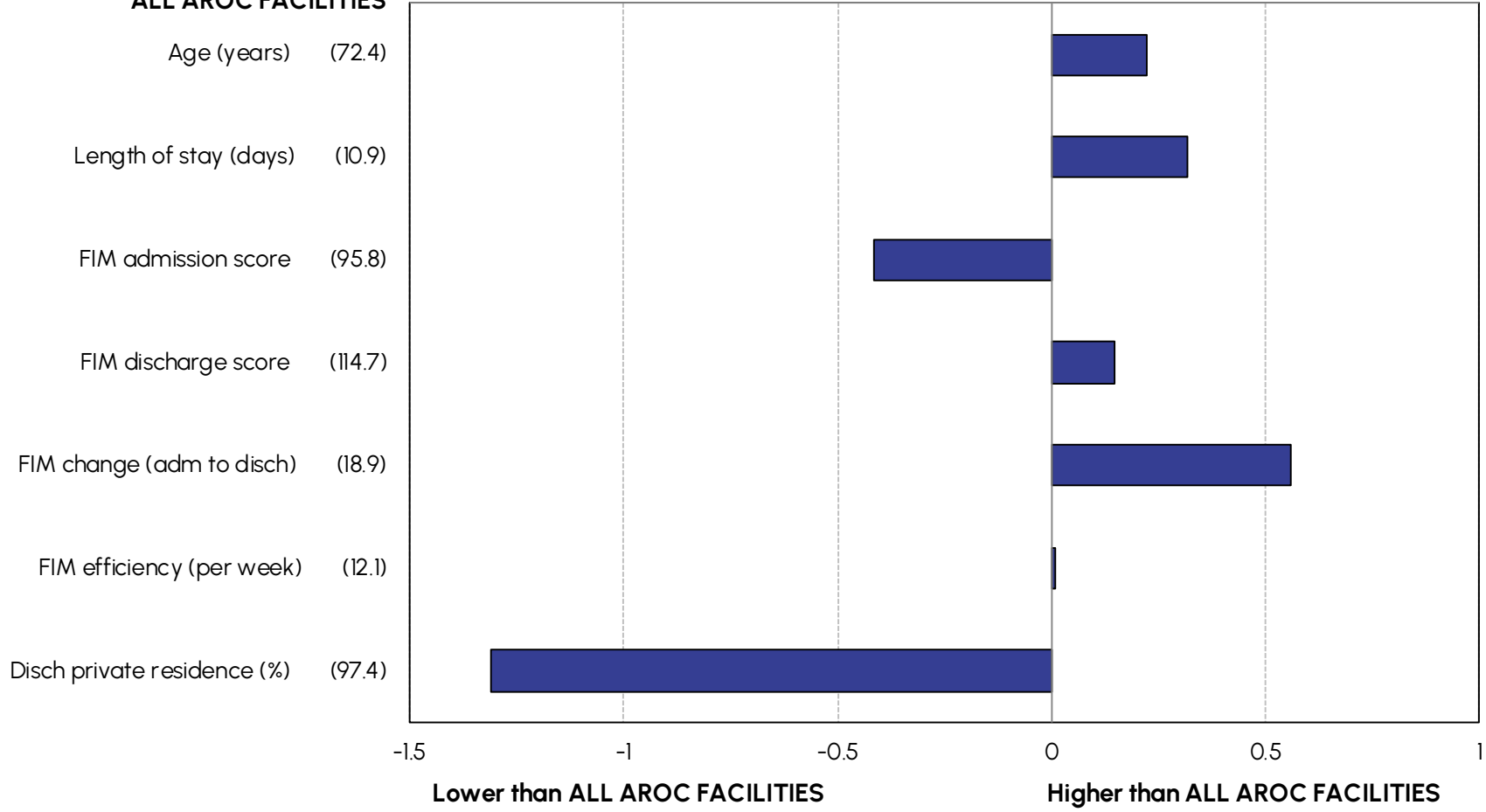
NOTE: Includes only completed episodes with valid FIM scores and LOS; where n<5 the casemix-adjusted relative mean will not be shown

# Outcome measures – difference from all AROC



## How YOUR FACILITY is different to ALL AROC FACILITIES

### ALL AROC FACILITIES

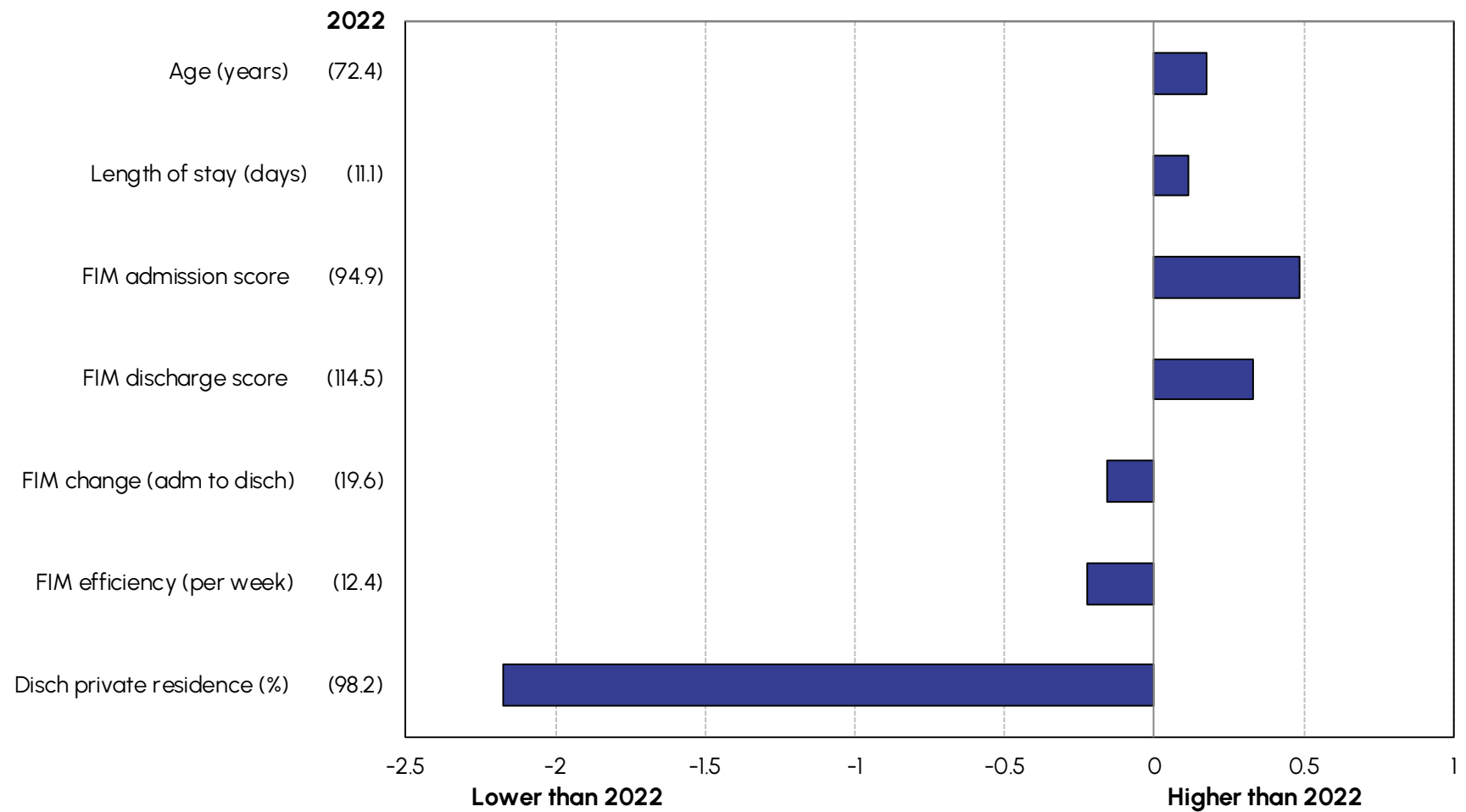


NOTE: Includes only completed episodes with valid FIM scores and LOS

# Outcome measures – difference from last year

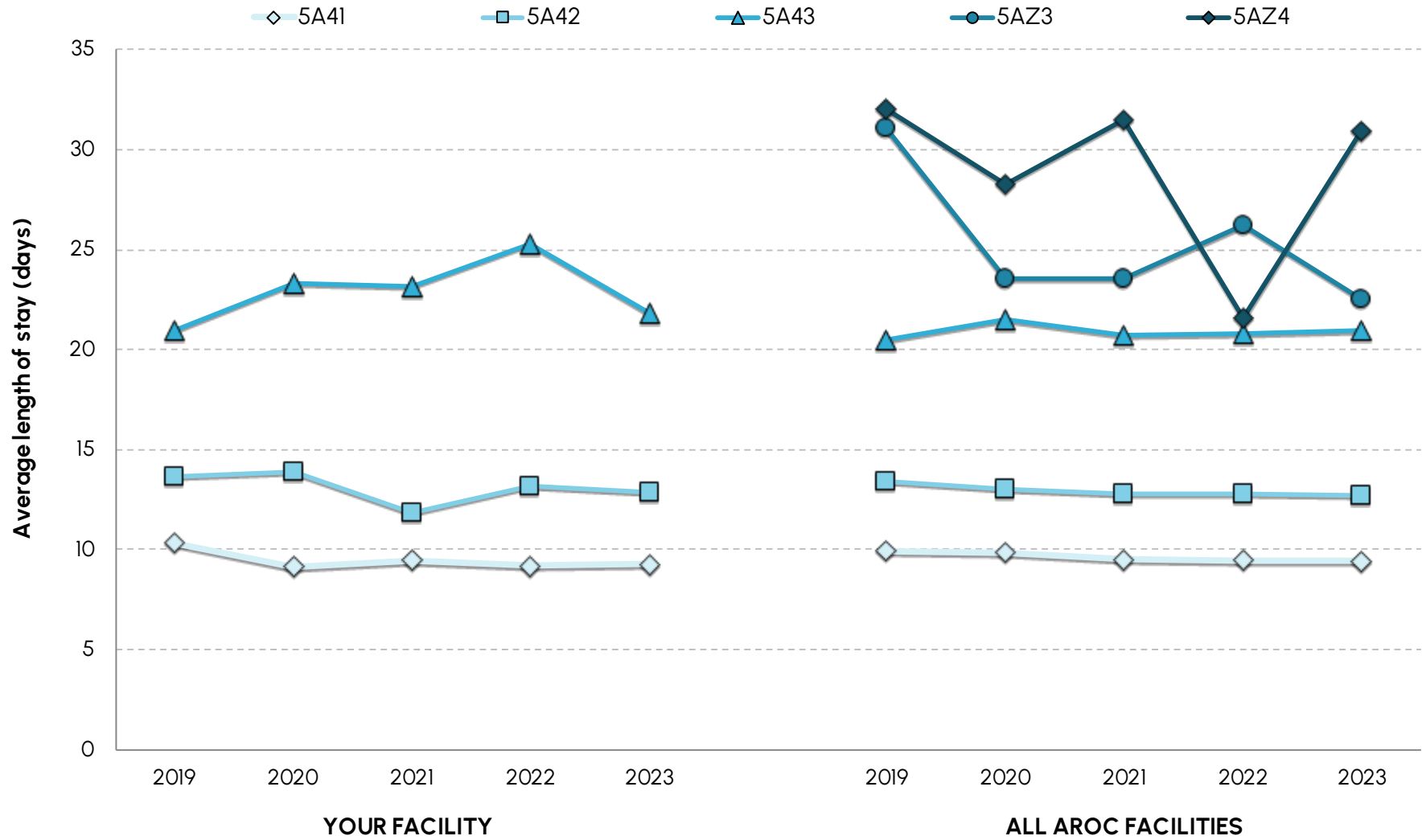


## How YOUR FACILITY has changed since 2022



NOTE: Includes only completed episodes with valid FIM scores and LOS

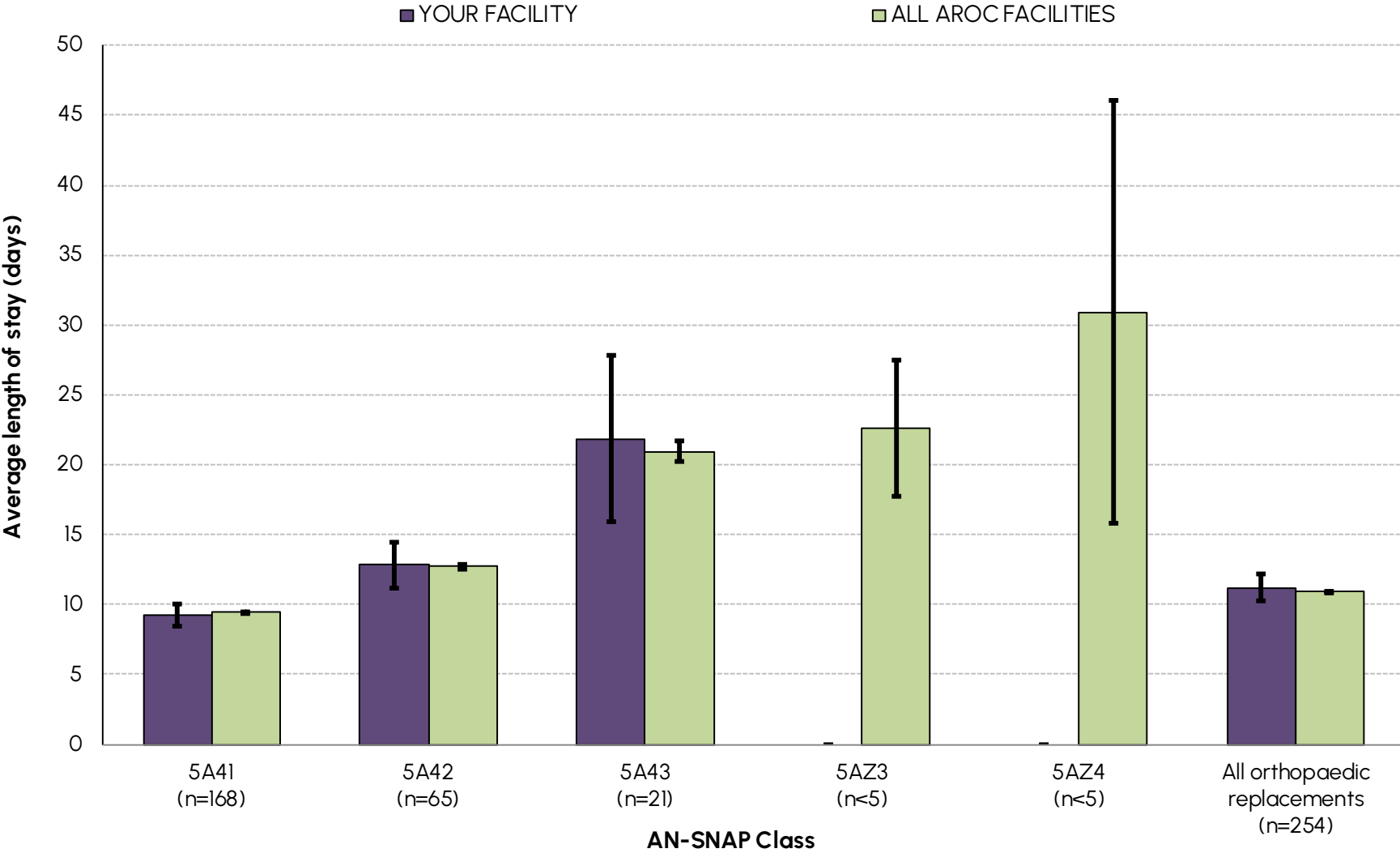
# Average length of stay by AN-SNAP class over time



NOTE: Includes only completed episodes with valid LOS; where n<5 average LOS will not be shown

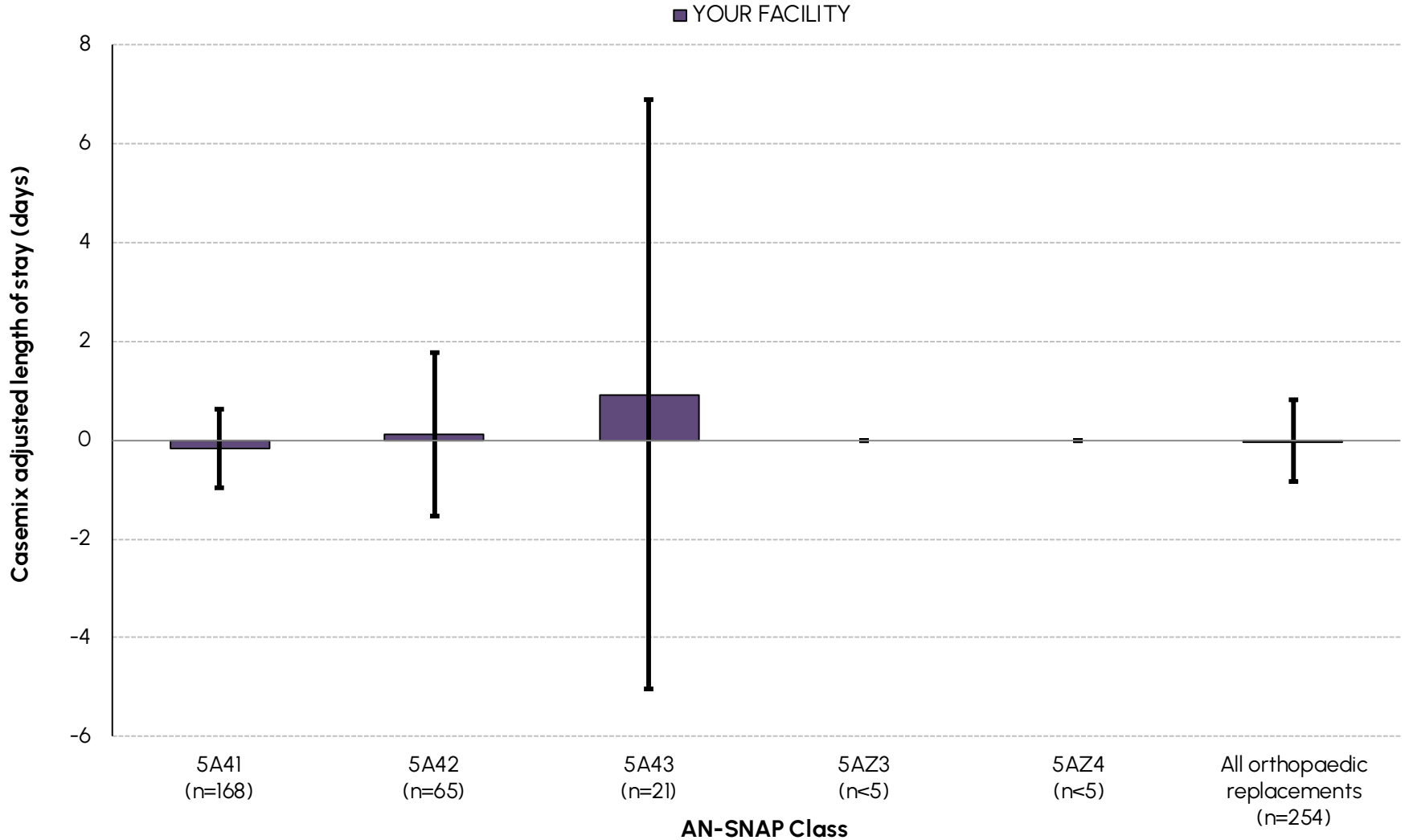


# Average length of stay by AN-SNAP class



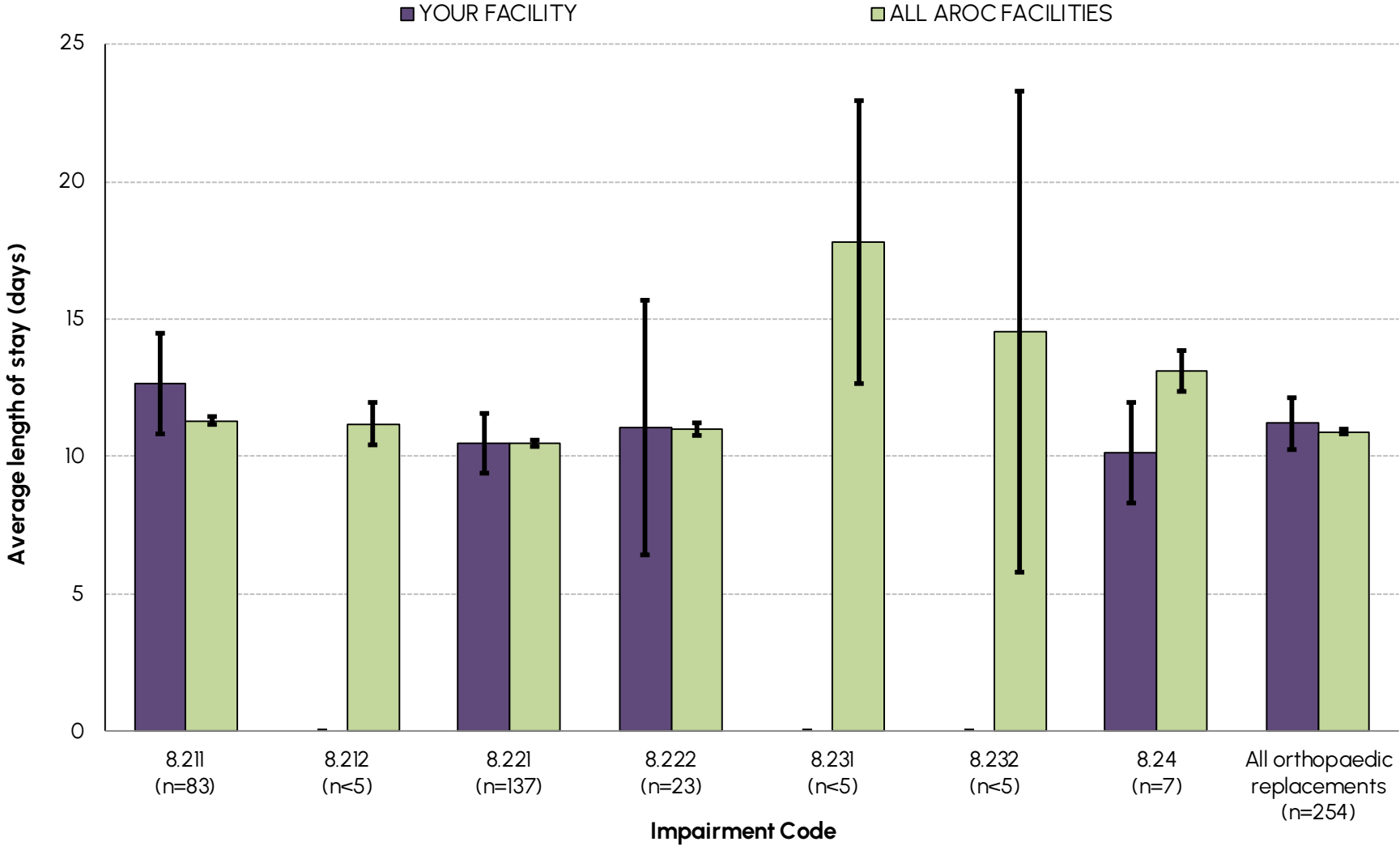
NOTE: Includes only completed episodes with valid LOS, where n<5 average LOS will not be shown

# Casemix-adjusted relative mean length of stay by AN-SNAP class



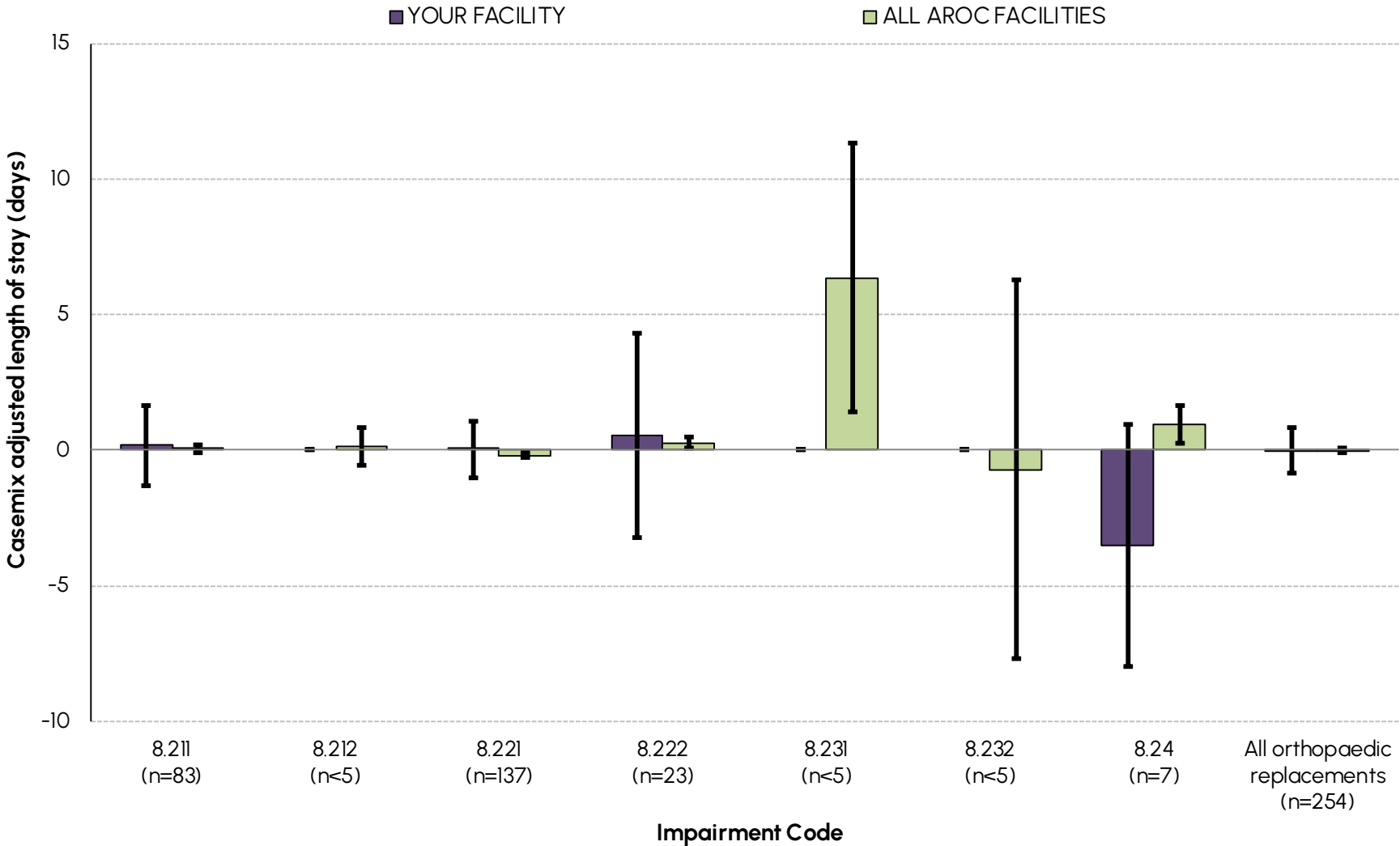
NOTE: Includes only completed episodes with valid LOS; where n<5 CARMi LOS will not be shown

# Average length of stay by impairment



NOTE: Includes only completed episodes with valid LOS, where n<5 average LOS will not be shown

