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The AROC annual report: The state of rehabilitation in New Zealand in 2018

Tara L. Alexander

University of Wollongong, hurst@uow.edu.au

Frances D. Simmonds

University of Wollongong, frances@uow.edu.au

Jacquelin T. Capell

University of Wollongong, jcapell@uow.edu.au

Lewis J. Green

University of Wollongong, lewis@uow.edu.au

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Abstract

This is the seventh comprehensive annual report describing discharge episodes from subacute inpatient rehabilitation programs provided by New Zealand facilities that are members of the Australasian Rehabilitation Outcomes Centre (AROC).

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The AROC Annual Report:

The state of rehabilitation in New Zealand in 2018



**Australasian Faculty
of Rehabilitation
Medicine**

**UNIVERSITY OF
WOLLONGONG**



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Introduction

This is the seventh comprehensive annual report describing discharge episodes from subacute inpatient rehabilitation programs provided by New Zealand facilities that are members of the Australasian Rehabilitation Outcomes Centre (AROC).

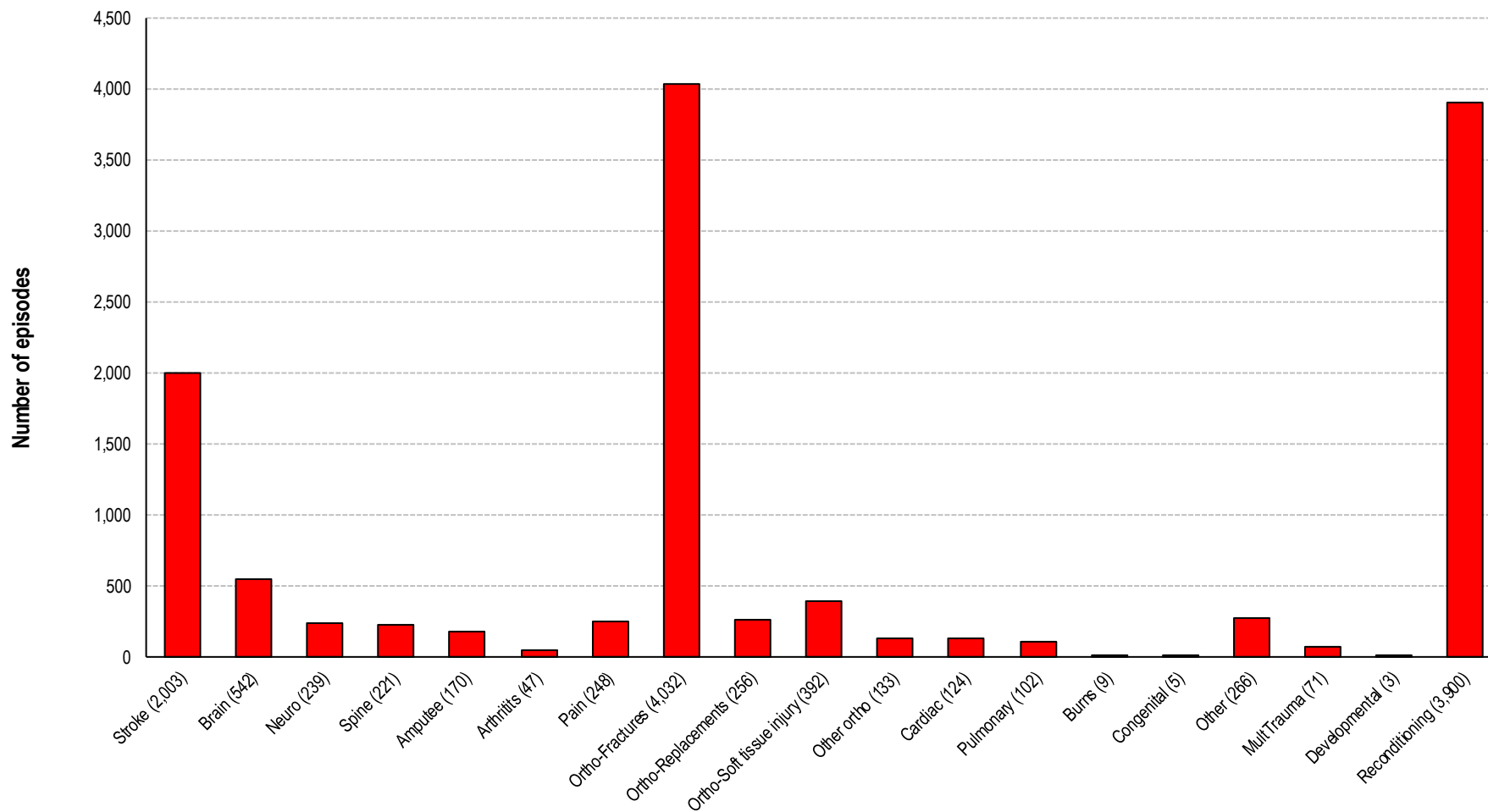
The inaugural report was published in 2013 and described the 2012 data; this sixth instalment describes the 2018 data.

This report is the third to use the version 4 AN-SNAP classification (implemented in Australia in July 2016). For more information about AN-SNAP classification please refer to the AROC website: <http://ahsri.uow.edu.au/aroc>

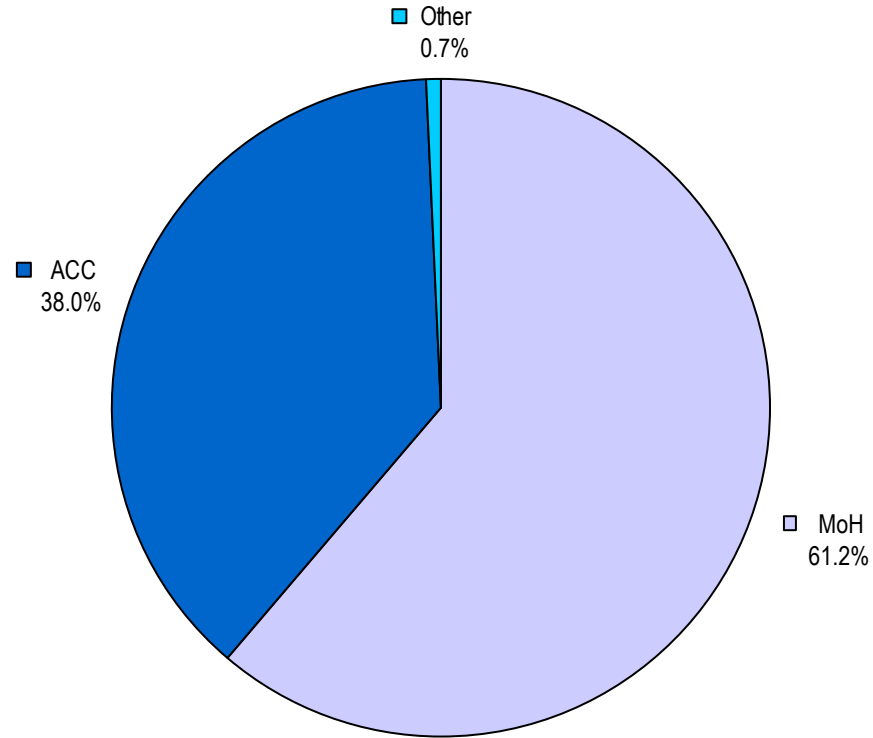
This report also includes an extended times series analysis, looking at change in various rehabilitation measures over the most recent five years.

The provision of rehabilitation in New Zealand has grown over the past few years, with 2018 seeing a 3.8% real increase in inpatient episodes of rehabilitation provided.

Number of episodes by impairment group, 2018



Funding source for rehabilitation in New Zealand, 2018

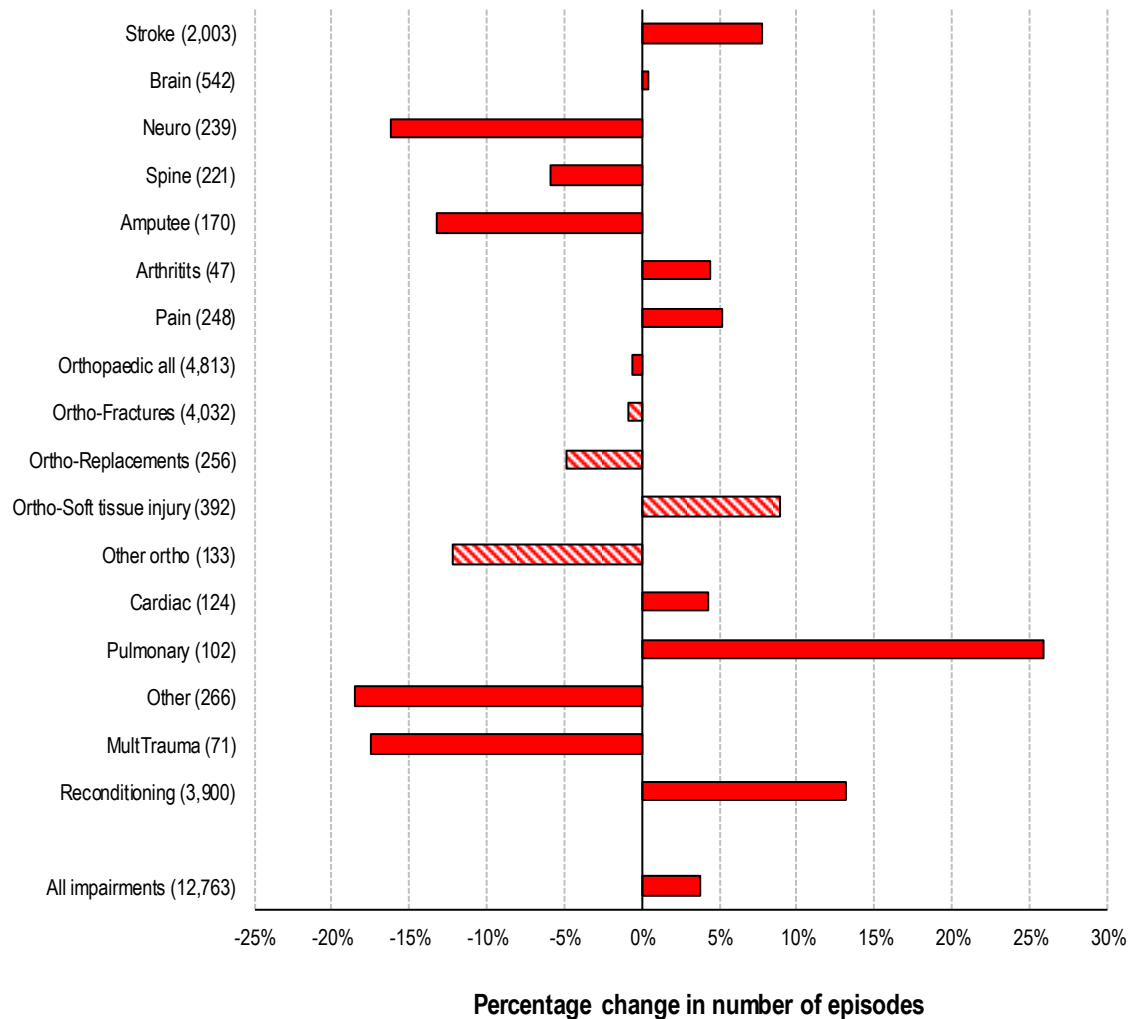


Changes in rehabilitation – compared to last year

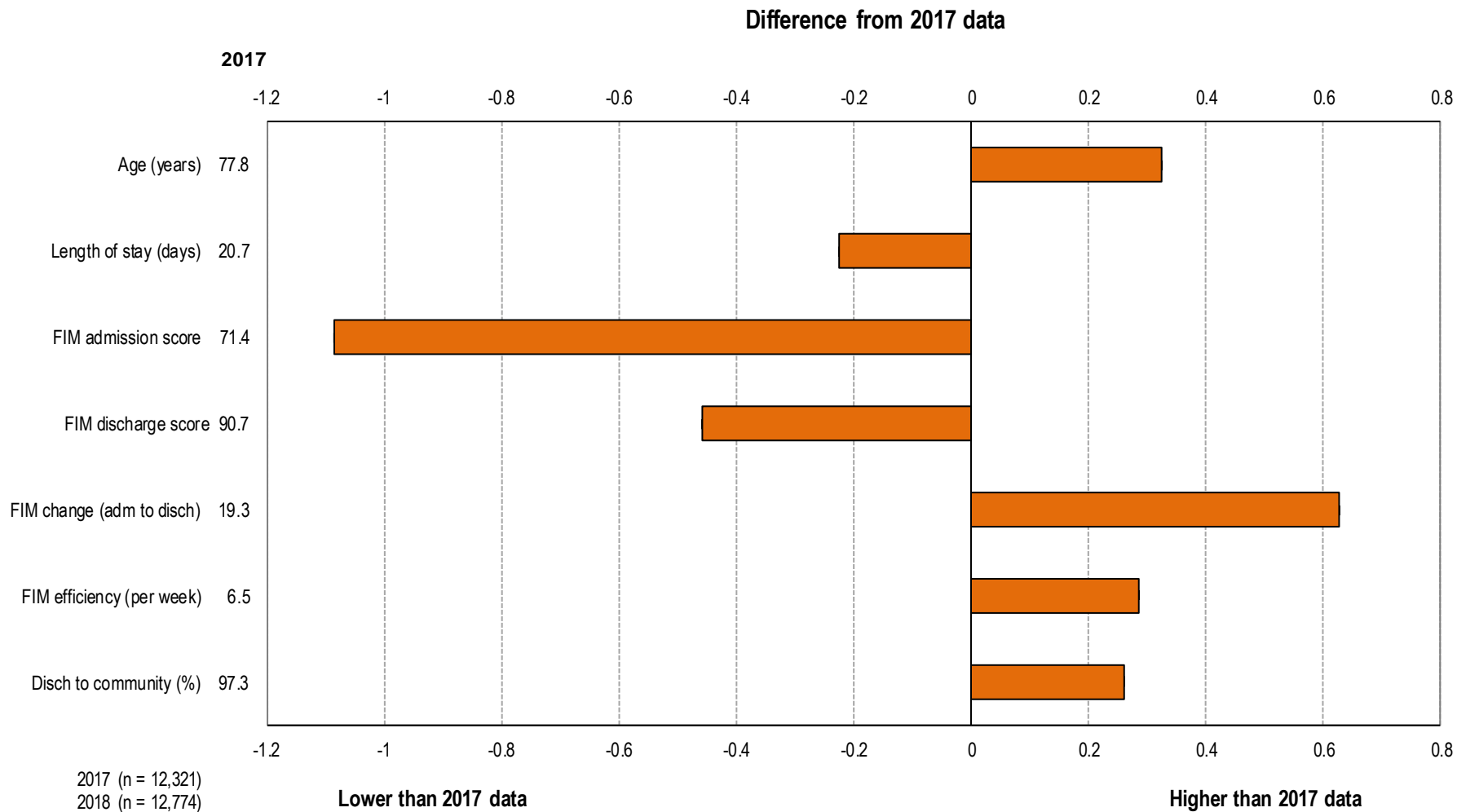
The following figures look at changes in rehabilitation between last year and this year:

- The first figure considers the number of episodes within each impairment group and documents real changes in episode volume since last year.
- The second figure presents the key changes in rehabilitation outcome measures between last year and this year. The horizontal axis describes the difference between last year and this year averages, while last years actual values are presented on the left side of the graph.

Change in number of episodes by impairment group, 2017 to 2018



Change in outcome measures, 2017 to 2018

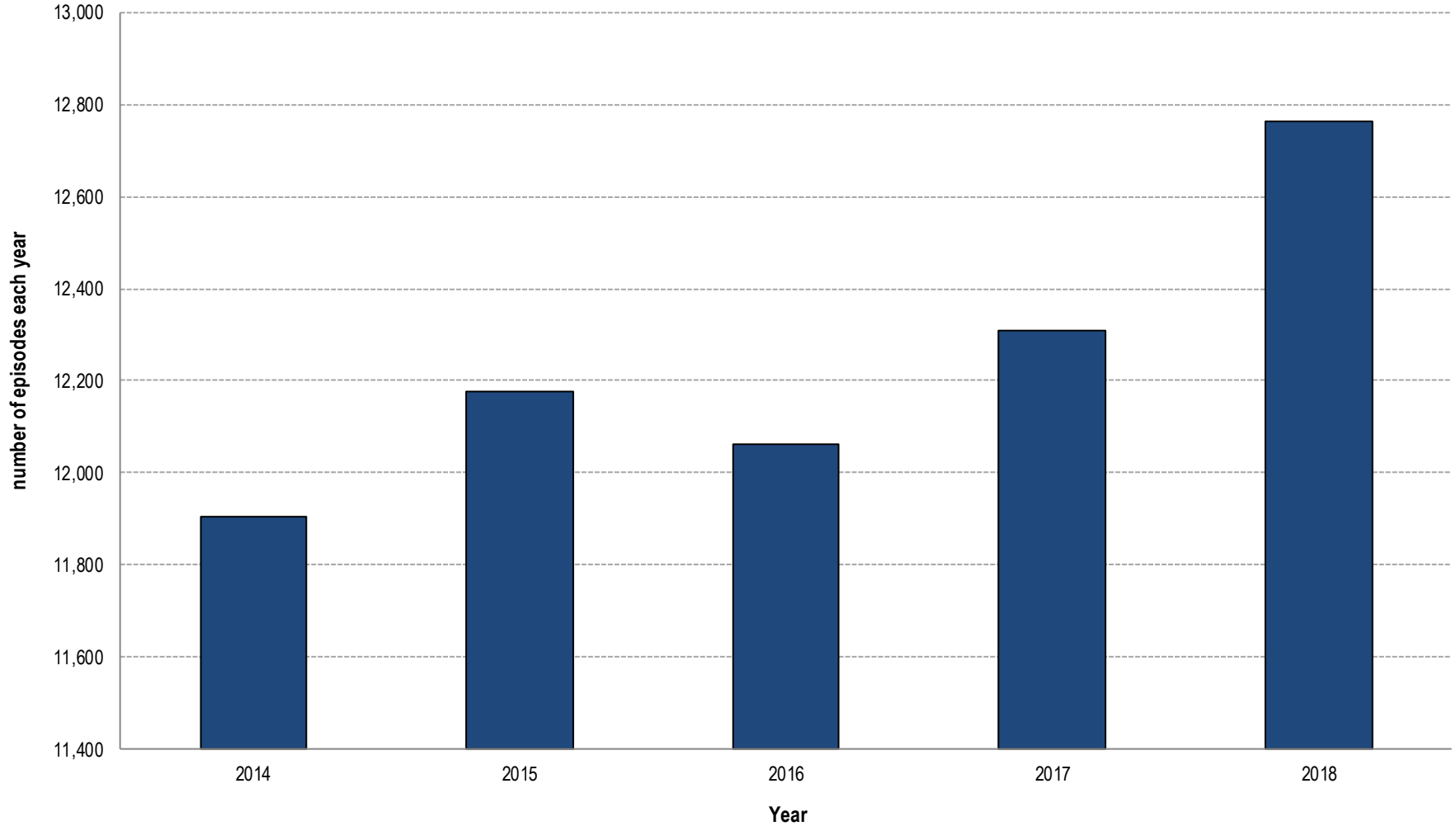


Changes in rehabilitation – compared to five years ago

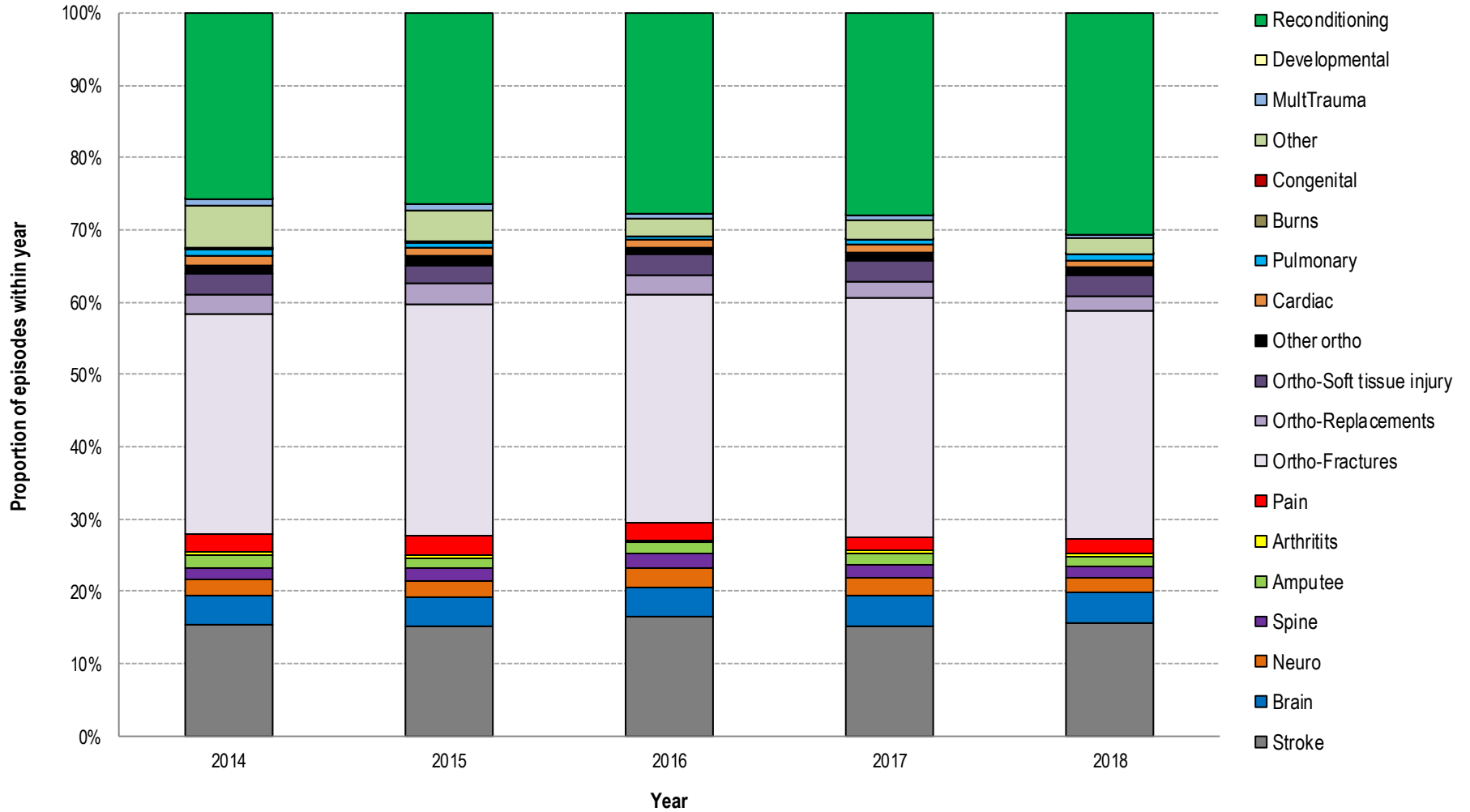
The following figures look at changes in rehabilitation over the last 5 years:

- The first figure shows the total number of episodes each year over the past 5 years.
- The second figure outlines the changing proportion of episodes within each impairment group over the past five years as a proportion of all episodes each year.
- The third figure presents the key changes in rehabilitation outcome measures between five years ago and this year. The horizontal axis describes the difference between five years ago and this year averages, while the actual values from five years ago are presented on the left side of the graph.
- The remaining figures provide a graphical representation of the change in various rehabilitation measures over the most recent five years. Each bar (one per year) represents the difference, positive or negative, of that year's value to the value from five years ago. The value for the bar from five years ago will always be zero.
 - Age at admission
 - Admission to rehabilitation within a week of injury or onset of symptoms
 - Length of stay
 - Proportion of FIM assessments within three days of rehabilitation commencing
 - Admission FIM score as a proportion of the total score possible
 - FIM change as a proportion of the total change possible
 - FIM efficiency

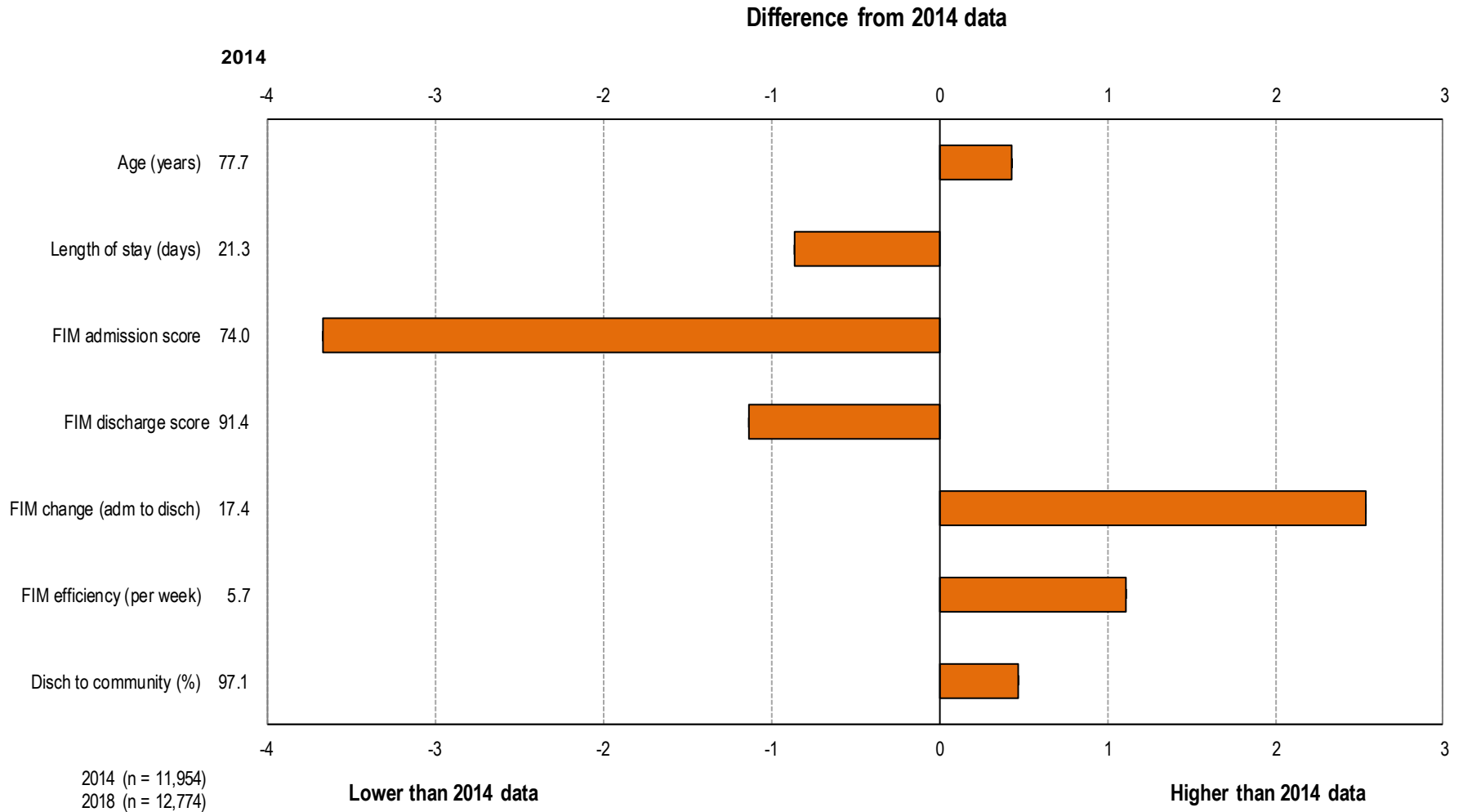
Number of episodes each year - 2014 to 2018



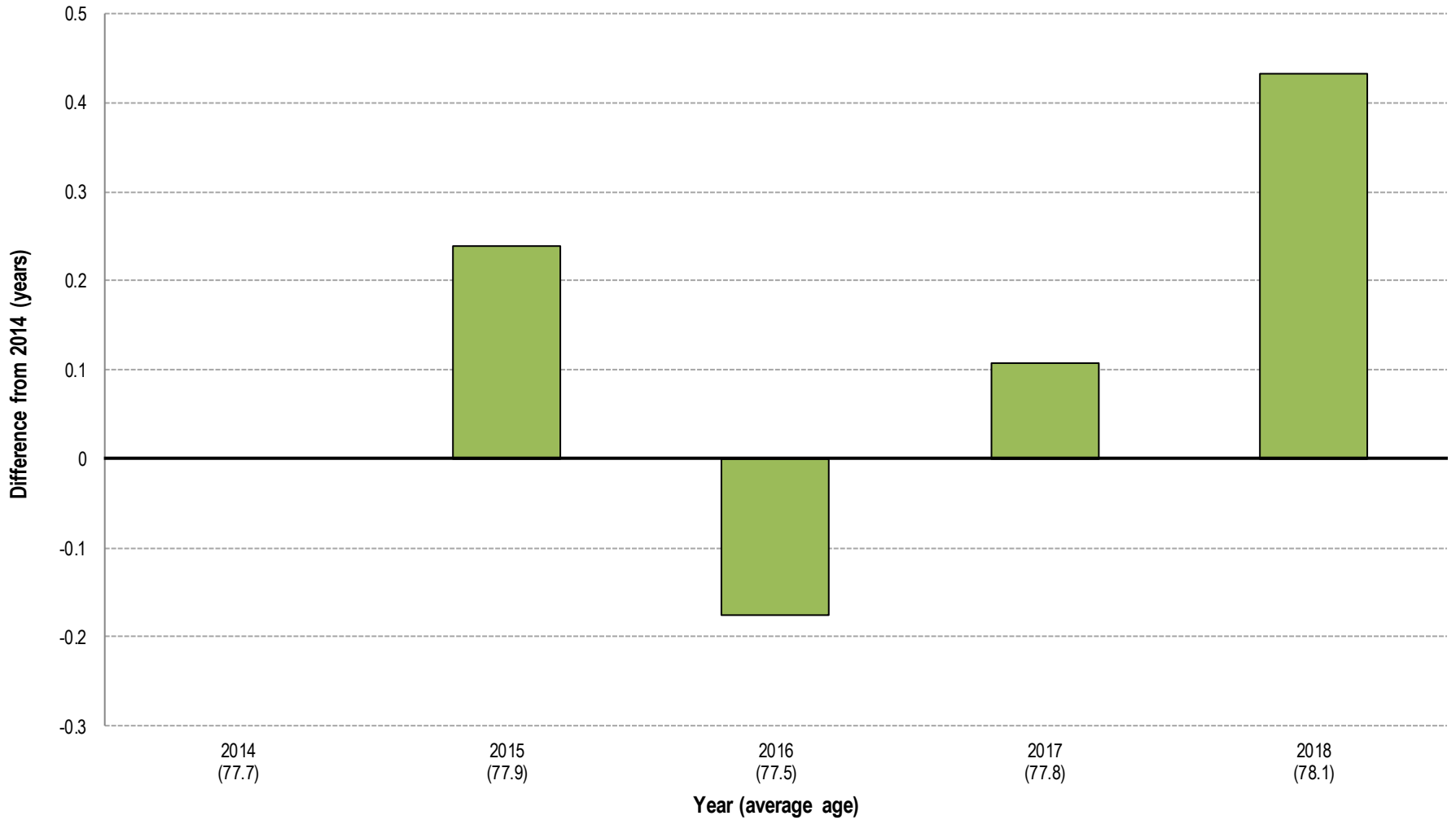
Proportion of episodes by impairment group, 2014 to 2018



Change in outcome measures, 2014 to 2018

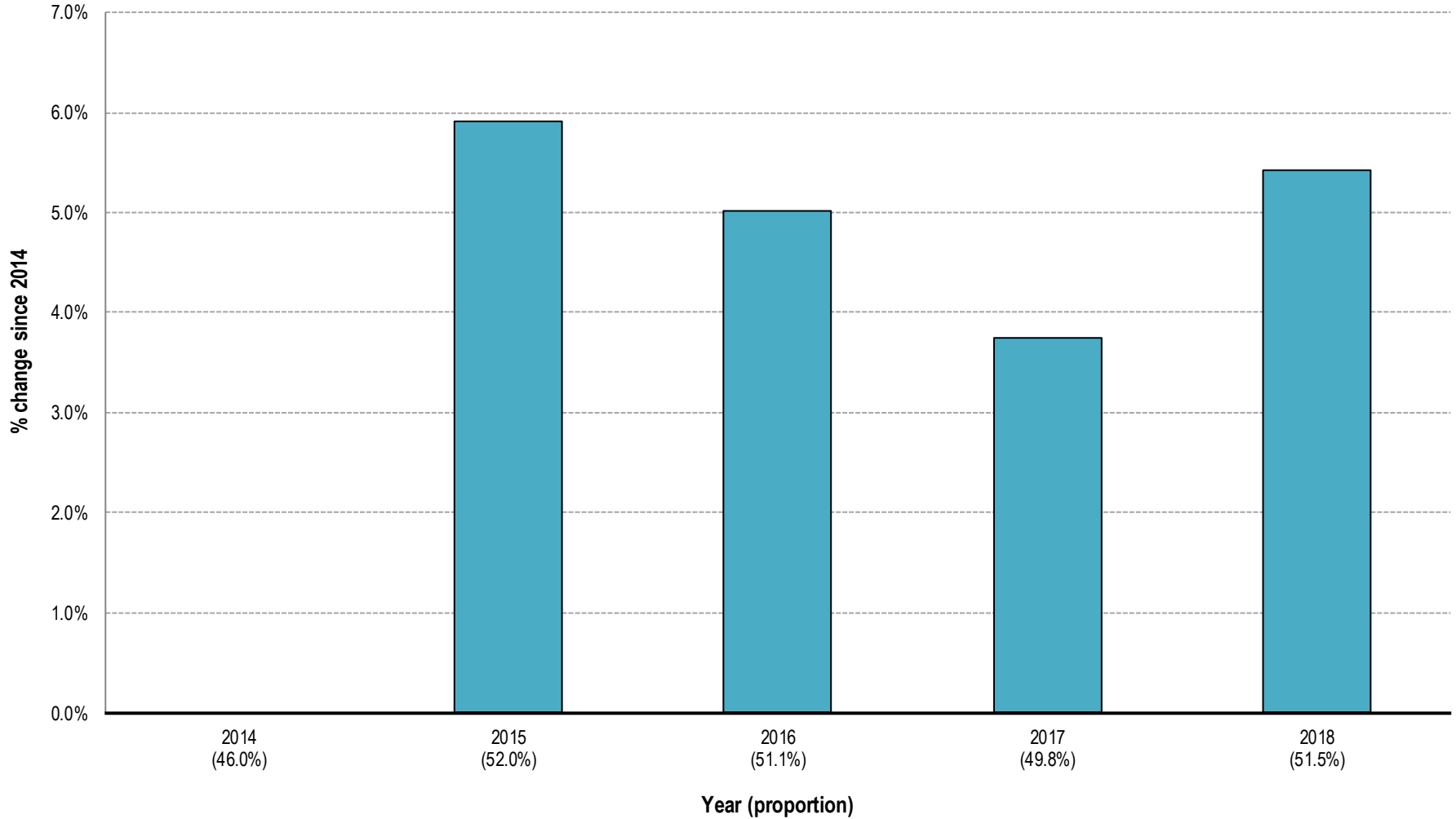


Average age compared to five years ago



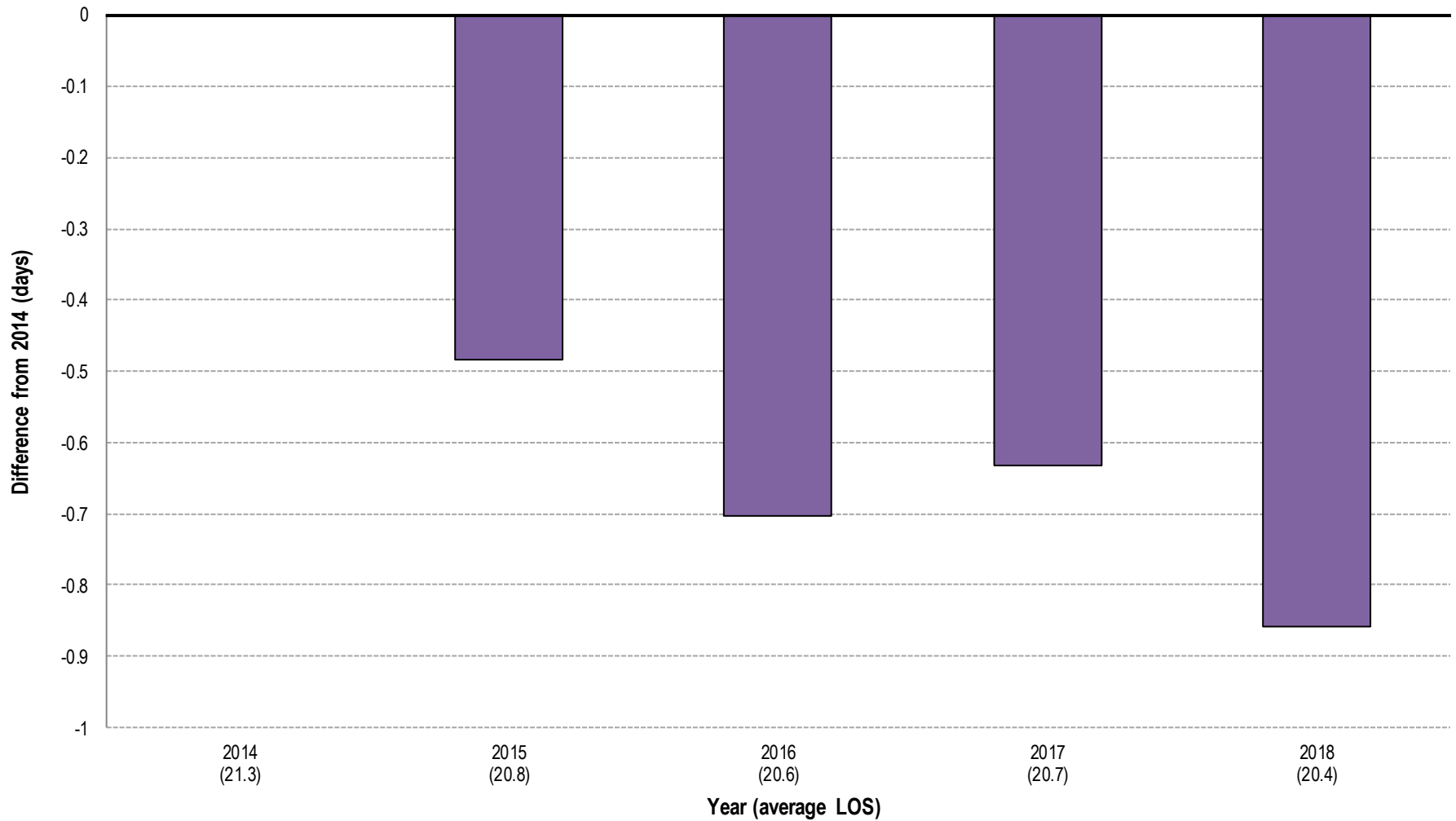
Over the last five years patients age has fluctuated very little.

Admission to rehabilitation within a week of injury or onset of symptoms compared to five years ago



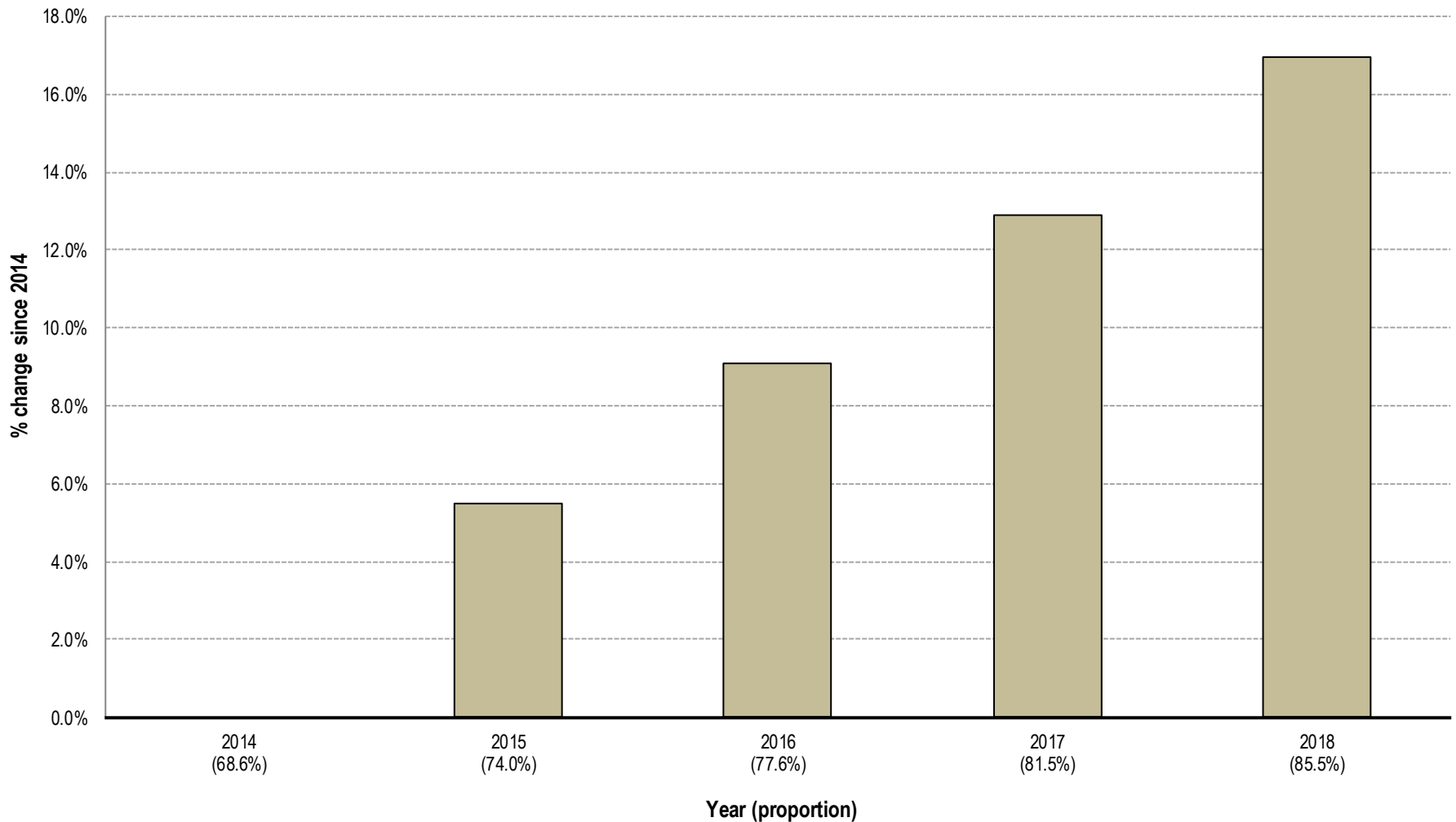
Over the last five years patients have been commencing rehabilitation sooner after their injury /onset of symptoms; in 2018 5.5% more patients were admitted to rehabilitation within a week of onset compared to in 2014.

Length of stay compared to five years ago



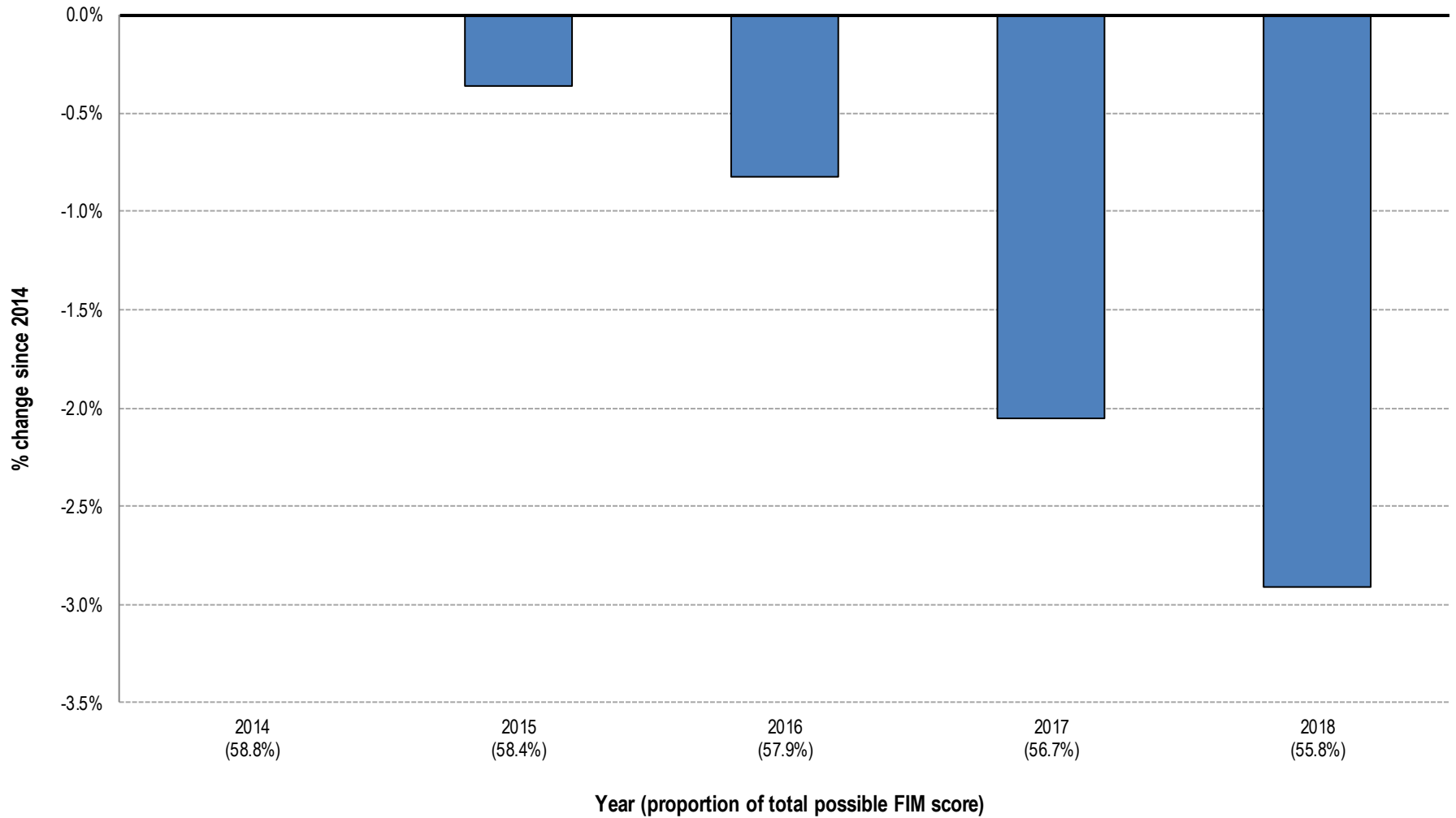
Over the last five years rehabilitation length of stay (LOS) has been declining; in 2018 patients stayed just under 1 day less than they did in 2014.

Timeliness of FIM assessment within 24 hours compared to five years ago



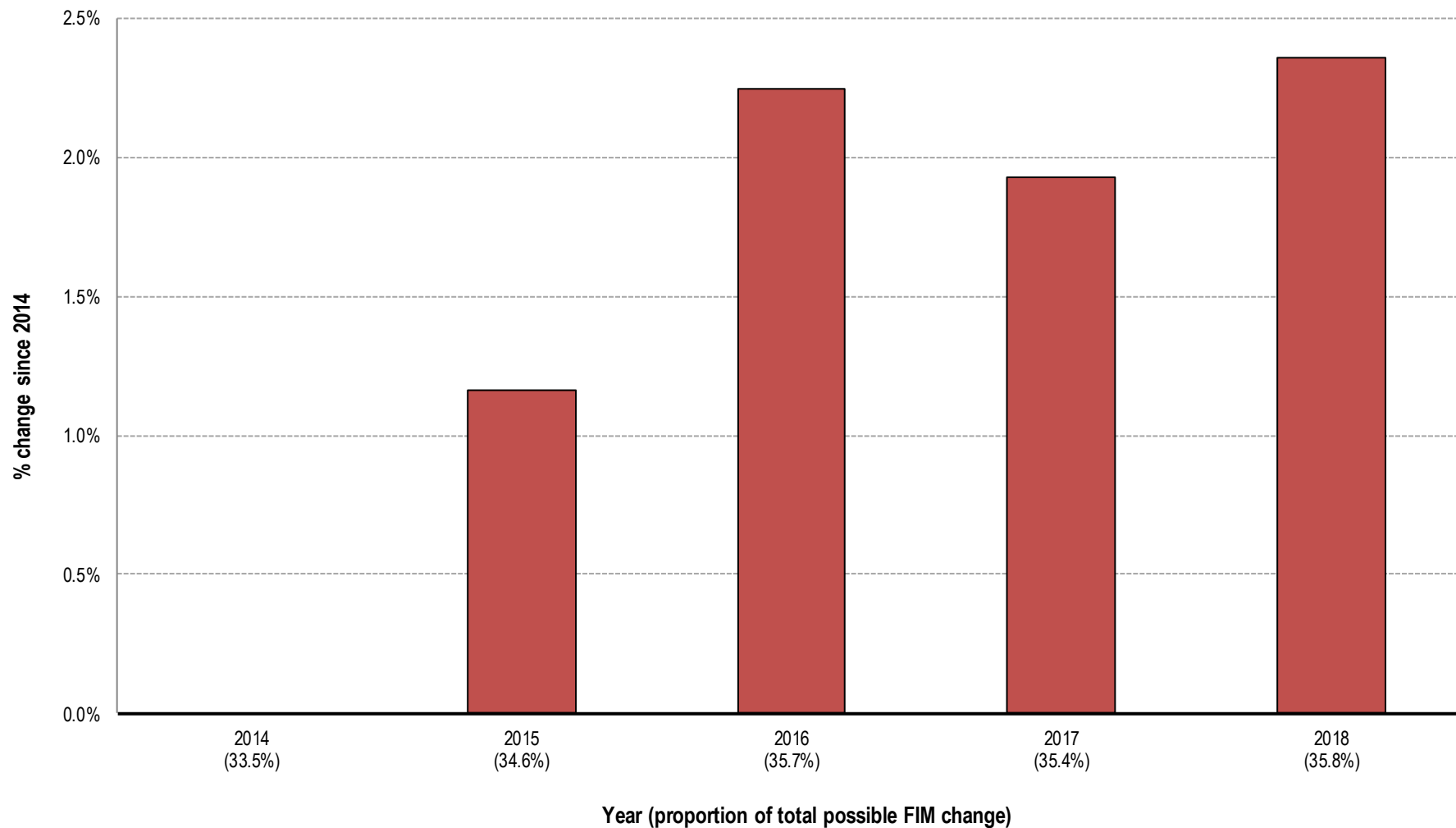
Over the last 5 years timeliness of FIM assessment has greatly increased, with nearly 17% more patients assessed for their functional ability within 24 hours of rehabilitation commencing in 2018 when compared to 2014.

FIM scores at admission as a proportion of total possible compared to five years ago



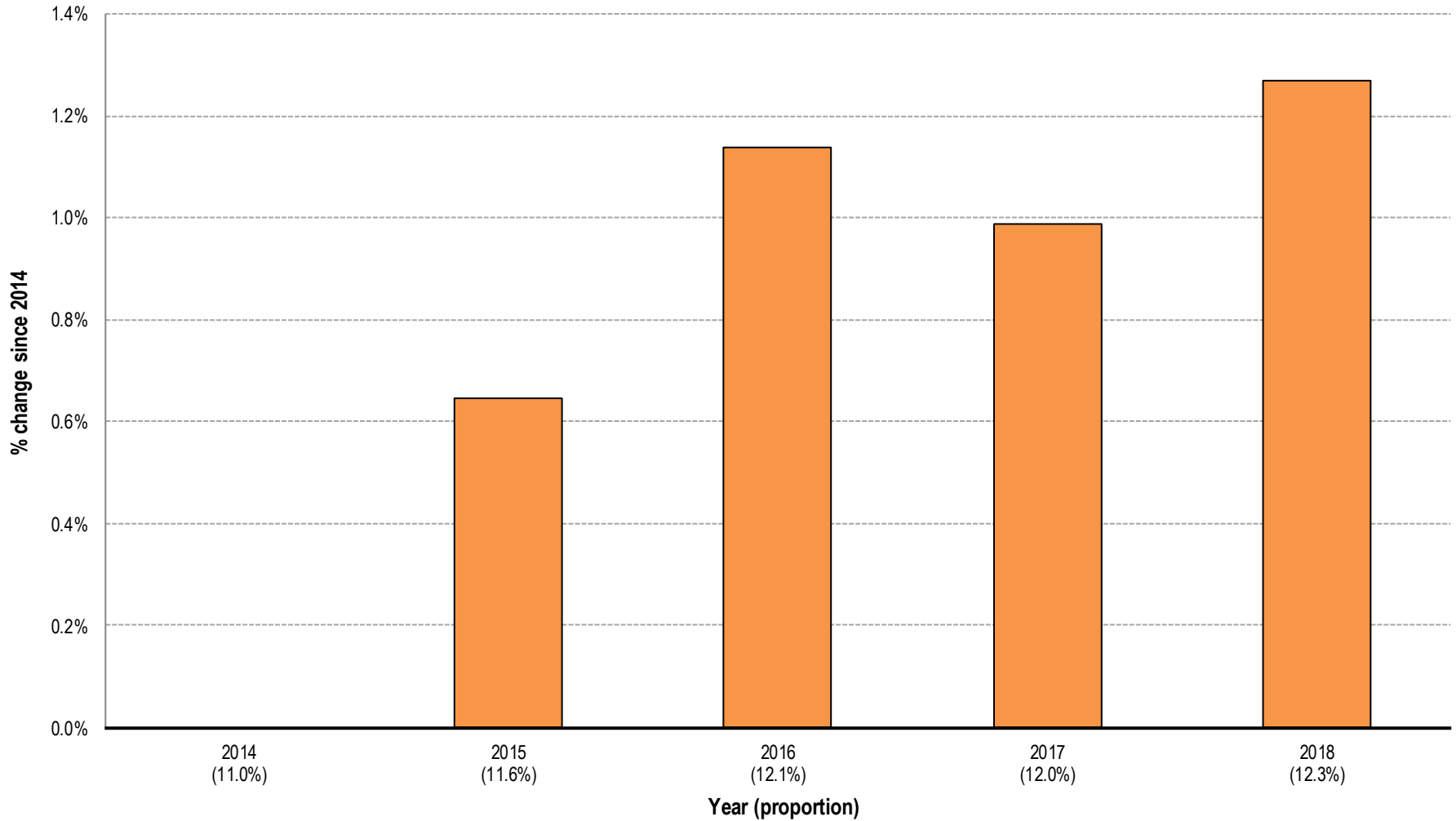
Over the last five years the FIM admission score has declined, nearly 3% lower in 2018 compared to in 2014.

Relative functional gain in FIM compared to five years ago



FIM Relative Functional Gain (RFG), or change in FIM score possible from admission to discharge has increased over the last few years and was 2.3% higher in 2018 than it was in 2014. In 2018 35.8% of FIM relative functional gain was achieved.