# Casemix-adjusted relative mean length of stay by impairment



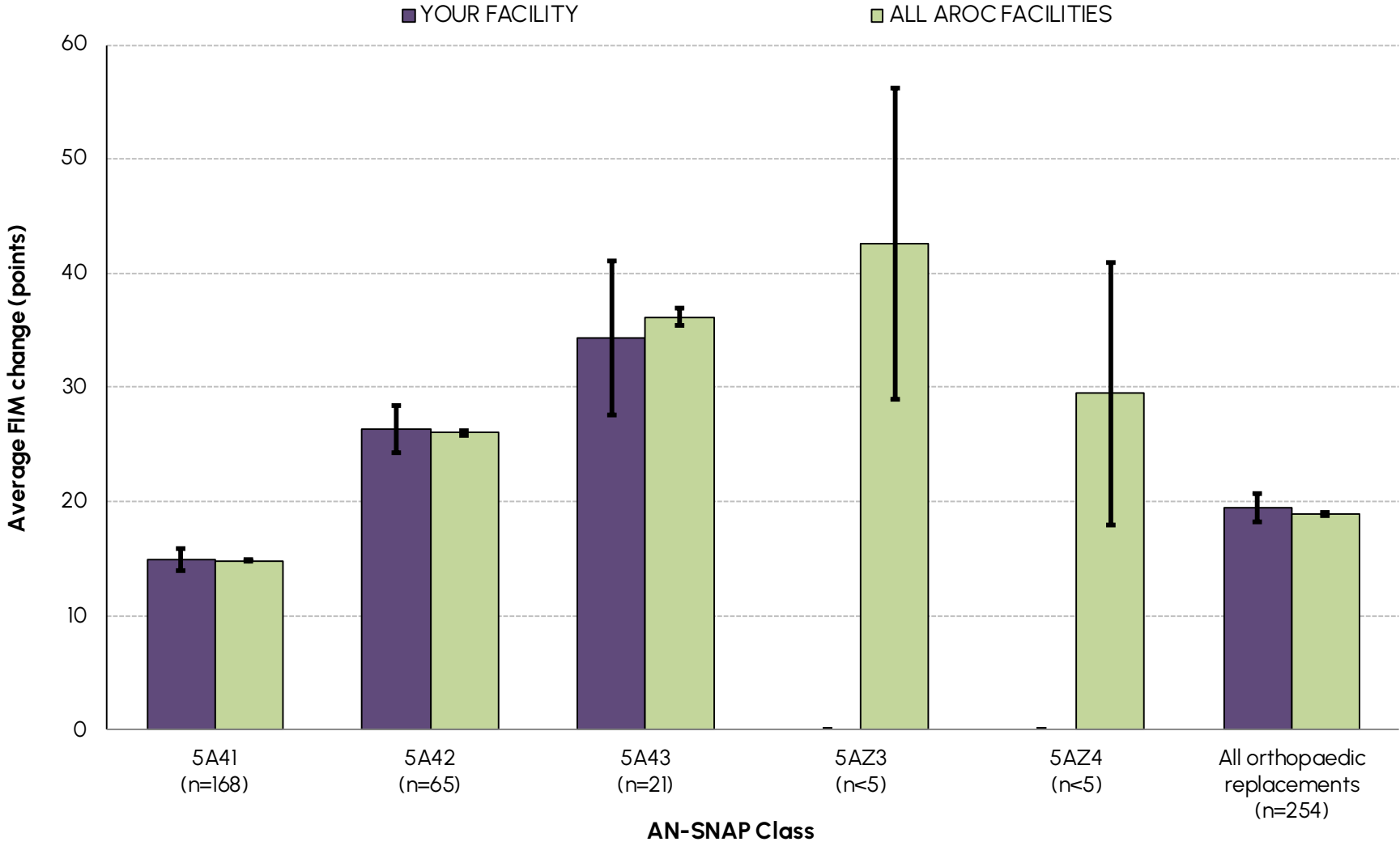
NOTE: Includes only completed episodes with valid LOS; where n<5 CARMi LOS will not be shown

# Average FIM change by AN-SNAP class over time



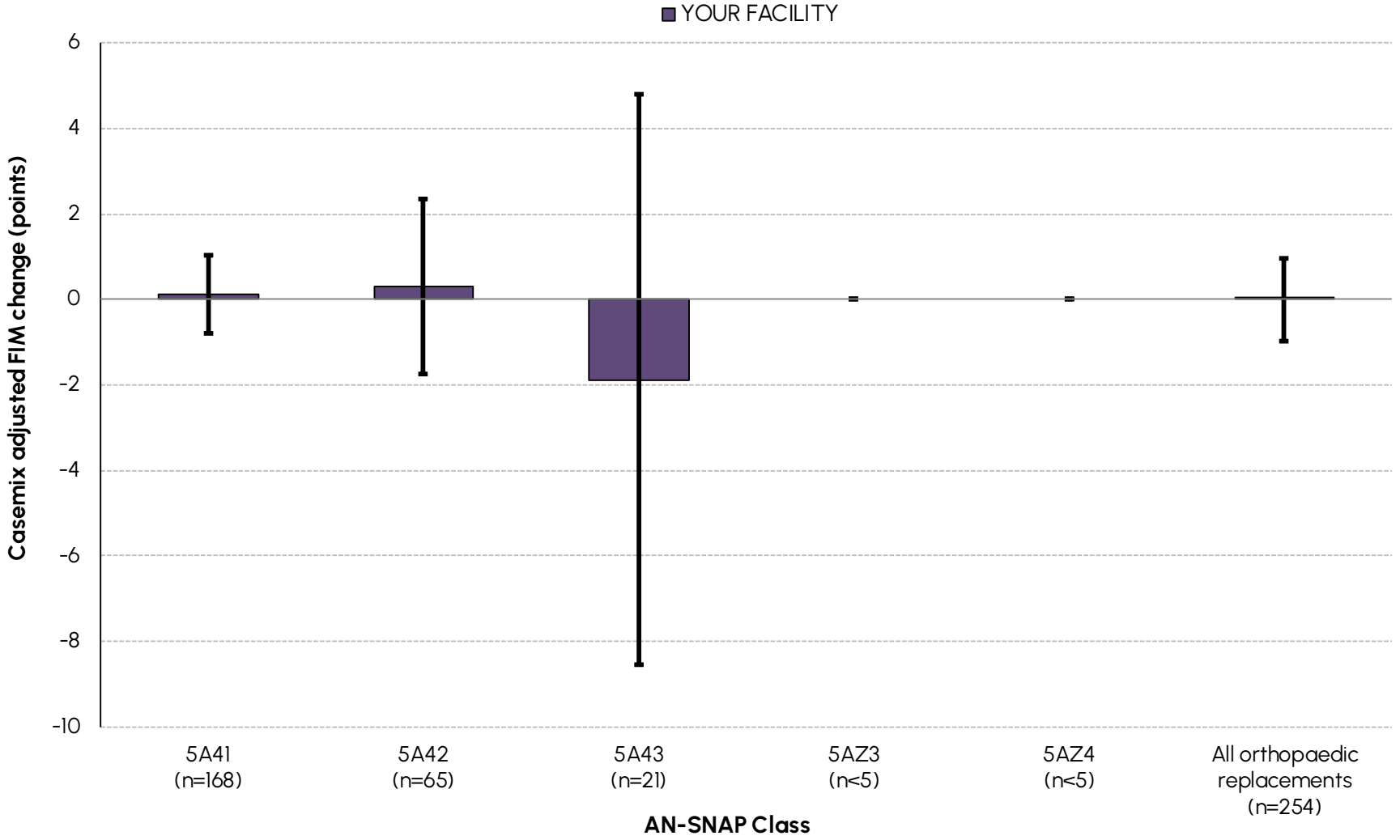
NOTE: Includes only completed episodes with valid FIM scores; where n<5 average FIM change will not be shown

# Average FIM change by AN-SNAP class



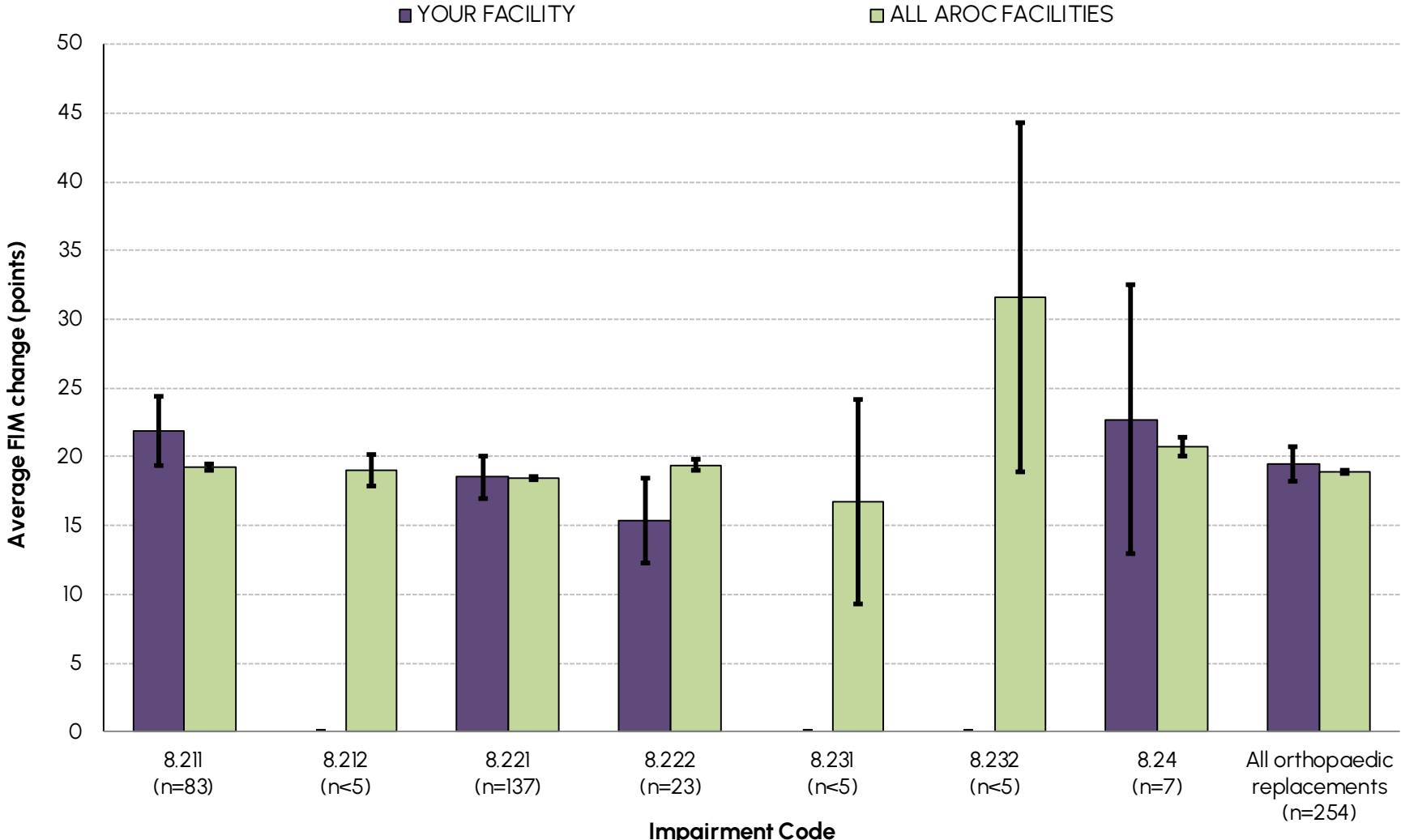
NOTE: Includes only completed episodes with valid FIM scores, where n<5 average FIM change will not be shown

# Casemix-adjusted relative mean FIM change by AN-SNAP class



NOTE: Includes only completed episodes with valid FIM scores, where n<5 CARMi FIM change will not be shown

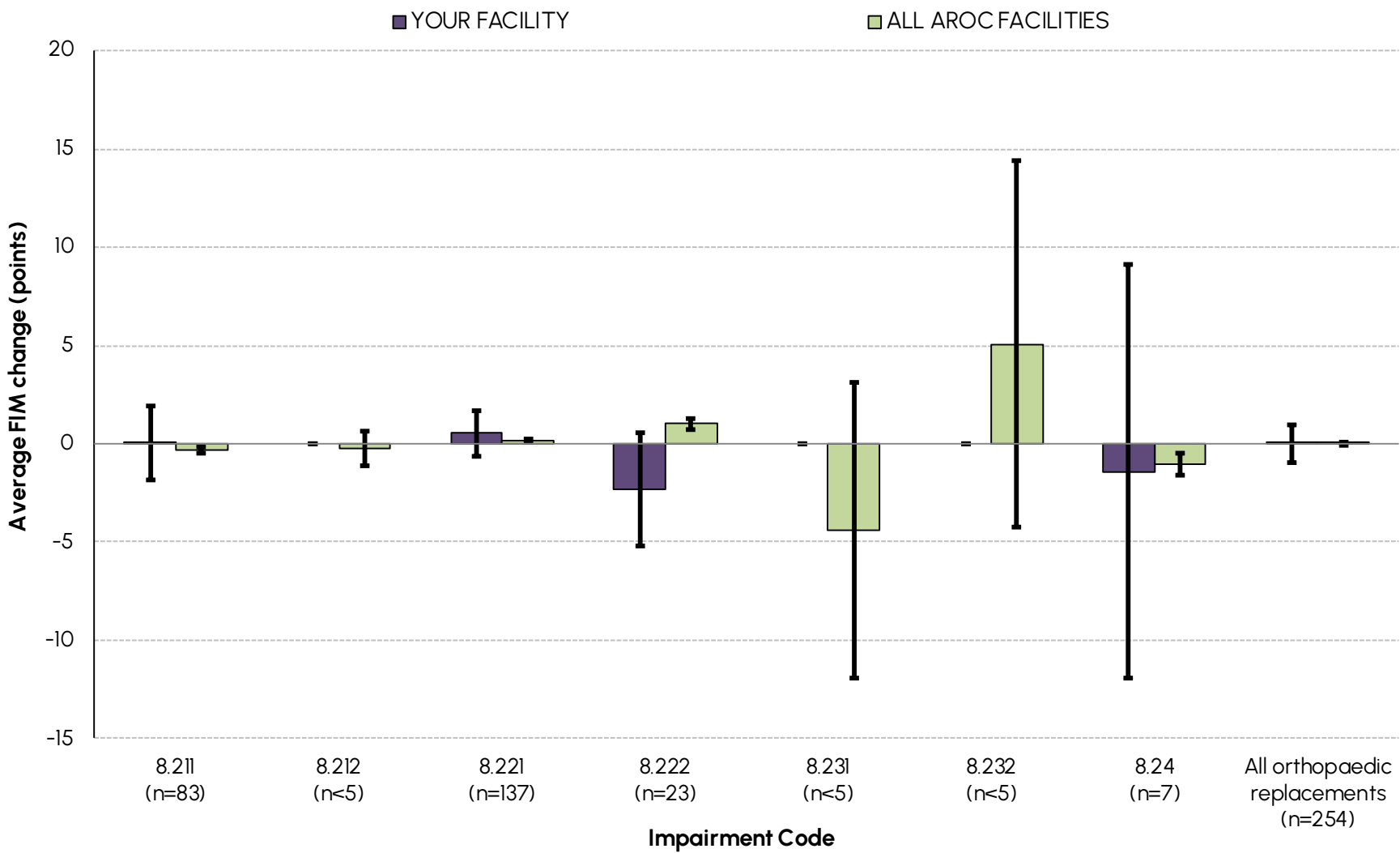
# Average FIM change by impairment



NOTE: Includes only completed episodes with valid FIM scores, where n<5 average FIM change will not be shown



# Casemix-adjusted relative mean FIM change by impairment



NOTE: Includes only completed episodes with valid FIM scores, where n<5 CARMi FIM change will not be shown

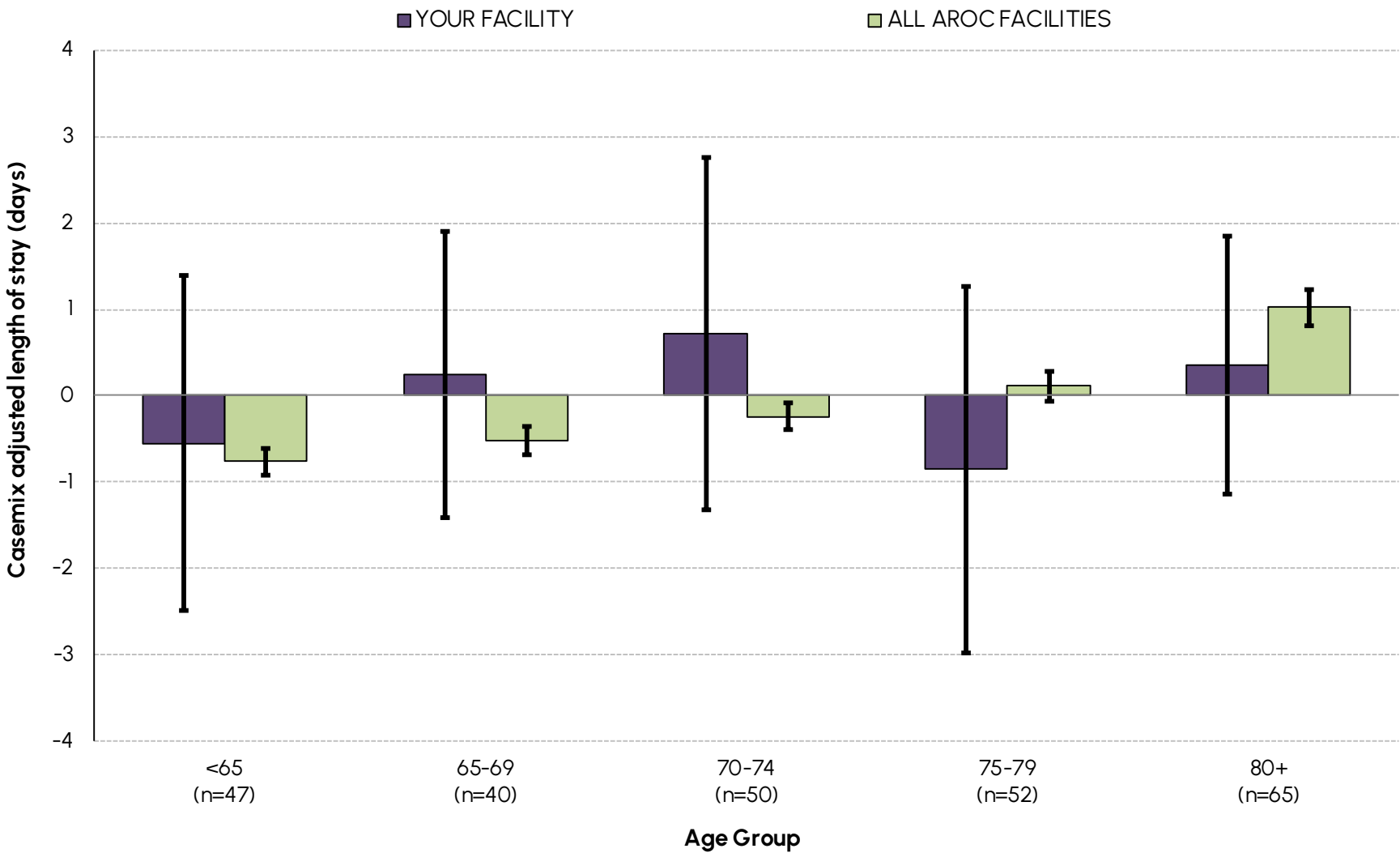
# Casemix-adjusted relative mean and average length of stay and FIM change by AN-SNAP class and impairment

AN-SNAP class V5	YOUR FACILITY				ALL AROC FACILITIES	
	CARMi (95%CI)		Average (95%CI)		Average (95%CI)	
	LOS	FIM change	LOS	FIM change	LOS	FIM change
5A41 (weighted motor 61-91)	-0.2 (-1.0 – 0.6)	0.1 (-0.8 – 1.0)	9.3 (8.5 – 10.1)	14.9 (14.0 – 15.8)	9.4 (9.3 – 9.5)	14.8 (14.7 – 14.9)
5A42 (weighted motor 45-60)	0.1 (-1.5 – 1.8)	0.3 (-1.8 – 2.4)	12.8 (11.2 – 14.5)	26.3 (24.3 – 28.4)	12.7 (12.6 – 12.9)	26.0 (25.8 – 26.2)
5A43 (weighted motor 19-44)	0.9 (-5.0 – 6.9)	-1.9 (-8.6 – 4.8)	21.9 (15.9 – 27.8)	34.3 (27.6 – 41.0)	20.9 (20.2 – 21.7)	36.2 (35.4 – 36.9)
5AZ3 (motor 13-18, Age ≥ 79)	—	—	—	—	22.6 (17.7 – 27.5)	42.6 (29.0 – 56.2)
5AZ4 (motor 13-18, Age ≤ 78)	—	—	—	—	30.9 (15.8 – 46.1)	29.5 (17.9 – 41.0)
<b>All Replacement AN-SNAP classes</b>	<b>0.0 (-0.8 – 0.8)</b>	<b>0.0 (-1.0 – 1.0)</b>	<b>11.2 (10.3 – 12.2)</b>	<b>19.4 (18.2 – 20.7)</b>	<b>10.9 (10.8 – 11.0)</b>	<b>18.9 (18.8 – 19.0)</b>

Impairment	YOUR FACILITY				ALL AROC FACILITIES	
	CARMi (95%CI)		Average (95%CI)		Average (95%CI)	
	LOS	FIM change	LOS	FIM change	LOS	FIM change
8.211 Unilateral hip replacement	0.2 (-1.3 – 1.7)	0.0 (-1.8 – 1.9)	12.7 (10.8 – 14.5)	21.9 (19.4 – 24.4)	11.3 (11.1 – 11.5)	19.2 (19.0 – 19.4)
8.212 Bilateral hip replacement	—	—	—	—	11.2 (10.4 – 12.0)	19.1 (17.9 – 20.2)
8.221 Unilateral knee replacement	0.0 (-1.0 – 1.1)	0.5 (-0.7 – 1.7)	10.5 (9.4 – 11.6)	18.5 (17.0 – 20.1)	10.5 (10.4 – 10.6)	18.4 (18.3 – 18.6)
8.222 Bilateral knee replacement	0.5 (-3.2 – 4.3)	-2.4 (-5.2 – 0.5)	11.0 (6.4 – 15.7)	15.3 (12.3 – 18.4)	11.0 (10.8 – 11.2)	19.4 (19.0 – 19.8)
8.231 Knee and hip replacement, same side	—	—	—	—	17.8 (12.6 – 23.0)	16.8 (9.4 – 24.1)
8.232 Knee and hip replacement, diff sides	—	—	—	—	14.5 (5.8 – 23.3)	31.6 (18.9 – 44.3)
8.24 Shoulder replacement	-3.5 (-8.0 – 1.0)	-1.4 (-11.9 – 9.1)	10.1 (8.3 – 12.0)	22.7 (12.9 – 32.5)	13.1 (12.4 – 13.9)	20.7 (20.1 – 21.4)
<b>All Orthopaedic Replacements</b>	<b>0.0 (-0.8 – 0.8)</b>	<b>0.0 (-1.0 – 1.0)</b>	<b>11.2 (10.3 – 12.2)</b>	<b>19.4 (18.2 – 20.7)</b>	<b>10.9 (10.8 – 11.0)</b>	<b>18.9 (18.8 – 19.0)</b>

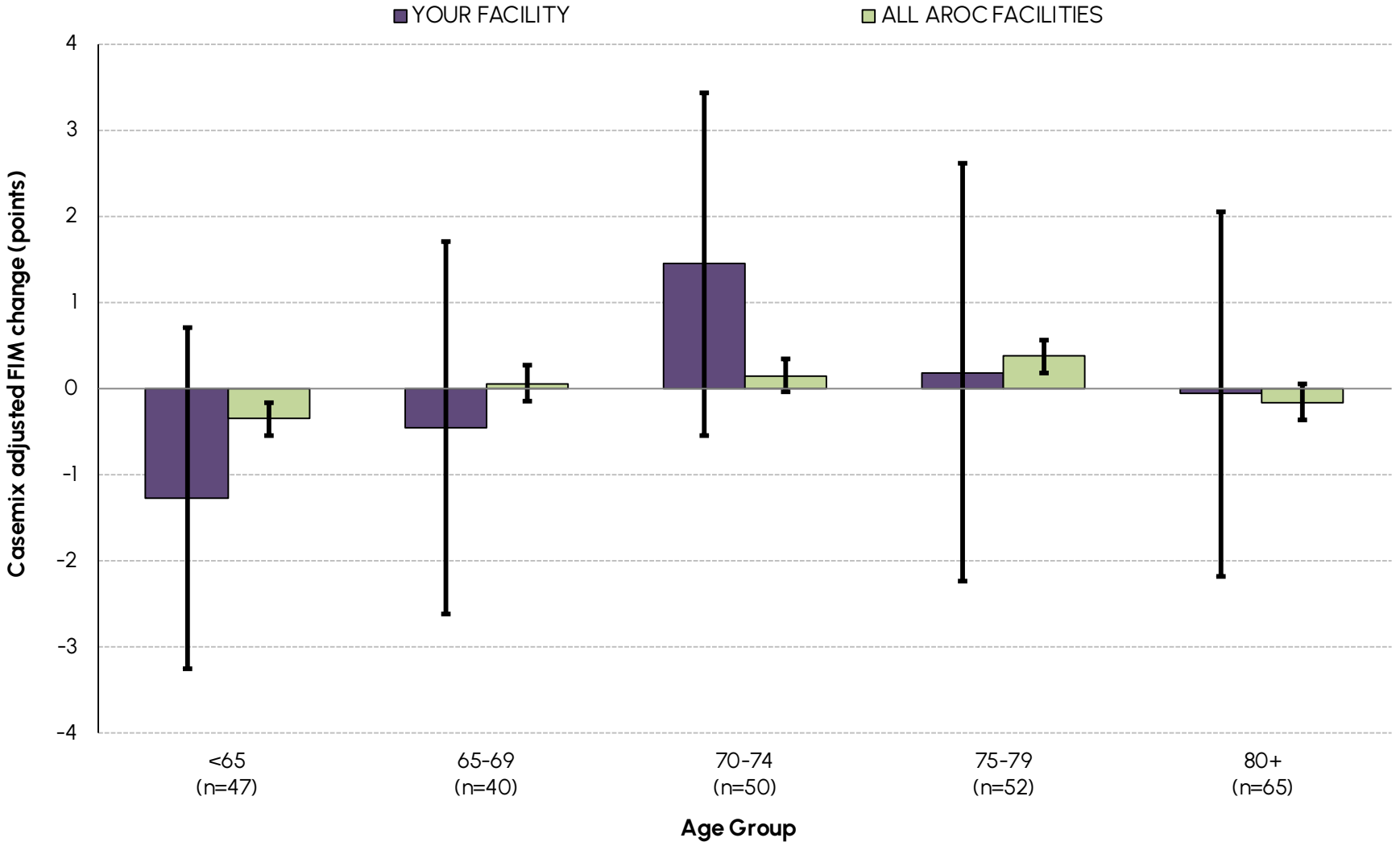
NOTE: Includes only completed episodes with valid FIM scores and LOS, where n<5 no values are shown

# Casemix-adjusted relative mean length of stay by age group\*



NOTE: Includes only completed episodes with valid LOS and age, where n<5 CARMi LOS will not be shown  
 \* Approximately 20% total population per age group

# Casemix-adjusted relative mean FIM change by age group\*



NOTE: Includes only completed episodes with valid FIM scores and age, where n<5 CARMI FIM change will not be shown  
 \* Approximately 20% total population per age group

# Average and casemix-adjusted relative mean length of stay and FIM change by age group\*

Age group	YOUR FACILITY		ALL AROC FACILITIES	
	LOS (95%CI)	FIM change (95%CI)	LOS (95%CI)	FIM change (95%CI)
<65	9.9 (7.6 – 12.1)	16.1 (13.0 – 19.3)	9.6 (9.5 – 9.8)	17.1 (16.9 – 17.4)
65-69	10.8 (9.1 – 12.5)	17.4 (14.9 – 19.9)	9.9 (9.8 – 10.1)	17.8 (17.6 – 18.1)
70-74	11.6 (9.2 – 13.9)	20.0 (17.1 – 22.9)	10.4 (10.2 – 10.6)	18.4 (18.1 – 18.6)
75-79	10.3 (8.1 – 12.4)	19.7 (16.9 – 22.5)	11.0 (10.9 – 11.2)	19.4 (19.1 – 19.6)
80+	13.0 (11.1 – 14.8)	22.4 (19.9 – 24.9)	12.9 (12.7 – 13.1)	21.0 (20.7 – 21.3)

Age group	YOUR FACILITY		ALL AROC FACILITIES	
	CARMI LOS (95%CI)	CARMI FIM change (95%CI)	CARMI LOS (95%CI)	CARMI FIM change (95%CI)
<65	-0.6 (-2.5 – 1.4)	-1.3 (-3.3 – 0.7)	-0.8 (-0.9 – -0.6)	-0.4 (-0.5 – -0.2)
65-69	0.2 (-1.4 – 1.9)	-0.5 (-2.6 – 1.7)	-0.5 (-0.7 – -0.4)	0.1 (-0.1 – 0.3)
70-74	0.7 (-1.3 – 2.8)	1.5 (-0.5 – 3.4)	-0.2 (-0.4 – -0.1)	0.2 (0.0 – 0.3)
75-79	-0.9 (-3.0 – 1.3)	0.2 (-2.2 – 2.6)	0.1 (-0.1 – 0.3)	0.4 (0.2 – 0.6)
80+	0.4 (-1.1 – 1.9)	-0.1 (-2.2 – 2.1)	1.0 (0.8 – 1.2)	-0.2 (-0.4 – 0.1)