FIM efficiency per week compared to five years ago



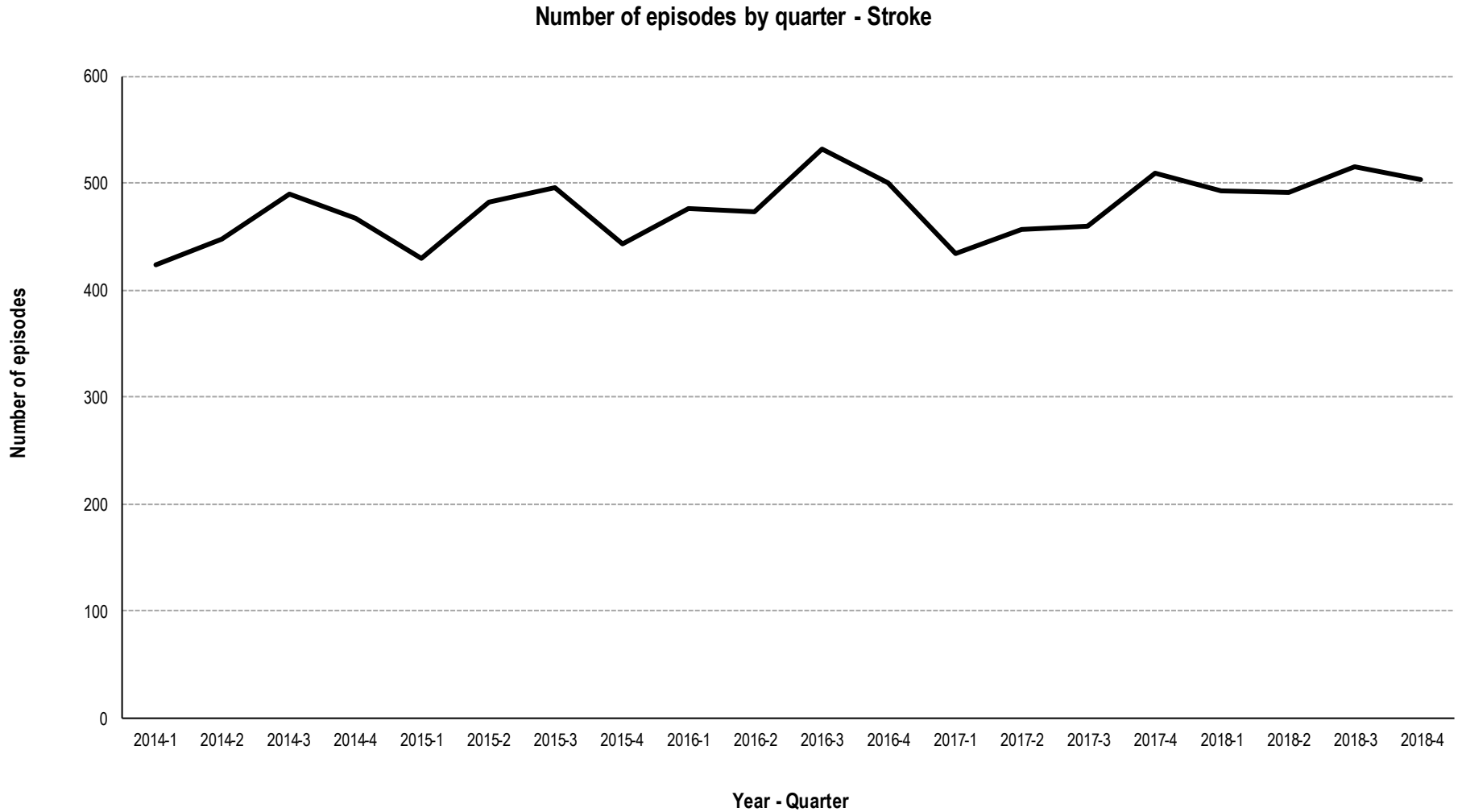
Over the last three years weekly FIM efficiency (change in FIM score possible from admission to discharge divided by length of stay x7) has increased slightly; in 2018 it was 1.2% higher than it was in 2014.

Outcomes by impairment

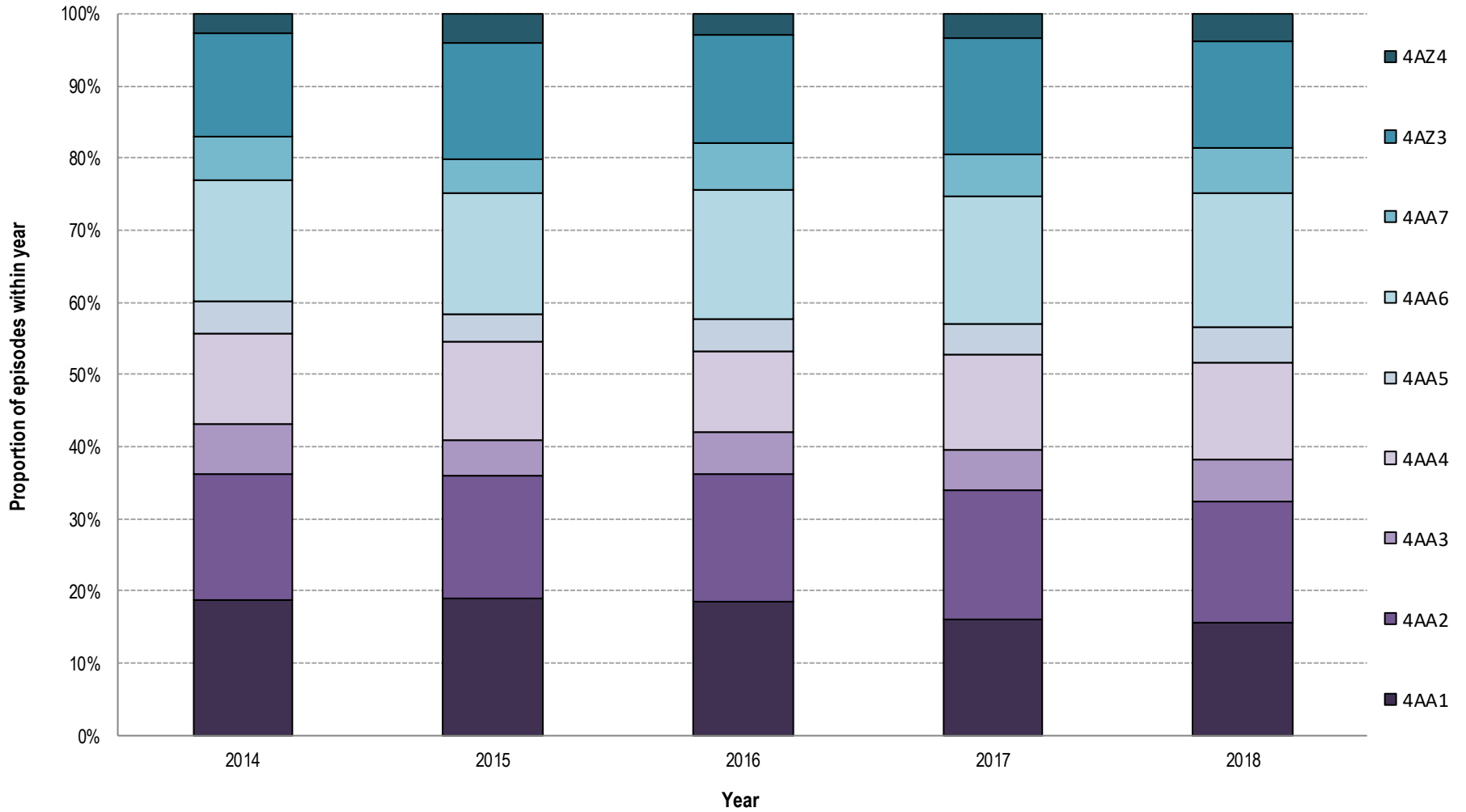
A series of figures and tables are provided for each impairment group; these outline the key descriptive data for this year, changes in episode volumes over the last 5 years, and changes in rehabilitation outcome measures between last year and this year:

- The first figure in each group outlines the number of episodes for each quarter over the past five years, and documents any changes in episode volume over time and/or seasonal trends.
- The second figure displays the proportion of episodes in each AN-SNAP class over the last 5 years.
- The third is a table outlining key data for the respective impairment group by AN-SNAP class.
- The fourth figure provides a summary of the discharge destination of all episodes by AN-SNAP class.
- The fifth figure provides a graphical representation of length of stay (LOS) and improvement in the FIM (Functional Independence Measure) by AN-SNAP class.
- Finally, the sixth figure presents the key changes in rehabilitation outcome measures between last year and this year. The horizontal axis describes the difference between last year and this year averages, while last year's actual values are presented on the left side of the graph.

Stroke episodes over time



Stroke casemix over time

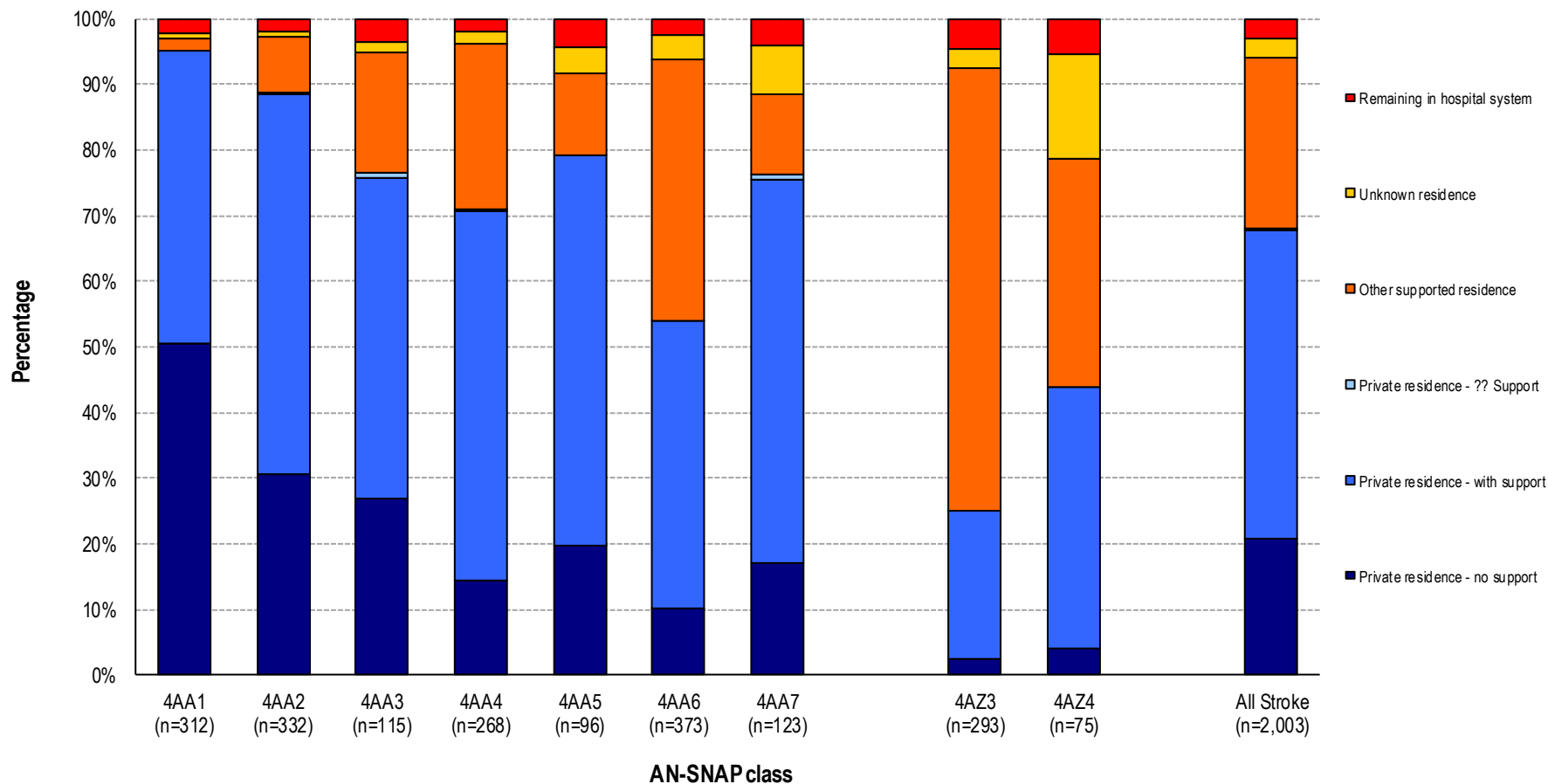


Stroke episodes in 2018

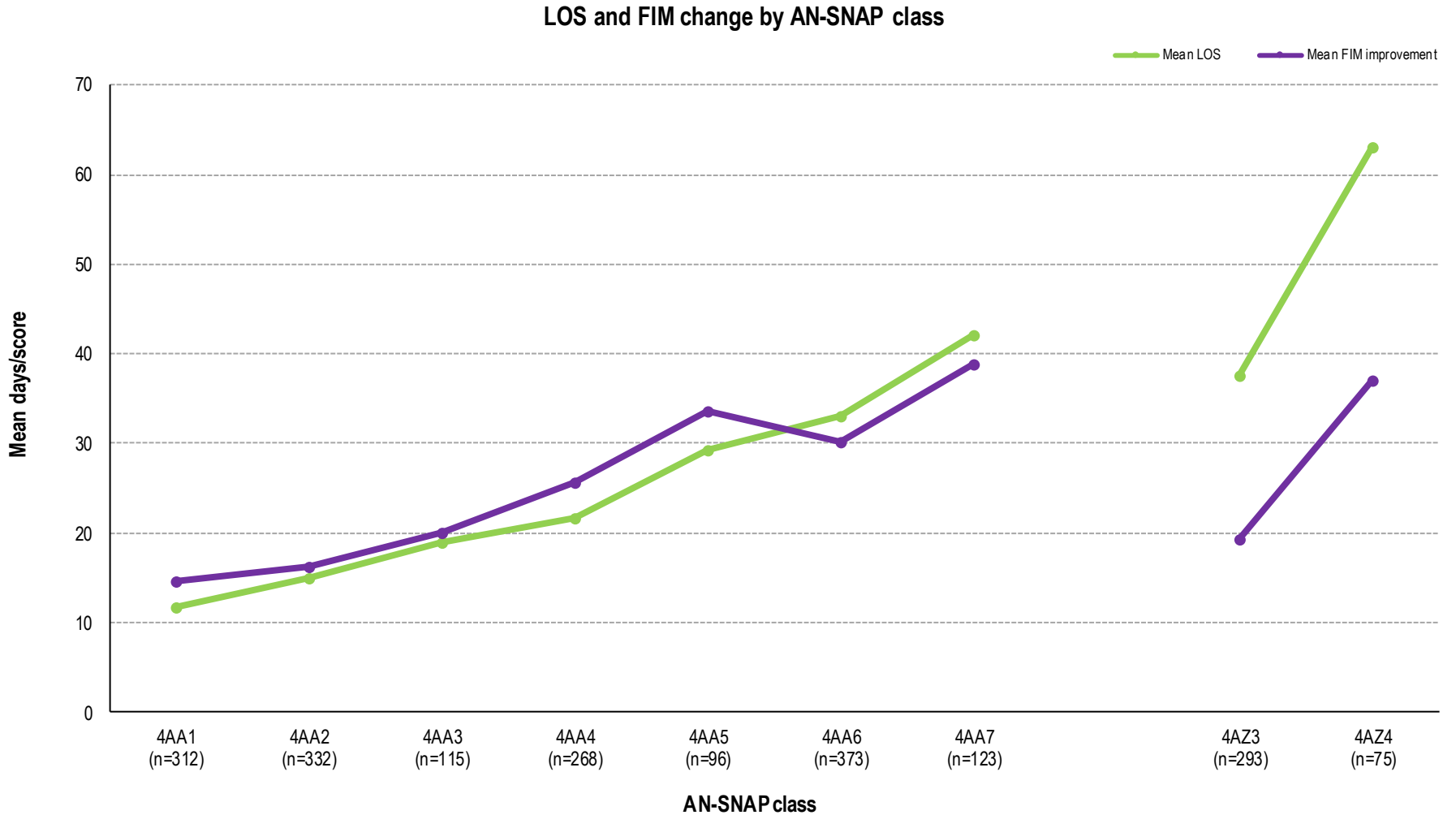
AN-SNAP class:	4AA1	4AA2	4AA3	4AA4	4AA5	4AA6	4AA7	4AZ3	4AZ4	All Stroke
Number of episodes	312	332	115	268	96	373	123	293	75	2,003
Proportion of episodes	15.6%	16.6%	5.7%	13.4%	4.8%	18.6%	6.1%	14.6%	3.7%	100.0%
Gender (%)										
<i>Female</i>	49.4%	45.5%	48.7%	50.0%	38.5%	54.2%	35.8%	52.2%	44.0%	48.7%
<i>Male</i>	50.3%	54.5%	51.3%	50.0%	61.5%	45.6%	64.2%	47.8%	56.0%	51.2%
Age group (%)										
<i>Under 65</i>	24.4%	21.4%	20.9%	0.0%	83.3%	0.0%	89.4%	0.0%	100.0%	21.8%
<i>Over 65</i>	74.7%	78.3%	79.1%	100.0%	16.7%	100.0%	10.6%	100.0%	0.0%	77.5%
Age (Mean+95%CI)	72.8 (71.3-74.3)	73.8 (72.3-75.4)	74.4 (72.1-76.7)	81.8 (80.9-82.7)	56.8 (55.1-58.5)	80.9 (80.1-81.6)	55.8 (54.3-57.3)	80.8 (79.9-81.7)	54.2 (52.1-56.3)	74.4 (73.9-75.0)
Admission FIM (Mean+95%CI)	99.6 (98.4-100.9)	89.1 (87.9-90.3)	76.7 (74.7-78.6)	65.7 (64.6-66.9)	68.4 (66.4-70.3)	48.0 (47.0-49.0)	49.9 (47.9-51.8)	28.2 (27.3-29.1)	29.1 (27.0-31.2)	65.1 (63.9-66.3)
LOS (Mean+95%CI)	11.7 (11.0-12.5)	15.0 (13.9-16.0)	19.0 (16.5-21.6)	21.7 (20.2-23.1)	29.3 (25.2-33.5)	33.0 (30.9-35.1)	42.2 (38.1-46.3)	37.7 (35.1-40.2)	63.1 (53.1-73.1)	26.3 (25.3-27.3)
Discharge destination (%)										
<i>Discharged to community</i>	97.7%	98.2%	96.5%	98.1%	95.8%	97.6%	95.9%	95.4%	94.7%	97.1%
<i>Remaining in hospital system</i>	2.3%	1.8%	3.5%	1.9%	4.2%	2.4%	4.1%	4.6%	5.3%	2.9%
FIM change (Mean+95%CI)	14.6 (13.6-15.6)	16.3 (15.1-17.4)	20.1 (17.6-22.6)	25.7 (23.8-27.5)	33.6 (30.9-36.3)	30.2 (28.0-32.3)	38.9 (35.4-42.3)	19.3 (16.7-22.0)	37.1 (30.9-43.2)	23.6 (22.7-24.4)
FIM efficiency (FIM change/LOS)	1.2	1.1	1.1	1.2	1.1	0.9	0.9	0.5	0.6	0.9

Stroke discharge destination by AN-SNAP class

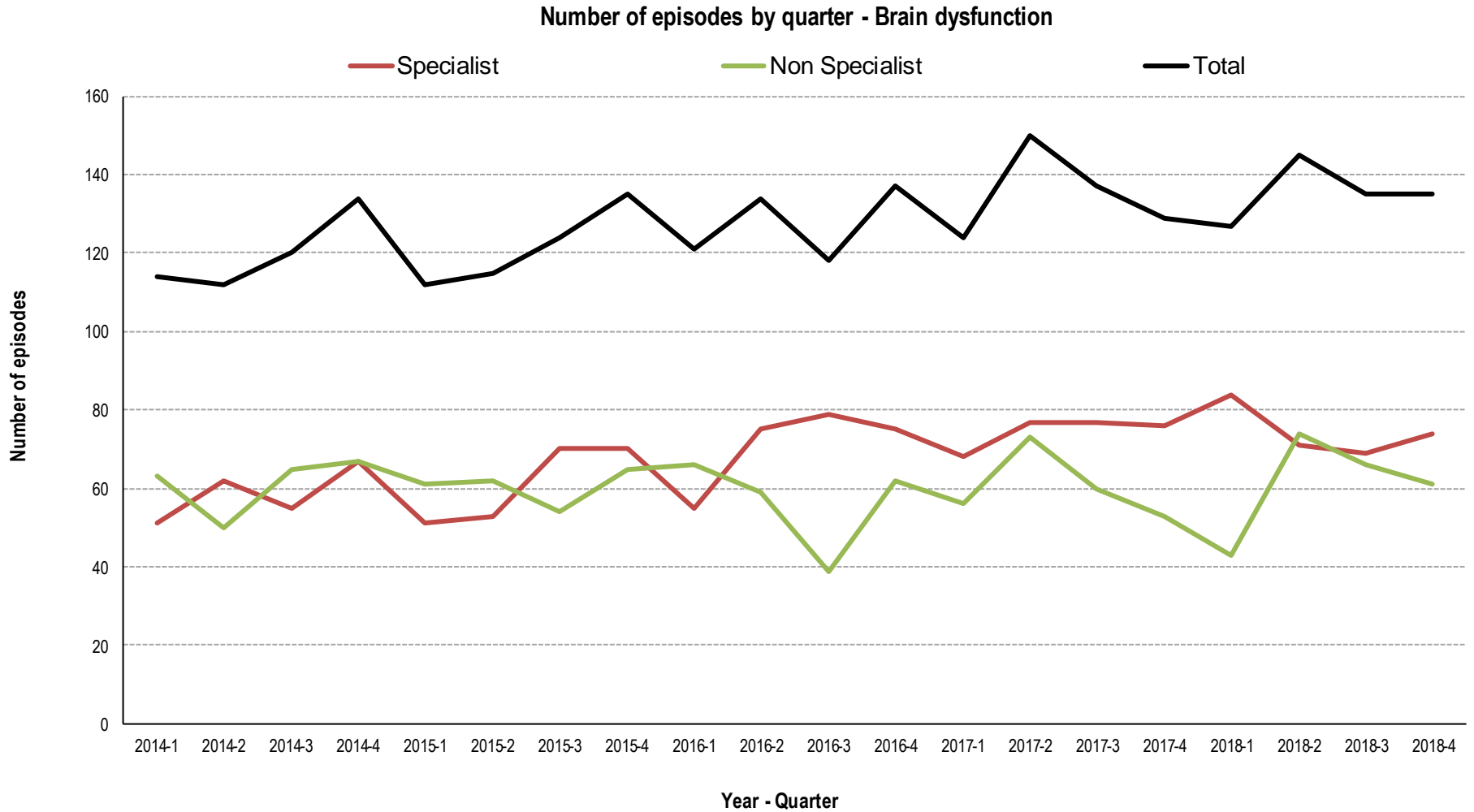
Discharge destination - Stroke



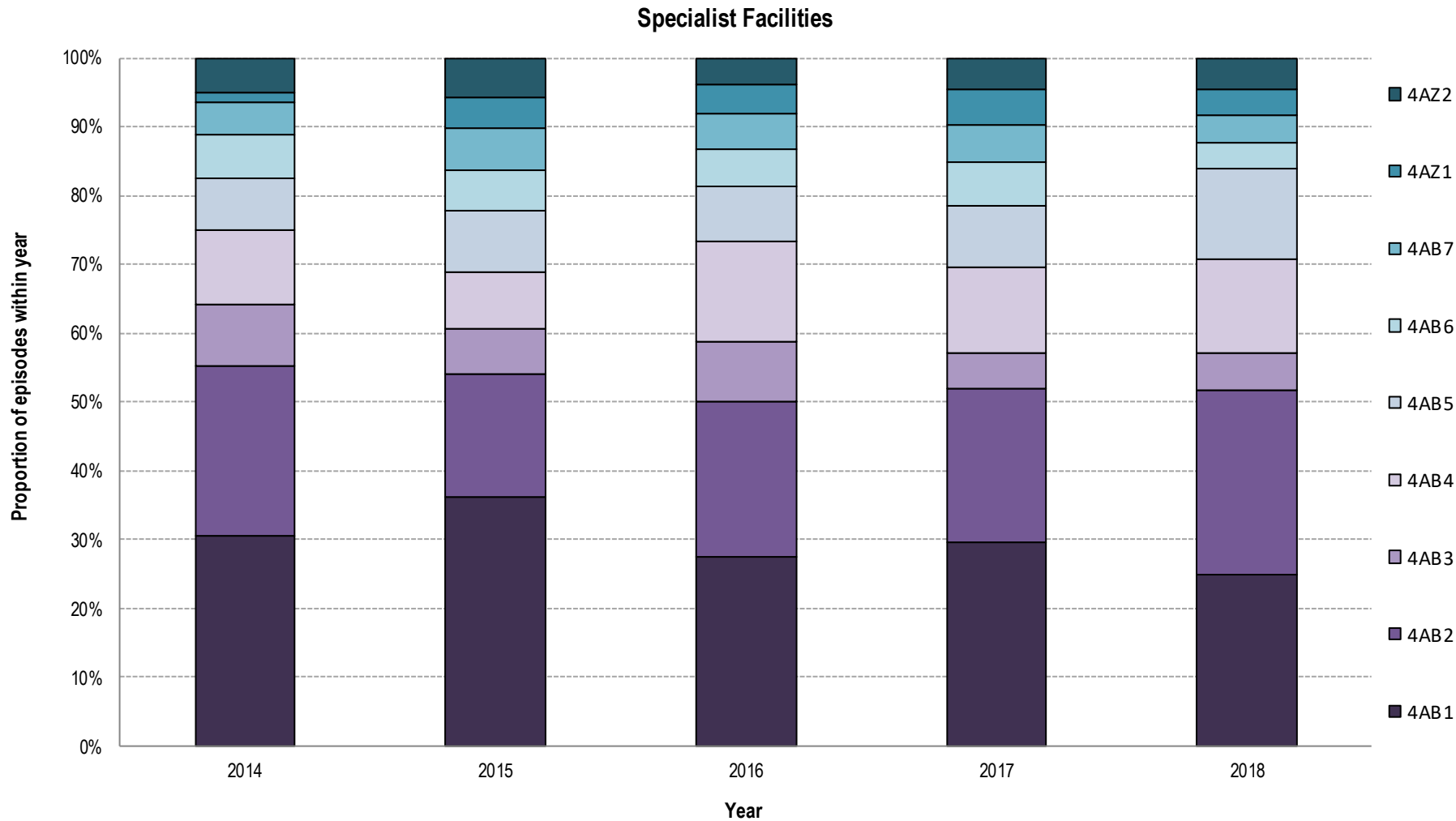
Stroke LOS and FIM change by AN-SNAP class