\*Approximately 20% total population per age group

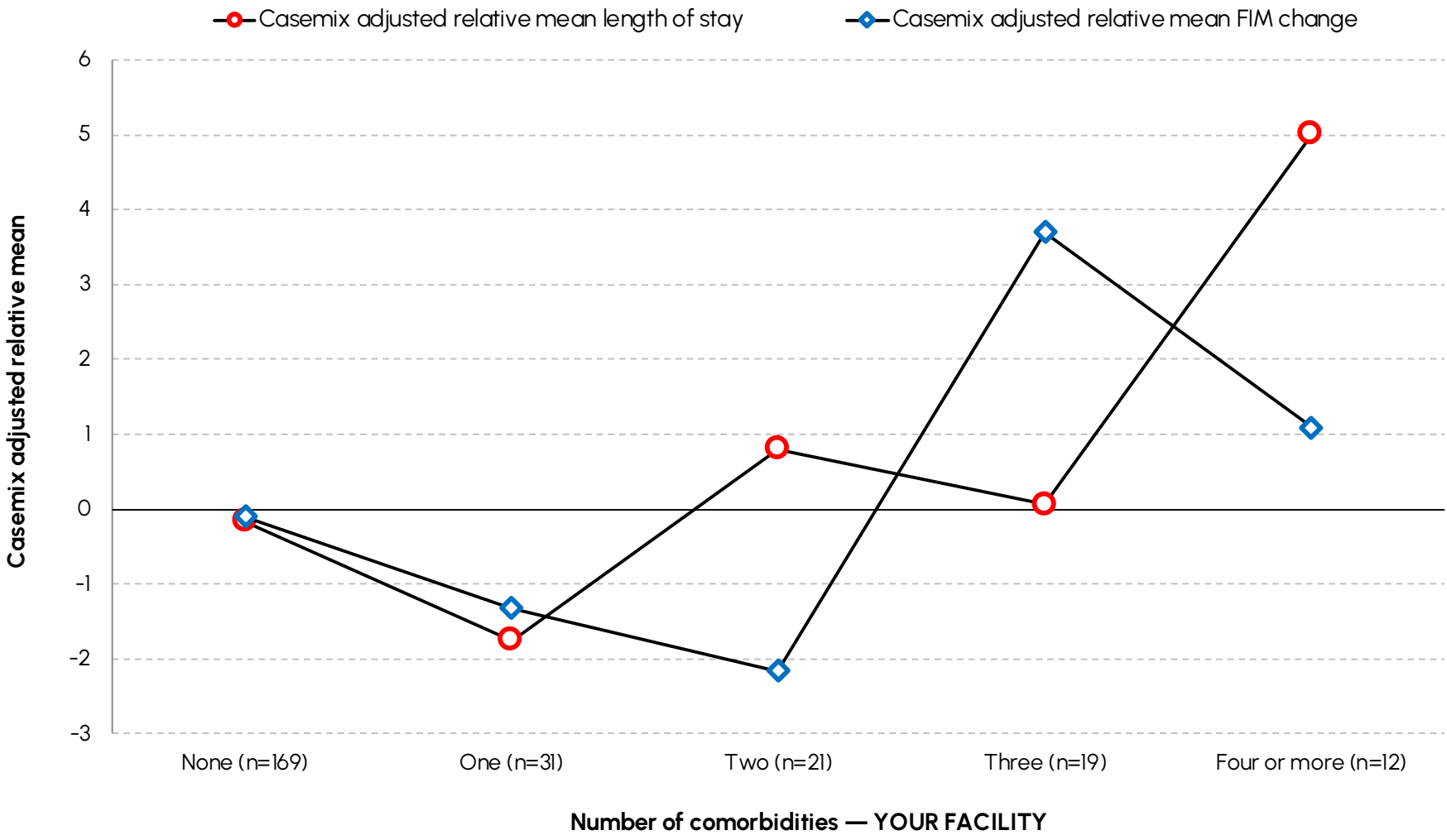
NOTE: Includes only completed episodes with valid FIM scores and LOS and age, where n<5 no values are shown



# Explanatory data

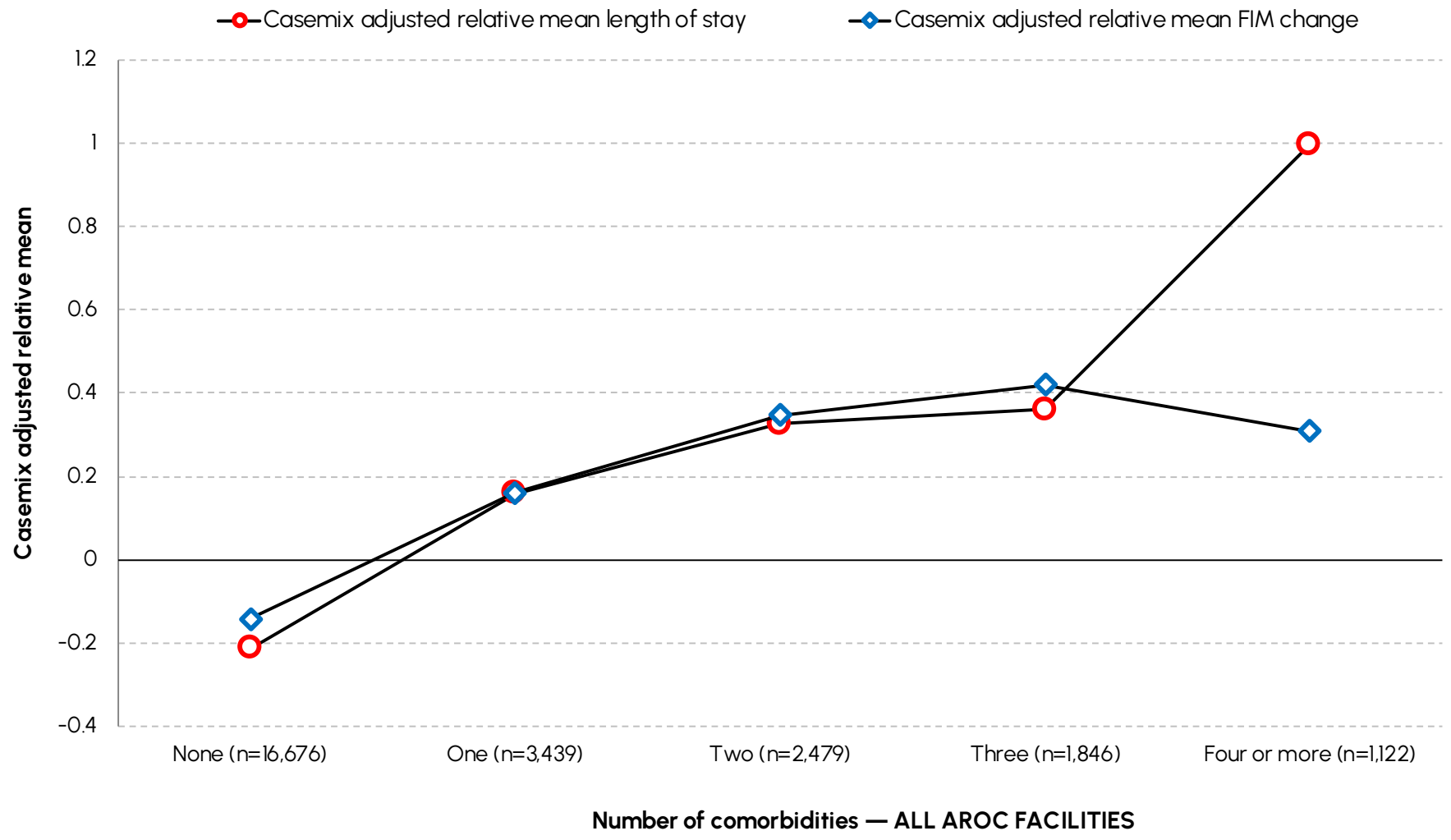


# Casemix-adjusted relative mean length of stay and FIM change by number of comorbidities



NOTE: Includes only completed episodes with valid FIM scores and LOS; where n<5 the casemix-adjusted relative mean will not be shown

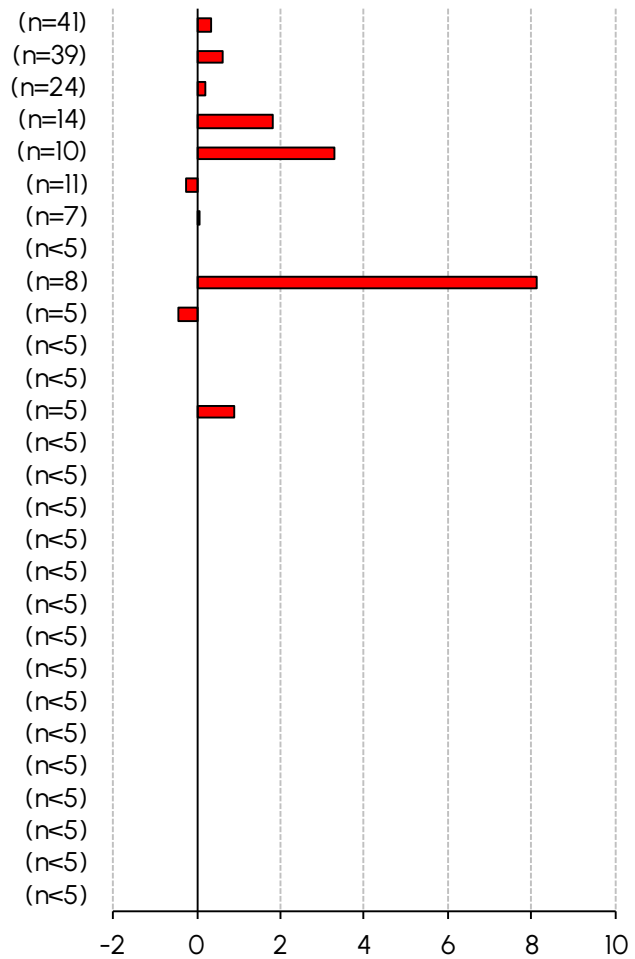
# Casemix-adjusted relative mean length of stay and FIM change by number of comorbidities



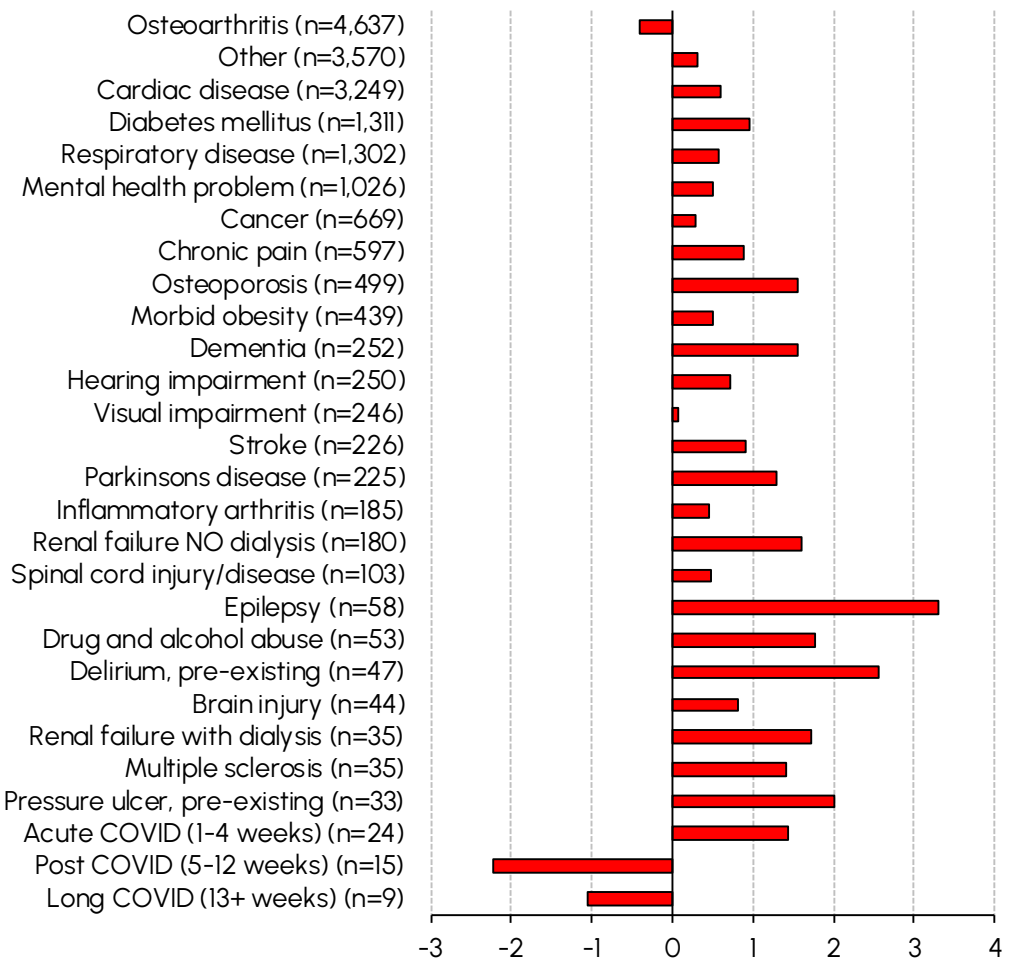
NOTE: Includes only completed episodes with valid FIM scores and LOS; where n<5 the casemix-adjusted relative mean will not be shown



# Casemix-adjusted relative mean length of stay by type of comorbidity



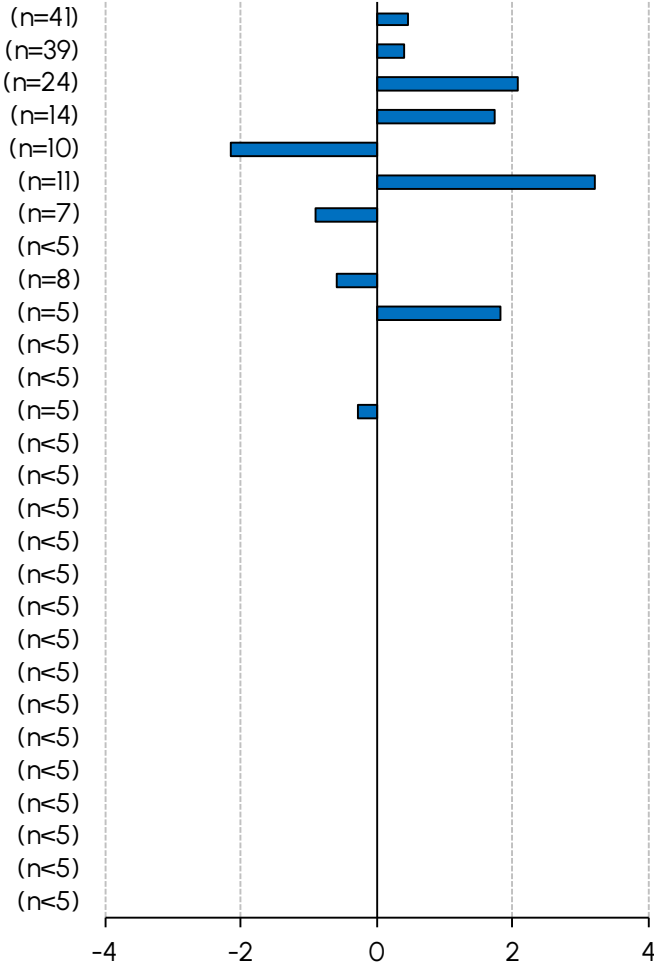
CARMIL OS — YOUR FACILITY



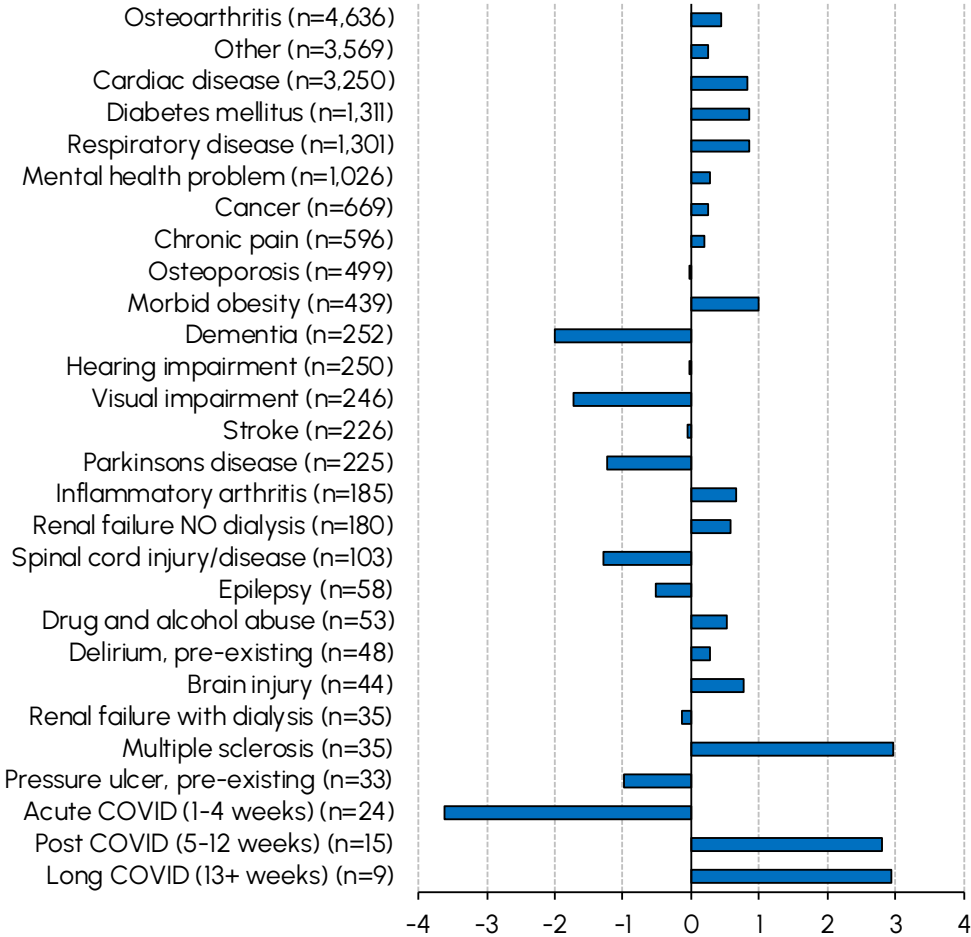
CARMIL OS — ALL AROC FACILITIES

NOTE: Includes only completed episodes with valid LOS  
 \* No data included where number of episodes <5

# Casemix-adjusted relative mean FIM change by type of comorbidity



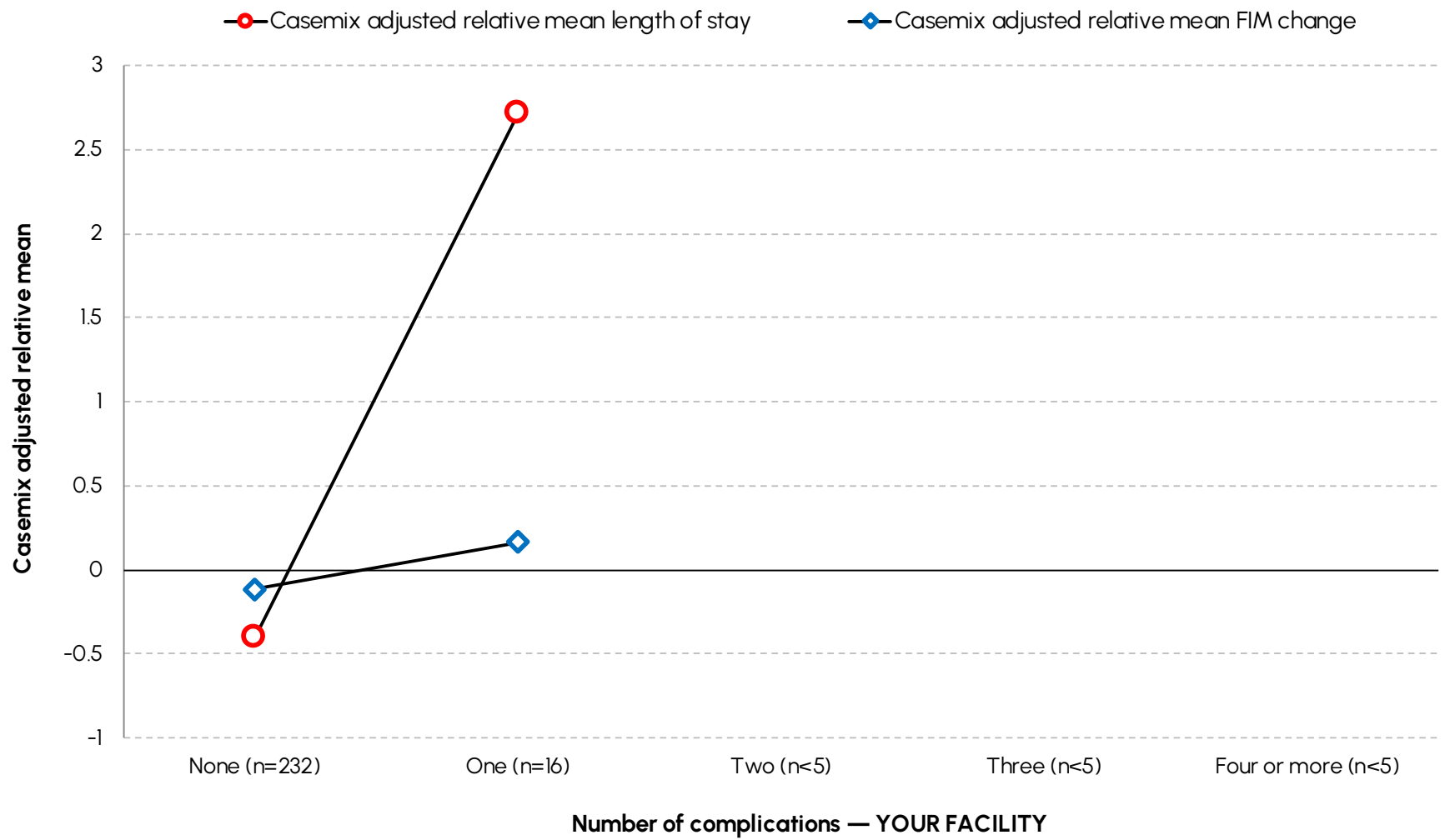
CARMi FIM change — YOUR FACILITY



CARMi FIM change — ALL AROC FACILITIES

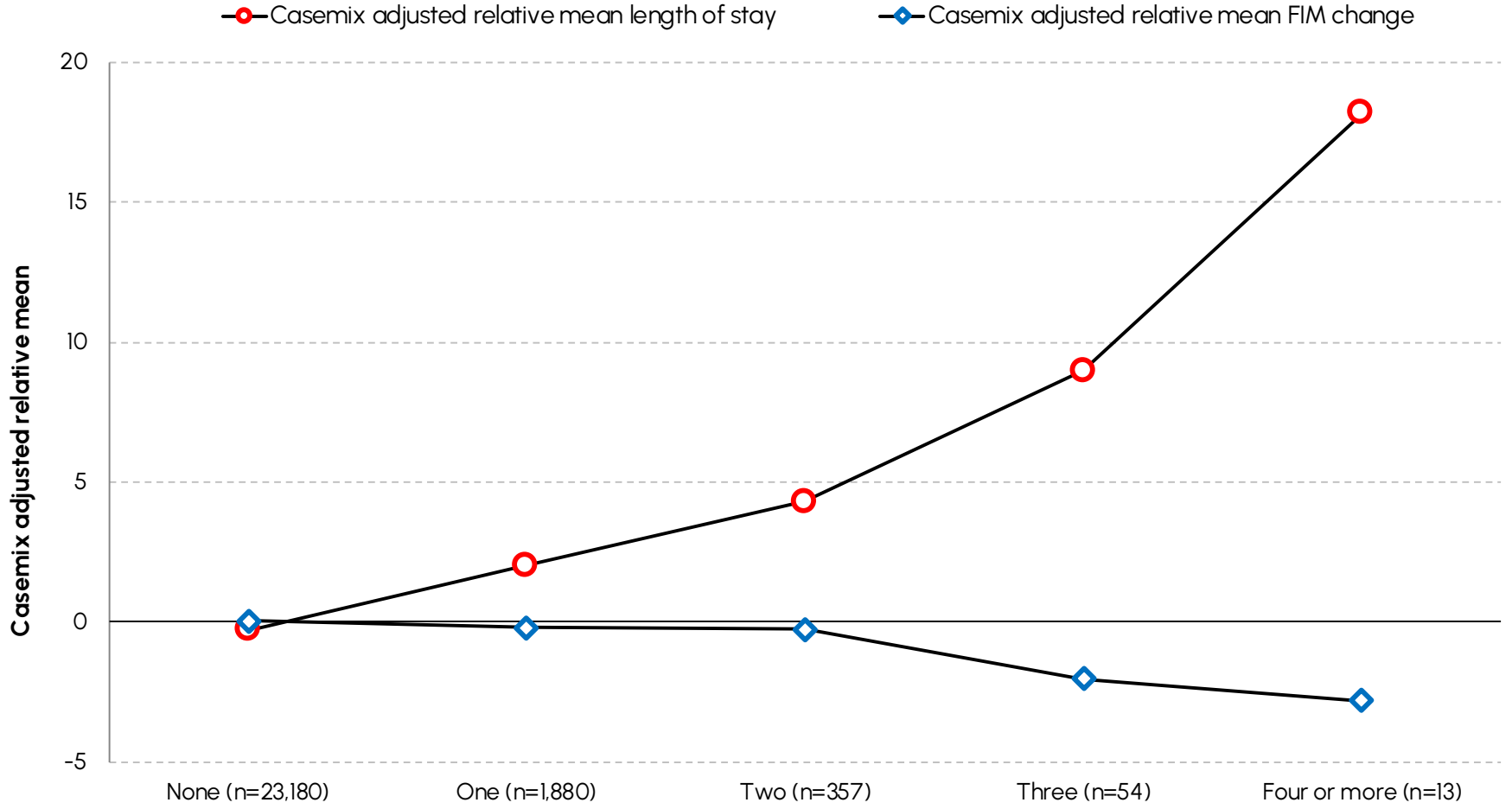
NOTE: Includes only completed episodes with valid FIM scores  
\* No data included where number of episodes <5

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



NOTE: Includes only completed episodes with valid FIM scores and LOS; where n<5 the casemix-adjusted relative mean will not be shown

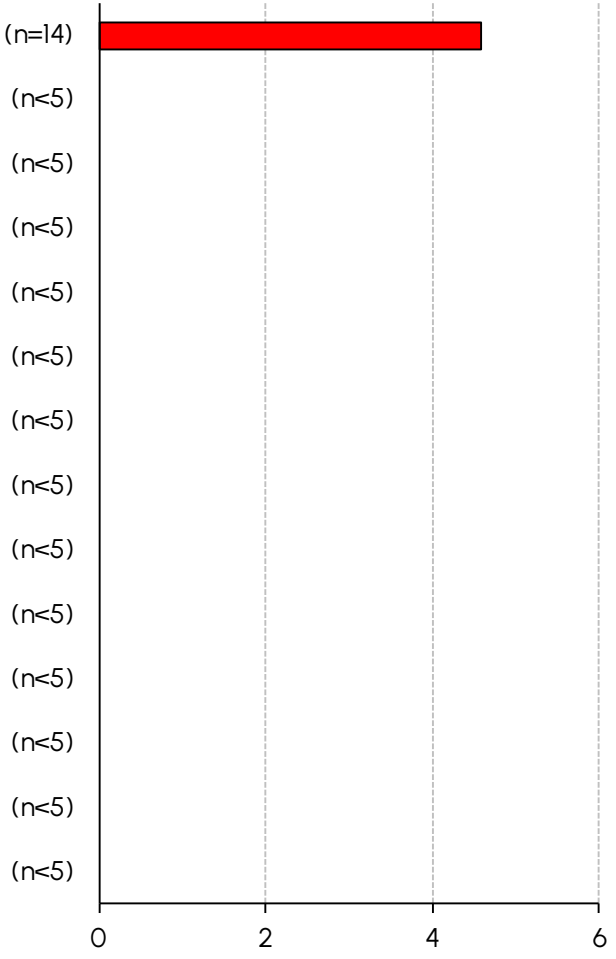
# Casemix-adjusted relative mean length of stay and FIM change by number of complications



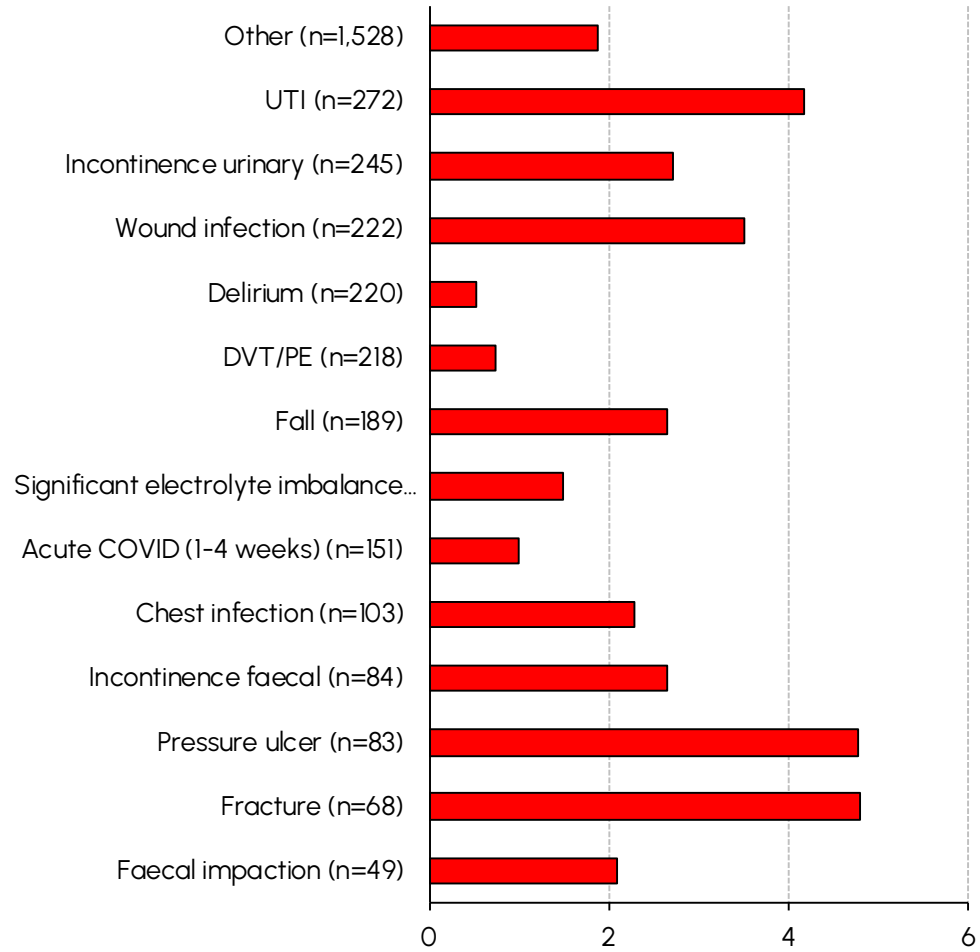
**Number of complications — ALL AROC FACILITIES**