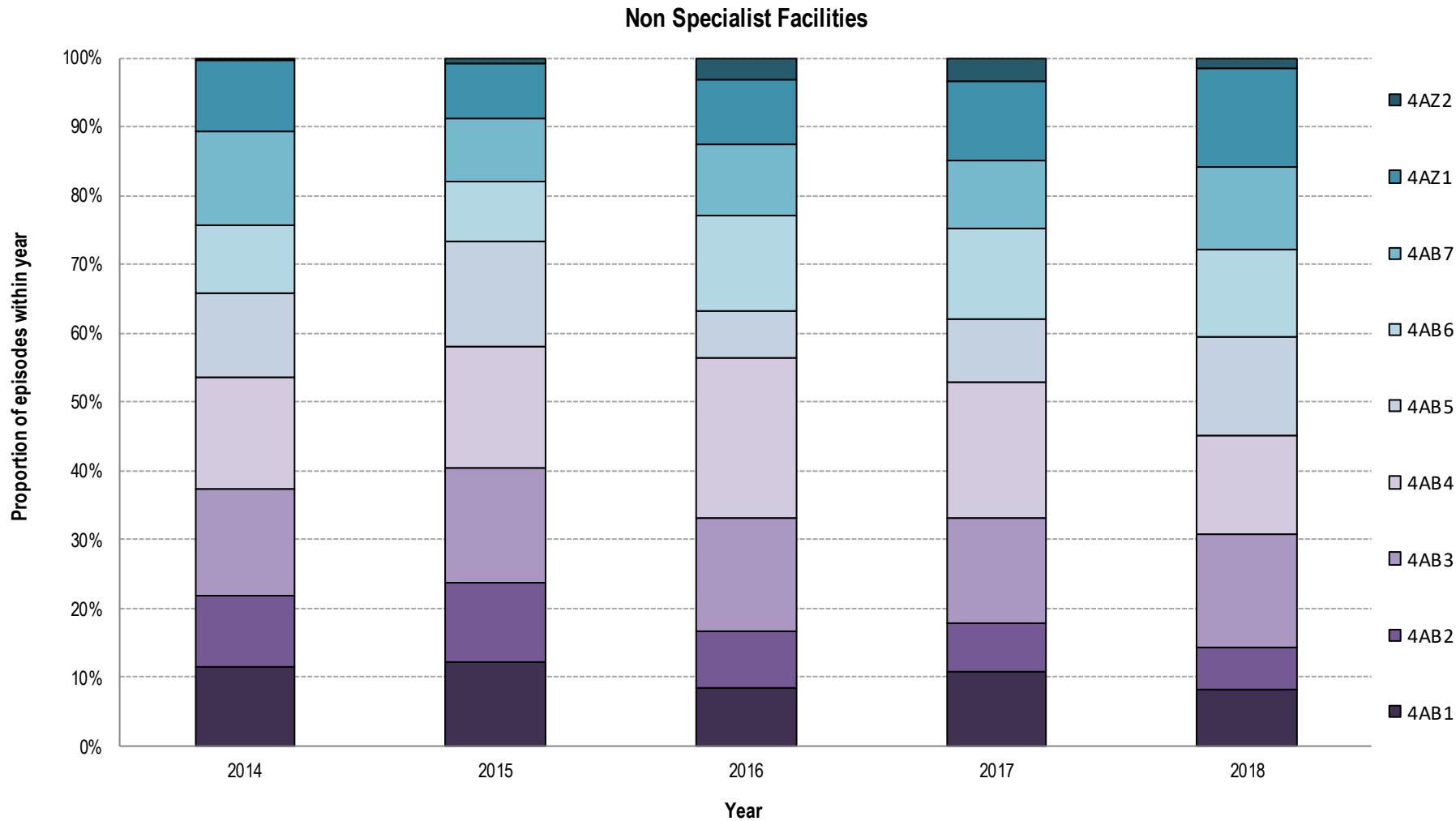
Brain dysfunction episodes over time



Brain dysfunction casemix over time – Specialist facilities



Brain dysfunction casemix over time – Non specialist facilities



Brain dysfunction episodes in 2018 - Specialist facilities

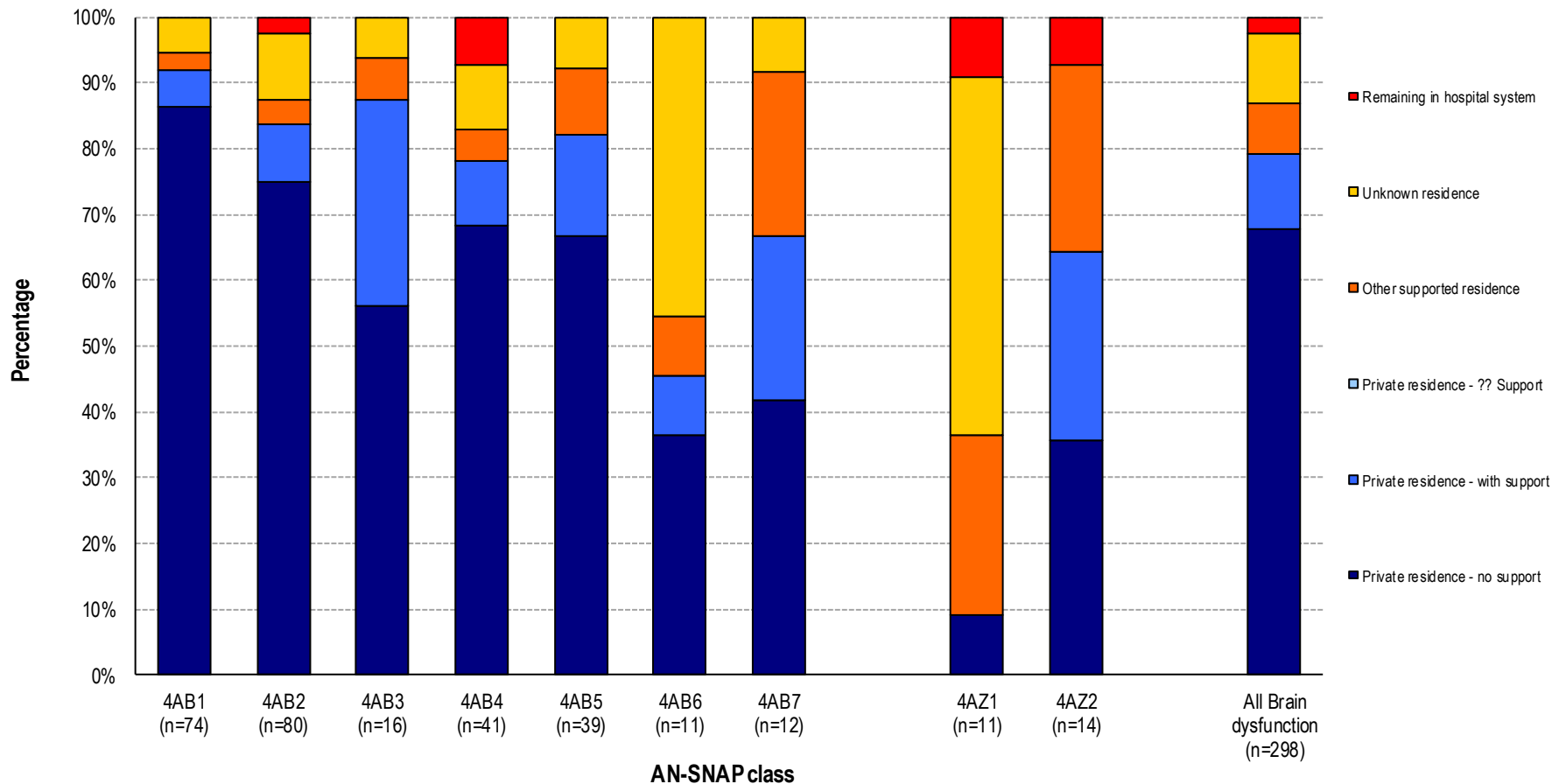
AN-SNAP class:	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AZ1	4AZ2	All Brain dysfunction
Number of episodes	74	80	16	41	39	11	12	11	14	298
Proportion of episodes	24.8%	26.8%	5.4%	13.8%	13.1%	3.7%	4.0%	3.7%	4.7%	100.0%
Gender (%)										
<i>Female</i>	29.7%	36.3%	50.0%	29.3%	28.2%	27.3%	33.3%	27.3%	28.6%	32.2%
<i>Male</i>	70.3%	63.8%	50.0%	70.7%	71.8%	72.7%	66.7%	72.7%	71.4%	67.8%
Age group (%)										
<i>Under 65</i>	81.1%	85.0%	81.3%	53.7%	74.4%	72.7%	50.0%	63.6%	100.0%	76.2%
<i>Over 65</i>	18.9%	15.0%	18.8%	46.3%	25.6%	27.3%	50.0%	36.4%	0.0%	23.8%
Age (Mean+95%CI)	44.7 (40.4-49.0)	42.4 (38.5-46.2)	48.8 (38.1-59.4)	58.4 (52.3-64.5)	46.7 (40.1-53.3)	52.2 (37.2-67.2)	51.9 (38.8-65.1)	62.9 (57.2-68.6)	29.5 (23.6-35.4)	47.0 (44.7-49.2)
Admission FIM (Mean+95%CI)	111.7 (110.0-113.4)	99.2 (97.3-101.2)	86.5 (83.8-89.2)	79.7 (77.5-82.0)	68.8 (66.0-71.6)	47.0 (41.9-52.1)	33.5 (31.6-35.3)	25.9 (20.5-31.2)	21.3 (19.8-22.8)	85.3 (82.0-88.5)
LOS (Mean+95%CI)	13.0 (11.2-14.8)	24.3 (19.9-28.8)	26.7 (20.1-33.3)	30.8 (24.9-36.8)	51.2 (39.5-63.0)	44.1 (27.1-61.1)	67.5 (36.5-98.6)	83.4 (50.9-115.8)	92.6 (64.5-120.7)	33.0 (29.2-36.8)
Discharge destination (%)										
<i>Discharged to community</i>	98.7%	97.5%	94.1%	88.4%	97.5%	84.6%	85.7%	76.9%	81.3%	93.6%
<i>Remaining in hospital system</i>	1.3%	2.5%	5.9%	11.6%	2.5%	15.4%	14.3%	23.1%	18.8%	6.4%
FIM change (Mean+95%CI)	10.4 (8.9-11.9)	18.5 (16.4-20.6)	30.3 (26.0-34.5)	33.3 (29.7-36.9)	40.9 (36.3-45.5)	42.1 (18.2-66.0)	53.3 (37.5-69.0)	39.4 (19.7-59.0)	75.8 (58.9-92.7)	27.3 (24.8-29.8)
FIM efficiency (FIM change/LOS)	0.8	0.8	1.1	1.1	0.8	1.0	0.8	0.5	0.8	0.8

Brain dysfunction episodes in 2018 - Non specialist facilities

AN-SNAP class:	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AZ1	4AZ2	All Brain dysfunction
Number of episodes	20	15	40	35	35	31	29	35	4	244
Proportion of episodes	8.2%	6.1%	16.4%	14.3%	14.3%	12.7%	11.9%	14.3%	n < 5	100.0%
Gender (%)										
Female	50.0%	66.7%	57.5%	45.7%	37.1%	45.2%	75.9%	65.7%	n < 5	54.9%
Male	50.0%	33.3%	42.5%	54.3%	62.9%	54.8%	24.1%	34.3%	n < 5	45.1%
Age group (%)										
Under 65	25.0%	53.3%	20.0%	22.9%	31.4%	29.0%	27.6%	31.4%	n < 5	29.5%
Over 65	70.0%	46.7%	80.0%	74.3%	68.6%	71.0%	72.4%	68.6%	n < 5	69.7%
Age (Mean+95%CI)	70.6 (64.0-77.2)	64.6 (57.7-71.5)	74.2 (69.0-79.3)	72.5 (67.8-77.2)	72.3 (68.1-76.4)	73.5 (68.3-78.7)	71.2 (66.8-75.7)	71.9 (67.3-76.5)	n < 5	71.5 (69.7-73.4)
Admission FIM (Mean+95%CI)	107.6 (104.6-110.6)	93.5 (89.9-97.2)	86.2 (83.2-89.1)	76.1 (73.2-78.9)	62.4 (60.0-64.8)	54.3 (51.8-56.8)	36.7 (33.9-39.5)	24.6 (22.6-26.5)	n < 5	64.7 (61.3-68.2)
LOS (Mean+95%CI)	9.4 (7.4-11.4)	20.1 (14.2-26.1)	15.0 (11.7-18.3)	18.4 (14.2-22.6)	23.0 (18.9-27.1)	23.8 (20.0-27.7)	29.1 (22.7-35.5)	37.6 (28.1-47.1)	n < 5	23.1 (20.7-25.6)
Discharge destination (%)										
Discharged to community	95.0%	88.2%	97.5%	86.8%	97.1%	93.5%	93.1%	91.4%	n < 5	92.0%
Remaining in hospital system	5.0%	11.8%	2.5%	13.2%	2.9%	6.5%	6.9%	8.6%	n < 5	8.0%
FIM change (Mean+95%CI)	8.2 (5.6-10.8)	13.4 (7.7-19.1)	19.8 (16.5-23.1)	13.9 (7.4-20.4)	23.9 (18.9-28.8)	26.3 (18.8-33.8)	30.3 (20.6-40.1)	36.0 (25.0-47.0)	n < 5	22.4 (19.7-25.2)
FIM efficiency (FIM change/LOS)	0.9	0.7	1.3	0.8	1.0	1.1	1.0	1.0	n < 5	1.0

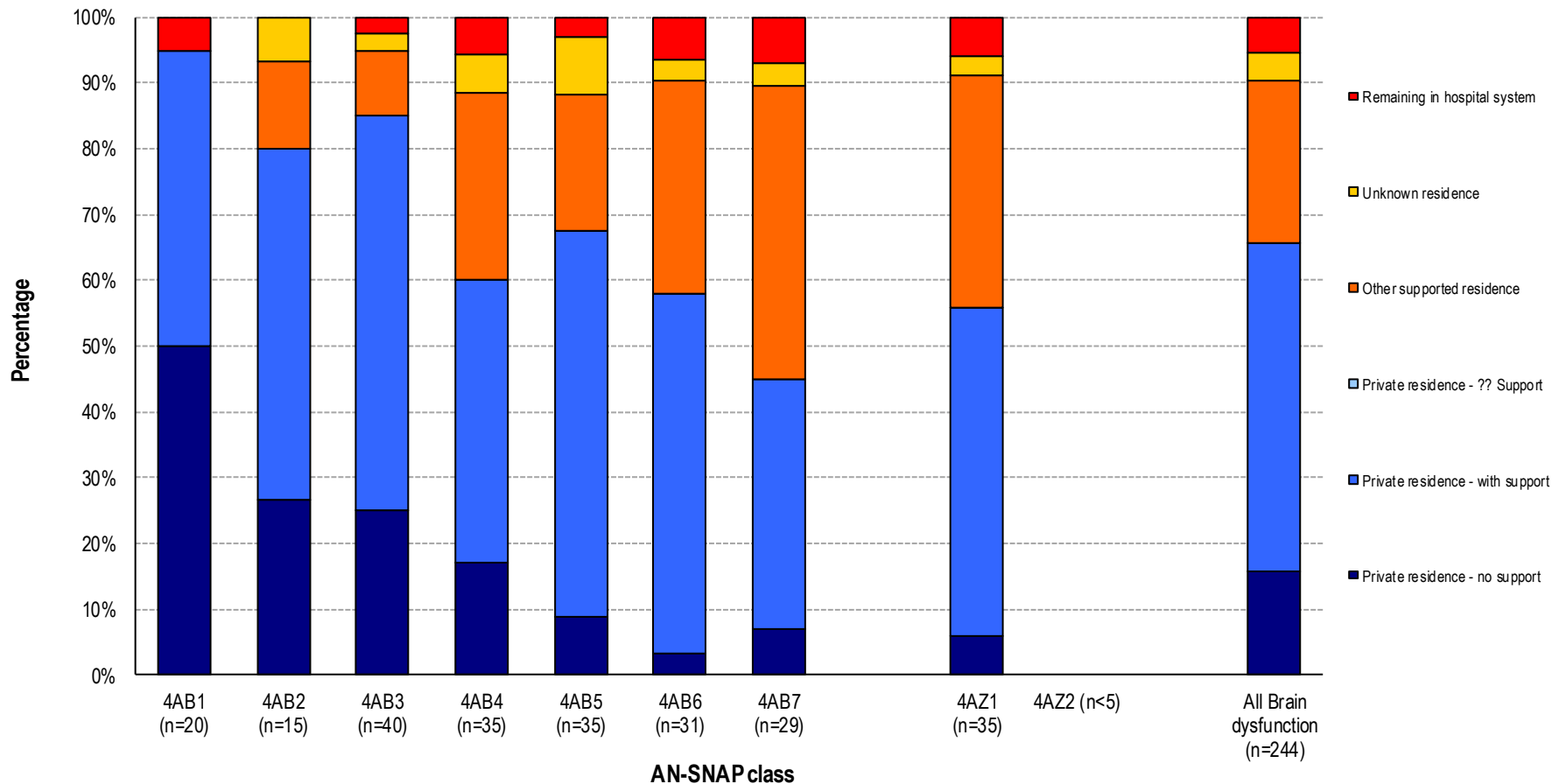
Brain dysfunction discharge destination by AN-SNAP Class – Specialist facilities

Specialist - Discharge destination - Brain dysfunction



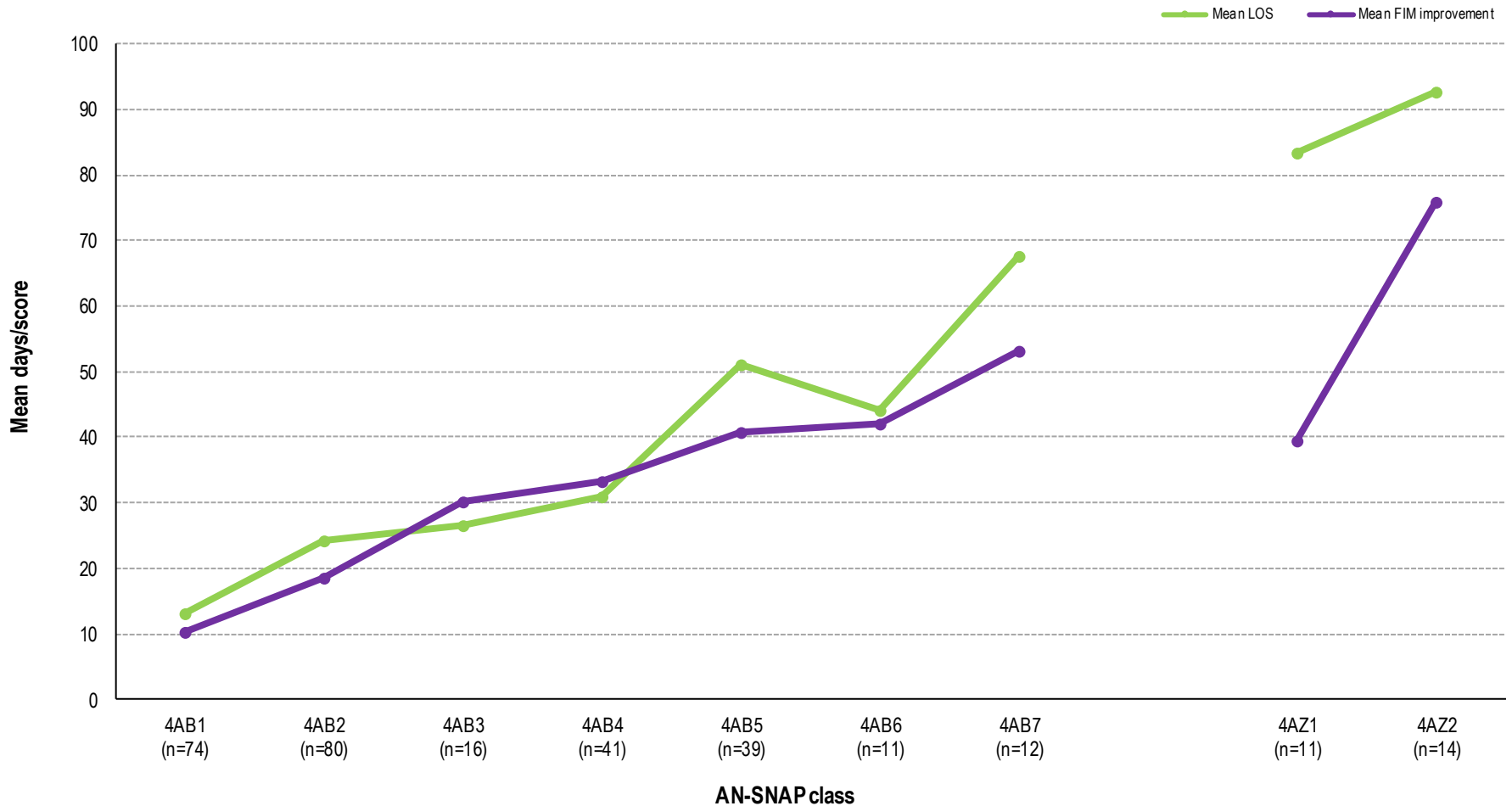
Brain dysfunction discharge destination by AN-SNAP Class – Non specialist facilities

Non specialist - Discharge destination - Brain dysfunction



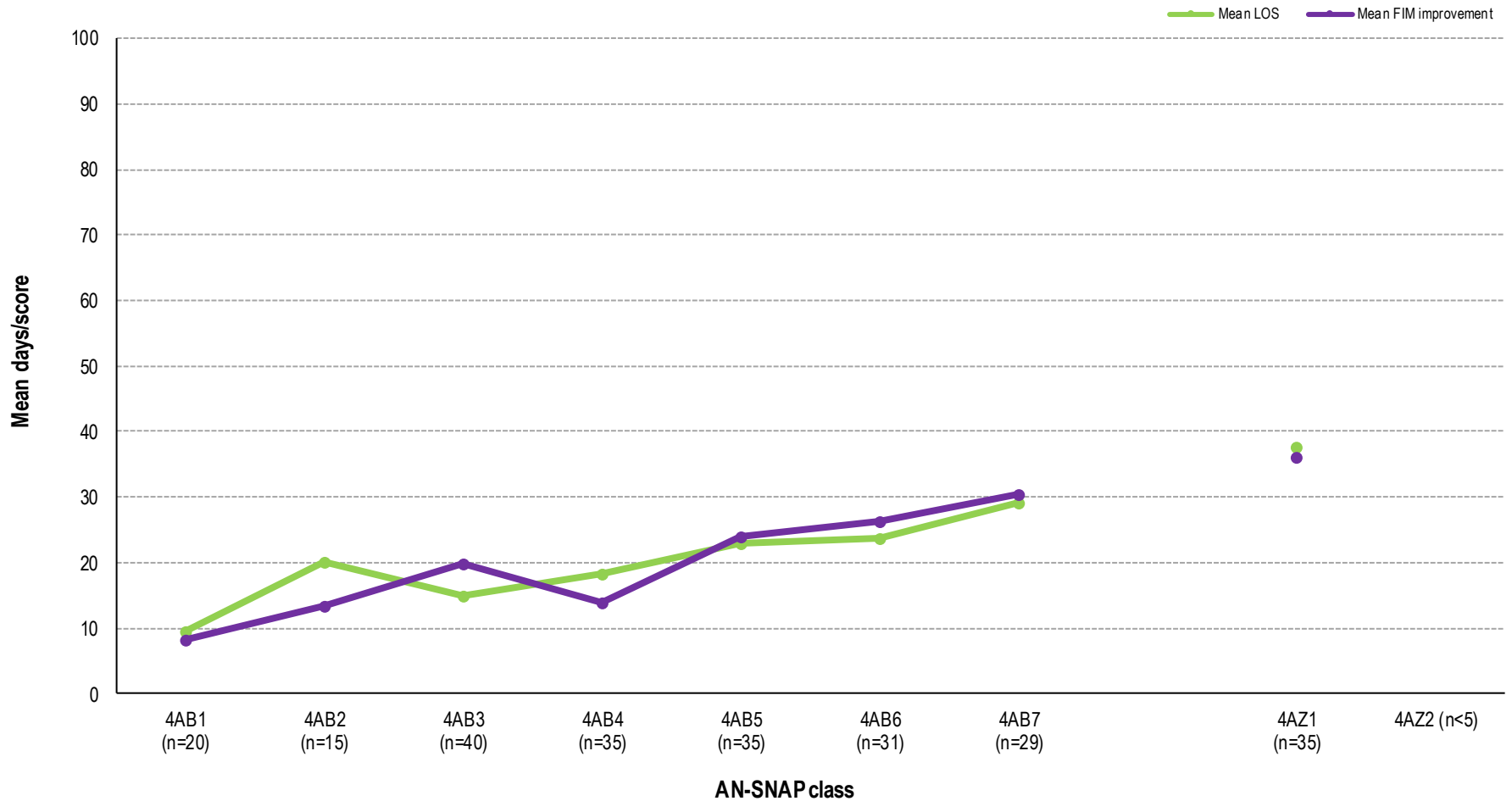
Brain dysfunction LOS and FIM change by AN-SNAP Class – Specialist facilities

Specialist - LOS and FIM change by AN-SNAP class



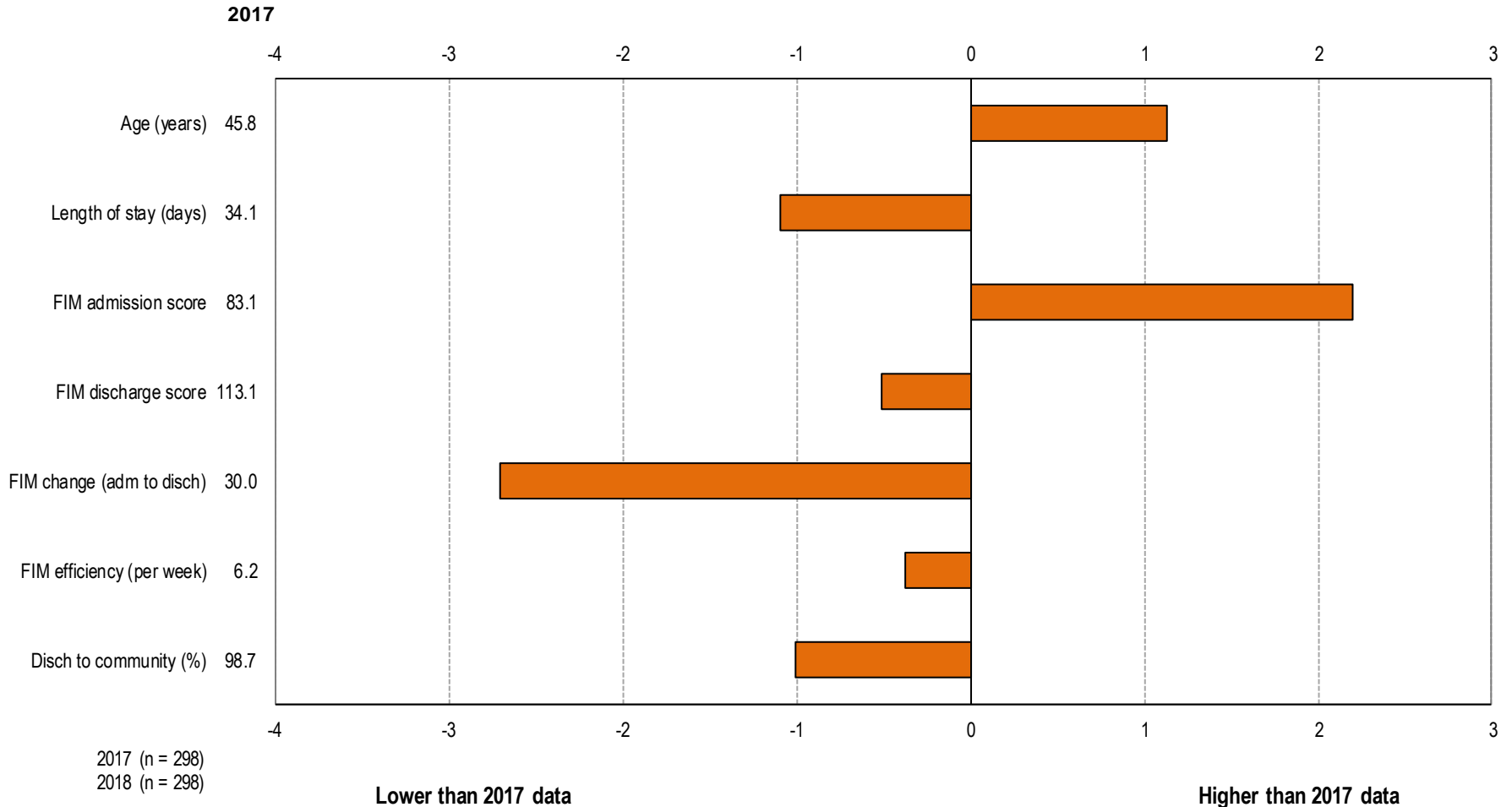
Brain dysfunction LOS and FIM change by AN-SNAP Class – Non specialist facilities

Non specialist - LOS and FIM change by AN-SNAP class



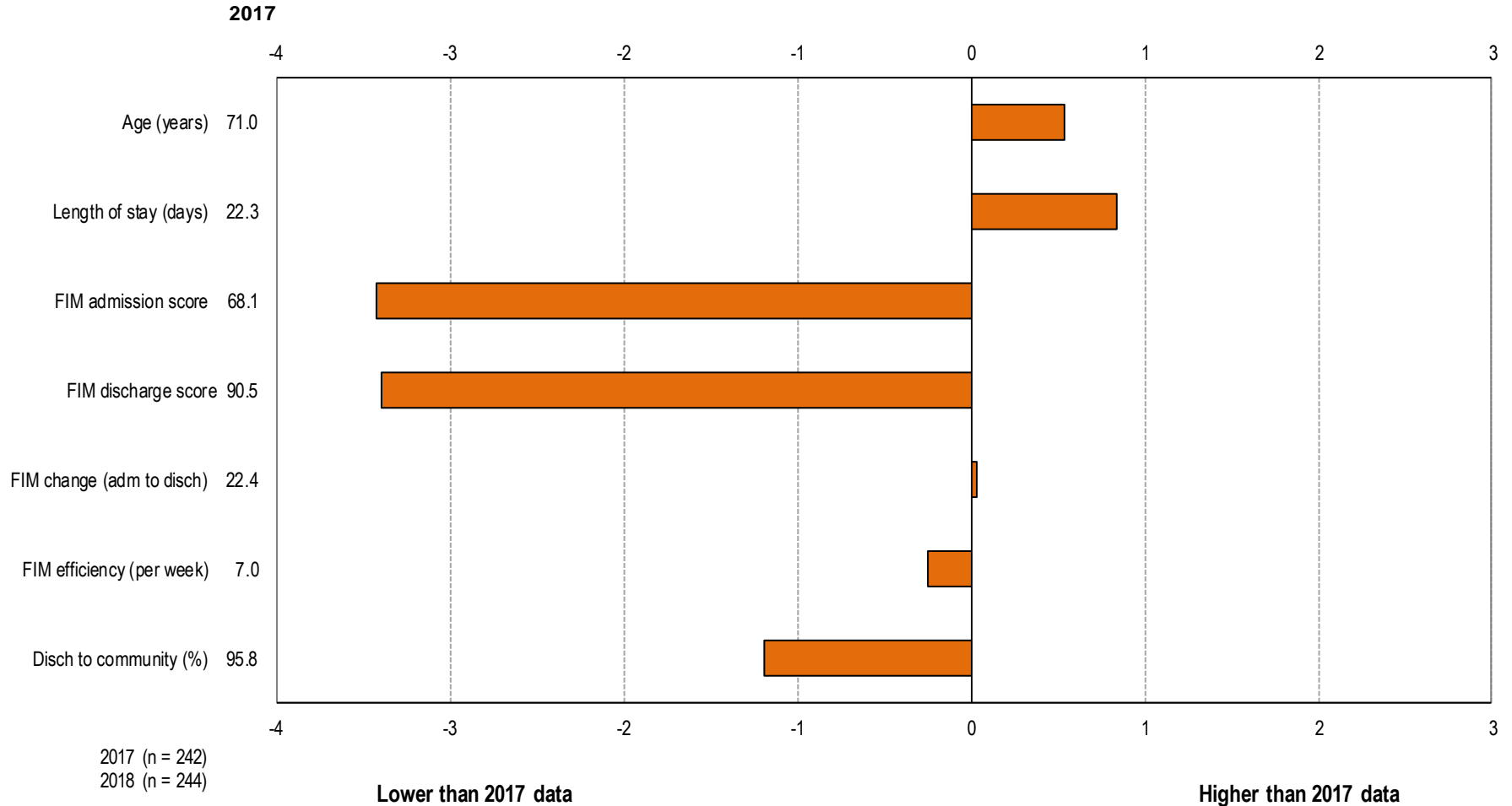
Change in outcome measures in brain dysfunction, 2017 to 2018 - Specialist facilities

Specialist - Difference from 2017 data - All Brain dysfunction



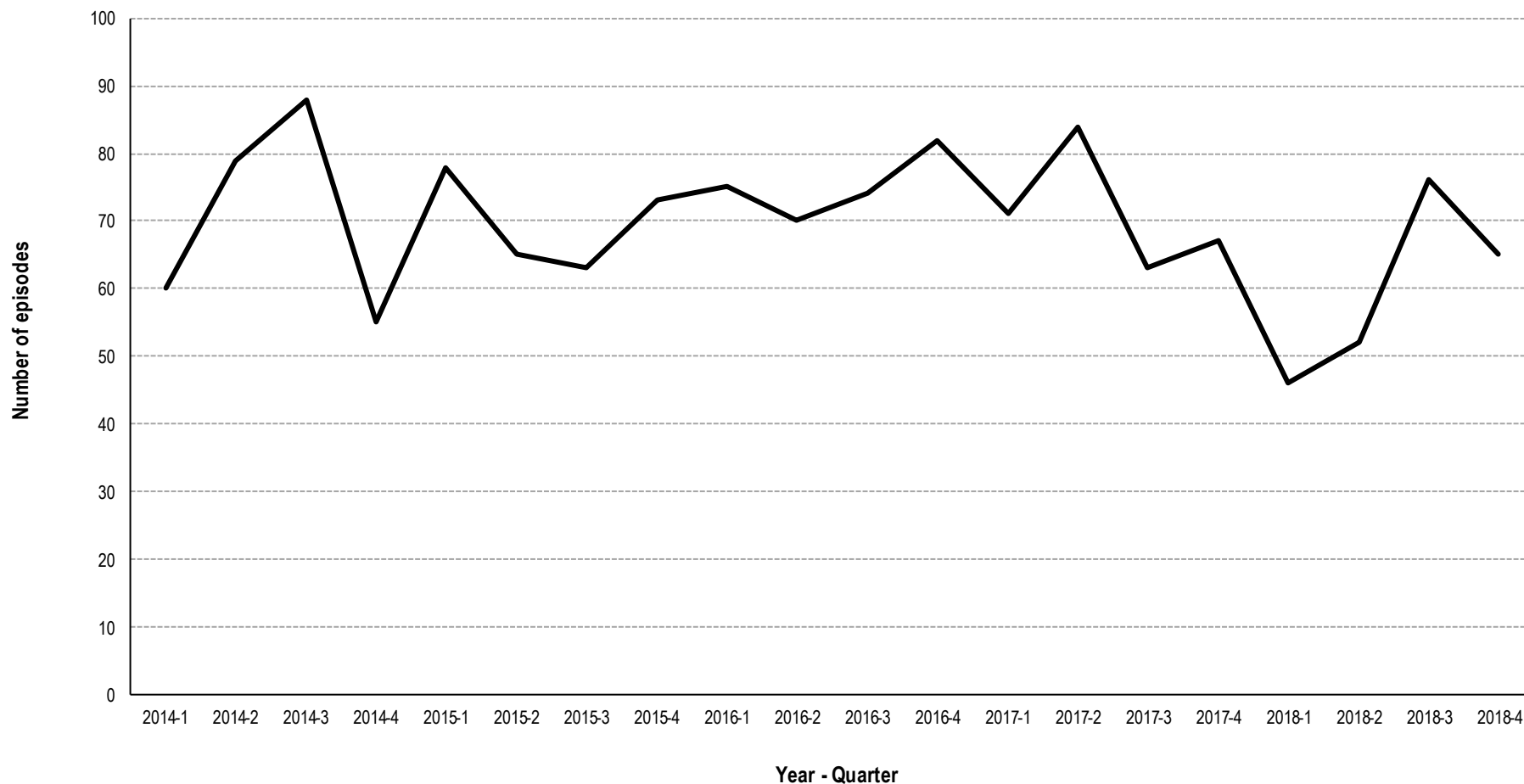
Change in outcome measures in brain dysfunction, 2017 to 2018 - Non specialist facilities

Non specialist - Difference from 2017 data - All Brain dysfunction

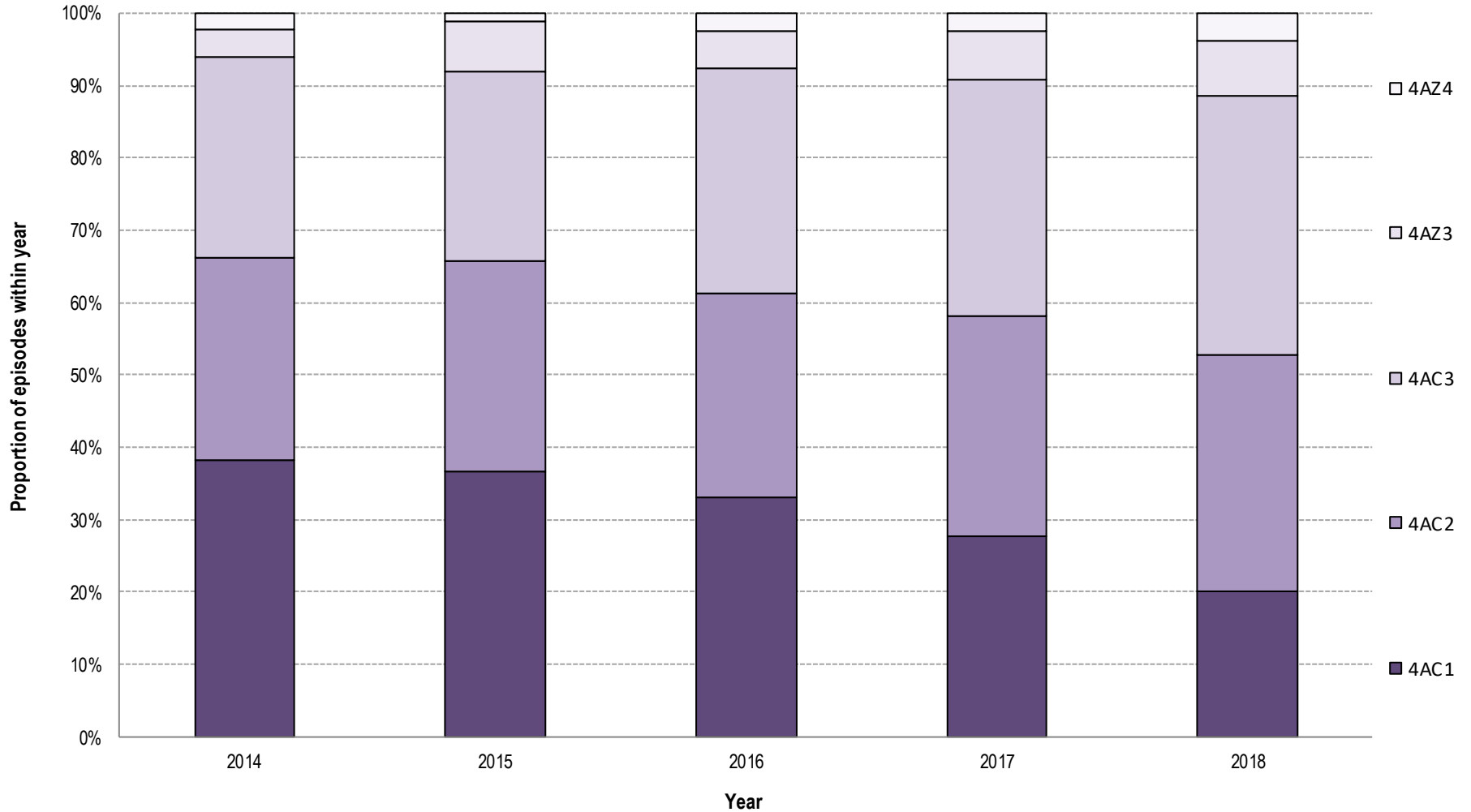


Neurological conditions episodes over time

Number of episodes by quarter - Neurological conditions



Neurological conditions casemix over time



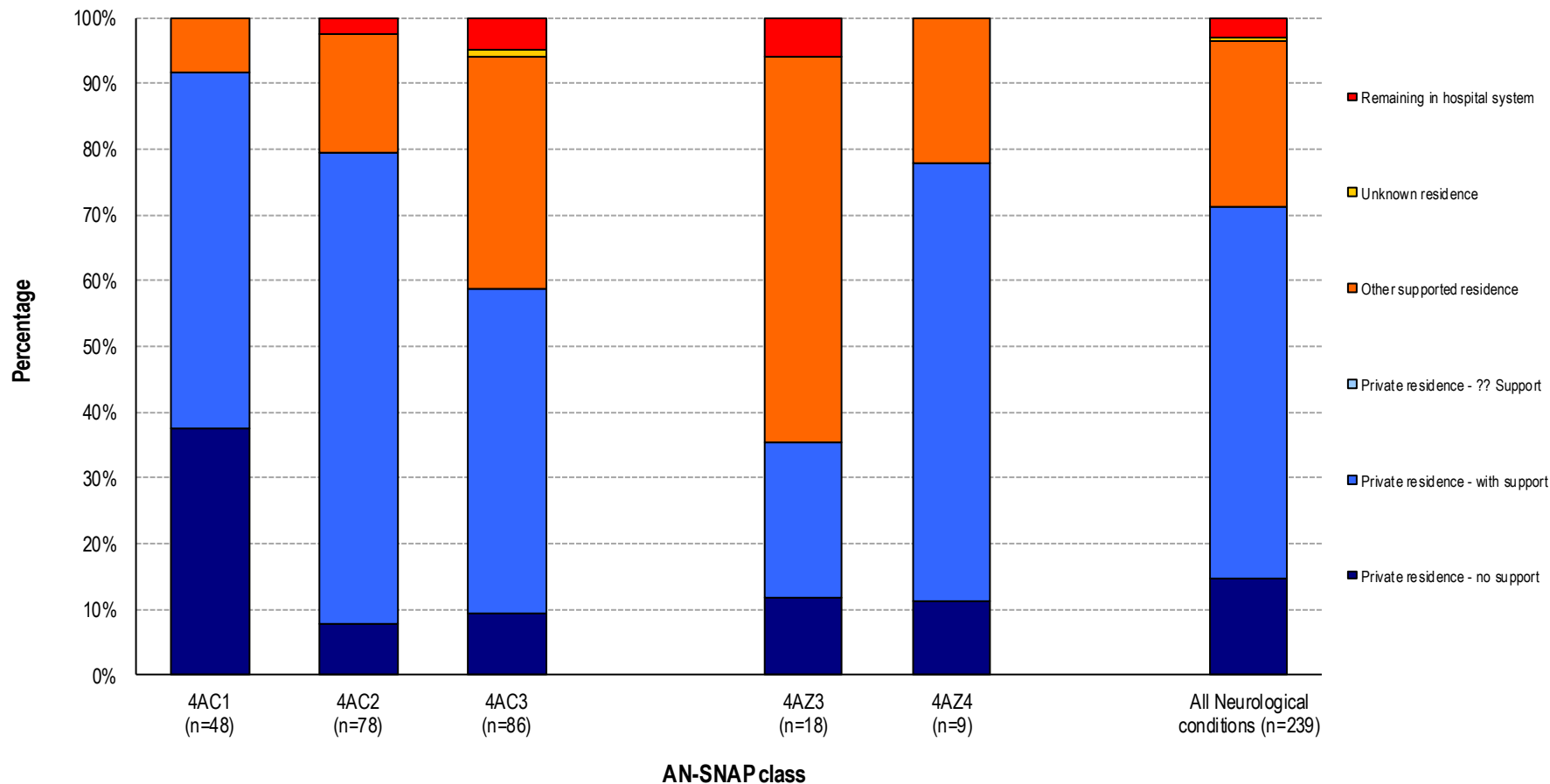
Neurological conditions episodes in 2018



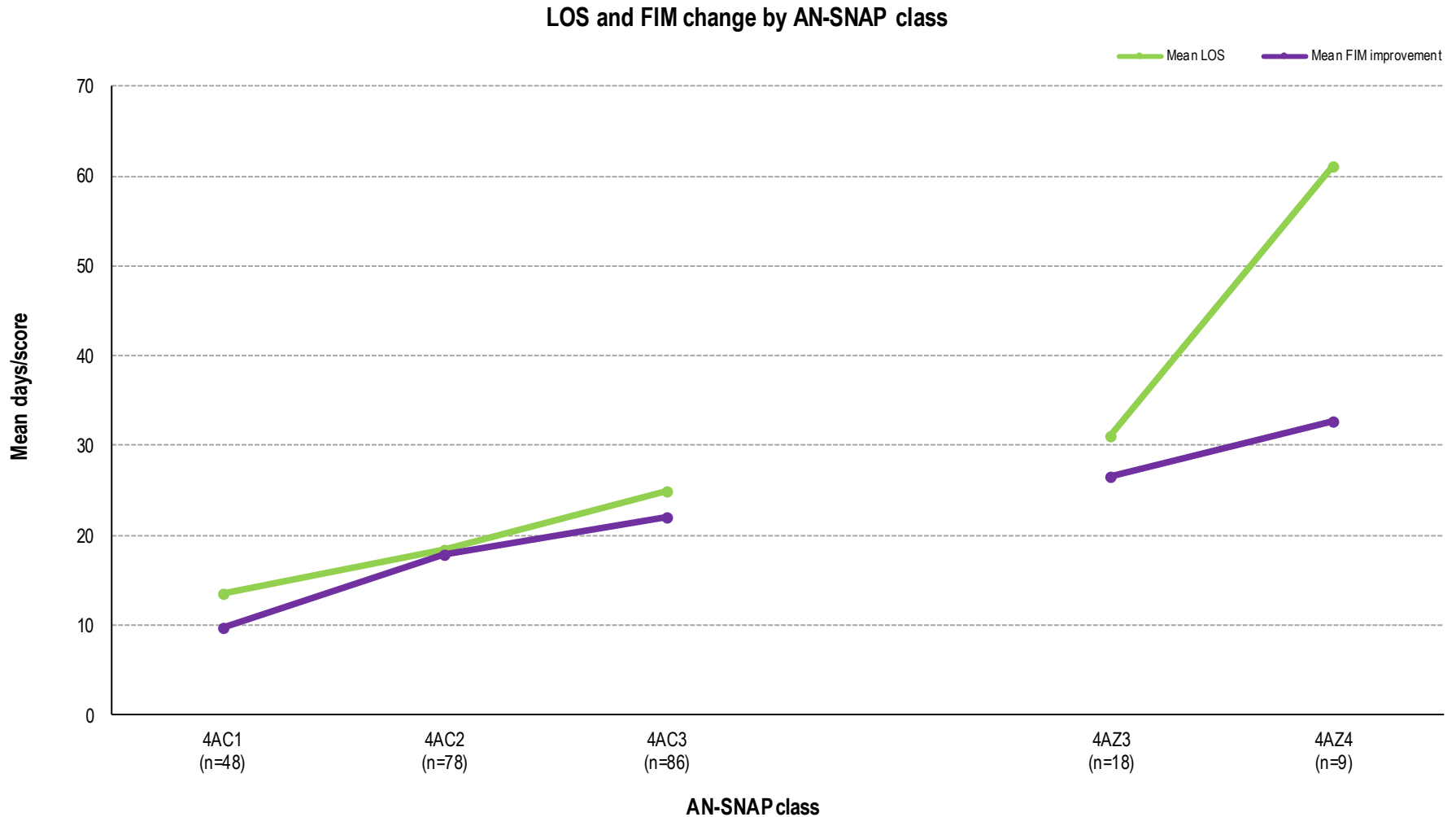
AN-SNAP class:	4AC1	4AC2	4AC3	4AZ3	4AZ4	All Neurological conditions
Number of episodes	48	78	86	18	9	239
Proportion of episodes	20.1%	32.6%	36.0%	7.5%	3.8%	100.0%
Gender (%)						
<i>Female</i>	58.3%	47.4%	51.2%	16.7%	55.6%	49.0%
<i>Male</i>	41.7%	52.6%	48.8%	83.3%	44.4%	51.0%
Age group (%)						
<i>Under 65</i>	43.8%	21.8%	27.9%	0.0%	100.0%	29.7%
<i>Over 65</i>	56.3%	78.2%	70.9%	100.0%	0.0%	69.9%
Age (Mean+95%CI)	65.1 (60.0-70.2)	72.1 (69.0-75.1)	70.2 (66.8-73.7)	78.3 (75.0-81.7)	48.7 (39.4-58.0)	69.6 (67.6-71.6)
Admission FIM (Mean+95%CI)	100.3 (97.8-102.9)	75.4 (73.3-77.4)	51.0 (48.3-53.8)	28.9 (24.5-33.3)	42.0 (38.4-45.6)	67.8 (64.7-70.9)
LOS (Mean+95%CI)	13.5 (10.5-16.5)	18.4 (15.6-21.2)	24.8 (21.1-28.6)	31.1 (20.4-41.8)	61.1 (23.5-98.8)	22.0 (19.4-24.5)
Discharge destination (%)						
<i>Discharged to community</i>	100.0%	97.4%	95.3%	94.1%	100.0%	97.0%
<i>Remaining in hospital system</i>	0.0%	2.6%	4.7%	5.9%	0.0%	3.0%
FIM change (Mean+95%CI)	9.7 (7.4-11.9)	17.8 (14.9-20.8)	22.0 (17.6-26.3)	26.6 (14.7-38.5)	32.6 (14.4-50.9)	18.7 (16.4-20.9)
FIM efficiency (FIM change/LOS)	0.7	1.0	0.9	0.9	0.5	0.8

Neurological conditions discharge destination by AN-SNAP class

Discharge destination - Neurological conditions

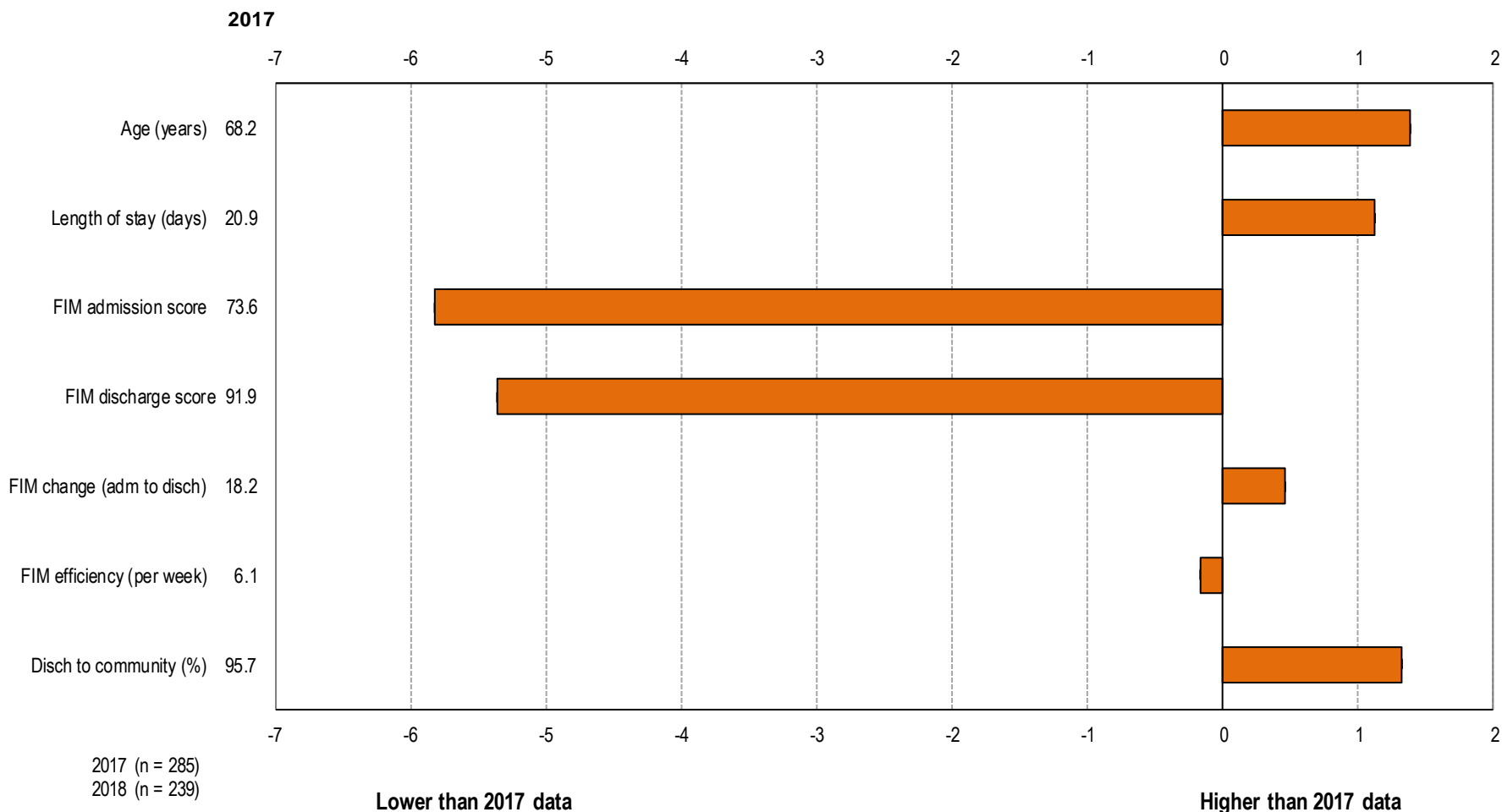


Neurological conditions LOS and FIM change by AN-SNAP class

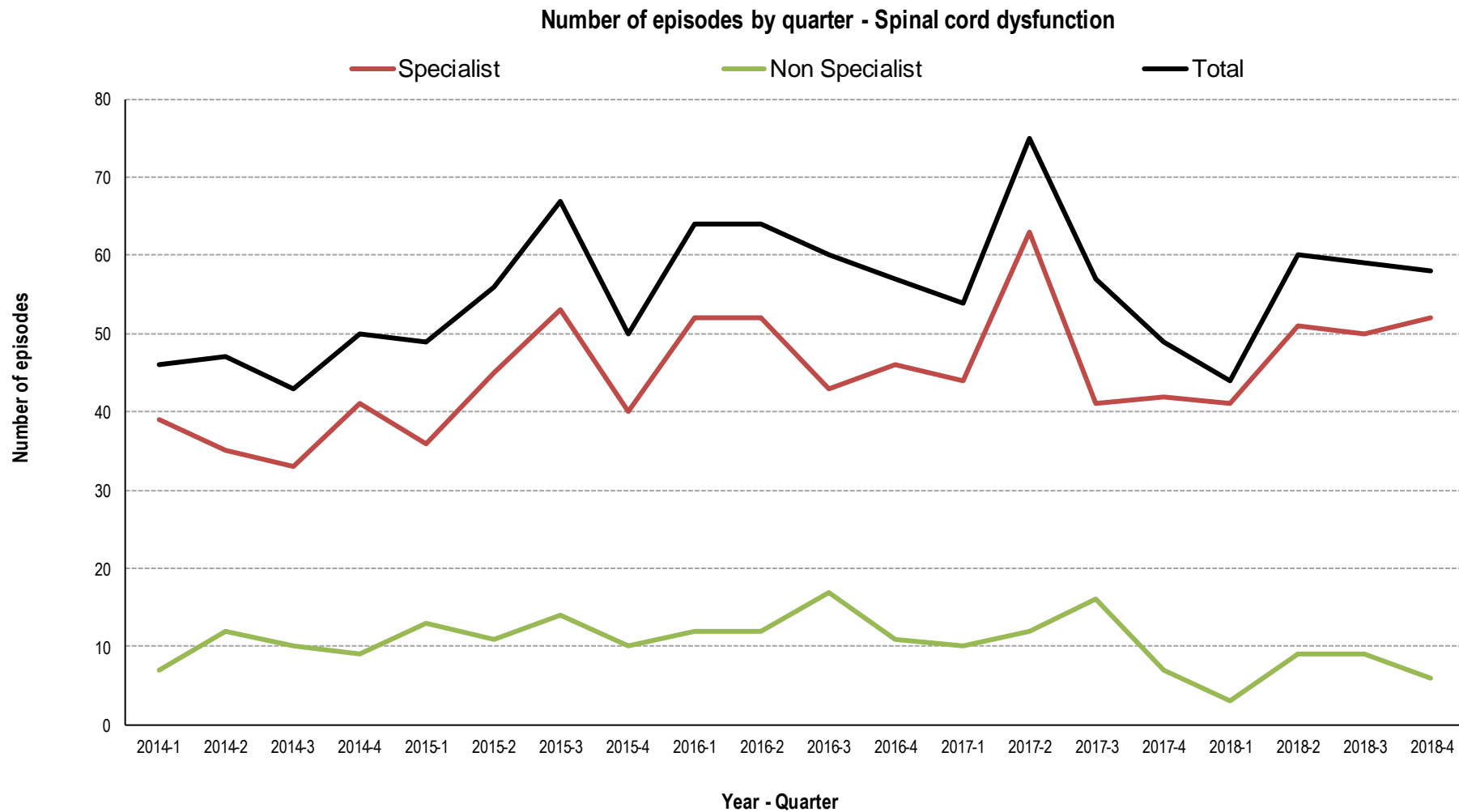


Change in outcome measures in neurological conditions, 2017 to 2018

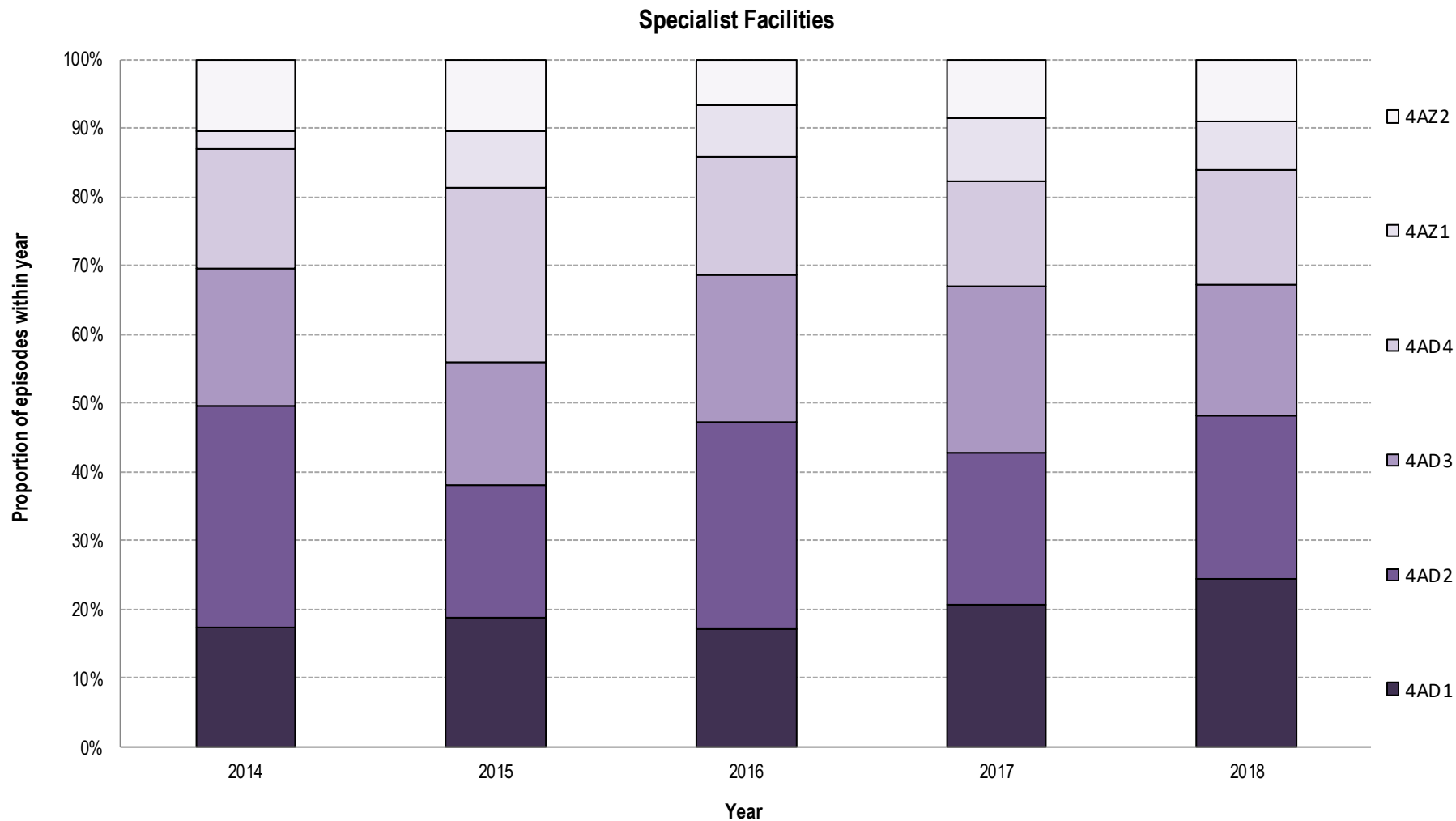
Difference from 2017 data - All Neurological conditions