NOTE: Includes only completed episodes with valid FIM scores and LOS; where n<5 the casemix-adjusted relative mean will not be shown

# Casemix-adjusted relative mean length of stay by type of complication



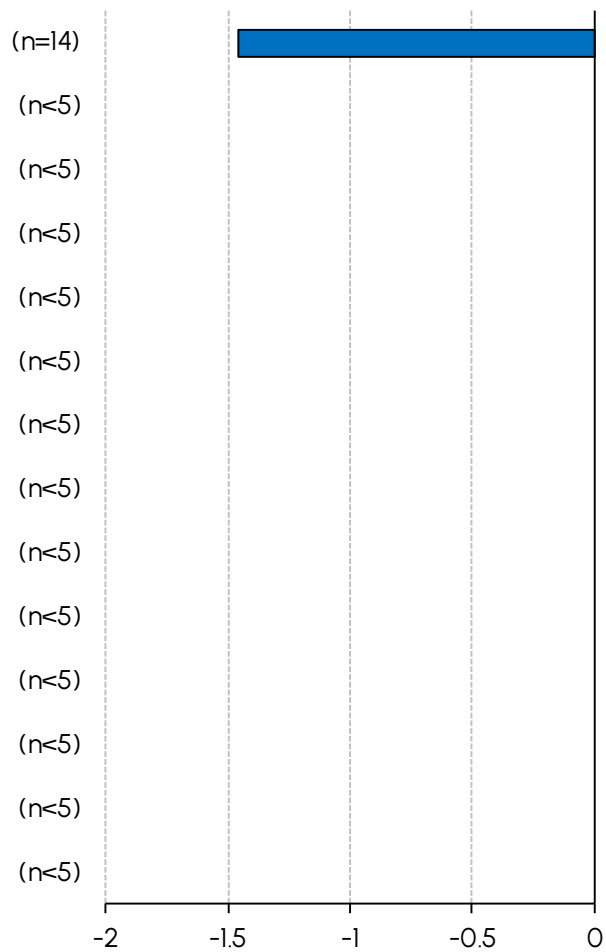
CARMILoS — YOUR FACILITY



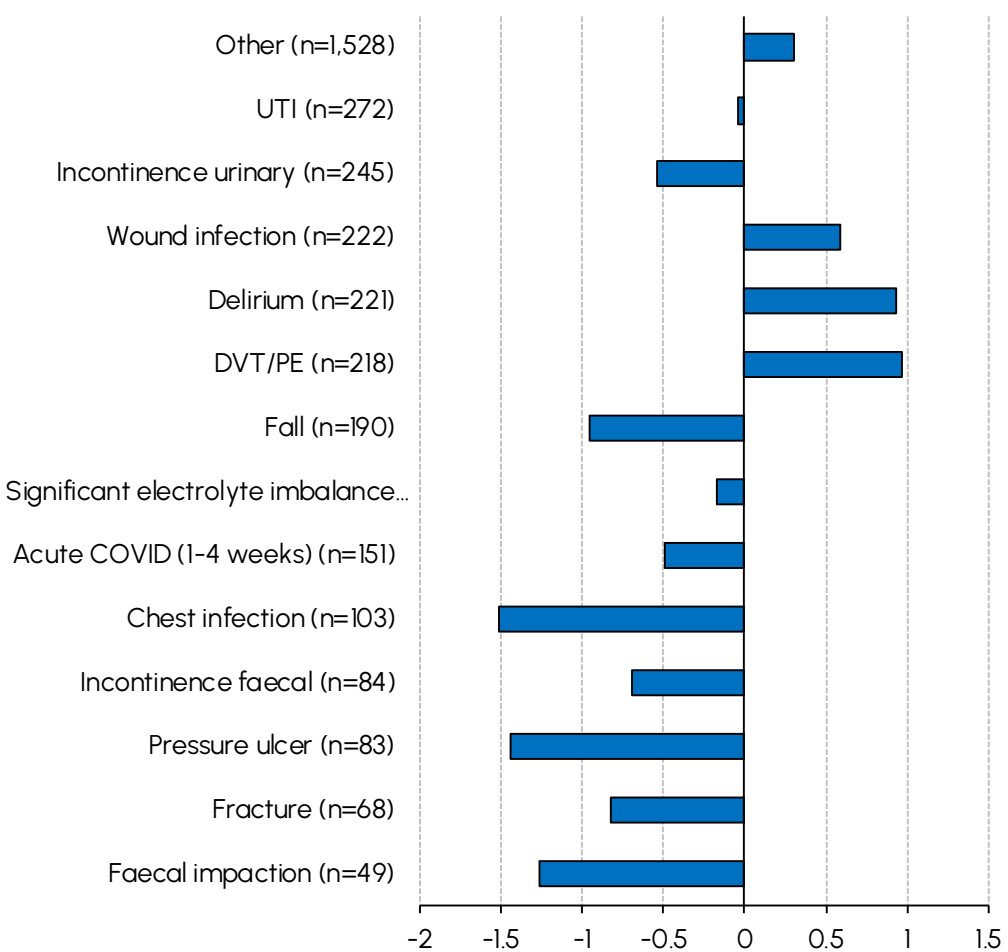
CARMILoS — ALL AROC FACILITIES

NOTE: Includes only completed episodes with valid LOS  
 \* No data included where number of episodes <5

# Casemix-adjusted relative mean FIM change by type of complication



CARMi FIM change — YOUR FACILITY



CARMi FIM change — ALL AROC FACILITIES

NOTE: Includes only completed episodes with valid FIM scores  
 \* No data included where number of episodes <5

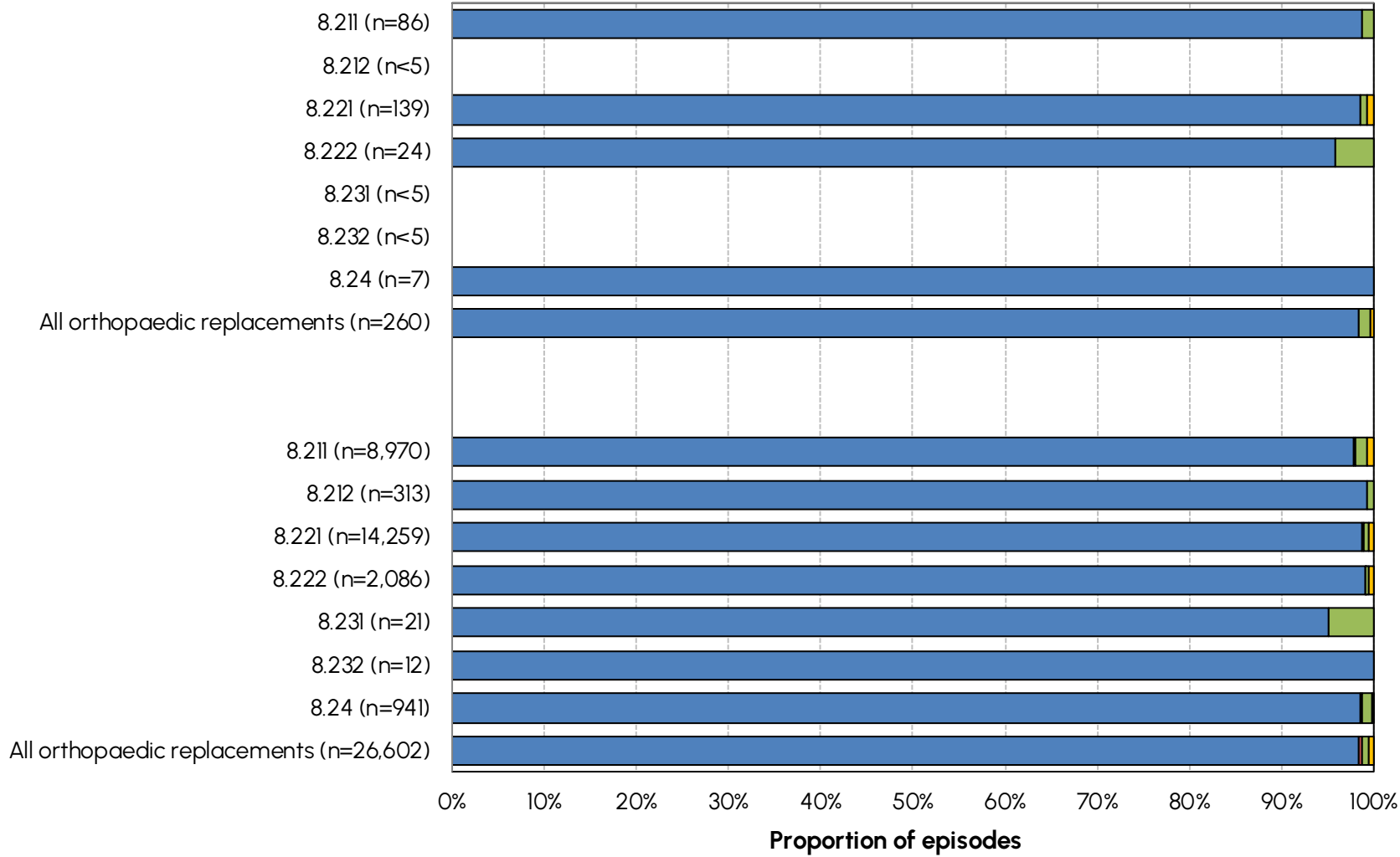
# Type of accommodation prior to impairment



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

YOUR FACILITY

ALL AROC FACILITIES



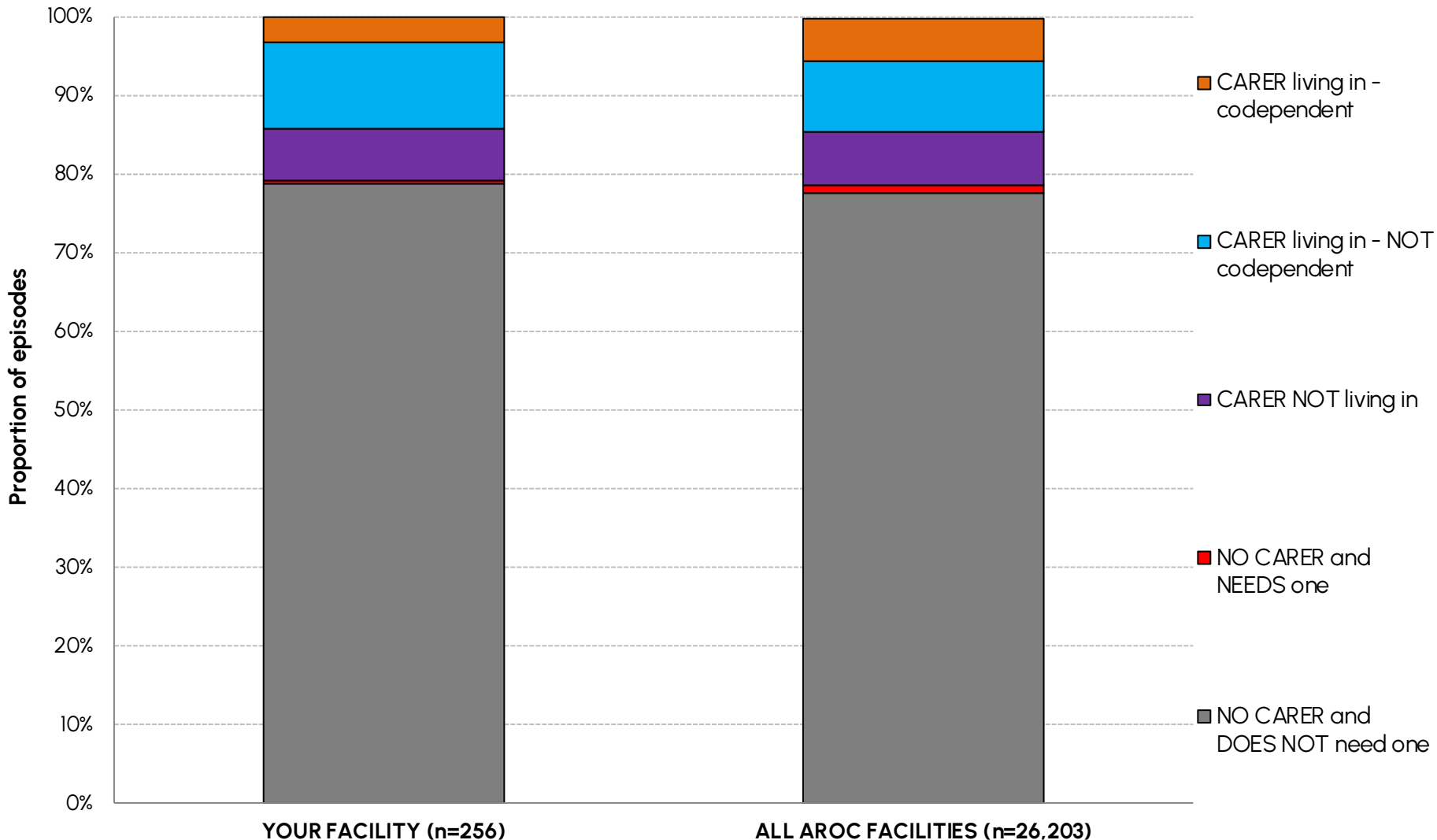
# Type of accommodation prior to impairment

Impairment	YOUR FACILITY — N (%)					All episodes
	Private residence	Residential Aged	Other	Unknown		
		Care				
8.211 Unilateral hip replacement	85 (97.7)	1 (1.1)	0 (0.0)	1	87 (100.0)	
8.212 Bilateral hip replacement	4 (100.0)	0 (0.0)	0 (0.0)	0	4 (100.0)	
8.221 Unilateral knee replacement	137 (98.6)	1 (0.7)	1 (0.7)	0	139 (100.0)	
8.222 Bilateral knee replacement	23 (95.8)	1 (4.2)	0 (0.0)	0	24 (100.0)	
8.231 Knee and hip replacement, same side	0 —	0 —	0 —	0	0 —	
8.232 Knee and hip replacement, diff sides	0 —	0 —	0 —	0	0 —	
8.24 Shoulder replacement	7 (100.0)	0 (0.0)	0 (0.0)	0	7 (100.0)	
<b>All Orthopaedic Replacements</b>	<b>256 (98.1)</b>	<b>3 (1.1)</b>	<b>1 (0.4)</b>	<b>1</b>	<b>261 (100.0)</b>	

Impairment	ALL AROC FACILITIES — N (%)					
	Private residence	Rest Home (NZ only)	Residential Aged	Other	Unknown	All episodes
			Care (AU) / 24hr nursing care (NZ)			
8.211 Unilateral hip replacement	8,772 (97.5)	24 (0.3)	119 (1.3)	55 (0.6)	29	8,999 (100.0)
8.212 Bilateral hip replacement	311 (99.0)	0 (0.0)	2 (0.6)	0 (0.0)	1	314 (100.0)
8.221 Unilateral knee replacement	14,093 (98.5)	24 (0.2)	77 (0.5)	65 (0.5)	52	14,311 (100.0)
8.222 Bilateral knee replacement	2,067 (98.9)	2 (0.1)	6 (0.3)	11 (0.5)	3	2,089 (100.0)
8.231 Knee and hip replacement, same side	20 (95.2)	0 (0.0)	1 (4.8)	0 (0.0)	0	21 (100.0)
8.232 Knee and hip replacement, diff sides	12 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0	12 (100.0)
8.24 Shoulder replacement	928 (98.5)	2 (0.2)	9 (1.0)	2 (0.2)	1	942 (100.0)
<b>All Orthopaedic Replacements</b>	<b>26,203 (98.2)</b>	<b>52 (0.2)</b>	<b>214 (0.8)</b>	<b>133 (0.5)</b>	<b>86</b>	<b>26,688 (100.0)</b>

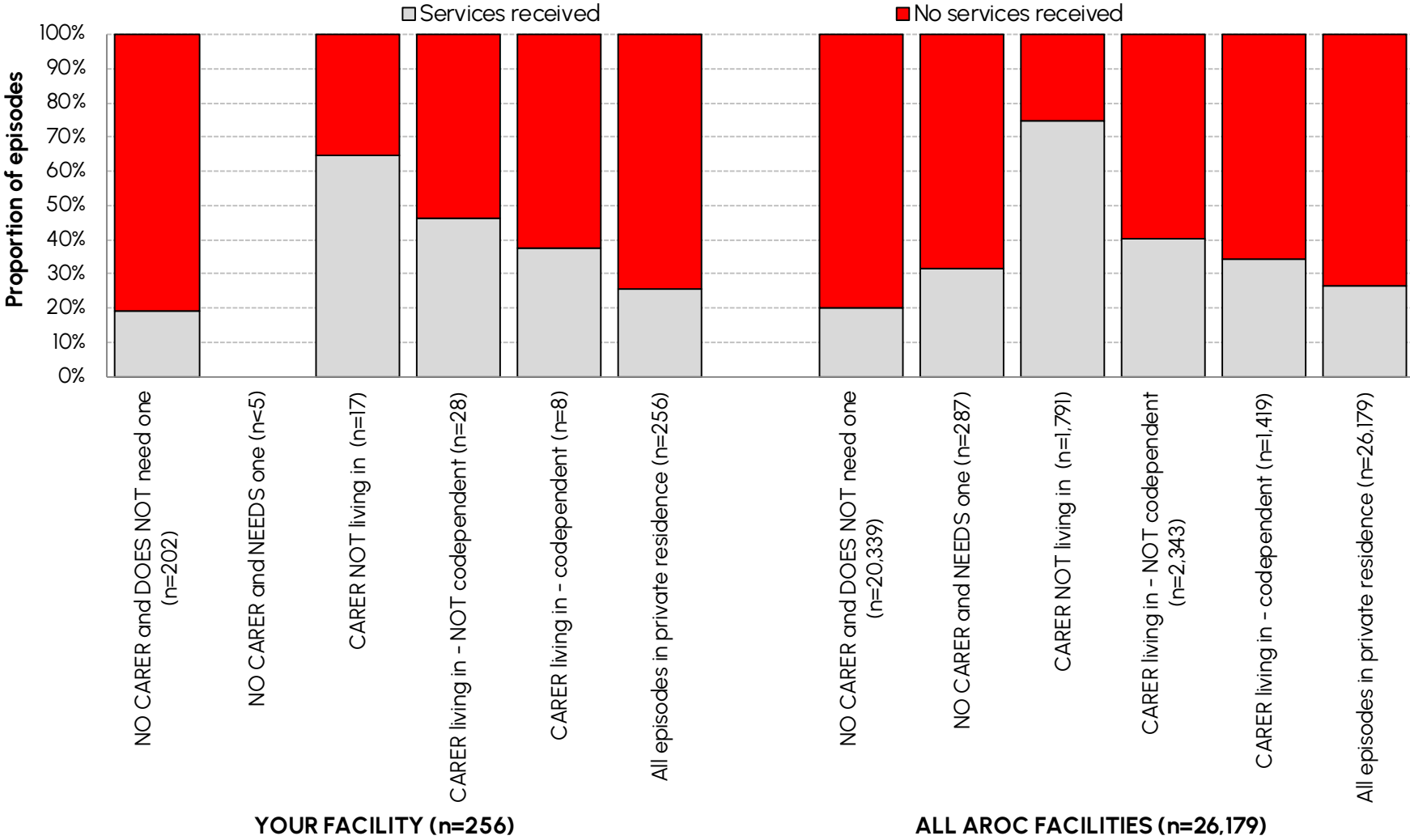


# Carer status prior to impairment



NOTE: Includes only those episodes coming from private residence.

# Any services received prior to impairment by carer status



NOTE: Includes only those episodes coming from private residence and with known carer status and known services status.

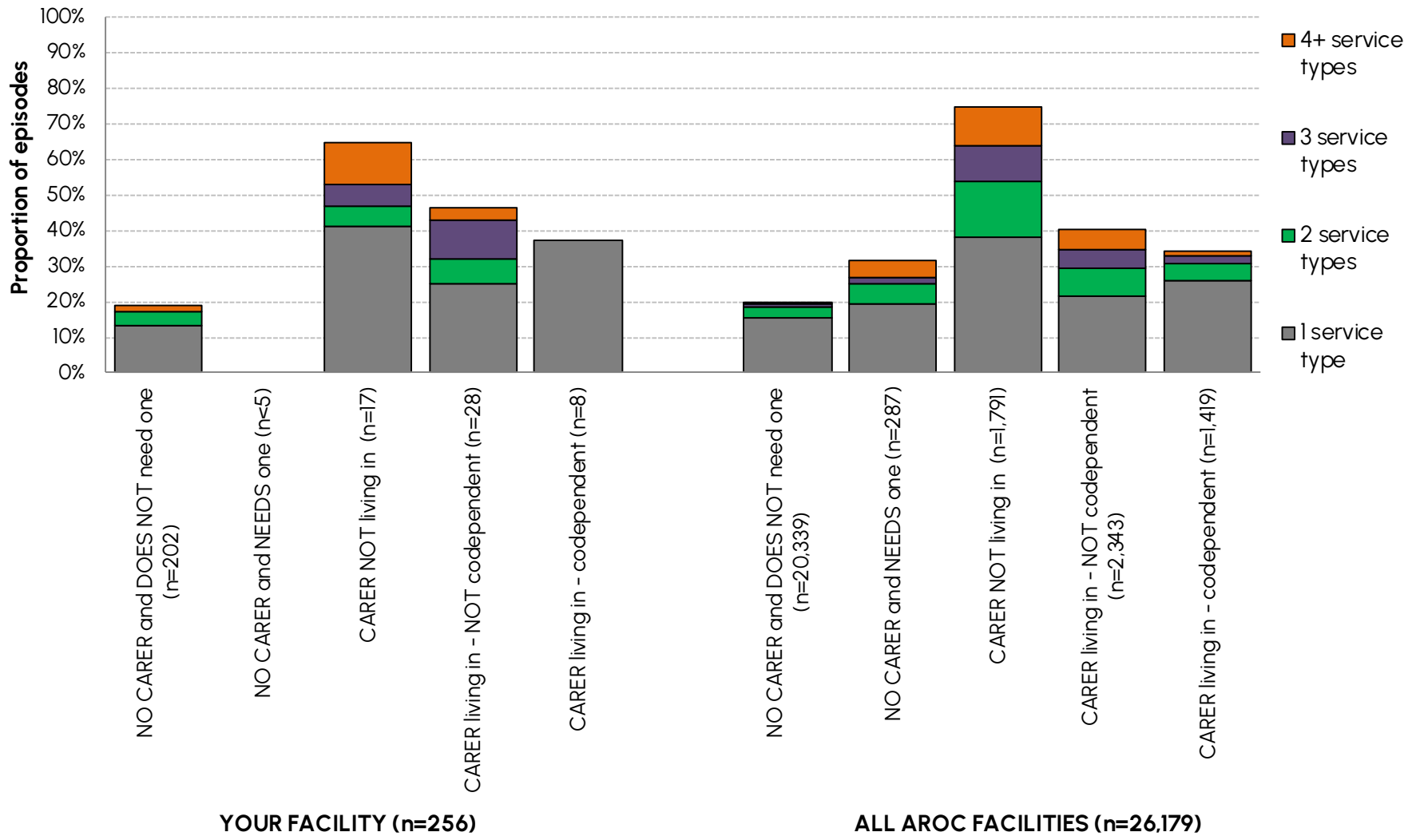
# Carer status and any services received prior to impairment

Carer status prior to this impairment	YOUR FACILITY		ALL AROC FACILITIES	
	No.	%	No.	%
NO CARER and DOES NOT need one	202	78.9	20,339	77.7
NO CARER and NEEDS one	1	0.4	287	1.1
CARER NOT living in	17	6.6	1,791	6.8
CARER living in - NOT codependent	28	10.9	2,343	8.9
CARER living in - codependent	8	3.1	1,419	5.4
Missing	0		24	
<b>All episodes in private residence</b>	<b>256</b>	<b>100.0</b>	<b>26,203</b>	<b>100.0</b>

Carer status prior to this impairment	Any services received prior to this impairment?			
	YOUR FACILITY		ALL AROC FACILITIES	
	Yes (%)	No (%)	Yes (%)	No (%)
NO CARER and DOES NOT need one	19.3	80.7	19.9	80.1
NO CARER and NEEDS one	—	—	31.7	68.3
CARER NOT living in	64.7	35.3	75.0	25.0
CARER living in - NOT codependent	46.4	53.6	40.5	59.5
CARER living in - codependent	37.5	62.5	34.2	65.8
<b>All episodes in private residence</b>	<b>25.8</b>	<b>74.2</b>	<b>26.5</b>	<b>73.5</b>

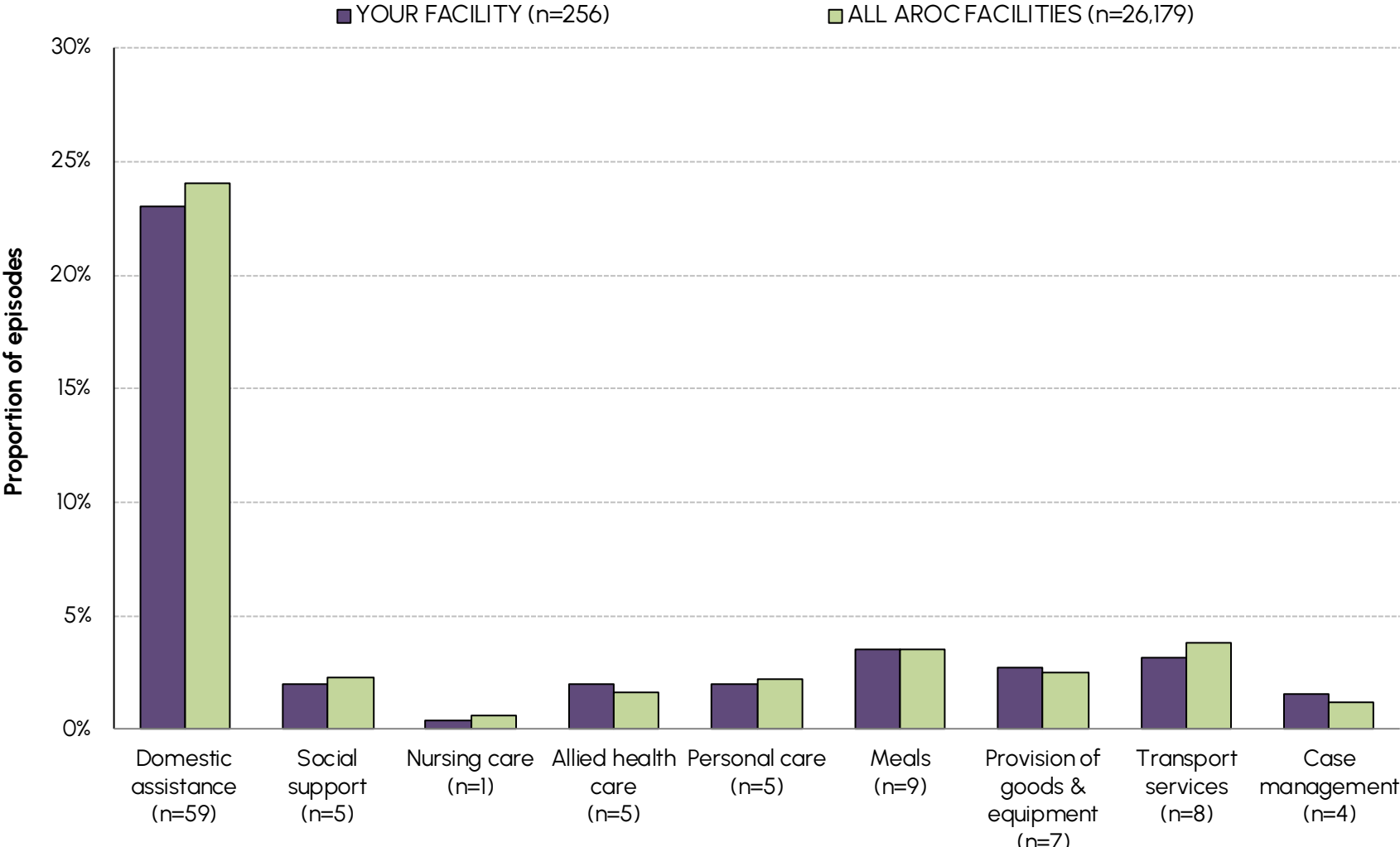
NOTE: Includes only those episodes coming from private residence and with known carer status.