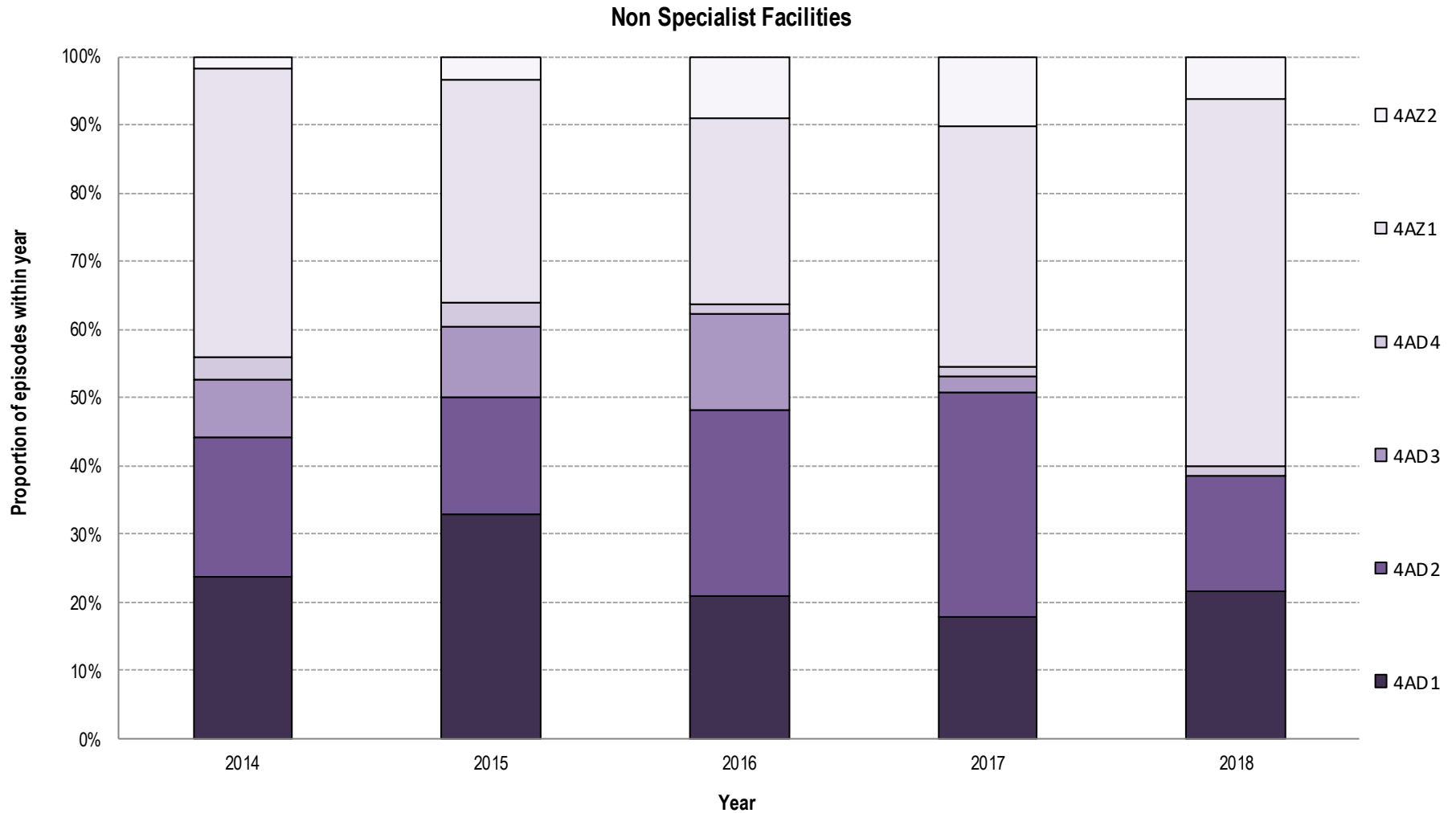
Spinal cord dysfunction episodes over time



Spinal cord dysfunction casemix over time – Specialist facilities



Spinal cord dysfunction episodes over time – Non specialist facilities



Spinal cord dysfunction episodes in 2018 - Specialist facilities



AN-SNAP class:	4AD1	4AD2	4AD3	4AD4	4AZ1	4AZ2	All Spinal cord dysfunction
Number of episodes	38	37	30	26	37	25	194
Proportion of episodes	19.6%	19.1%	15.5%	13.4%	19.1%	12.9%	100.0%
Gender (%)							
<i>Female</i>	28.9%	32.4%	30.0%	23.1%	21.6%	12.0%	25.3%
<i>Male</i>	71.1%	67.6%	70.0%	76.9%	78.4%	88.0%	74.7%
Age group (%)							
<i>Under 65</i>	63.2%	45.9%	100.0%	100.0%	45.9%	100.0%	71.6%
<i>Over 65</i>	36.8%	54.1%	0.0%	0.0%	54.1%	0.0%	28.4%
Age (Mean+95%CI)	62.8 (60.2-65.5)	67.5 (64.1-70.8)	34.1 (30.1-38.1)	27.2 (23.3-31.1)	66.9 (63.6-70.1)	29.3 (25.7-32.9)	51.0 (48.1-53.8)
Admission FIM (Mean+95%CI)	98.7 (94.1-103.2)	62.4 (59.9-64.9)	95.8 (89.8-101.8)	59.7 (57.4-62.0)	44.0 (41.5-46.6)	45.7 (44.2-47.2)	69.0 (65.4-72.5)
LOS (Mean+95%CI)	31.9 (24.9-39.0)	57.1 (48.1-66.1)	32.1 (20.2-44.1)	61.2 (48.6-73.8)	89.1 (71.0-107.1)	91.6 (74.4-108.9)	59.2 (53.0-65.5)
Discharge destination (%)							
<i>Discharged to community</i>	100.0%	97.3%	96.7%	92.3%	94.6%	100.0%	96.4%
<i>Remaining in hospital system</i>	0.0%	2.7%	3.3%	7.7%	5.4%	0.0%	3.6%
FIM change (Mean+95%CI)	17.9 (13.9-21.9)	30.1 (23.5-36.6)	21.0 (16.4-25.7)	43.7 (36.6-50.7)	26.4 (19.0-33.8)	30.4 (20.8-40.0)	27.2 (24.4-30.1)
FIM efficiency (FIM change/LOS)	0.6	0.5	0.7	0.7	0.3	0.3	0.5

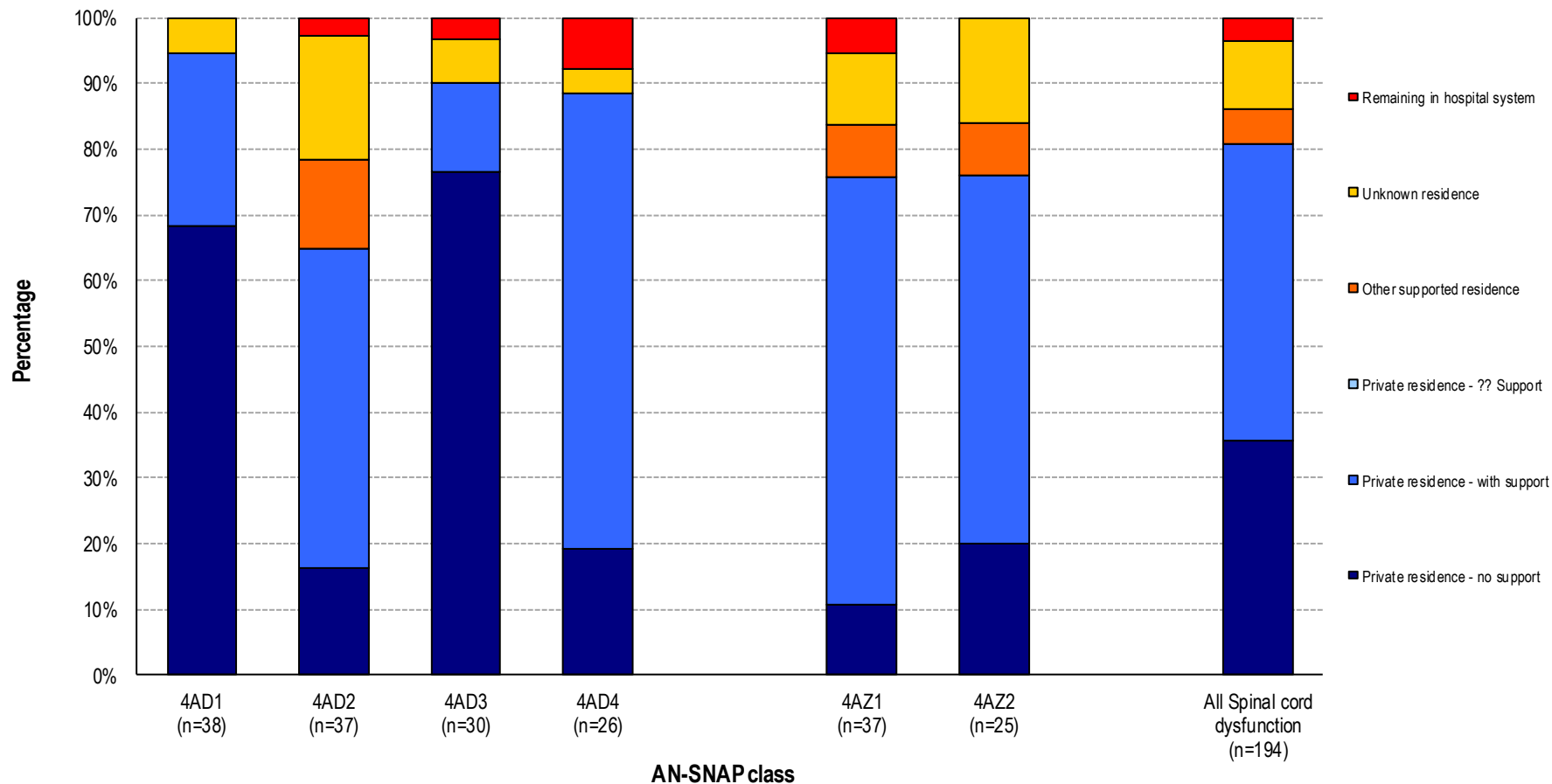
Spinal cord dysfunction episodes in 2018 - Non specialist facilities



AN-SNAP class:	4AD1	4AD2	4AD3	4AD4	4AZ1	4AZ2	All Spinal cord dysfunction
Number of episodes	14	11	0	1	1	0	27
Proportion of episodes	51.9%	40.7%	n < 5	n < 5	n < 5	n < 5	100.0%
Gender (%)							
<i>Female</i>	35.7%	9.1%	n < 5	n < 5	n < 5	n < 5	25.9%
<i>Male</i>	64.3%	90.9%	n < 5	n < 5	n < 5	n < 5	74.1%
Age group (%)							
<i>Under 65</i>	28.6%	9.1%	n < 5	n < 5	n < 5	n < 5	22.2%
<i>Over 65</i>	71.4%	90.9%	n < 5	n < 5	n < 5	n < 5	77.8%
Age (Mean+95%CI)	70.3 (63.8-76.8)	74.6 (69.8-79.5)	n < 5	n < 5	n < 5	n < 5	71.2 (66.3-76.1)
Admission FIM (Mean+95%CI)	89.2 (81.5-96.9)	55.4 (47.8-62.9)	n < 5	n < 5	n < 5	n < 5	72.6 (64.3-81.0)
LOS (Mean+95%CI)	16.8 (9.8-23.8)	42.8 (17.6-68.1)	n < 5	n < 5	n < 5	n < 5	31.7 (19.1-44.4)
Discharge destination (%)							
<i>Discharged to community</i>	100.0%	91.7%	n < 5	n < 5	n < 5	n < 5	79.4%
<i>Remaining in hospital system</i>	0.0%	8.3%	n < 5	n < 5	n < 5	n < 5	20.6%
FIM change (Mean+95%CI)	12.1 (4.3-19.8)	21.4 (9.4-33.3)	n < 5	n < 5	n < 5	n < 5	16.1 (9.5-22.7)
FIM efficiency (FIM change/LOS)	0.7	0.5	n < 5	n < 5	n < 5	n < 5	0.5

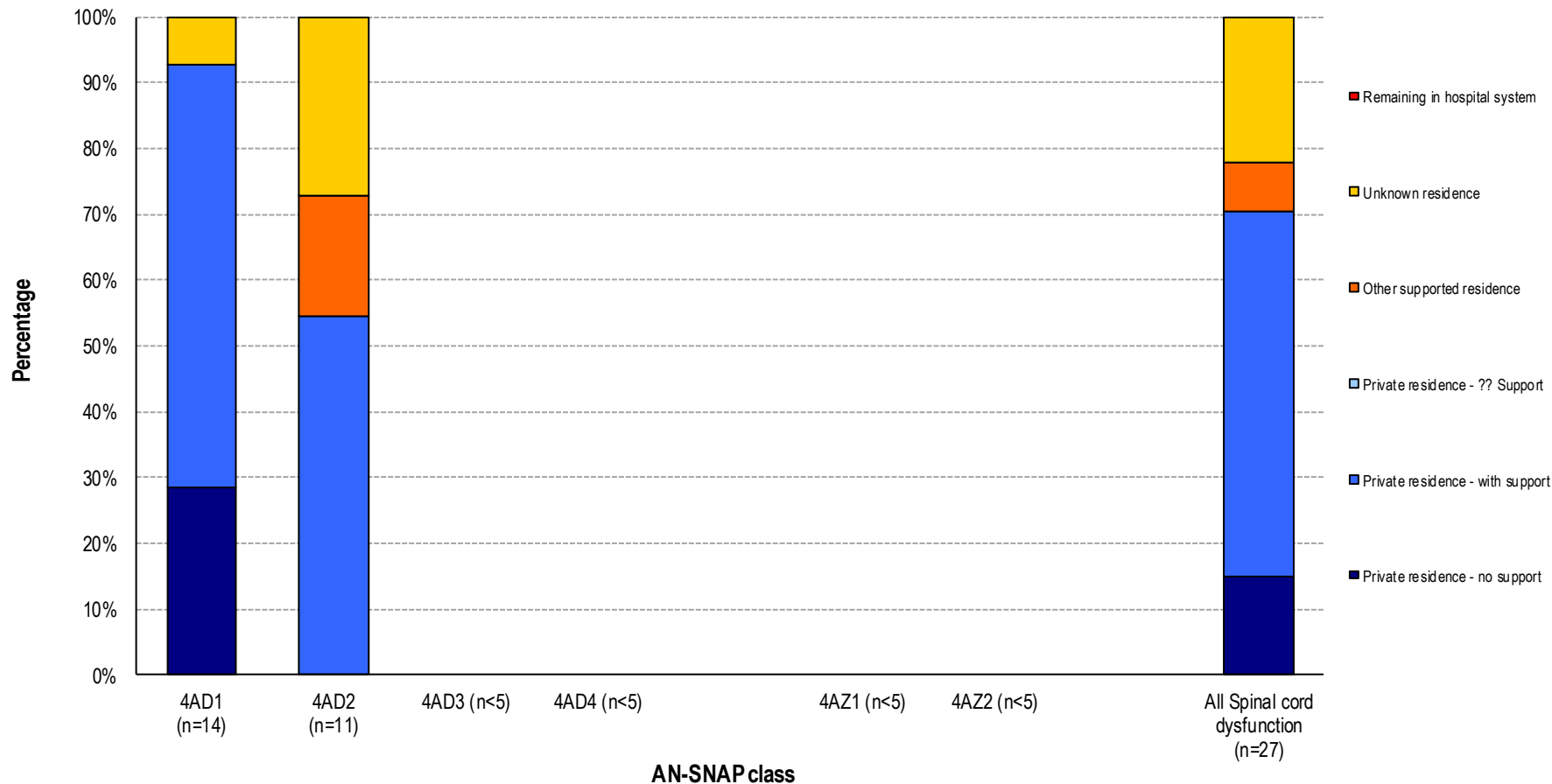
Spinal cord dysfunction discharge destination by AN-SNAP class – Specialist facilities

Specialist - Discharge destination - Spinal cord dysfunction



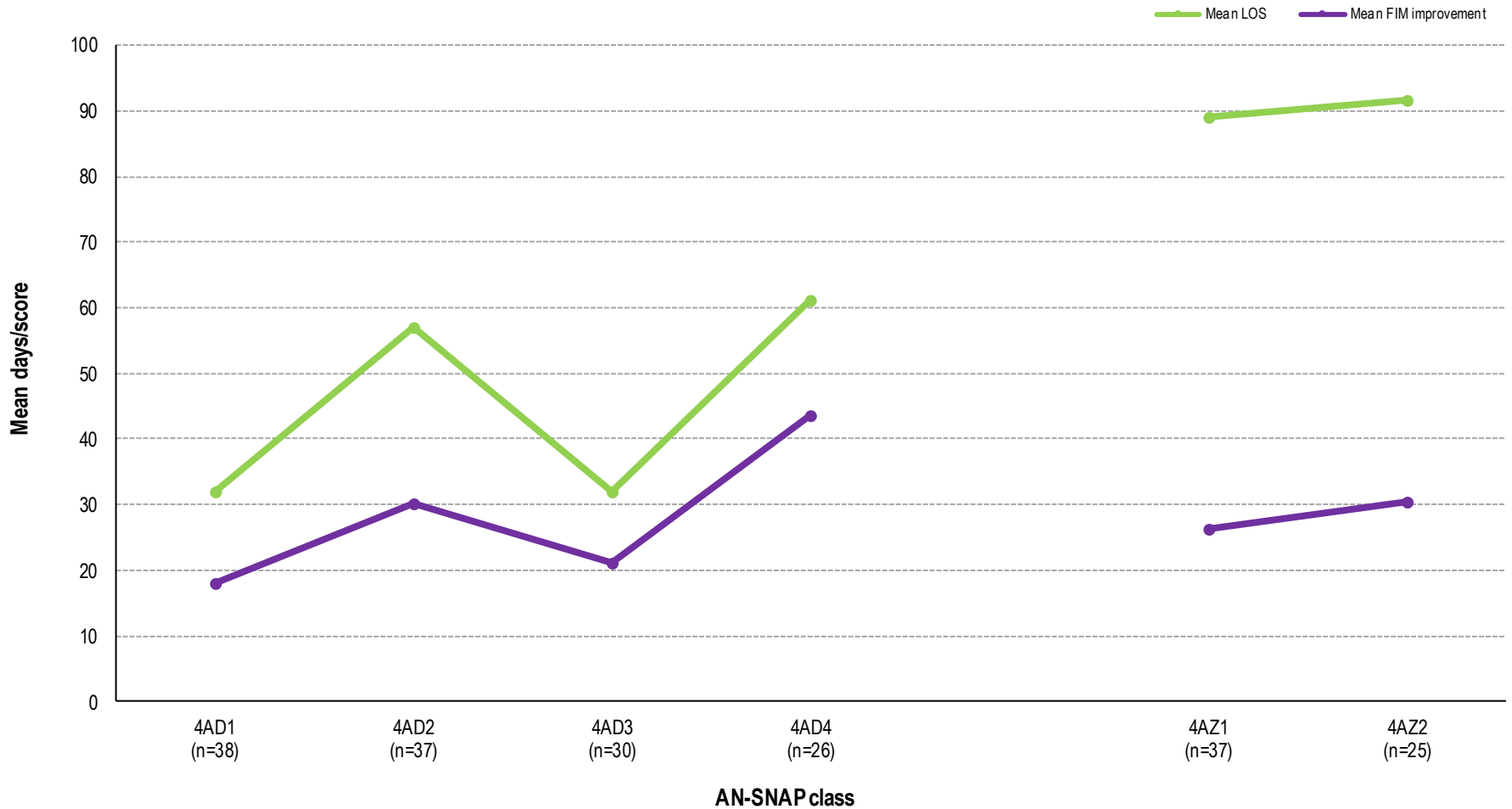
Spinal cord dysfunction discharge destination by AN-SNAP class – Non specialist facilities

Non specialist - Discharge destination - Spinal cord dysfunction



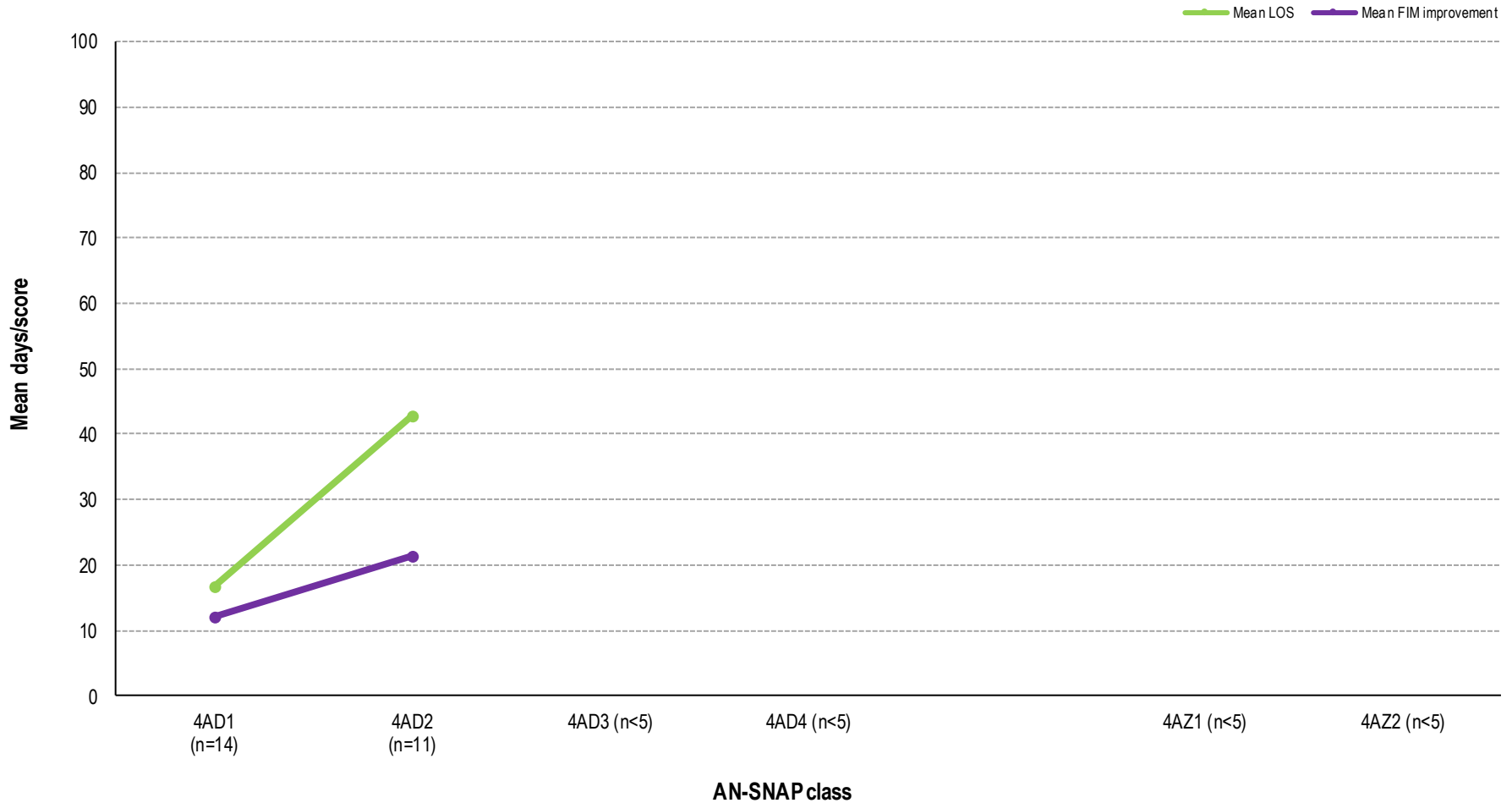
Spinal cord dysfunction LOS and FIM change by AN-SNAP class – Specialist facilities

Specialist - LOS and FIM change by AN-SNAP class



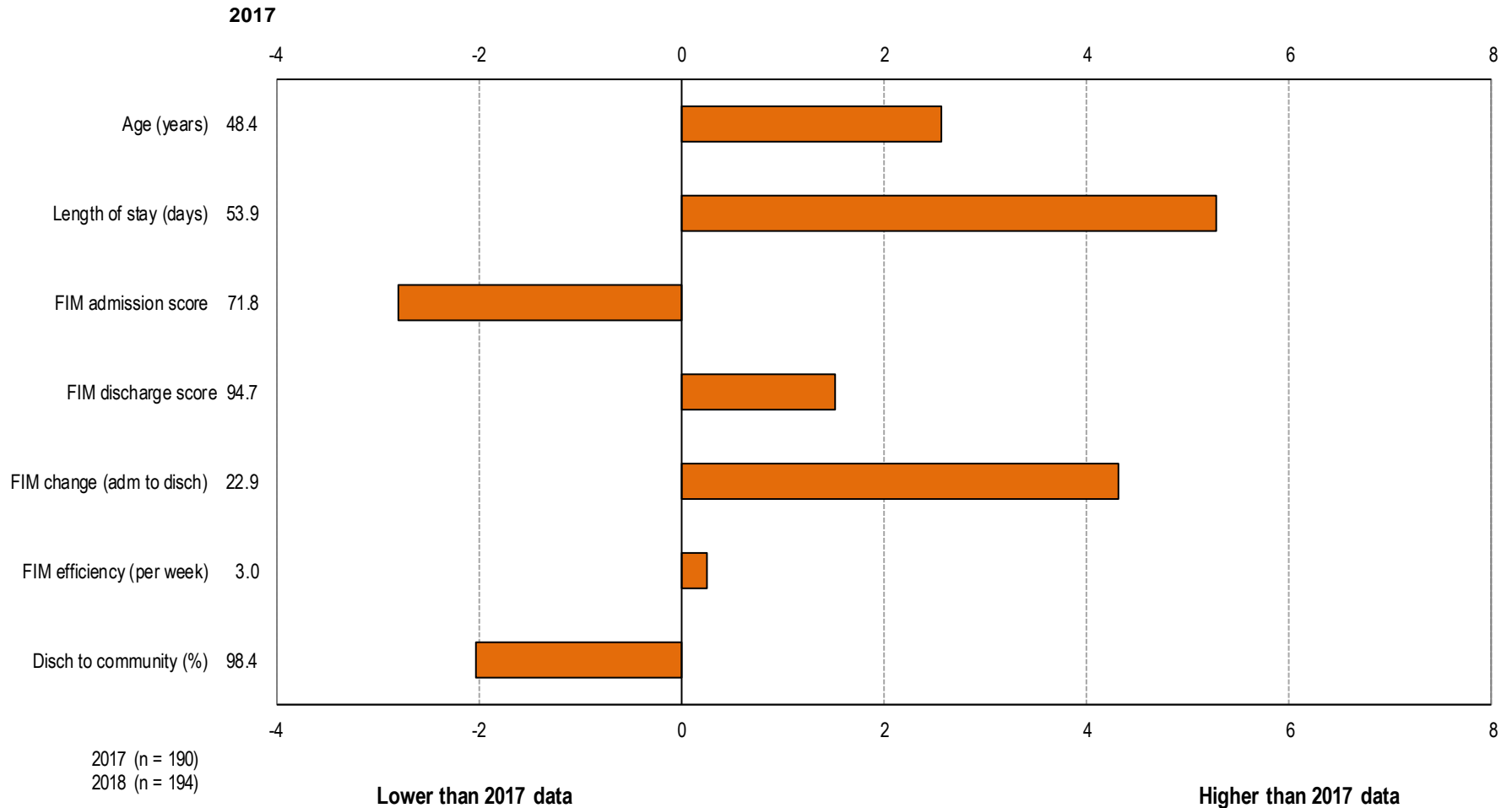
Spinal cord dysfunction LOS and FIM change by AN-SNAP class – Non specialist facilities

Non specialist - LOS and FIM change by AN-SNAP class



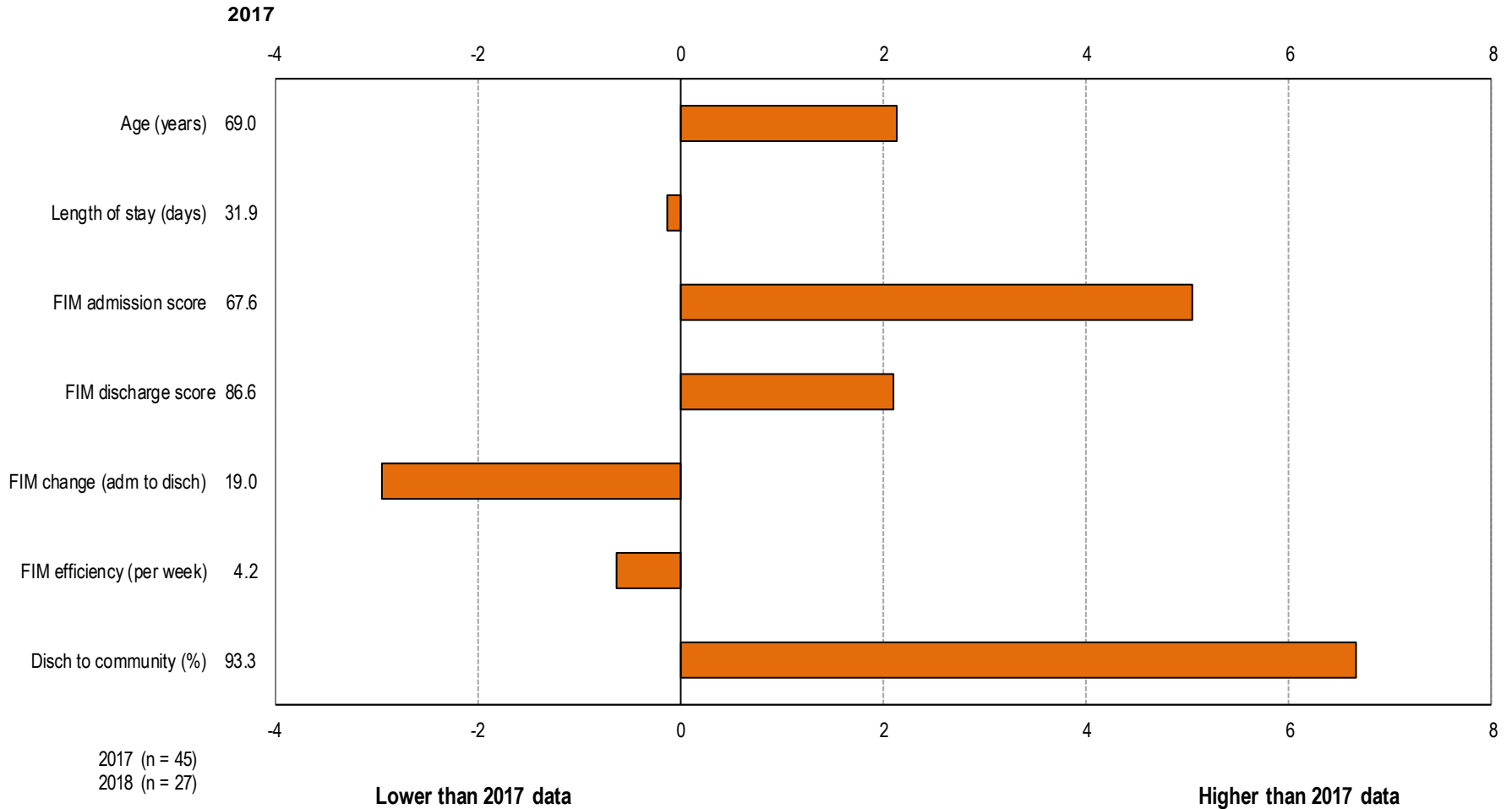
Change in outcome measures in spinal cord dysfunction, 2017 to 2018 - Specialist facilities

Specialist - Difference from 2017 data - All Spinal cord dysfunction

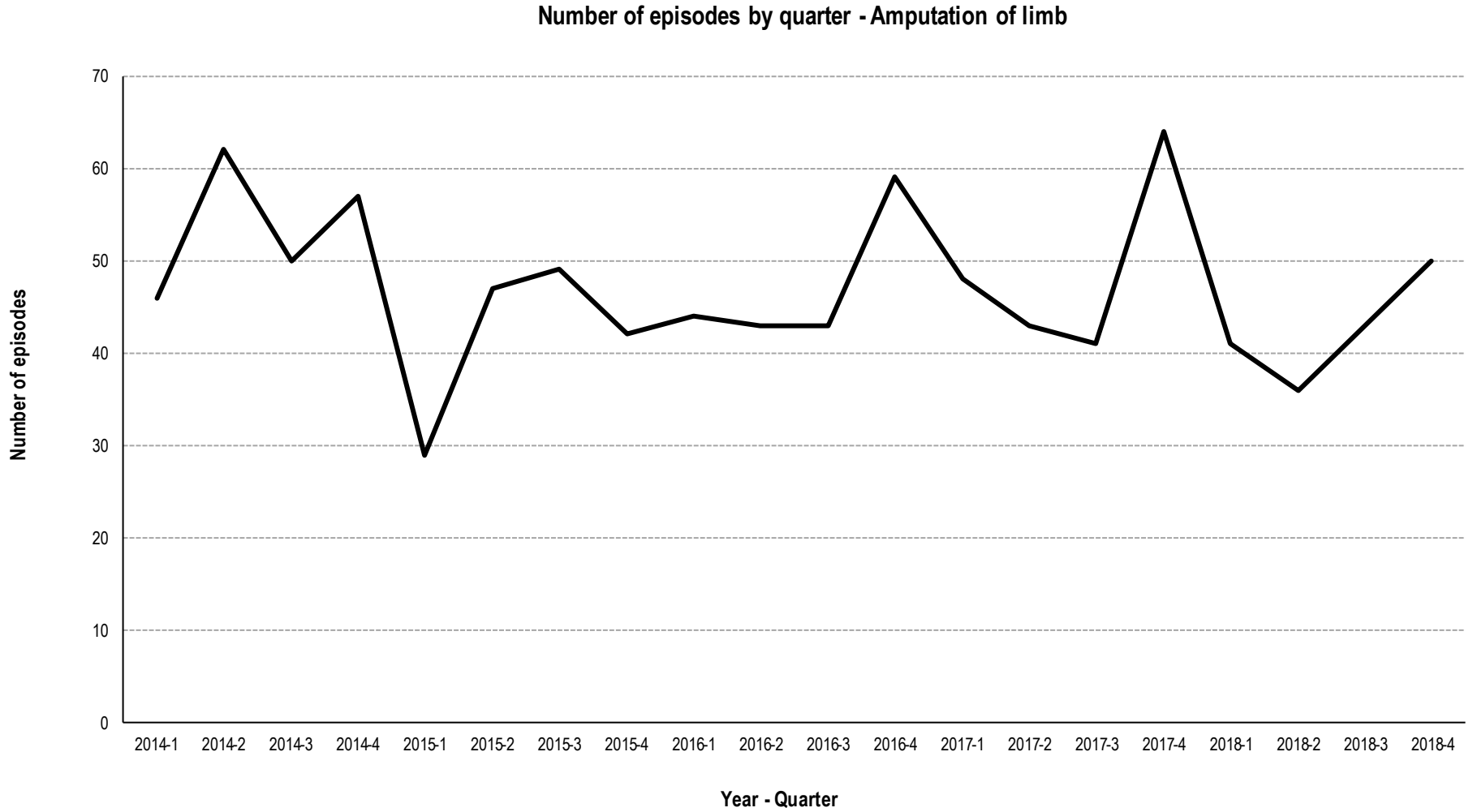


Change in outcome measures in spinal cord dysfunction, 2017 to 2018 - Non specialist facilities

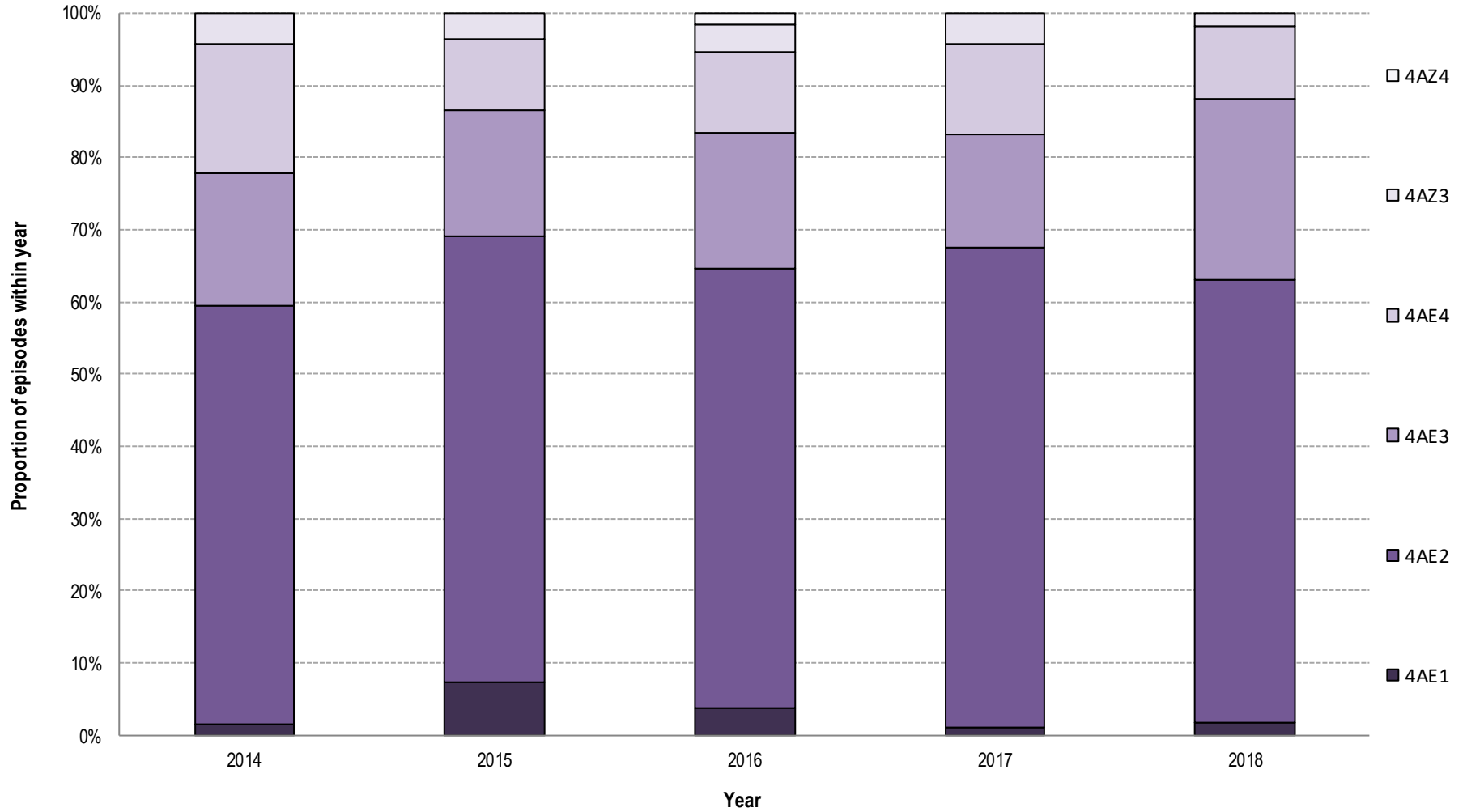
Non specialist - Difference from 2017 data - All Spinal cord dysfunction



Amputation episodes over time



Amputation casemix over time



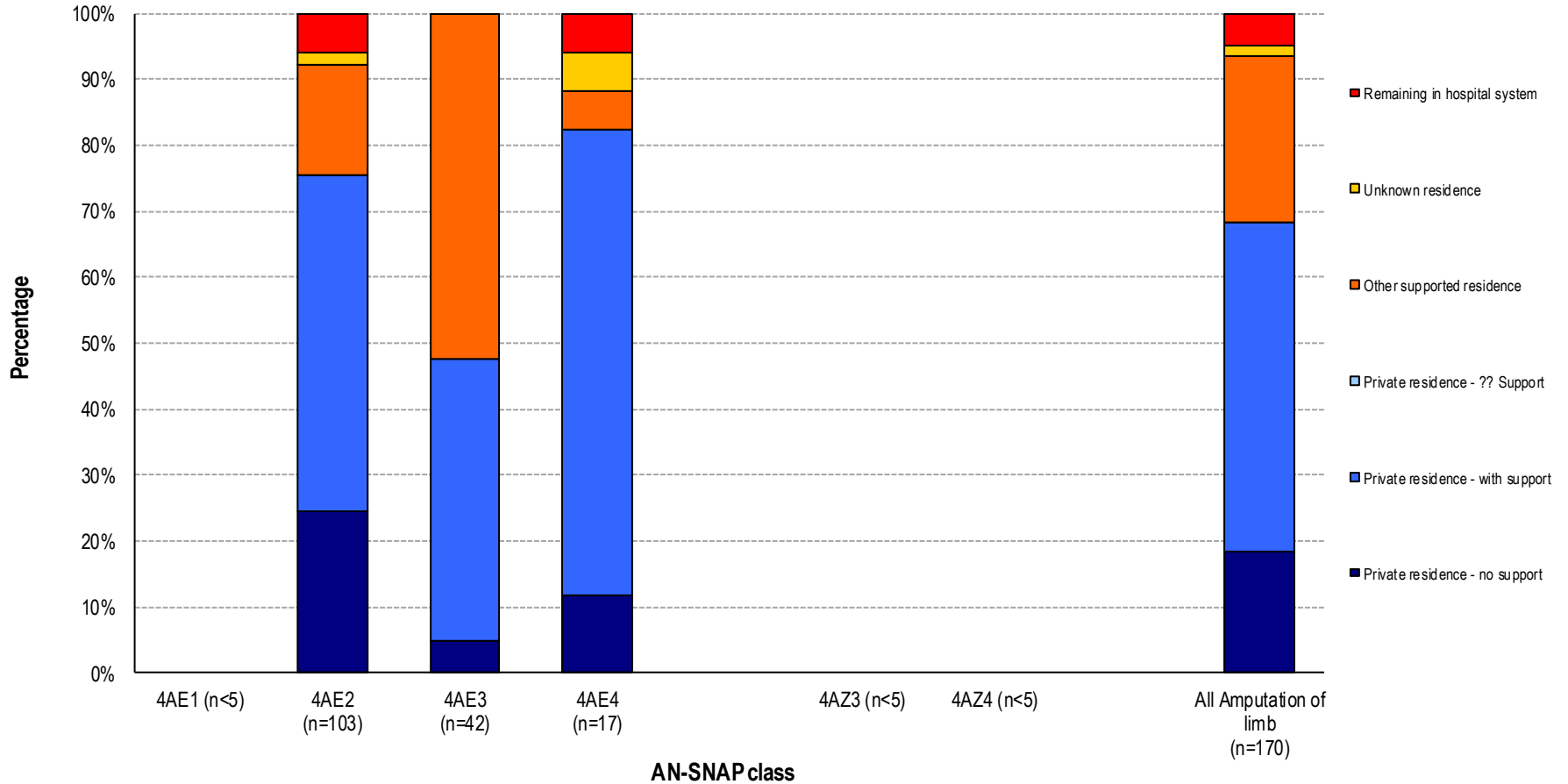
Amputation episodes in 2018



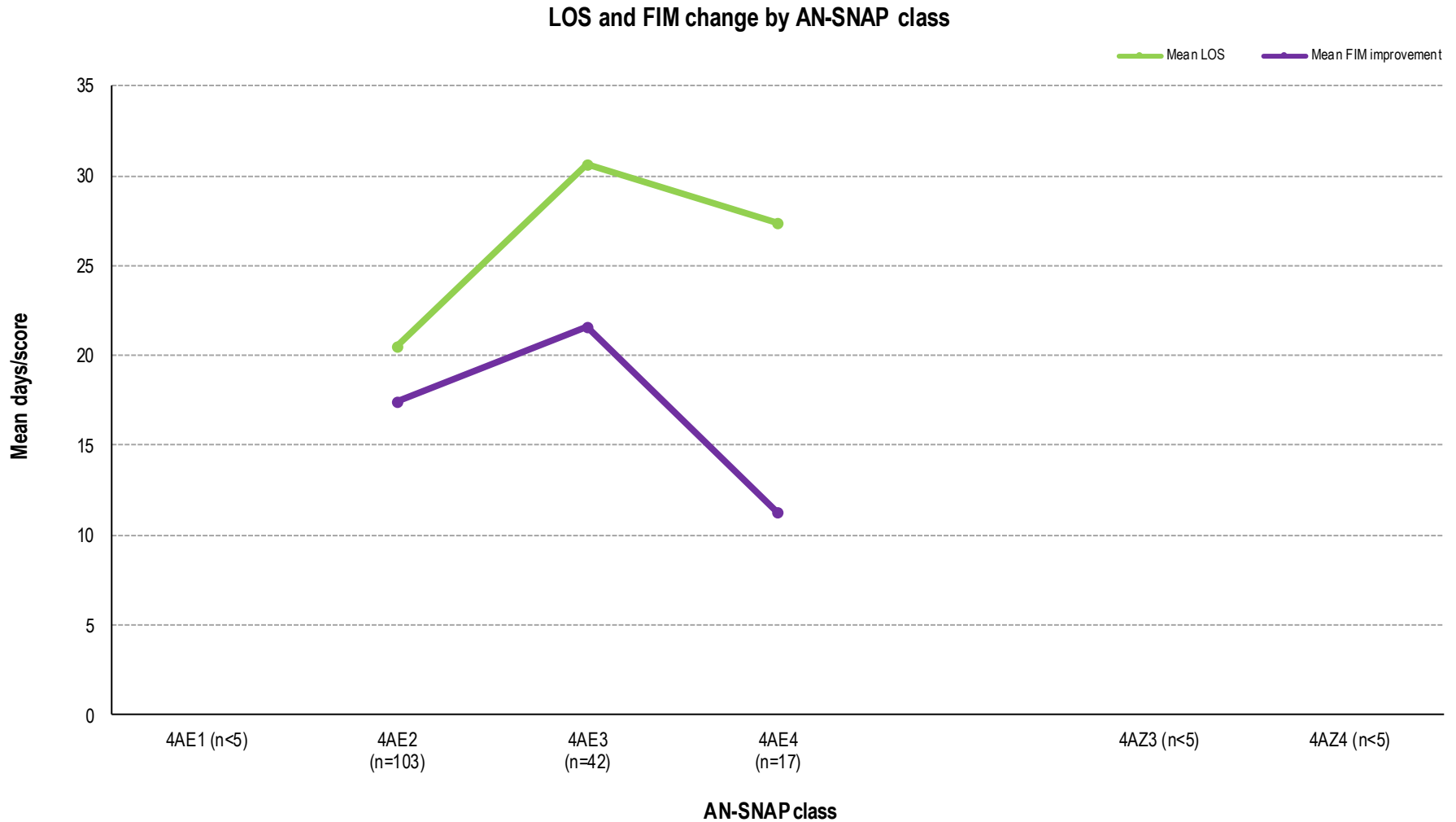
AN-SNAP class:	4AE1	4AE2	4AE3	4AE4	4AZ3	4AZ4	All Amputation of limb
Number of episodes	3	103	42	17	3	0	170
Proportion of episodes	n < 5	60.6%	24.7%	10.0%	n < 5	n < 5	100.0%
Gender (%)							
<i>Female</i>	n < 5	28.2%	50.0%	41.2%	n < 5	n < 5	34.1%
<i>Male</i>	n < 5	71.8%	50.0%	58.8%	n < 5	n < 5	65.9%
Age group (%)							
<i>Under 65</i>	n < 5	28.2%	21.4%	100.0%	n < 5	n < 5	32.9%
<i>Over 65</i>	n < 5	71.8%	78.6%	0.0%	n < 5	n < 5	65.9%
Age (Mean+95%CI)	n < 5	71.4 (69.5-73.4)	74.3 (71.2-77.4)	47.9 (45.6-50.1)	n < 5	n < 5	69.8 (67.9-71.6)
Admission FIM (Mean+95%CI)	n < 5	83.1 (80.4-85.8)	51.0 (48.1-53.8)	90.4 (82.5-98.3)	n < 5	n < 5	75.1 (71.9-78.3)
LOS (Mean+95%CI)	n < 5	20.5 (18.3-22.8)	30.7 (26.6-34.8)	27.4 (22.1-32.7)	n < 5	n < 5	24.0 (22.0-26.1)
Discharge destination (%)							
<i>Discharged to community</i>	n < 5	94.1%	100.0%	94.1%	n < 5	n < 5	95.2%
<i>Remaining in hospital system</i>	n < 5	5.9%	0.0%	5.9%	n < 5	n < 5	4.8%
FIM change (Mean+95%CI)	n < 5	17.5 (15.5-19.5)	21.6 (15.7-27.5)	11.3 (7.4-15.2)	n < 5	n < 5	17.8 (15.7-19.9)
FIM efficiency (FIM change/LOS)	n < 5	0.8	0.7	0.4	n < 5	n < 5	0.7