# Number of services received prior to impairment by carer status



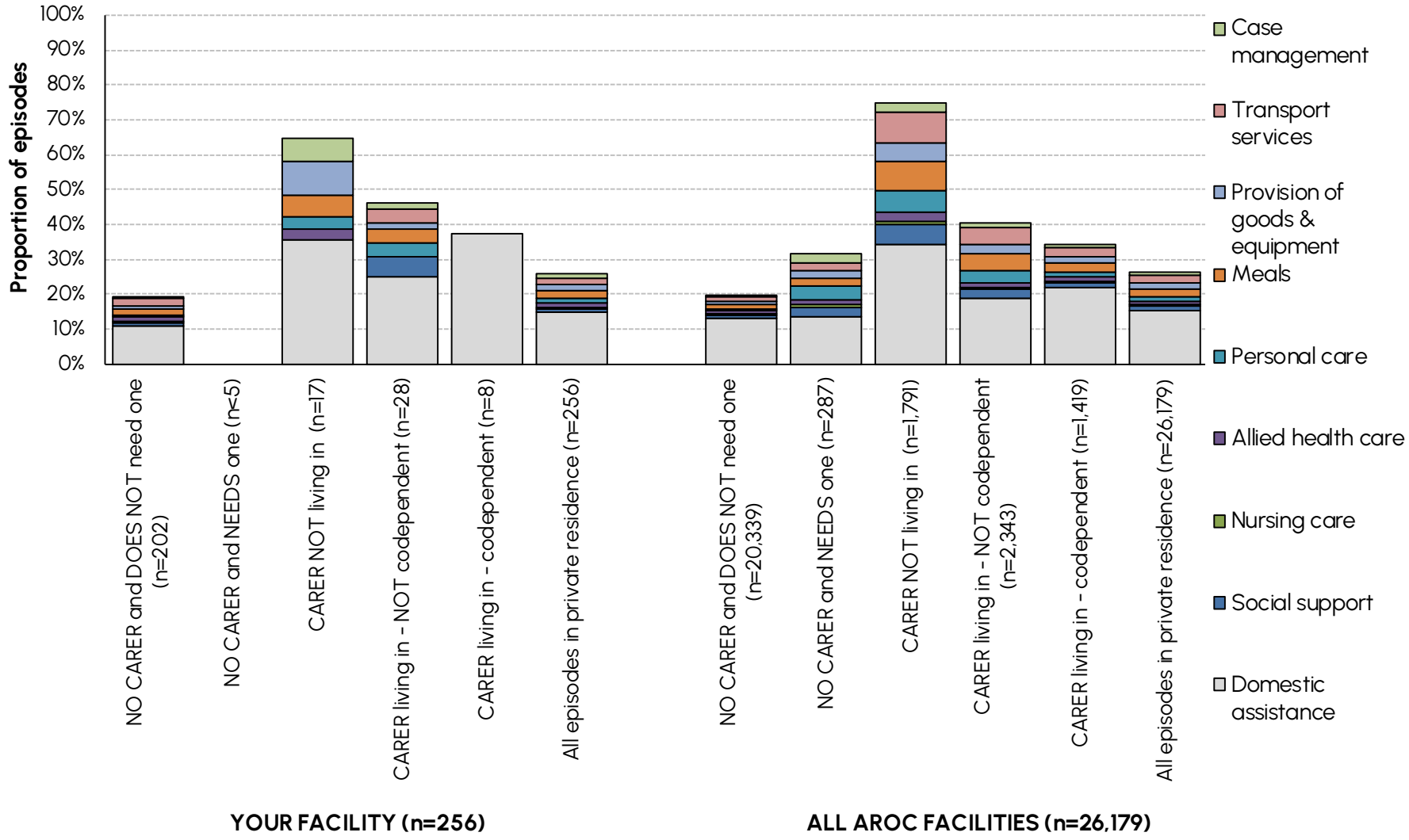
NOTE: Includes only those episodes coming from private residence and with known carer status and known services status

# Type of services received prior to impairment



NOTE: Includes only those episodes coming from private residence and with known carer status and known services status

# Type of services received prior to impairment by carer status



NOTE: Includes only those episodes coming from private residence and with known carer status and known services status

# Number and type of services received prior to impairment by carer status

Services received prior to this impairment	Carer status prior to discharge - YOUR FACILITY						All episodes in private residence
	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		
Number of episodes in private residence	202	1	17	28	8		<b>256</b>
<b>Percent of episodes receiving:</b>							
No services	80.7	100.0	35.3	53.6	62.5		<b>74.2</b>
1 service type	13.4	0.0	41.2	25.0	37.5		<b>17.2</b>
2 service types	4.0	0.0	5.9	7.1	0.0		<b>4.3</b>
3 service types	0.0	0.0	5.9	10.7	0.0		<b>1.6</b>
4 or more service types	1.5	0.0	11.8	3.6	0.0		<b>2.3</b>
<b>Service Type received</b>							
Domestic assistance	15.8	0.0	64.7	46.4	37.5		<b>23.0</b>
Social support	1.0	0.0	0.0	10.7	0.0		<b>2.0</b>
Nursing care	0.5	0.0	0.0	0.0	0.0		<b>0.4</b>
Allied health care	2.0	0.0	5.9	0.0	0.0		<b>2.0</b>
Personal care	1.0	0.0	5.9	7.1	0.0		<b>2.0</b>
Meals	2.5	0.0	11.8	7.1	0.0		<b>3.5</b>
Provision of goods & equipment	1.5	0.0	17.6	3.6	0.0		<b>2.7</b>
Transport services	3.0	0.0	0.0	7.1	0.0		<b>3.1</b>
Case management	0.5	0.0	11.8	3.6	0.0		<b>1.6</b>

NOTE: Includes only those episodes coming from private residence and with known carer status and known services status

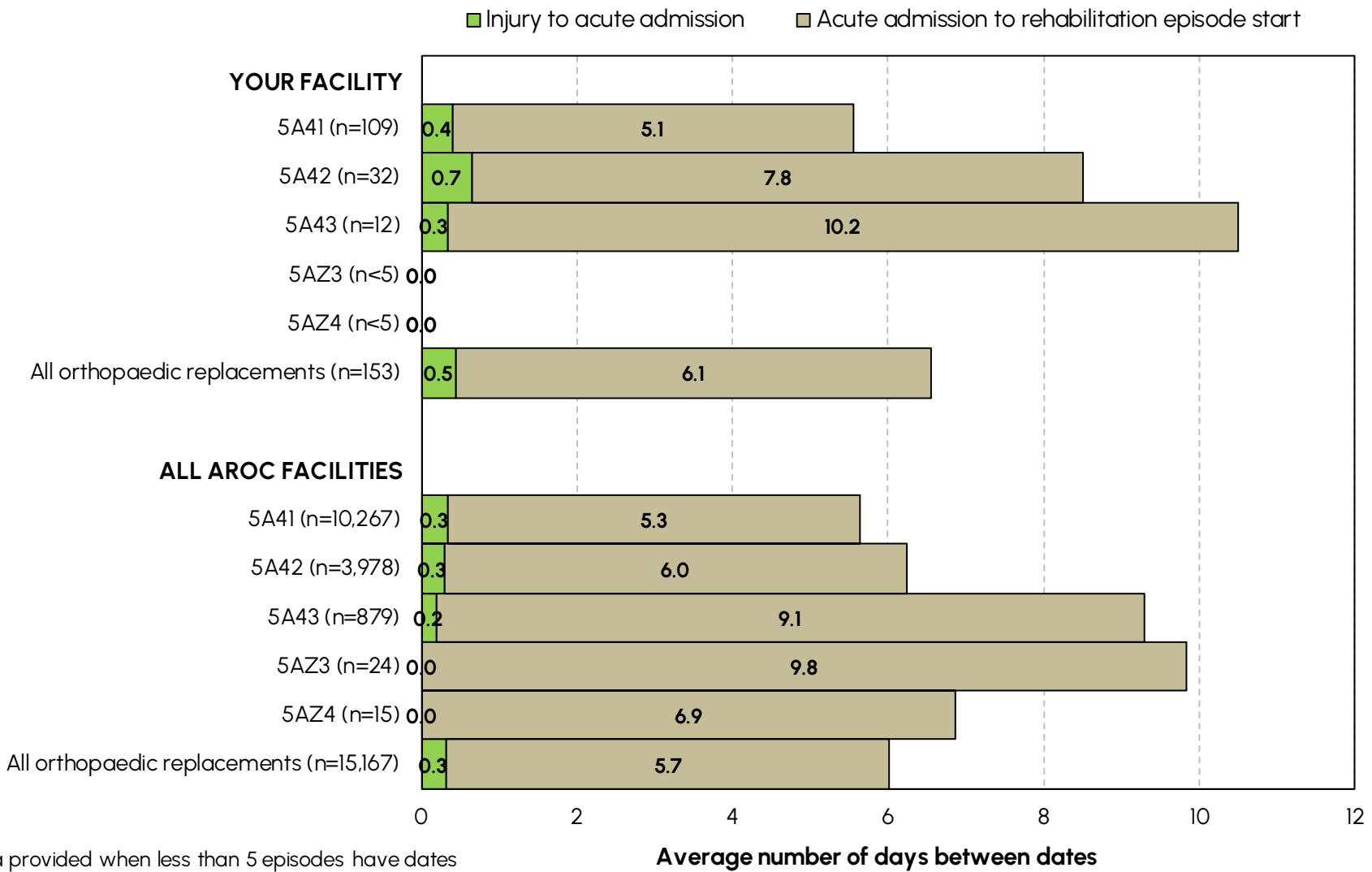
# Number and type of services received prior to impairment by carer status

Services received prior to this impairment	Carer status prior to discharge - ALL AROC FACILITIES						All episodes in private residence
	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		
Number of episodes in private residence	20,339	287	1,791	2,343	1,419	<b>26,179</b>	
<b>Percent of episodes receiving:</b>							
No services	80.1	68.3	25.0	59.5	65.8	<b>73.5</b>	
1 service type	15.4	19.5	38.4	21.8	25.9	<b>18.1</b>	
2 service types	3.0	5.6	15.7	7.6	5.1	<b>4.5</b>	
3 service types	0.9	1.7	9.7	5.1	1.8	<b>2.0</b>	
4 or more service types	0.6	4.9	11.2	6.0	1.5	<b>1.9</b>	
<b>Service Type received</b>							
Domestic assistance	18.0	25.4	70.3	37.3	31.3	<b>24.1</b>	
Social support	1.1	4.5	11.3	5.5	1.8	<b>2.3</b>	
Nursing care	0.3	1.7	2.5	0.9	0.6	<b>0.6</b>	
Allied health care	1.2	2.8	4.7	2.7	1.6	<b>1.6</b>	
Personal care	0.7	7.0	13.2	6.5	2.1	<b>2.2</b>	
Meals	1.6	4.5	16.5	10.1	3.5	<b>3.5</b>	
Provision of goods & equipment	1.4	3.5	10.7	5.2	2.9	<b>2.5</b>	
Transport services	1.8	4.5	18.1	9.9	3.7	<b>3.8</b>	
Case management	0.5	4.9	5.9	2.5	1.0	<b>1.1</b>	

NOTE: Includes only those episodes coming from private residence and with known carer status and known services status



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

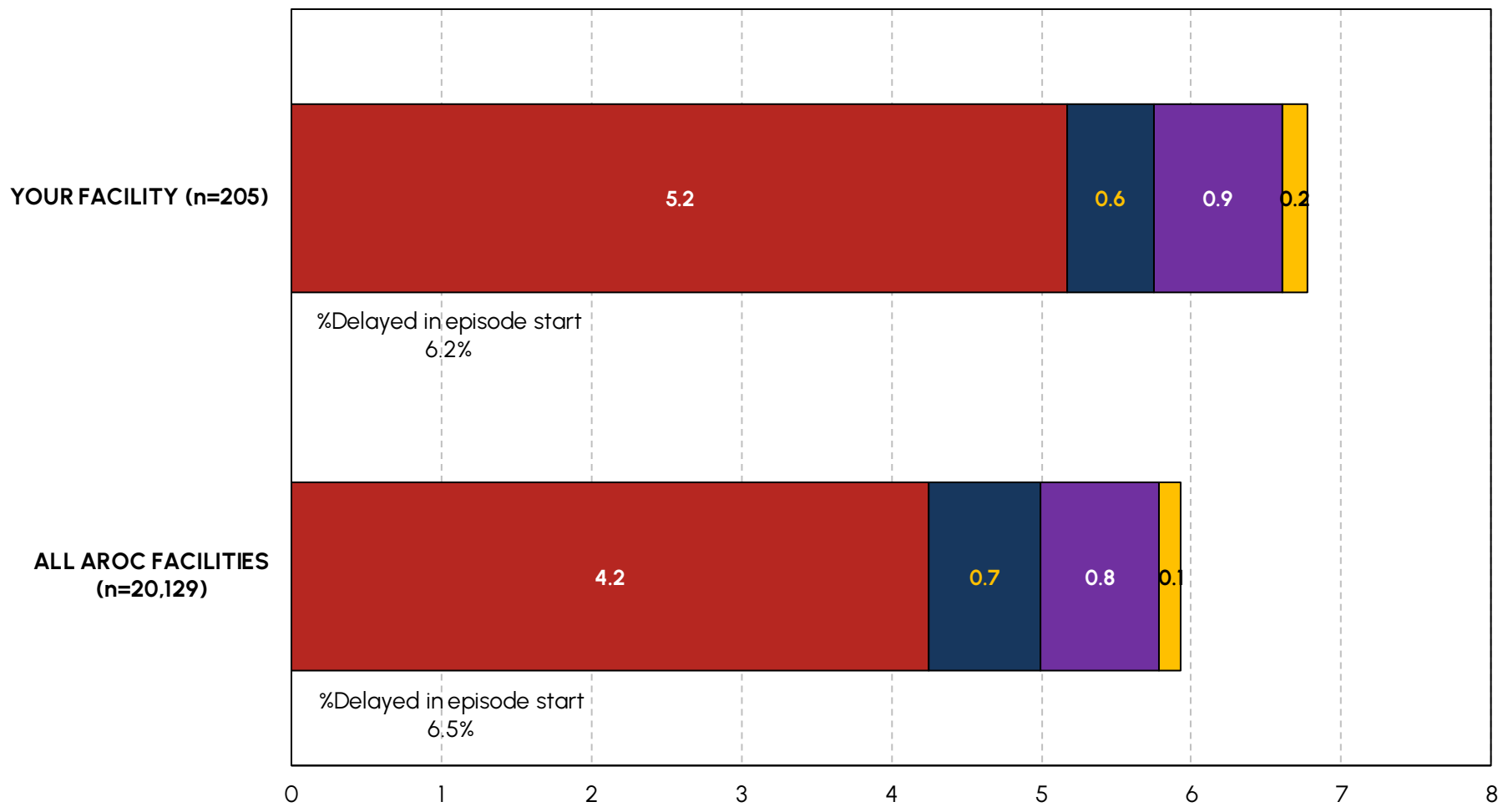


\*No data provided when less than 5 episodes have dates  
 NOTE: Includes first admissions where all dates have been entered only

# Days from referral to rehabilitation episode start



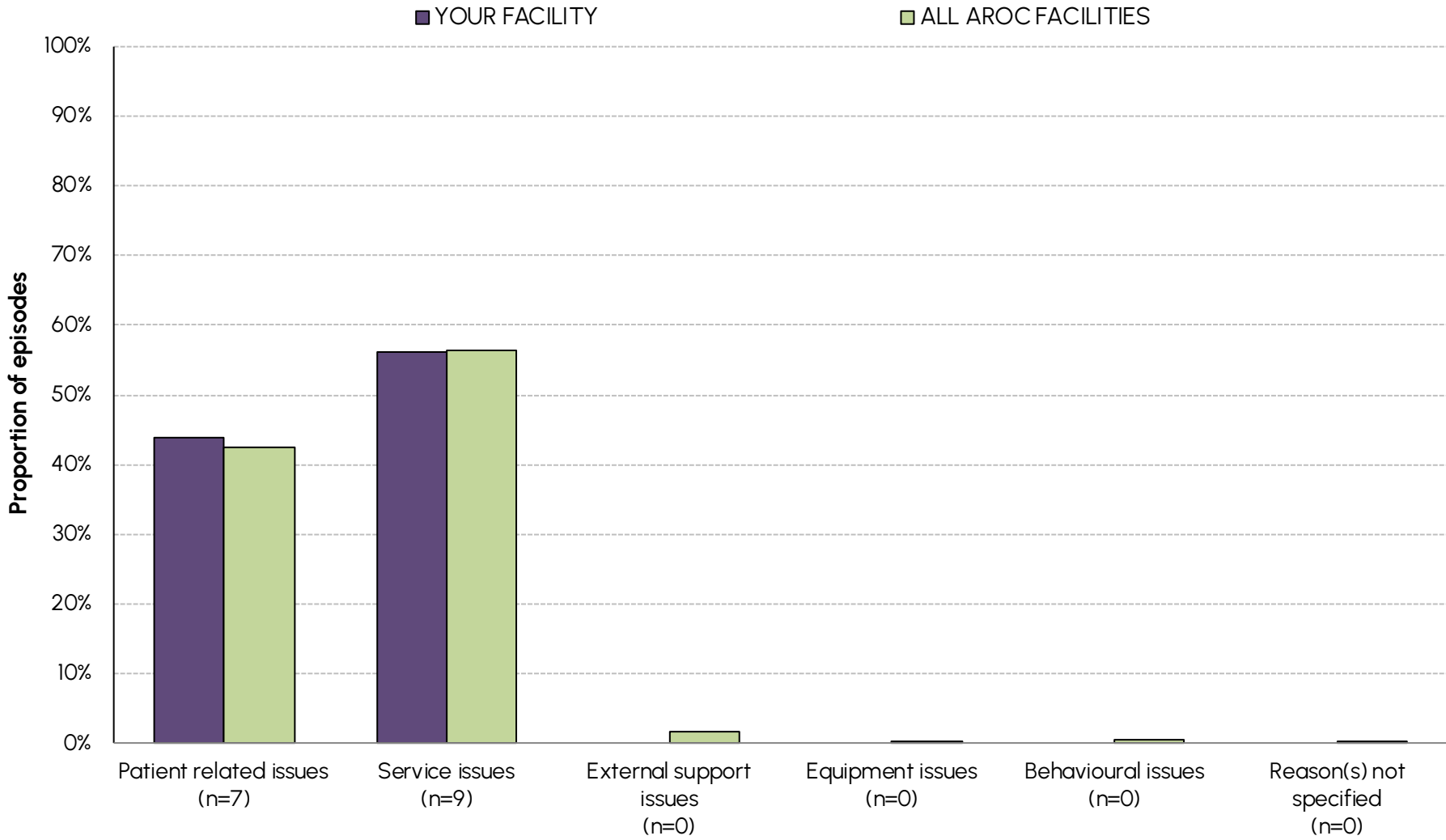
■ Injury to Referral   
 ■ Referral to assessment   
 ■ Assessment to clinically rehab ready   
 ■ Clinically rehab ready to rehab episode start



\*No data provided when less than 5 episodes have dates  
 NOTE: Includes first admissions where all dates have been entered only

**Average number of days between dates**

# Type of delay in episode start



# Delays in episode start

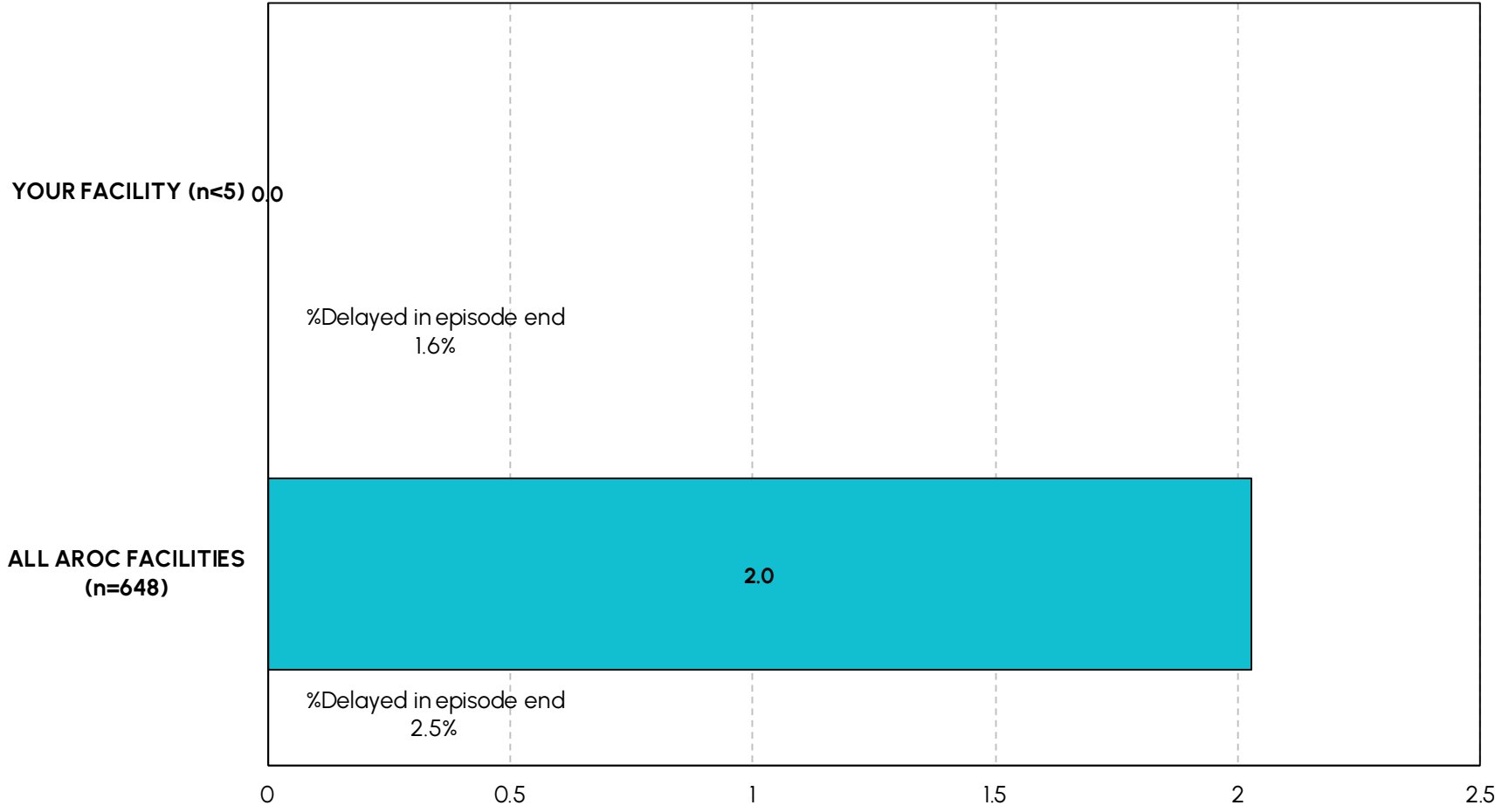
	YOUR FACILITY		ALL AROC FACILITIES	
	No.	%	No.	%
<b>Delay in episode start</b>				
No delay	243	93.8	24,785	93.5
Delay in episode start	16	6.2	1,720	6.5
Missing	2		183	
<b>All episodes</b>	<b>261</b>	<b>100.0</b>	<b>26,688</b>	<b>100.0</b>

	YOUR FACILITY		ALL AROC FACILITIES	
	No.	%	No.	%
<b>Reasons for delay in episode start</b>				
Patient related issues	7	43.8	732	42.6
Service issues	9	56.3	970	56.4
External support issues	0	0.0	27	1.6
Equipment issues	0	0.0	1	0.1
Behavioural issues	0	0.0	9	0.5
Reason(s) not specified	0	0.0	5	0.3

# Days from clinically ready to discharge



Community Ready to episode end (where a delay was reported)

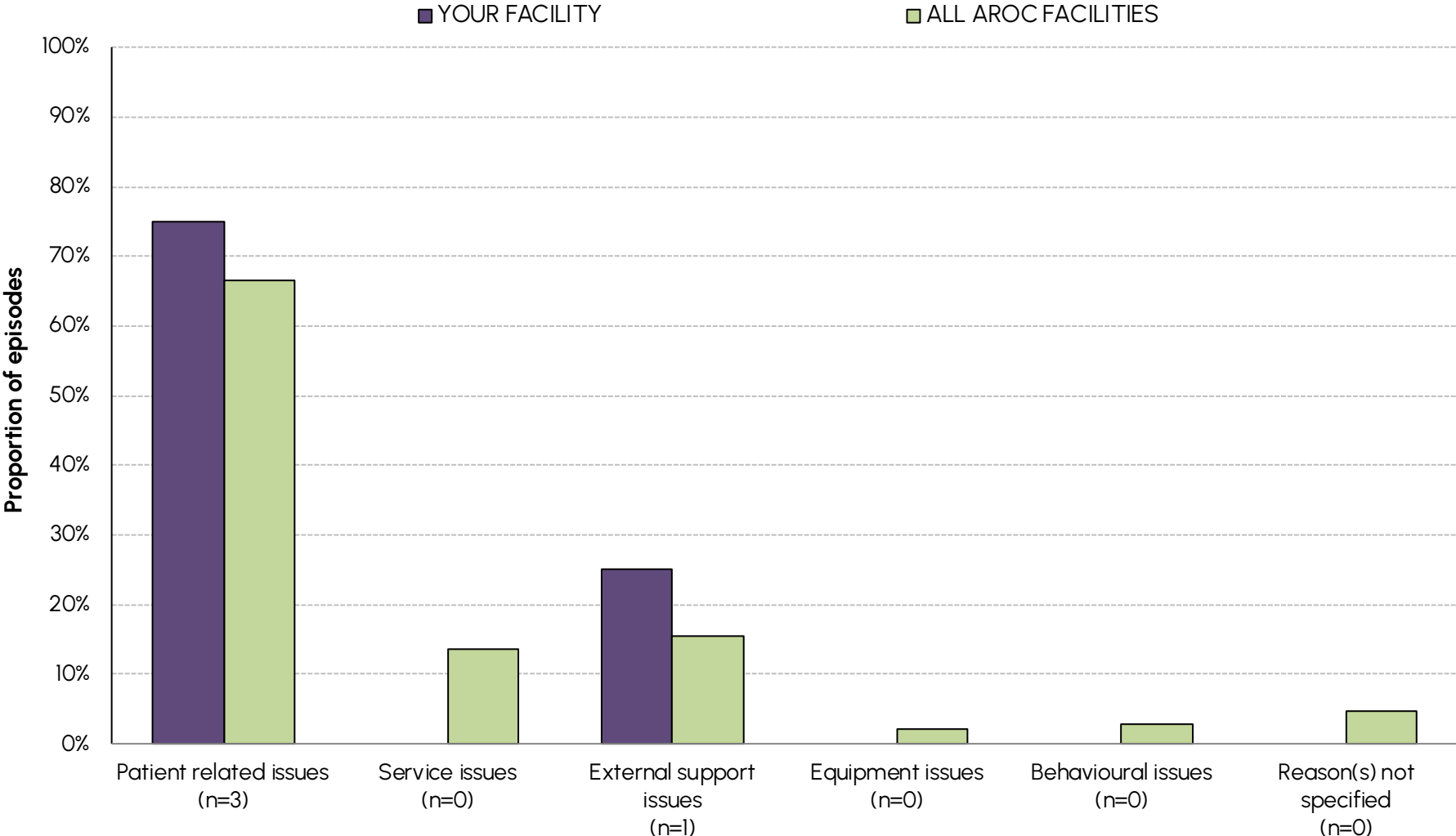


\*No data provided when less than 5 episodes have dates

Average number of days between dates

NOTE: Includes completed episodes with a delay in discharge

# Type of delay in episode end



NOTE: Includes completed episodes only

# Delays in episode end

Delay in episode end	YOUR FACILITY		ALL AROC FACILITIES	
	No.	%	No.	%
No delay	250	98.4	24,988	97.5
Delay in episode end	4	1.6	650	2.5
Missing	0		66	
<b>All episodes</b>	<b>254</b>	<b>100.0</b>	<b>25,704</b>	<b>100.0</b>

Reasons for delay in episode end	YOUR FACILITY		ALL AROC FACILITIES	
	No.	%	No.	%
Patient related issues	3	75.0	433	66.6
Service issues	0	0.0	88	13.5
External support issues	1	25.0	101	15.5
Equipment issues	0	0.0	14	2.2
Behavioural issues	0	0.0	18	2.8
Reason(s) not specified	0	0.0	31	4.8

NOTE: Includes completed episodes only

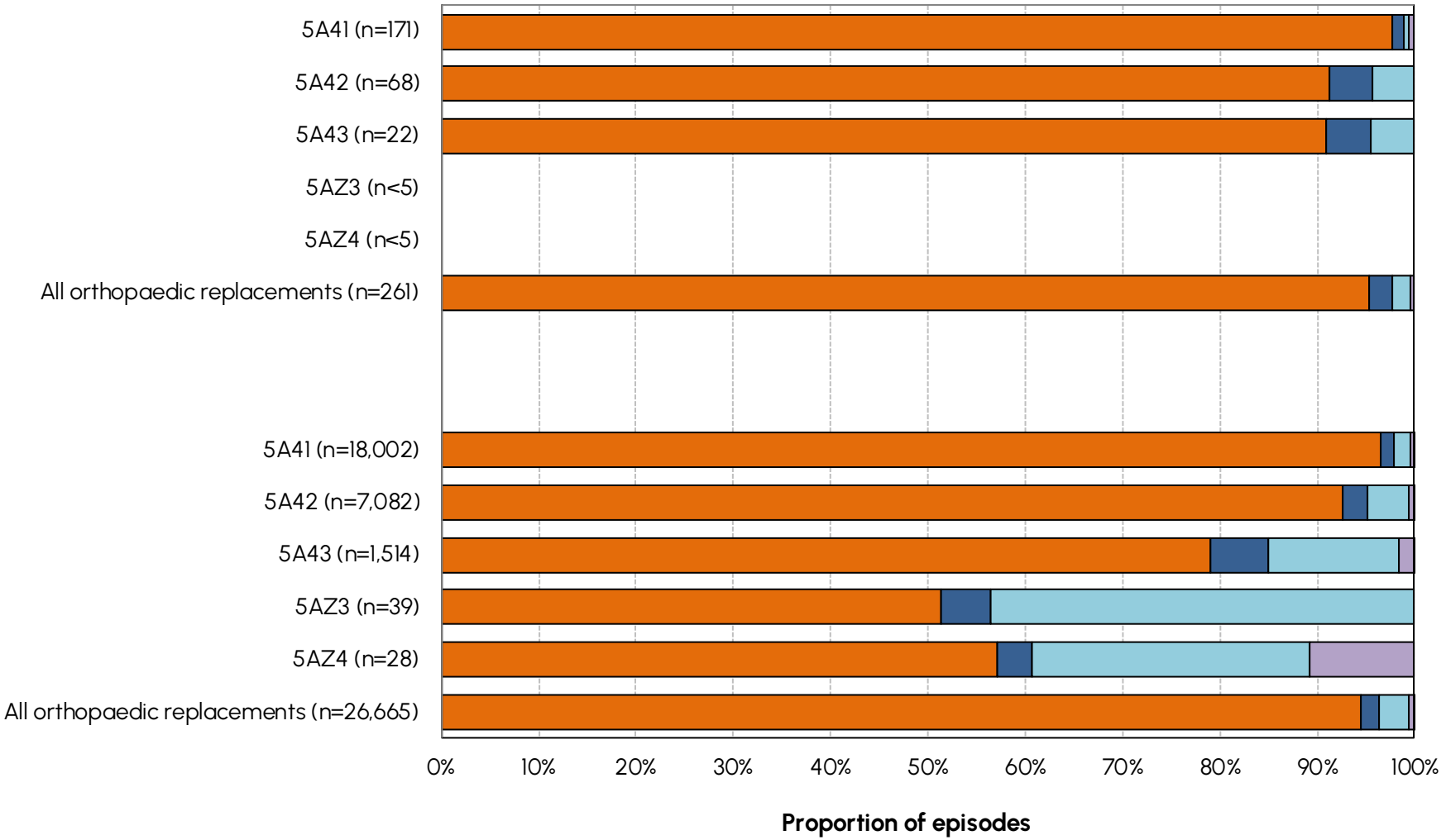
# Discharge destination by AN-SNAP class



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

YOUR FACILITY

ALL AROC FACILITIES





# Discharge destination by AN-SNAP class

AN-SNAP class V5	YOUR FACILITY — N					ALL AROC FACILITIES — N				
	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown
5A41 (weighted motor 61-91)	167	2	1	1	0	17,380	252	283	79	8
5A42 (weighted motor 45-60)	62	3	3	0	0	6,559	181	299	40	3
5A43 (weighted motor 19-44)	20	1	1	0	0	1,197	90	202	24	1
5AZ3 (motor 13-18, Age ≥ 79)	0	0	0	0	0	20	2	17	0	0
5AZ4 (motor 13-18, Age ≤ 78)	0	0	0	0	0	16	1	8	3	0
<b>All Replacement AN-SNAP classes</b>	<b>249</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>25,172</b>	<b>526</b>	<b>809</b>	<b>146</b>	<b>12</b>

AN-SNAP class V5	YOUR FACILITY — %					ALL AROC FACILITIES — %				
	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown
5A41 (weighted motor 61-91)	97.7	1.2	0.6	0.6	0.0	96.5	1.4	1.6	0.4	0.0
5A42 (weighted motor 45-60)	91.2	4.4	4.4	0.0	0.0	92.6	2.6	4.2	0.6	0.0
5A43 (weighted motor 19-44)	90.9	4.5	4.5	0.0	0.0	79.1	5.9	13.3	1.6	0.1
5AZ3 (motor 13-18, Age ≥ 79)	—	—	—	—	—	51.3	5.1	43.6	0.0	0.0
5AZ4 (motor 13-18, Age ≤ 78)	—	—	—	—	—	57.1	3.6	28.6	10.7	0.0
<b>All Replacement AN-SNAP classes</b>	<b>95.4</b>	<b>2.3</b>	<b>1.9</b>	<b>0.4</b>	<b>0.0</b>	<b>94.4</b>	<b>2.0</b>	<b>3.0</b>	<b>0.5</b>	<b>0.0</b>

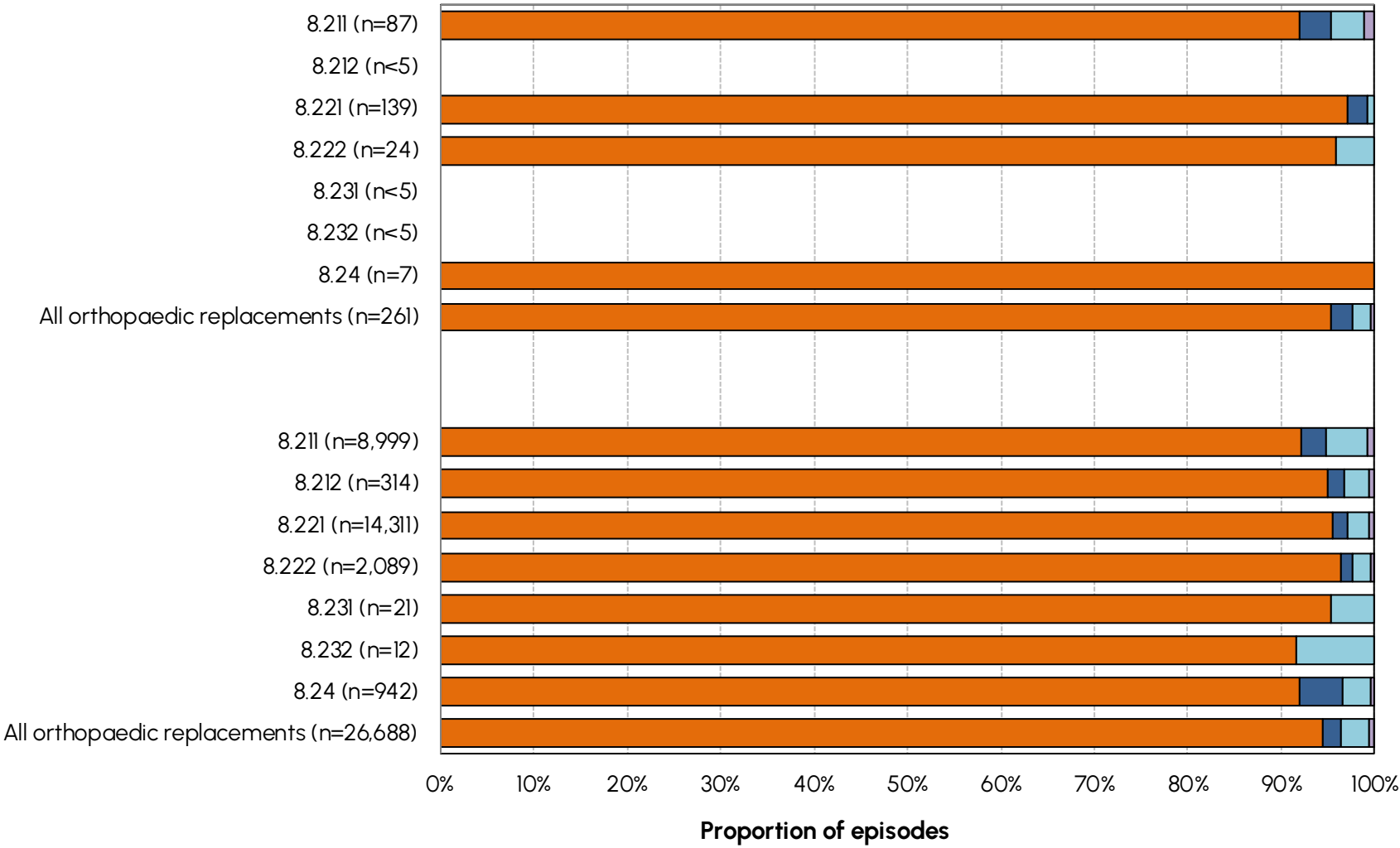
# Discharge destination by impairment



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

YOUR FACILITY

ALL AROC FACILITIES

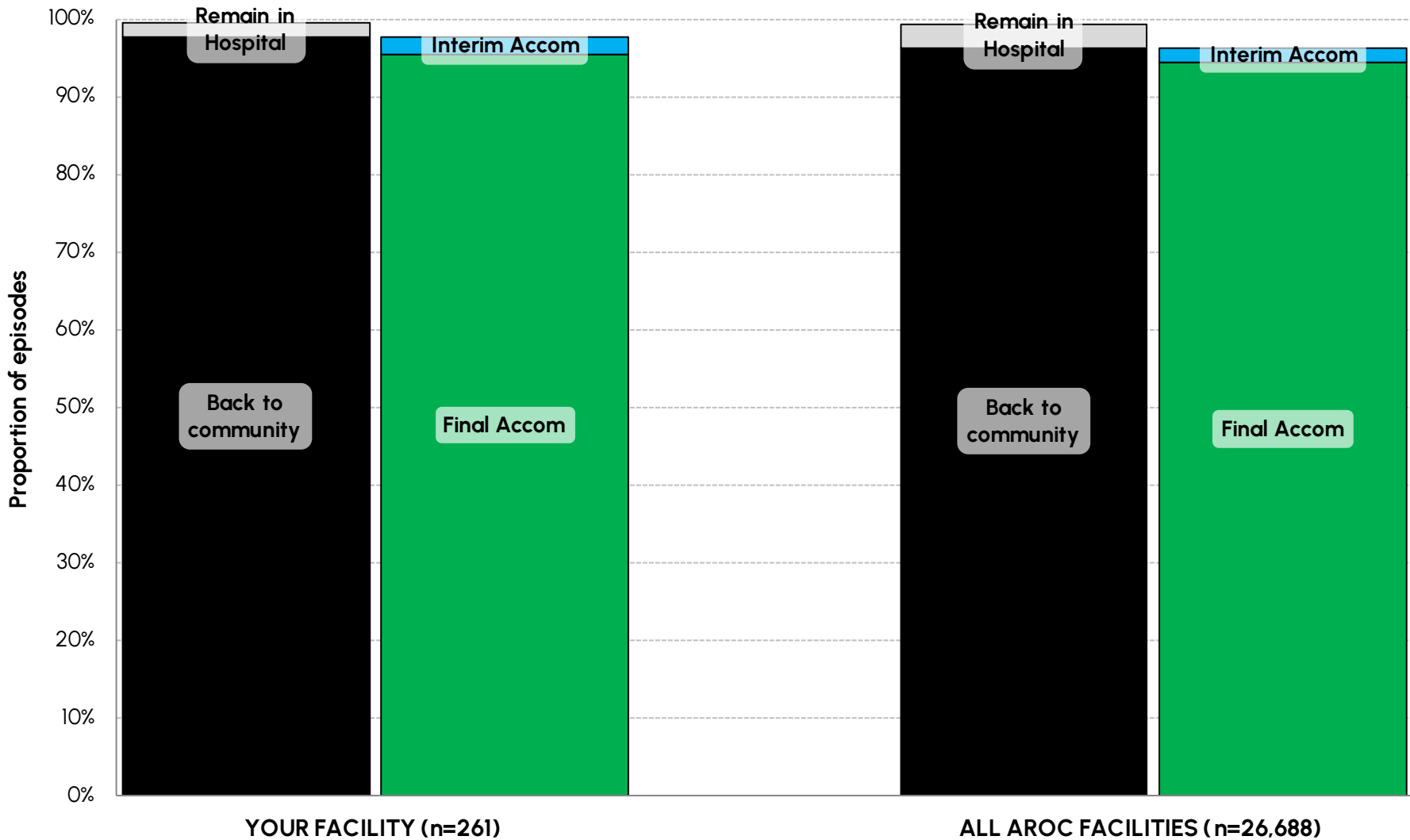


# Discharge destination by impairment

Impairment	YOUR FACILITY — N					ALL AROC FACILITIES — N				
	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown
8.211 Unilateral hip replacement	80	3	3	1	0	8,298	230	399	61	11
8.212 Bilateral hip replacement	4	0	0	0	0	298	6	8	2	0
8.221 Unilateral knee replacement	135	3	1	0	0	13,679	223	331	72	6
8.222 Bilateral knee replacement	23	0	1	0	0	2,015	24	41	8	1
8.231 Knee and hip replacement, same side	0	0	0	0	0	20	0	1	0	0
8.232 Knee and hip replacement, diff sides	0	0	0	0	0	11	0	1	0	0
8.24 Shoulder replacement	7	0	0	0	0	866	43	29	4	0
<b>All Orthopaedic Replacements</b>	<b>249</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>25,187</b>	<b>526</b>	<b>810</b>	<b>147</b>	<b>18</b>

Impairment	YOUR FACILITY — %					ALL AROC FACILITIES — %				
	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown	Final Accom	Interim Accom	Remaining in Hospital	Other	Unknown
8.211 Unilateral hip replacement	92.0	3.4	3.4	1.1	0.0	92.2	2.6	4.4	0.7	0.1
8.212 Bilateral hip replacement	100.0	0.0	0.0	0.0	0.0	94.9	1.9	2.5	0.6	0.0
8.221 Unilateral knee replacement	97.1	2.2	0.7	0.0	0.0	95.6	1.6	2.3	0.5	0.0
8.222 Bilateral knee replacement	95.8	0.0	4.2	0.0	0.0	96.5	1.1	2.0	0.4	0.0
8.231 Knee and hip replacement, same side	—	—	—	—	—	95.2	0.0	4.8	0.0	0.0
8.232 Knee and hip replacement, diff sides	—	—	—	—	—	91.7	0.0	8.3	0.0	0.0
8.24 Shoulder replacement	100.0	0.0	0.0	0.0	0.0	91.9	4.6	3.1	0.4	0.0
<b>All Orthopaedic Replacements</b>	<b>95.4</b>	<b>2.3</b>	<b>1.9</b>	<b>0.4</b>	<b>0.0</b>	<b>94.4</b>	<b>2.0</b>	<b>3.0</b>	<b>0.6</b>	<b>0.1</b>

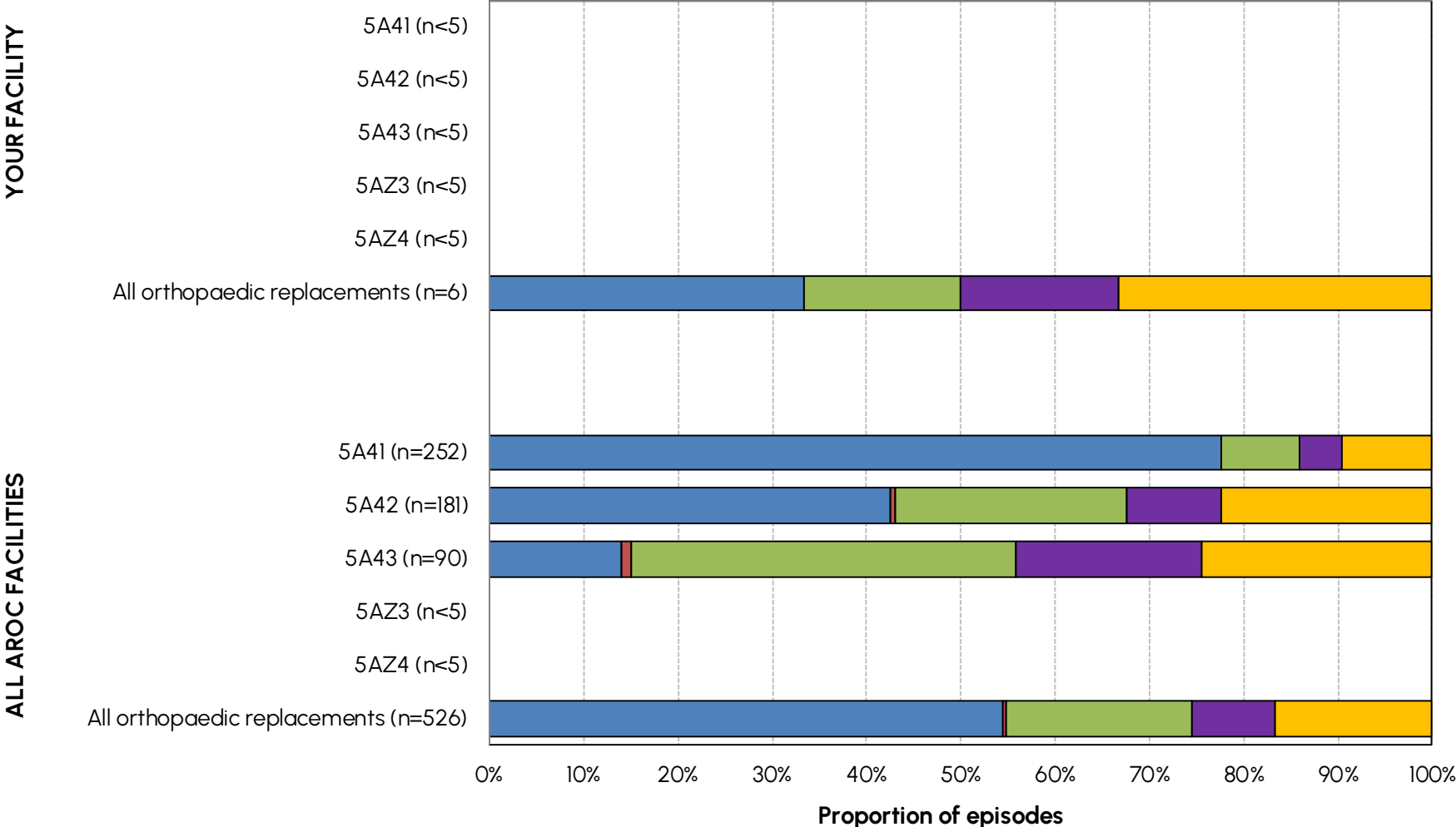
# Discharge destination



# Interim accommodation post discharge by AN-SNAP class



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



NOTE: Includes only those episodes with mode of episode end equal to interim accommodation

# Interim accommodation post discharge by AN-SNAP class



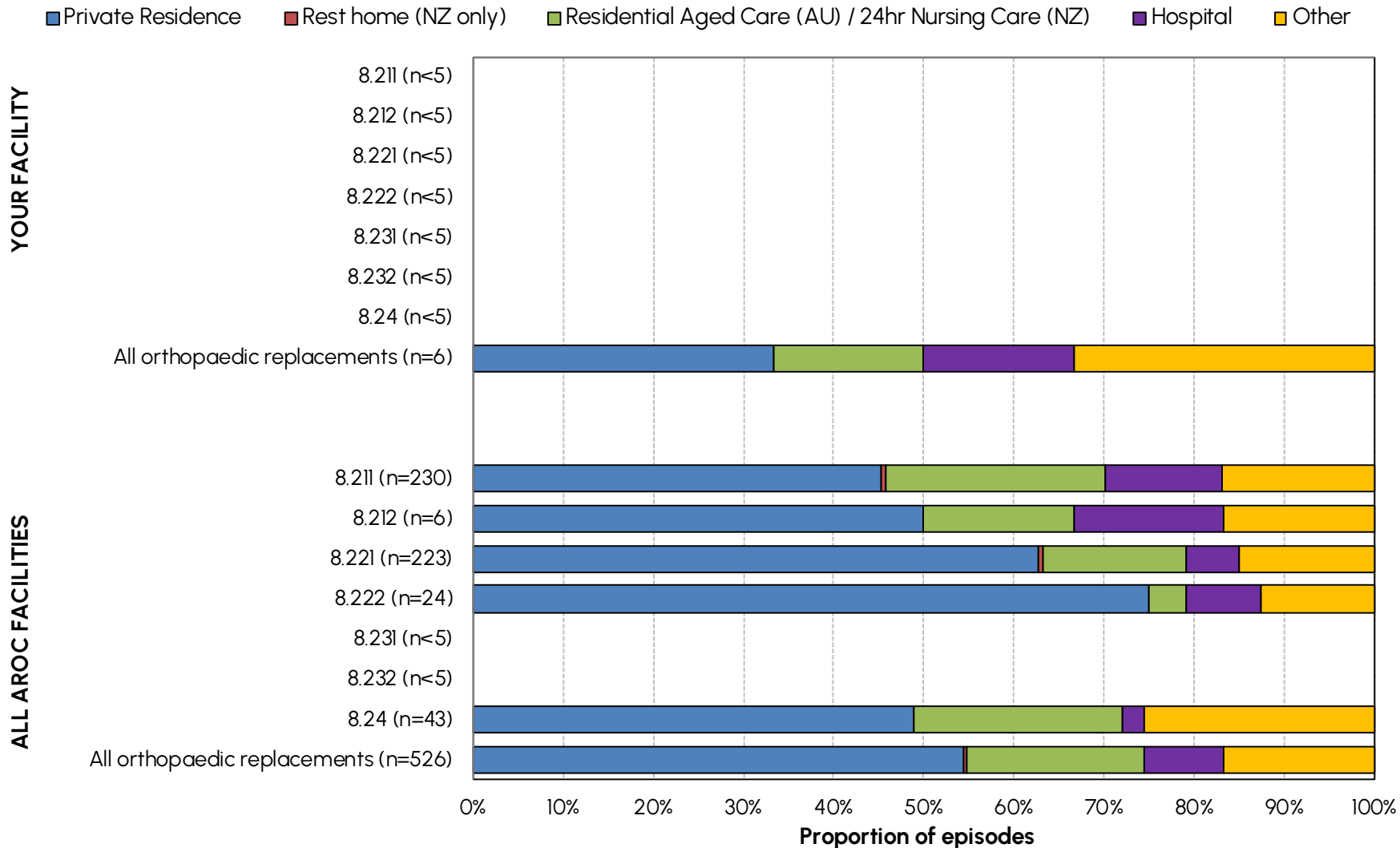
YOUR FACILITY — N (%)					
AN-SNAP class V5	Private residence	Residential Aged Care	Hospital	Other	All episodes**
5A41 (weighted motor 61-91)	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	2 (100.0)
5A42 (weighted motor 45-60)	1 (33.3)	0 (0.0)	1 (33.3)	0 (0.0)	3 (100.0)
5A43 (weighted motor 19-44)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	1 (100.0)
5AZ3 (motor 13-18, Age ≥ 79)	0 —	0 —	0 —	0 —	0 —
5AZ4 (motor 13-18, Age ≤ 78)	0 —	0 —	0 —	0 —	0 —
<b>All Replacement AN-SNAP classes</b>	<b>2 (33.3)</b>	<b>1 (16.7)</b>	<b>1 (16.7)</b>	<b>1 (16.7)</b>	<b>6 (100.0)</b>

ALL AROC FACILITIES — N (%)						
AN-SNAP class V5	Private residence	Rest Home (NZ only)	Residential Aged Care (AU) / 24hr Nursing Care (NZ)	Hospital	Other	All episodes**
5A41 (weighted motor 61-91)	194 (77.0)	0 (0.0)	21 (8.3)	11 (4.4)	20 (7.9)	252 (100.0)
5A42 (weighted motor 45-60)	76 (42.0)	1 (0.6)	44 (24.3)	18 (9.9)	35 (19.3)	181 (100.0)
5A43 (weighted motor 19-44)	12 (13.3)	1 (1.1)	35 (38.9)	17 (18.9)	21 (23.3)	90 (100.0)
5AZ3 (motor 13-18, Age ≥ 79)	0 (0.0)	0 (0.0)	1 (50.0)	0 (0.0)	1 (50.0)	2 (100.0)
5AZ4 (motor 13-18, Age ≤ 78)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	1 (100.0)
<b>All Replacement AN-SNAP classes</b>	<b>282 (53.6)</b>	<b>2 (0.4)</b>	<b>102 (19.4)</b>	<b>46 (8.7)</b>	<b>77 (14.6)</b>	<b>526 (100.0)</b>

\*\* There were 1 episode(s) in YOUR FACILITY and 17 episodes in ALL AROC FACILITIES with unknown interim accommodation

NOTE: Includes only those episodes with mode of episode end equal to interim accommodation

# Interim accommodation post discharge by impairment



NOTE: Includes only those episodes with mode of episode end equal to interim accommodation

# Interim accommodation post discharge by impairment



Impairment	YOUR FACILITY — N (%)					All episodes**
	Private residence	Residential Aged Care	Hospital	Other		
8.211 Unilateral hip replacement	1 (33.3)	0 (0.0)	1 (33.3)	1 (33.3)	1 (33.3)	3 (100.0)
8.212 Bilateral hip replacement	0 —	0 —	0 —	0 —	0 —	0 —
8.221 Unilateral knee replacement	1 (33.3)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)	3 (100.0)
8.222 Bilateral knee replacement	0 —	0 —	0 —	0 —	0 —	0 —
8.231 Knee and hip replacement, same side	0 —	0 —	0 —	0 —	0 —	0 —
8.232 Knee and hip replacement, diff sides	0 —	0 —	0 —	0 —	0 —	0 —
8.24 Shoulder replacement	0 —	0 —	0 —	0 —	0 —	0 —
<b>All Orthopaedic Replacements</b>	<b>2 (33.3)</b>	<b>1 (16.7)</b>	<b>1 (16.7)</b>	<b>1 (16.7)</b>	<b>1 (16.7)</b>	<b>6 (100.0)</b>

Impairment	ALL AROC FACILITIES — N (%)					
	Private residence	Rest Home (NZ only)	Residential Aged Care (AU) / 24hr Nursing Care (NZ)	Hospital	Other	All episodes**
8.211 Unilateral hip replacement	102 (44.3)	1 (0.4)	55 (23.9)	29 (12.6)	34 (14.8)	230 (100.0)
8.212 Bilateral hip replacement	3 (50.0)	0 (0.0)	1 (16.7)	1 (16.7)	1 (16.7)	6 (100.0)
8.221 Unilateral knee replacement	138 (61.9)	1 (0.4)	35 (15.7)	13 (5.8)	28 (12.6)	223 (100.0)
8.222 Bilateral knee replacement	18 (75.0)	0 (0.0)	1 (4.2)	2 (8.3)	3 (12.5)	24 (100.0)
8.231 Knee and hip replacement, same side	0 —	0 —	0 —	0 —	0 —	0 —
8.232 Knee and hip replacement, diff sides	0 —	0 —	0 —	0 —	0 —	0 —
8.24 Shoulder replacement	21 (48.8)	0 (0.0)	10 (23.3)	1 (2.3)	11 (25.6)	43 (100.0)
<b>All Orthopaedic Replacements</b>	<b>282 (53.6)</b>	<b>2 (0.4)</b>	<b>102 (19.4)</b>	<b>46 (8.7)</b>	<b>77 (14.6)</b>	<b>526 (100.0)</b>

\*\* There were 1 episode(s) in YOUR FACILITY and 17 episodes in ALL AROC FACILITIES with unknown interim accommodation

NOTE: Includes only those episodes with mode of episode end equal to interim accommodation

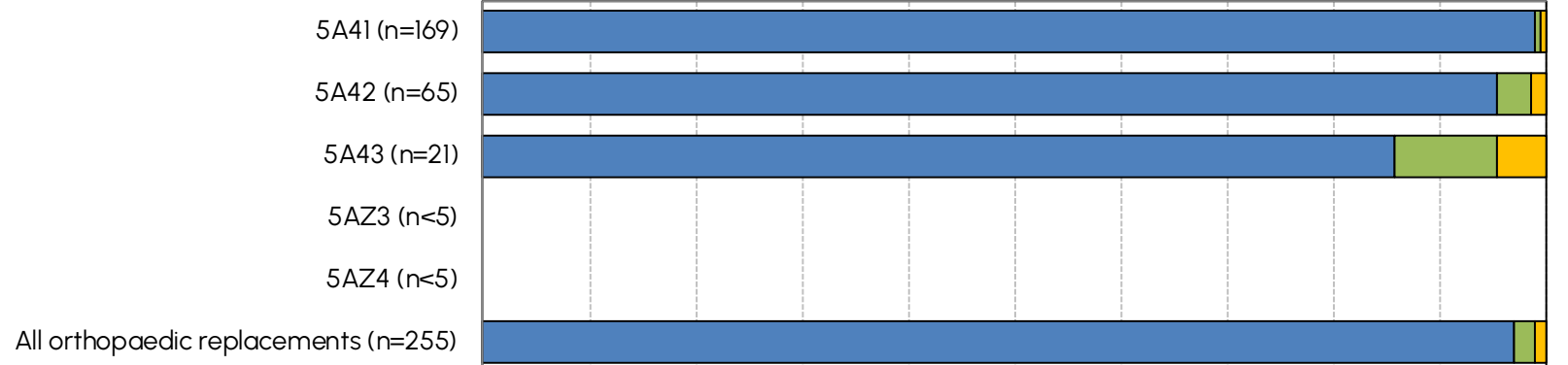


# Final accommodation post discharge by AN-SNAP class

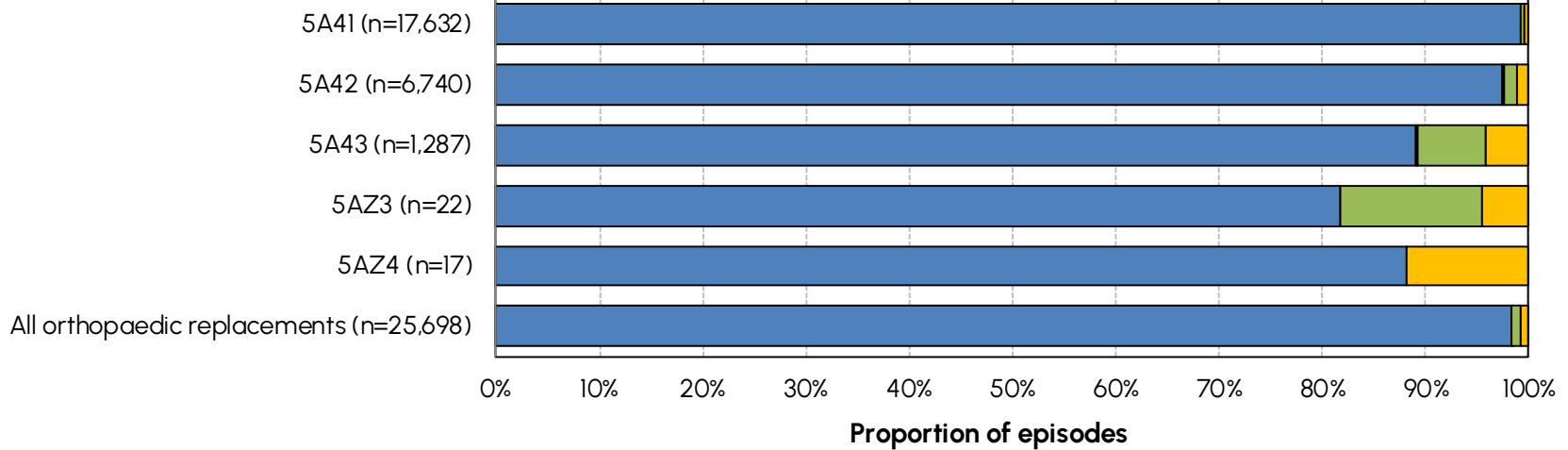


■ Private Residence 
 ■ Rest home (NZ only) 
 ■ Residential Aged Care (AU) / 24hr Nursing Care (NZ) 
 ■ Other

YOUR FACILITY



ALL AROC FACILITIES



NOTE: Includes only those episodes with mode of episode end equal to either final or interim accommodation

# Final accommodation post discharge by AN-SNAP class

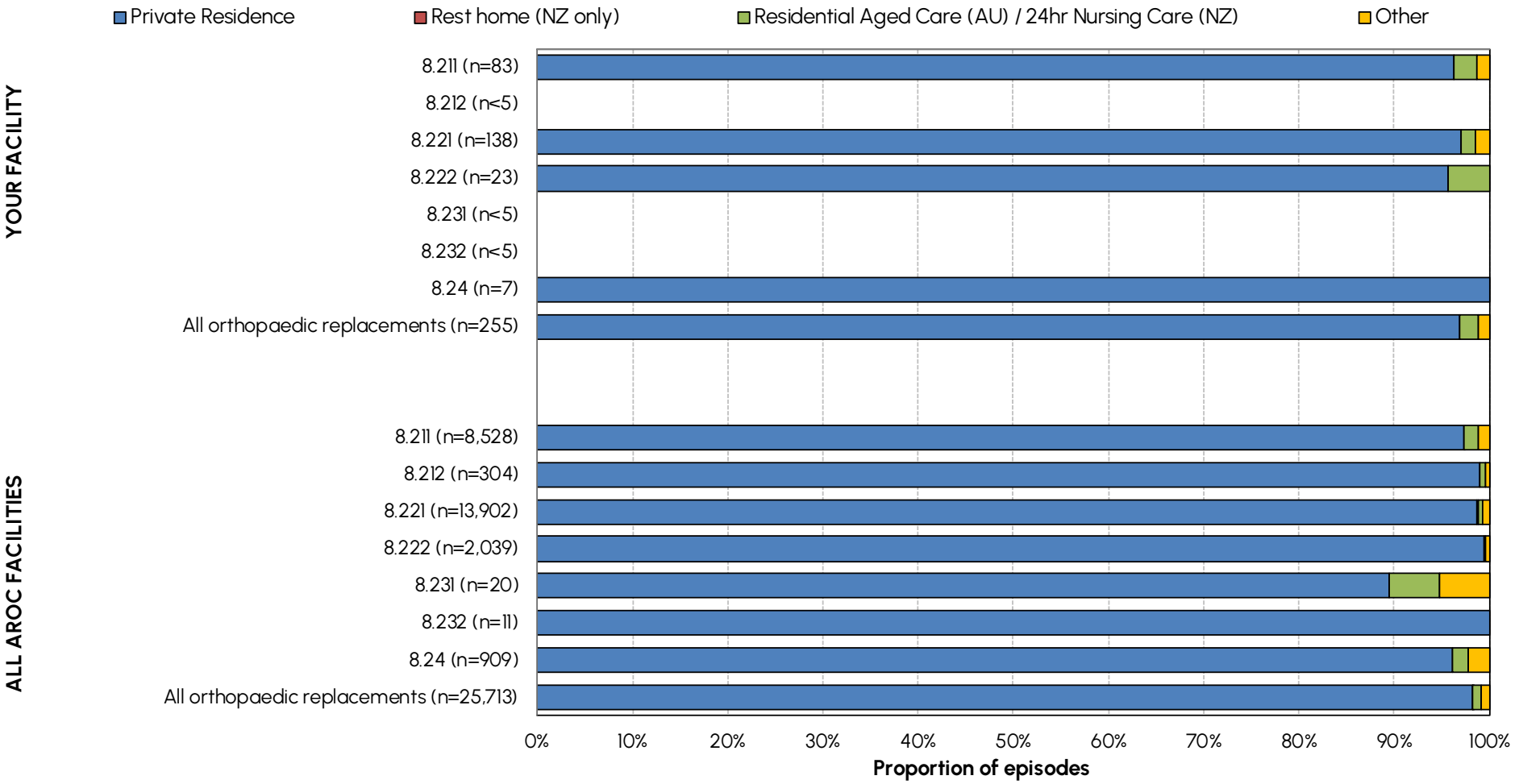


AN-SNAP class V5	YOUR FACILITY — N (%)					
	Private residence	Residential Aged		Other	Missing	All episodes
		Care				
5A41 (weighted motor 61-91)	166 (98.8)	1 (0.6)	1 (0.6)	1	168 (100.0)	
5A42 (weighted motor 45-60)	61 (95.3)	2 (3.1)	1 (1.6)	1	64 (100.0)	
5A43 (weighted motor 19-44)	18 (85.7)	2 (9.5)	1 (4.8)	0	21 (100.0)	
5AZ3 (motor 13-18, Age ≥ 79)	0 —	0 —	0 —	0	0 —	
5AZ4 (motor 13-18, Age ≤ 78)	0 —	0 —	0 —	0	0 —	
<b>All Replacement AN-SNAP classes</b>	<b>245 (96.8)</b>	<b>5 (2.0)</b>	<b>3 (1.2)</b>	<b>2</b>	<b>253 (100.0)</b>	

AN-SNAP class V5	ALL AROC FACILITIES — N (%)						
	Private residence	Rest Home (NZ only)	Residential Aged		Other	Missing	All episodes
			Care (AU) / 24hr	Nursing Care (NZ)			
5A41 (weighted motor 61-91)	17,405 (98.7)	0 (0.0)	48 (0.3)	86 (0.5)	93	17,632 (100.0)	
5A42 (weighted motor 45-60)	6,509 (96.6)	1 (0.0)	92 (1.4)	73 (1.1)	65	6,740 (100.0)	
5A43 (weighted motor 19-44)	1,107 (86.0)	4 (0.3)	82 (6.4)	51 (4.0)	43	1,287 (100.0)	
5AZ3 (motor 13-18, Age ≥ 79)	18 (81.8)	0 (0.0)	3 (13.6)	1 (4.5)	0	22 (100.0)	
5AZ4 (motor 13-18, Age ≤ 78)	15 (88.2)	0 (0.0)	0 (0.0)	2 (11.8)	0	17 (100.0)	
<b>All Replacement AN-SNAP classes</b>	<b>25,054 (97.5)</b>	<b>5 (0.0)</b>	<b>225 (0.9)</b>	<b>213 (0.8)</b>	<b>201</b>	<b>25,698 (100.0)</b>	

NOTE: Includes only those episodes with mode of episode end equal to either final or interim accommodation

# Final accommodation post discharge by impairment



NOTE: Includes only those episodes with mode of episode end equal to either final or interim accommodation

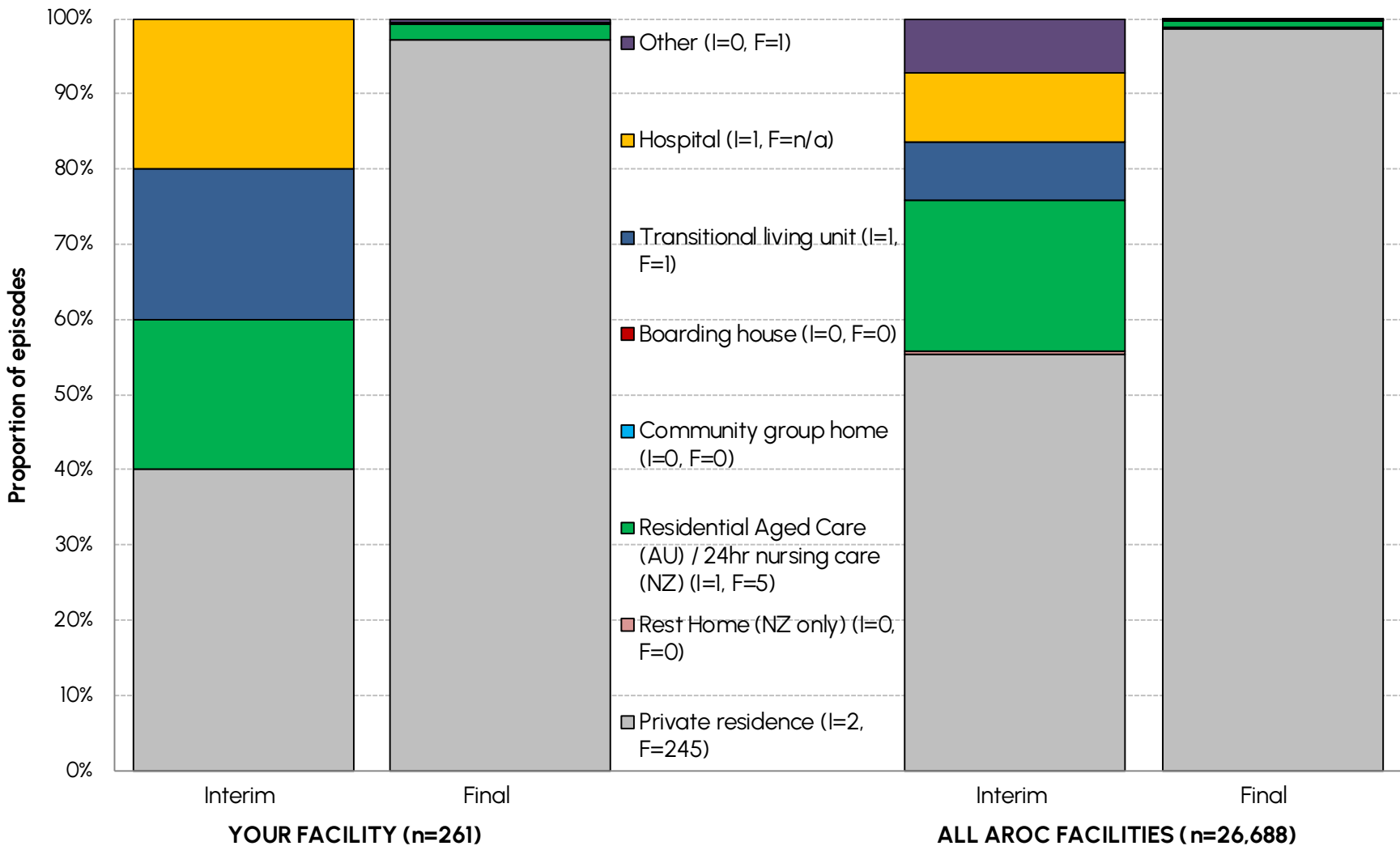
# Final accommodation post discharge by impairment

YOUR FACILITY — N (%)						
Impairment	Private residence	Residential Aged Care	Other	Missing	All episodes	
8.211 Unilateral hip replacement	79 (96.3)	2 (2.4)	1 (1.2)	1	82	(100.0)
8.212 Bilateral hip replacement	4 (100.0)	0 (0.0)	0 (0.0)	0	4	(100.0)
8.221 Unilateral knee replacement	133 (97.1)	2 (1.5)	2 (1.5)	1	137	(100.0)
8.222 Bilateral knee replacement	22 (95.7)	1 (4.3)	0 (0.0)	0	23	(100.0)
8.231 Knee and hip replacement, same side	0 —	0 —	0 —	0	0	—
8.232 Knee and hip replacement, diff sides	0 —	0 —	0 —	0	0	—
8.24 Shoulder replacement	7 (100.0)	0 (0.0)	0 (0.0)	0	7	(100.0)
<b>All Orthopaedic Replacements</b>	<b>245 (96.8)</b>	<b>5 (2.0)</b>	<b>3 (1.2)</b>	<b>2</b>	<b>253</b>	<b>(100.0)</b>

ALL AROC FACILITIES — N (%)						
Impairment	Private residence	Rest Home (NZ only)	Residential Aged Care (AU) / 24hr Nursina Care (NZ)	Other	Missing	All episodes
8.211 Unilateral hip replacement	8,206 (96.2)	2 (0.0)	130 (1.5)	92 (1.1)	98	8,528 (100.0)
8.212 Bilateral hip replacement	299 (98.4)	0 (0.0)	2 (0.7)	1 (0.3)	2	304 (100.0)
8.221 Unilateral knee replacement	13,645 (98.2)	3 (0.0)	74 (0.5)	91 (0.7)	89	13,902 (100.0)
8.222 Bilateral knee replacement	2,018 (99.0)	0 (0.0)	3 (0.1)	8 (0.4)	10	2,039 (100.0)
8.231 Knee and hip replacement, same side	17 (85.0)	0 (0.0)	1 (5.0)	1 (5.0)	1	20 (100.0)
8.232 Knee and hip replacement, diff sides	11 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0	11 (100.0)
8.24 Shoulder replacement	872 (95.9)	0 (0.0)	15 (1.7)	20 (2.2)	2	909 (100.0)
<b>All Orthopaedic Replacements</b>	<b>25,068 (97.5)</b>	<b>5 (0.0)</b>	<b>225 (0.9)</b>	<b>213 (0.8)</b>	<b>202</b>	<b>25,713 (100.0)</b>

NOTE: Includes only those episodes with mode of episode end equal to either final or interim accommodation

# Interim and final accommodation post discharge



NOTE: Includes only those episodes with mode of episode end equal to either final or interim accommodation

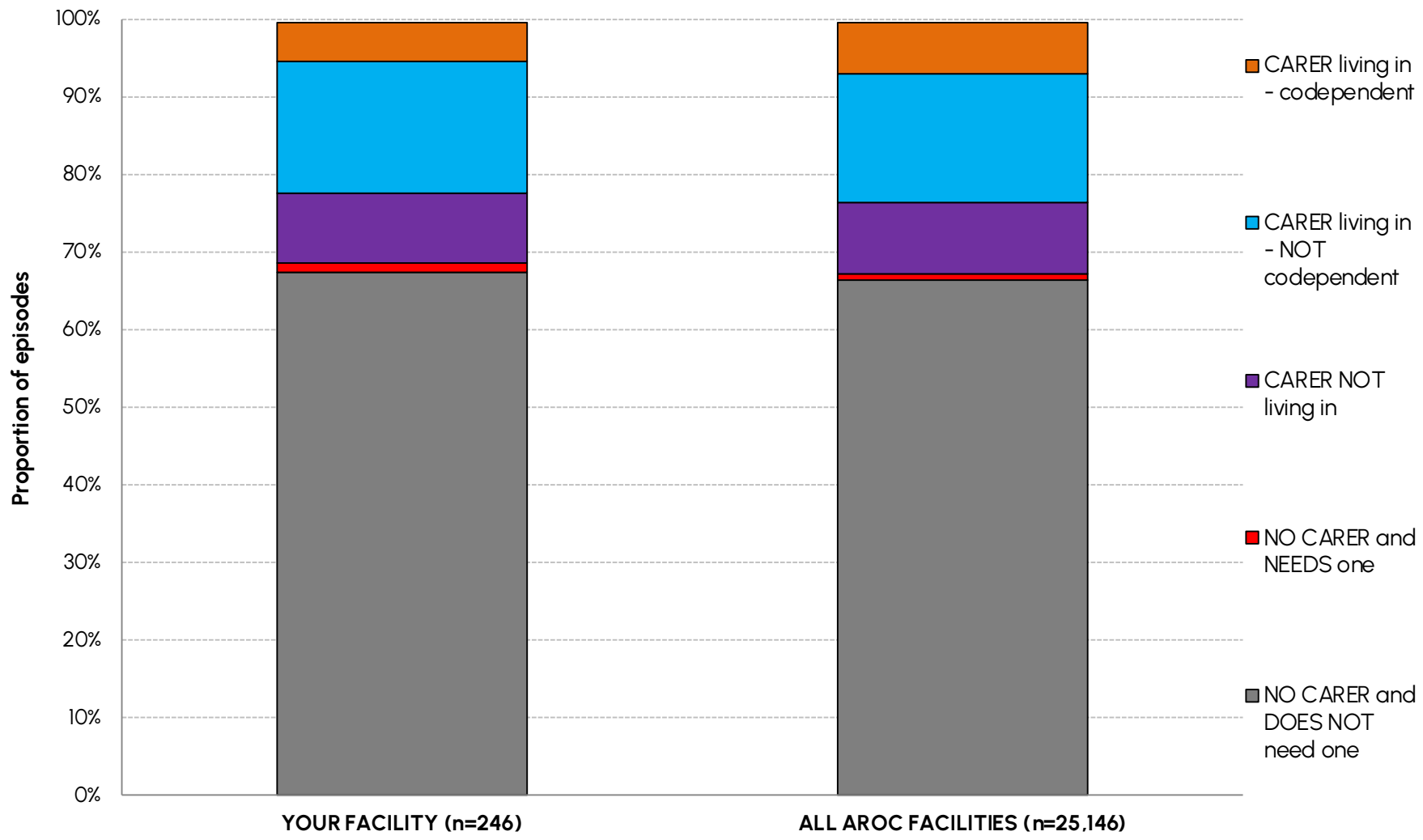
# Interim and final accommodation post discharge



Accommodation	YOUR FACILITY		ALL AROC FACILITIES	
	Interim (%)	Final (%)	Interim (%)	Final (%)
Private residence	2 (40.0)	245 (97.2)	282 (55.4)	25,054 (98.8)
Rest Home (NZ only)			2 (0.4)	5 (0.0)
Resi Aged Care (AU) / 24hr Nursing Care (NZ)	1 (20.0)	5 (2.0)	102 (20.0)	225 (0.9)
Community group home	0 (0.0)	0 (0.0)	0 (0.0)	17 (0.1)
Boarding house	0 (0.0)	0 (0.0)	0 (0.0)	6 (0.0)
Transitional living unit	1 (20.0)	1 (0.4)	40 (7.9)	21 (0.1)
Hospital	1 (20.0)	n/a	46 (9.0)	n/a
Other	0 (0.0)	1 (0.4)	37 (7.3)	42 (0.2)
Missing/Unknown	1	3	17	328
<b>All episodes</b>	<b>6 (100.0)</b>	<b>255 (100.0)</b>	<b>526 (100.0)</b>	<b>25,698 (100.0)</b>

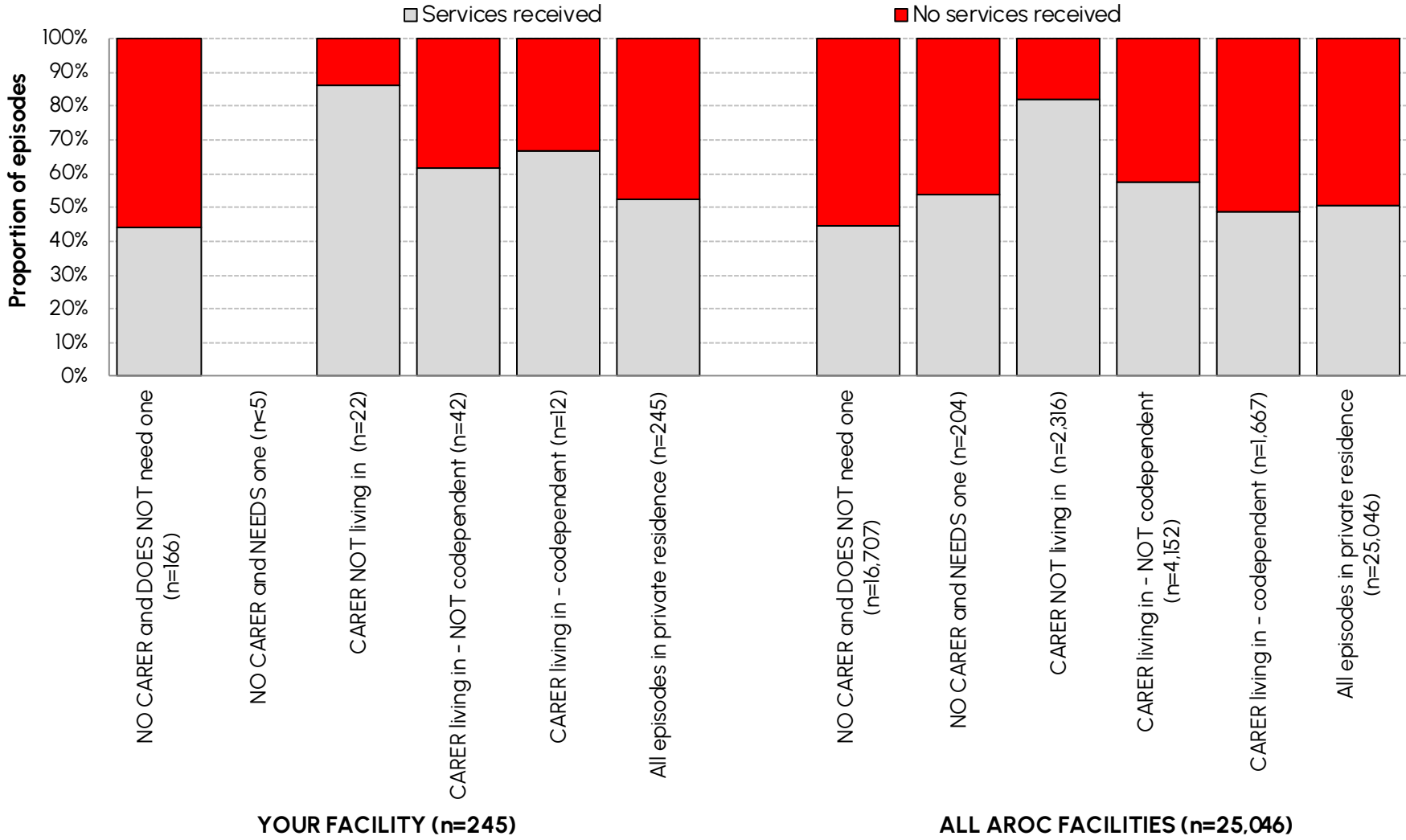
NOTE: Includes only those episodes with mode of episode end equal to either final or interim accommodation

# Carer status post discharge



NOTE: Includes only those episodes whose final accommodation is private residence

# Any services received post discharge by carer status



NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status



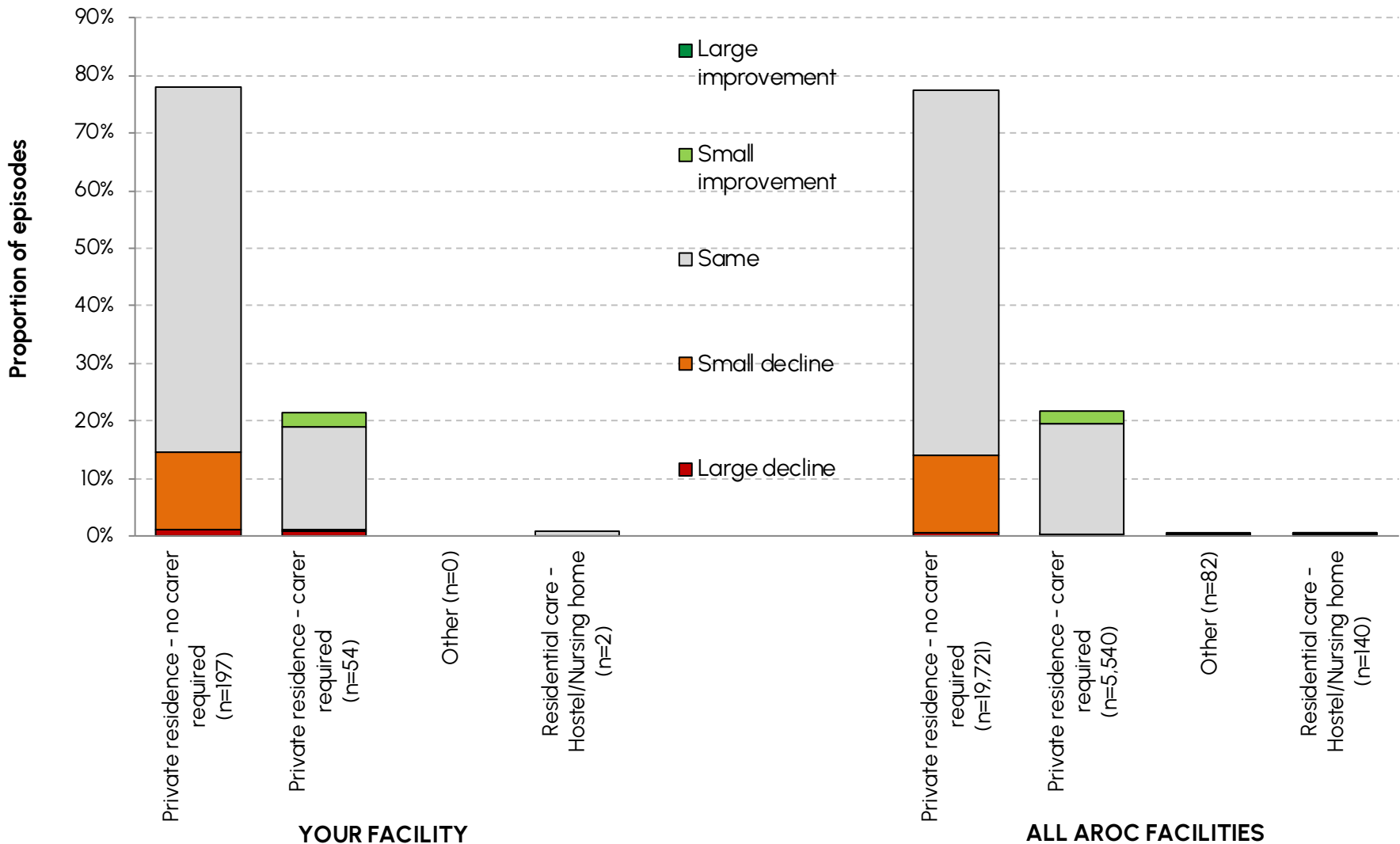
# Carer status and any services received post discharge

Carer status post discharge	YOUR FACILITY		ALL AROC FACILITIES	
	No.	%	No.	%
NO CARER and DOES NOT need one	166	67.8	16,708	66.7
NO CARER and NEEDS one	3	1.2	204	0.8
CARER NOT living in	22	9.0	2,316	9.2
CARER living in - NOT codependent	42	17.1	4,153	16.6
CARER living in - codependent	12	4.9	1,667	6.7
Missing	1		98	
<b>All episodes in private residence</b>	<b>246</b>	<b>100.0</b>	<b>25,146</b>	<b>100.0</b>

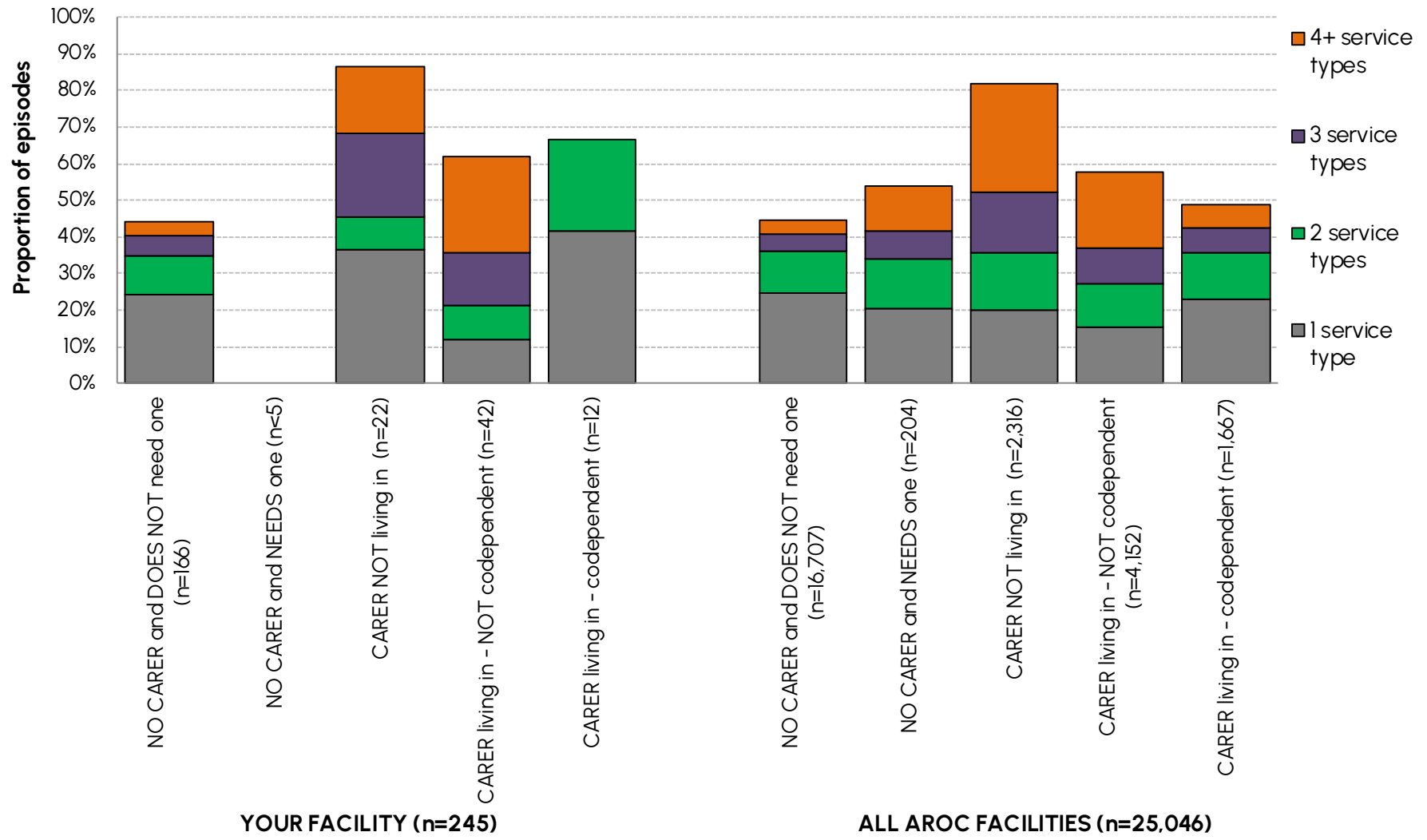
Any services received post discharge?				
Carer status post discharge	YOUR FACILITY		ALL AROC FACILITIES	
	Yes (%)	No (%)	Yes (%)	No (%)
NO CARER and DOES NOT need one	44.0	56.0	44.8	55.2
NO CARER and NEEDS one	—	—	53.9	46.1
CARER NOT living in	86.4	13.6	81.9	18.1
CARER living in - NOT codependent	61.9	38.1	57.7	42.3
CARER living in - codependent	66.7	33.3	49.0	51.0
<b>All episodes in private residence</b>	<b>52.2</b>	<b>47.8</b>	<b>50.7</b>	<b>49.3</b>

NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status

# Change in prior accommodation post discharge

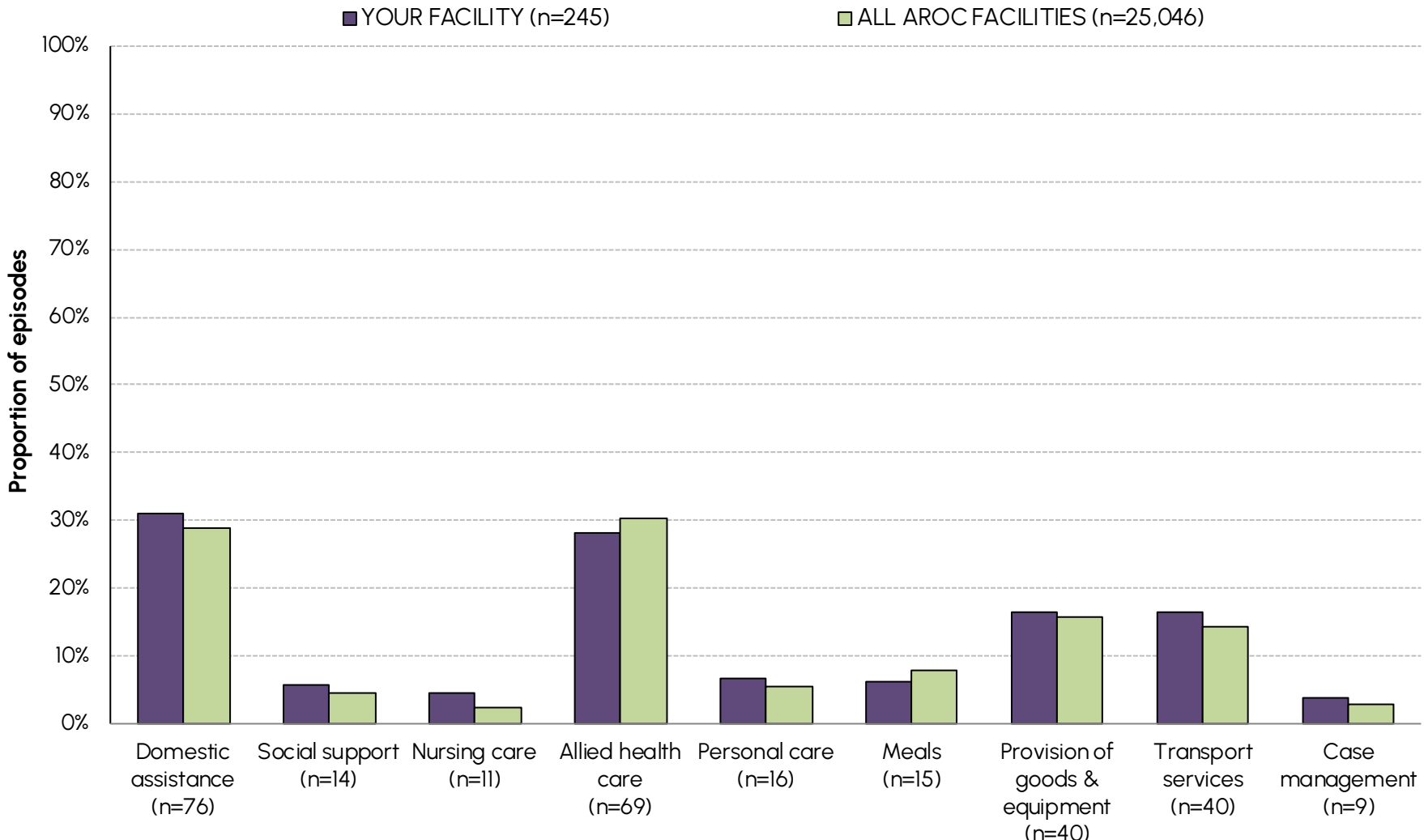


# Number of services received post discharge by carer status



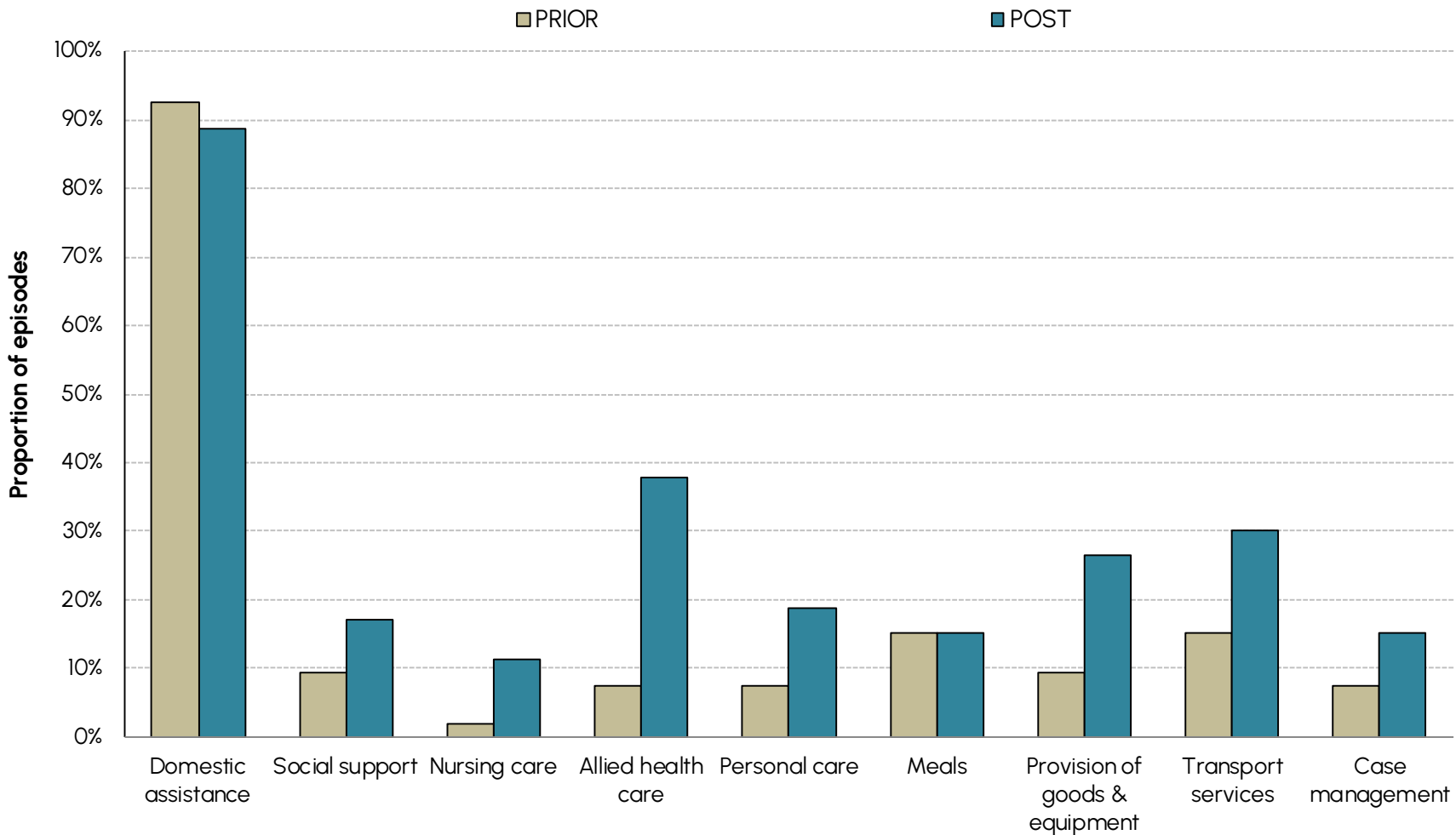
NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status

# Type of services received post discharge



NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status

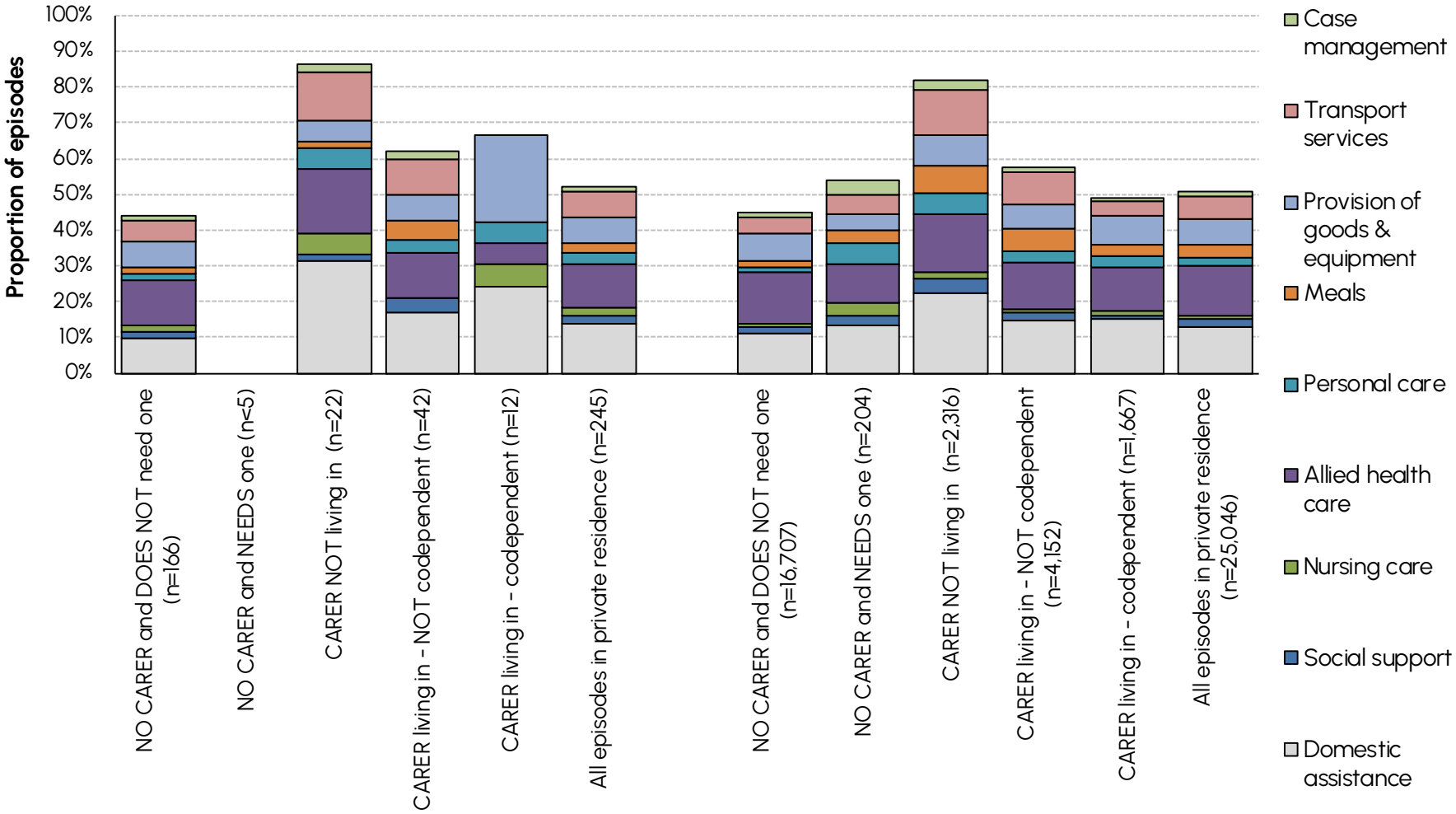
# Type of services received pre and post rehabilitation



**YOUR FACILITY (n=53)**

NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and received services both pre and post the episode

# Type of services received post discharge by carer status



**YOUR FACILITY (n=245)**

**ALL AROC FACILITIES (n=25,046)**

NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status

# Number and type of services received post discharge by carer status – Your facility



Services received post discharge	Carer status post discharge - YOUR FACILITY						All episodes in private residence
	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		
Number of episodes in private residence	166	3	22	42	12		<b>245</b>
<b>Percent of episodes receiving:</b>							
No services	56.0	33.3	13.6	38.1	33.3		<b>47.8</b>
1 service type	24.1	0.0	36.4	11.9	41.7		<b>23.7</b>
2 service types	10.8	0.0	9.1	9.5	25.0		<b>11.0</b>
3 service types	5.4	0.0	22.7	14.3	0.0		<b>8.2</b>
4 or more service types	3.6	66.7	18.2	26.2	0.0		<b>9.4</b>
<b>Service Type received</b>							
Domestic assistance	18.7	66.7	72.7	54.8	33.3		<b>31.0</b>
Social support	3.6	66.7	4.5	11.9	0.0		<b>5.7</b>
Nursing care	3.0	66.7	13.6	0.0	8.3		<b>4.5</b>
Allied health care	24.1	66.7	40.9	40.5	8.3		<b>28.2</b>
Personal care	3.6	33.3	13.6	11.9	8.3		<b>6.5</b>
Meals	3.6	33.3	4.5	16.7	0.0		<b>6.1</b>
Provision of goods & equipment	13.3	33.3	13.6	23.8	33.3		<b>16.3</b>
Transport services	11.4	33.3	31.8	31.0	0.0		<b>16.3</b>
Case management	2.4	33.3	4.5	7.1	0.0		<b>3.7</b>

NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status

# Number and type of services received post discharge by carer status – All AROC Facilities



Carer status post discharge - ALL AROC FACILITIES						
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	16,707	204	2,316	4,152	1,667	<b>25,046</b>
<b>Percent of episodes receiving:</b>						
No services	55.2	46.1	18.1	42.3	51.0	<b>49.3</b>
1 service type	24.6	20.6	20.1	15.4	22.8	<b>22.5</b>
2 service types	11.4	13.2	15.8	11.8	12.8	<b>12.0</b>
3 service types	4.9	7.8	16.5	9.9	6.9	<b>6.9</b>
4 or more service types	3.9	12.3	29.5	20.6	6.4	<b>9.3</b>
<b>Service Type received</b>						
Domestic assistance	19.9	33.3	67.5	42.2	30.5	<b>28.8</b>
Social support	3.1	7.4	12.1	6.6	2.5	<b>4.5</b>
Nursing care	1.7	9.3	5.7	3.0	2.5	<b>2.4</b>
Allied health care	26.5	27.5	48.3	38.4	24.4	<b>30.4</b>
Personal care	2.5	15.2	17.7	9.3	7.3	<b>5.5</b>
Meals	3.3	8.3	23.0	18.4	5.9	<b>7.8</b>
Provision of goods & equipment	13.5	11.8	25.3	19.0	17.1	<b>15.7</b>
Transport services	8.3	13.7	38.1	27.0	7.7	<b>14.2</b>
Case management	2.0	10.3	8.2	3.7	1.9	<b>2.9</b>

NOTE: Includes only those episodes whose final accommodation is private residence and with known carer status and known services status



## 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 5, introduced in July 2022 and used in these reports, uses the episode's impairment, age, weighted FIM motor admission score and FIM cognition score to determine which of 48 inpatient (admitted overnight adult) rehabilitation classes the episode should be assigned to.

Between AN-SNAP V4 and V5 there have been some minor refinements to the positioning of age and FIM score splits, and minor revisions to the impairment-specific weights used for the FIM item scores in the calculation of a motor score; orthopaedic replacement classes (lost in Version 4) have returned and brain injury classes are now split first on cognition FIM scores and second on motor FIM scores. 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 V5 please refer to the AROC website.

## AROC

The Australasian Rehabilitation Outcomes Centre (AROC) is the Australian and New Zealand rehabilitation medicine **integrated outcomes centre** that collects rehabilitation outcome measures at point-of-care from both private and public rehabilitation services across both countries. Established in 2002 it is a joint initiative of the Australasian rehabilitation sector (providers, payers, regulators and consumers) and current membership encompasses close to 100% of all Australian and New Zealand rehabilitation services, who routinely submit deidentified data to AROC for each rehabilitation episode, including information about demographics, process indicators and functional status.

## Benchmark group

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

# Appendix 1: Glossary

## Casemix-adjusted relative mean

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

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

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

**For each episode calculate:**

**LOSdiff = episode’s LOS – mean LOS appropriate AN-SNAP class.**

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

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

## Complete/incomplete episode

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

## Confidence interval for a mean

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

## COVID-19

The immediate impact of COVID-19 in 2020 on rehabilitation was a 12% decline in the number of rehabilitation episodes following temporary suspension of elective surgeries, ward re-assignments and closures, and fewer traumatic accidents. There is still an ongoing impact of COVID-19 on rehabilitation in the form of reduced inpatient beds, increased patient complexity and staffing issues.

The extent of the impact of COVID-19 on the demand for rehabilitation in both the inpatient or community rehabilitation is still being realised. To help measure the impact of COVID, and importantly long COVID, AROC added COVID specific impairment codes, comorbidity and complication codes to the AROC datasets effective July 2022. Appendix 2 lists the COVID impairment codes, which map to AN-SNAP V5 classes 5A91-5A93 & 5AZ3-5AZ4. COVID related data provided to AROC through the adjunct data collection along with entries in the patient comment field have been mapped to the new COVID codes.

- **Guidelines for the collection and coding of COVID-19 AROC data** can be found at <https://documents.uow.edu.au/content/groups/public/@web/@chsd/@aroc/documents/doc/uow272916.pdf>
- **The AROC COVID Coding Decision Tree** can be found at <https://documents.uow.edu.au/content/groups/public/@web/@chsd/@aroc/documents/doc/uow272917.pdf>
- Updated **Data Collection Forms** can be found at <https://ahsri.atlassian.net/wiki/spaces/AD/pages/17268778/Data+Collection+Forms>
- Services who do not have access to the new COVID codes are asked to identify patients who have had COVID-19 in the AROC data set services by entering the relevant **COVID-19 impairment code, comorbidity or complication** (as appropriate) in the patient comment field.

## COVID-19 (cont.)

The potential sequelae of COVID-19 appear to be numerous, so the functional deficits of these patients that result in the need for rehabilitation can be quite varied. To enable comprehensive reporting of rehabilitation outcomes for these patients, the National COVID-19 rehabilitation adjunct data collection was created, in collaboration with the NSW Agency for Clinical Innovation's Rehabilitation Community of Practice.

The national COVID-19 rehabilitation adjunct data collection covers all care settings – in-reach, inpatient and ambulatory – and services do not need to be an AROC member to participate. The data collection is to be completed for ALL patients who have received a positive diagnosis of COVID-19 and are now participating in rehabilitation in any care setting (even if COVID codes have been used in the AROC data collection). Where possible and appropriate, the National COVID-19 rehabilitation adjunct data will be linked with the AROC inpatient and/or ambulatory data collections.

The National COVID-19 rehabilitation adjunct data collection is entered online at <https://apps.ahsri.uow.edu.au/redcap/surveys/?s=DR4AE3FHAX>.

All relevant data items must be known prior to commencing data entry as there is no save and resume function. For convenience a data collection form is provided as an optional mechanism to collect the data (available here <https://apps.ahsri.uow.edu.au/downloads/CovidCollection.pdf>).

## 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 injury & brain injury) it does impact all impairments to some degree. Reporting of multiple episodes impacts outcomes analysis, resulting in shorter than real length of stays and reduced FIM change being reported.

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

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

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

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

## Data quality score

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

## Functional Independence Measure (FIM)

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

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

## FIM change

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

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

## FIM efficiency

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

## Impairment-specific weighted FIM motor scores

AN-SNAP v5, like Version 4, uses impairment-specific weighted FIM motor scores in the inpatient (admitted overnight adult) rehabilitation 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 the FIM motor item stairs where all weights were set to 1.

## Interquartile range (IQR)

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

## Length of stay (LOS)

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

## Mean

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

## Mean or median - which to use?

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

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

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

## Median

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



# Appendix 1: Glossary

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

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

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

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

## Submitted versus reporting episodes

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

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

# 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. The Valid FIM flag is used in analysis which measures FIM scores as an outcome.

## **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. The Valid LOS flag is used in analysis which measures LOS as an outcome.

## **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 4 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 haemorrhagic stroke

### 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 ischaemic stroke

## 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

## COVID-19 CONDITIONS

- 18.1 COVID-19 with pulmonary issues
- 18.2 COVID-19 with deconditioning
- 18.9 COVID-19 all other

# Appendix 3: AN-SNAP V5 Overnight Rehabilitation Classes



Class	Description of AN-SNAP class
5AA1	Stroke, Weighted FIM Motor 63 - 91, FIM Cognition 30 - 35
5AA2	Stroke, Weighted FIM Motor 63 - 91, FIM Cognition 21 - 29
5AA3	Stroke, Weighted FIM Motor 63 - 91, FIM Cognition 5 - 20
5AA4	Stroke, Weighted FIM Motor 44 - 62, FIM Cognition 18 - 35
5AA5	Stroke, Weighted FIM Motor 44 - 62, FIM Cognition 5 - 17
5AA6	Stroke, Weighted FIM Motor 19 - 43, Age >= 80
5AA7	Stroke, Weighted FIM Motor 19 - 43, Age 67 - 79
5AA8	Stroke, Weighted FIM Motor 19 - 43 Age 18 - 66
5AB1	Brain dysfunction, FIM Cognition 27 - 35 Weighted FIM Motor 59 - 91
5AB2	Brain dysfunction, FIM Cognition 27 - 35 Weighted FIM Motor 19 - 58
5AB3	Brain dysfunction, FIM Cognition 19 - 26 Weighted FIM Motor 50 - 91
5AB4	Brain dysfunction, FIM Cognition 19 - 26 Weighted FIM Motor 19 - 49
5AB5	Brain dysfunction, FIM Cognition 5 - 18 Weighted FIM Motor 39 - 91
5AB6	Brain dysfunction, FIM Cognition 5 - 18 Weighted FIM Motor 19 - 38
5AC1	Neurological conditions, Weighted FIM Motor 70 - 91
5AC2	Neurological conditions, Weighted FIM Motor 50 - 69
5AC3	Neurological conditions, Weighted FIM Motor 19 - 49
5AD1	Spinal cord dysfunction, Weighted FIM Motor 55 - 91
5AD2	Spinal cord dysfunction, Weighted FIM Motor 37 - 54
5AD3	Spinal cord dysfunction, Weighted FIM Motor 19 - 36
5AE1	Amputation of limb, Weighted FIM Motor 19-91
5AH1	Orthopaedic conditions, fractures, Weighted FIM Motor 48 - 91, FIM Cognition 33 - 35
5AH2	Orthopaedic conditions, fractures, Weighted FIM Motor 48 - 91, FIM Cognition 21 - 32
5AH3	Orthopaedic conditions, fractures, Weighted FIM Motor 48 - 91, FIM Cognition 5 - 20

Class	Description of AN-SNAP class
5AH4	Orthopaedic conditions, fractures, Weighted FIM Motor 19 - 47
5A41	Orthopaedic conditions, replacement (knee, hip, shoulder), Weighted FIM Motor 61 - 91
5A42	Orthopaedic conditions, replacement (knee, hip, shoulder), Weighted FIM Motor 45 - 60
5A43	Orthopaedic conditions, replacement (knee, hip, shoulder), Weighted FIM Motor 19 - 44
5A21	Orthopaedic conditions, all other, Weighted FIM Motor 57 - 91
5A22	Orthopaedic conditions, all other, Weighted FIM Motor 41 - 56
5A23	Orthopaedic conditions, all other, Weighted FIM Motor 19 - 40
5A31	Cardiac, Pain syndromes, and Pulmonary, Weighted FIM Motor 66 - 91
5A32	Cardiac, Pain syndromes, and Pulmonary, Weighted FIM Motor 38 - 65
5A33	Cardiac, Pain syndromes, and Pulmonary, Weighted FIM Motor 19 - 37
5AP1	Major Multiple Trauma, Weighted FIM Motor 51 - 91
5AP2	Major Multiple Trauma, Weighted FIM Motor 19 - 50
5AR1	Reconditioning, Weighted FIM Motor 64 - 91, FIM Cognition 29 - 35
5AR2	Reconditioning, Weighted FIM Motor 64 - 91, FIM Cognition 5 - 28
5AR3	Reconditioning, Weighted FIM Motor 48 - 63, FIM Cognition 19 - 35
5AR4	Reconditioning, Weighted FIM Motor 48 - 63, FIM Cognition 5 - 18
5AR5	Reconditioning, Weighted FIM Motor 19 - 47
5A91	All other impairments, Weighted FIM Motor 61 - 91
5A92	All other impairments, Weighted FIM Motor 42 - 60
5A93	All other impairments, Weighted FIM Motor 19 - 41
5AZ1	Weighted FIM Motor score 13-18, Brain, Spine, MMT, Burns, Age >= 59
5AZ2	Weighted FIM Motor score 13-18, Brain, Spine, MMT, Burns, Age 18 - 58
5AZ3	Weighted FIM Motor score 13-18, All other impairments, Age >= 79
5AZ4	Weighted FIM Motor score 13-18, All other impairments, Age 18 - 78


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

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

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

Anywhere Hospital AROC Impairment Specific Report on Orthopaedic Replacements (Inpatient - pathway 3), July 2022 – June 2023.  
Australasian Rehabilitation Outcomes Centre (2023).

**A**ustralasian **R**ehabilitation **O**utcomes **C**entre  
Faculty of Science, Medicine and Health  
University of Wollongong NSW 2522

 +61 2 4221 4411

 aroc@uow.edu.au

 aroc.org.au

 @uowaroc