Amputation discharge destination by AN-SNAP class

Discharge destination - Amputation of limb

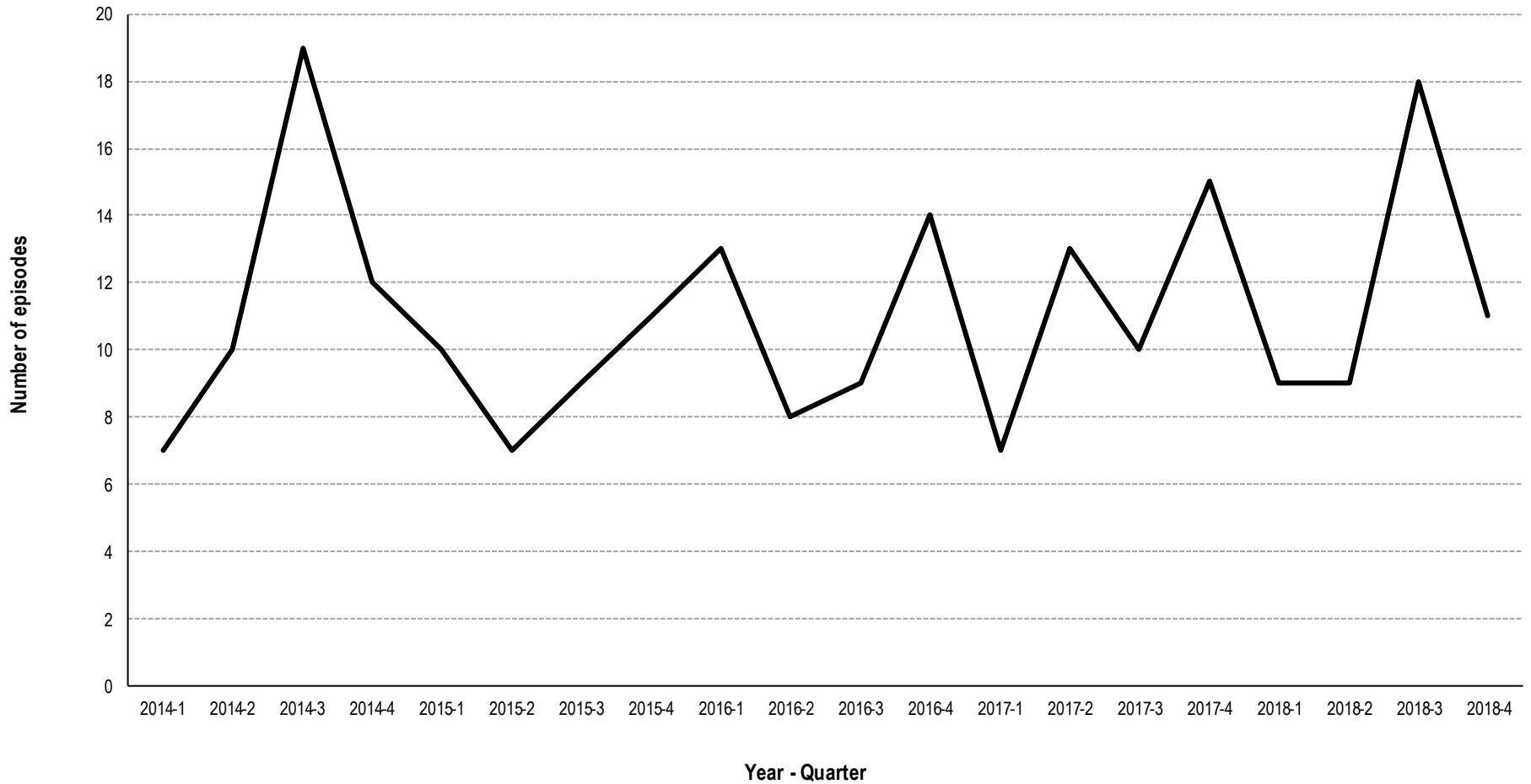


Amputation LOS and FIM change by AN-SNAP class

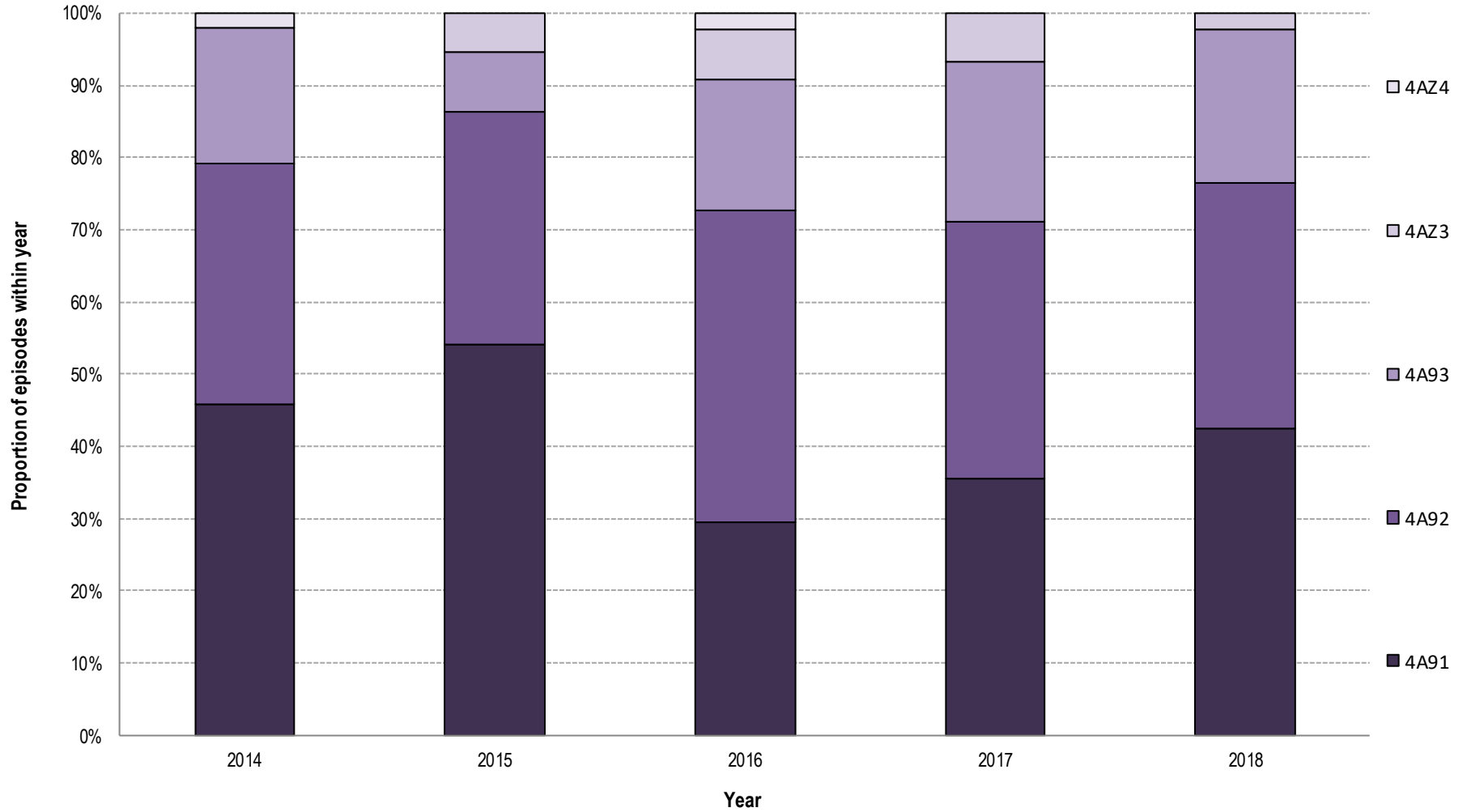


Arthritis episodes over time

Number of episodes by quarter - Arthritis



Arthritis casemix over time



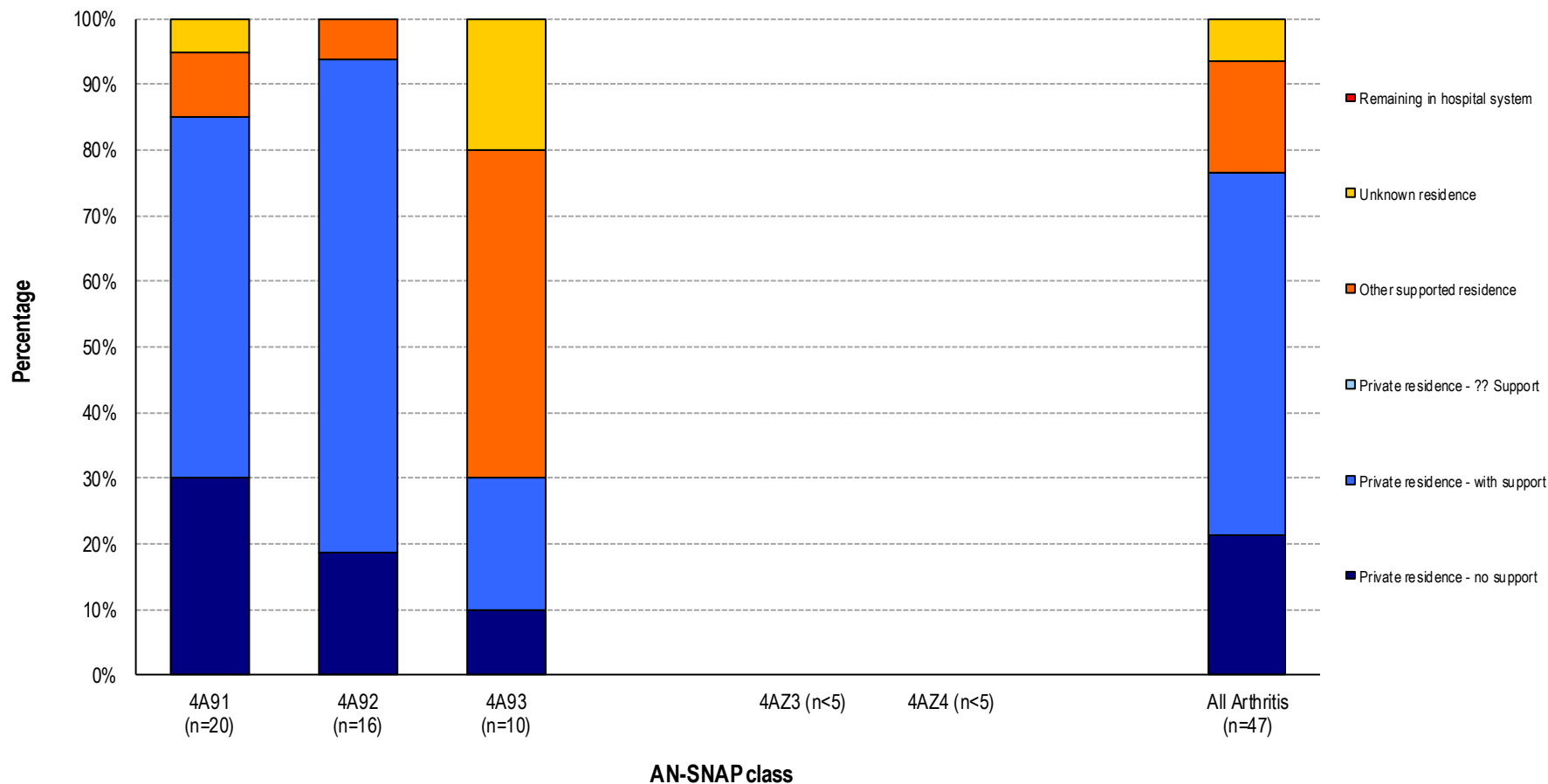
Arthritis episodes in 2018



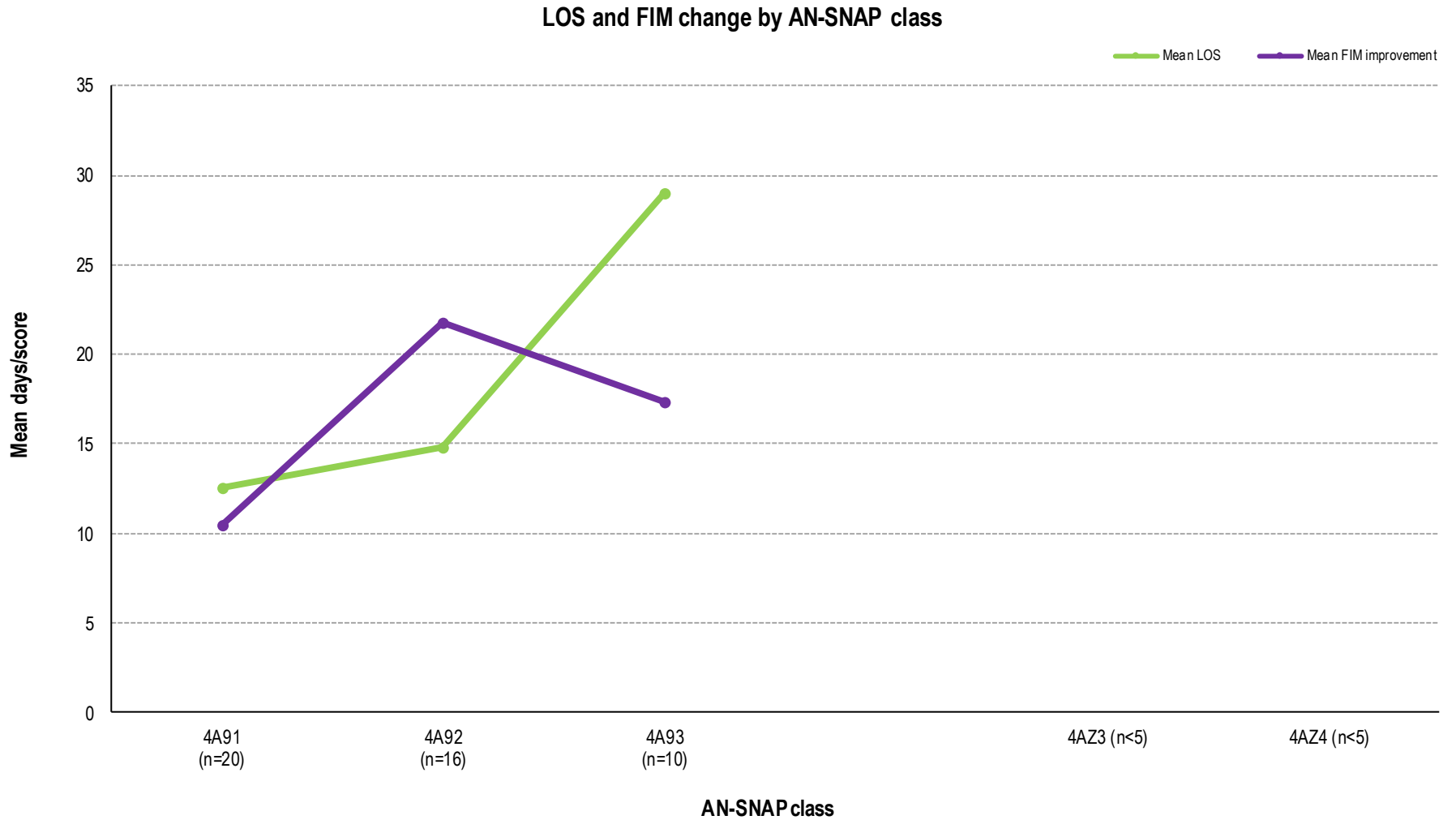
AN-SNAP class:	4A91	4A92	4A93	4AZ3	4AZ4	All Arthritis
Number of episodes	20	16	10	1	0	47
Proportion of episodes	42.6%	34.0%	21.3%	n < 5	n < 5	100.0%
Gender (%)						
<i>Female</i>	50.0%	68.8%	70.0%	n < 5	n < 5	61.7%
<i>Male</i>	50.0%	31.3%	30.0%	n < 5	n < 5	38.3%
Age group (%)						
<i>Under 65</i>	20.0%	6.3%	0.0%	n < 5	n < 5	10.6%
<i>Over 65</i>	80.0%	93.8%	100.0%	n < 5	n < 5	89.4%
Age (Mean+95%CI)	73.7 (67.5-79.9)	78.9 (74.8-83.1)	79.2 (73.6-84.8)	n < 5	n < 5	76.7 (73.4-79.9)
Admission FIM (Mean+95%CI)	92.9 (88.2-97.7)	74.3 (70.0-78.6)	52.0 (45.6-58.4)	n < 5	n < 5	77.1 (71.6-82.6)
LOS (Mean+95%CI)	12.6 (7.4-17.8)	14.8 (10.3-19.4)	29.0 (19.3-38.7)	n < 5	n < 5	16.6 (12.8-20.3)
Discharge destination (%)						
<i>Discharged to community</i>	100.0%	100.0%	100.0%	n < 5	n < 5	100.0%
<i>Remaining in hospital system</i>	0.0%	0.0%	0.0%	n < 5	n < 5	0.0%
FIM change (Mean+95%CI)	10.5 (5.5-15.4)	21.8 (14.0-29.5)	17.3 (10.1-24.6)	n < 5	n < 5	16.3 (12.3-20.3)
FIM efficiency (FIM change/LOS)	0.8	1.5	0.6	n < 5	n < 5	1.0

Arthritis discharge destination by AN-SNAP class

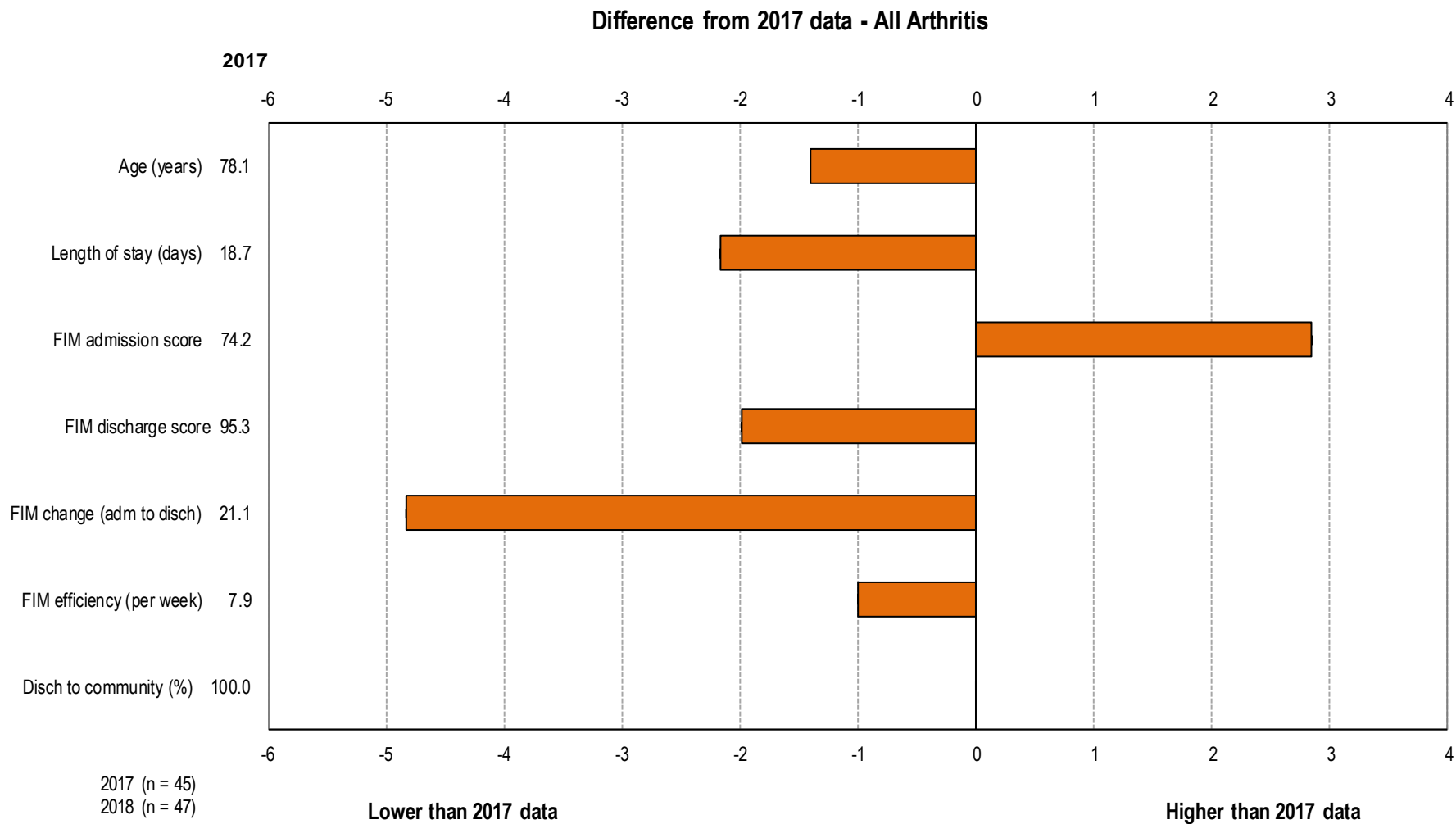
Discharge destination - Arthritis



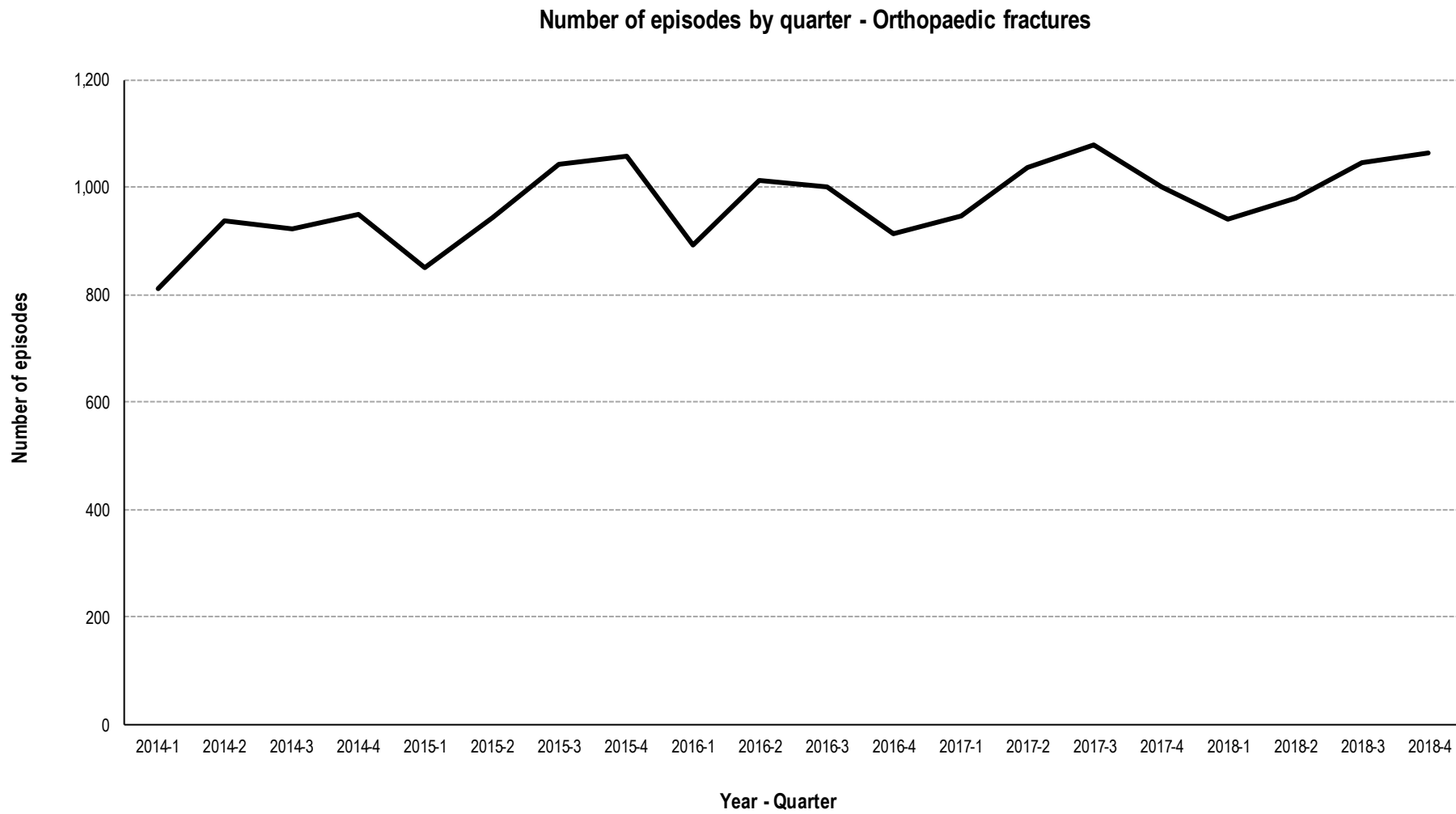
Arthritis LOS and FIM change by AN-SNAP class



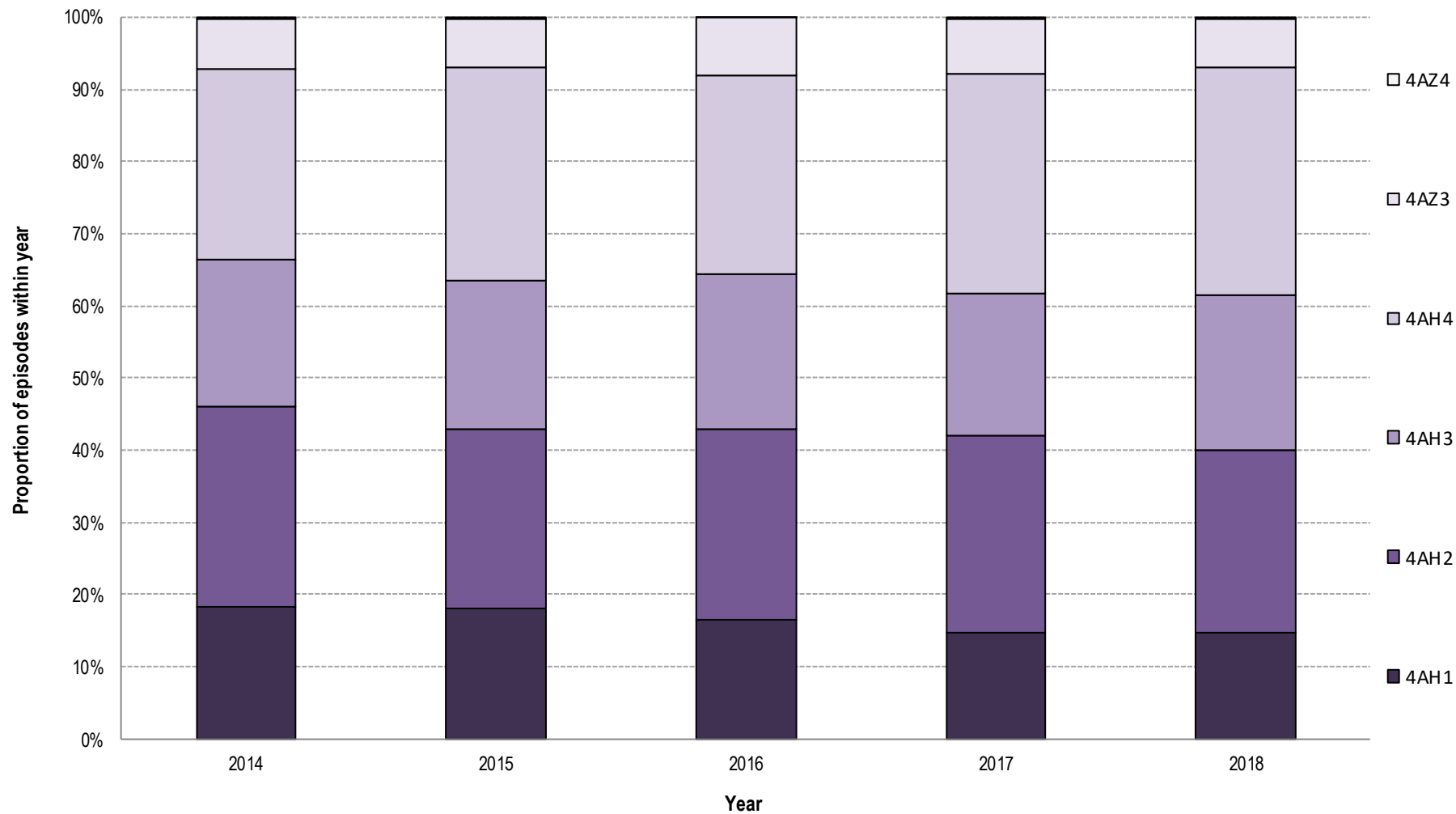
Change in outcome measures in arthritis, 2017 to 2018



Orthopaedic fracture episodes over time



Orthopaedic fracture casemix over time



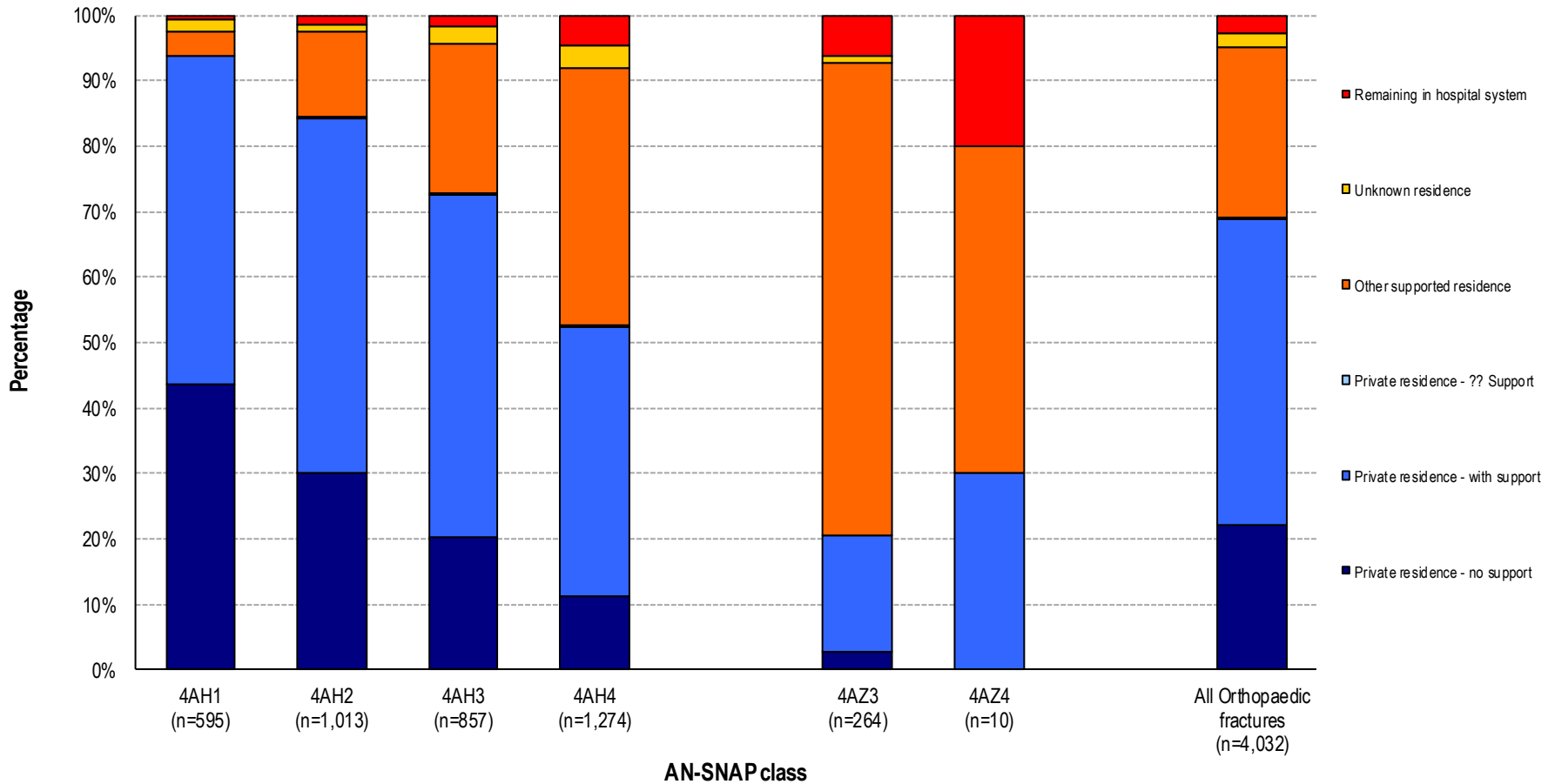
Orthopaedic fracture episodes in 2018



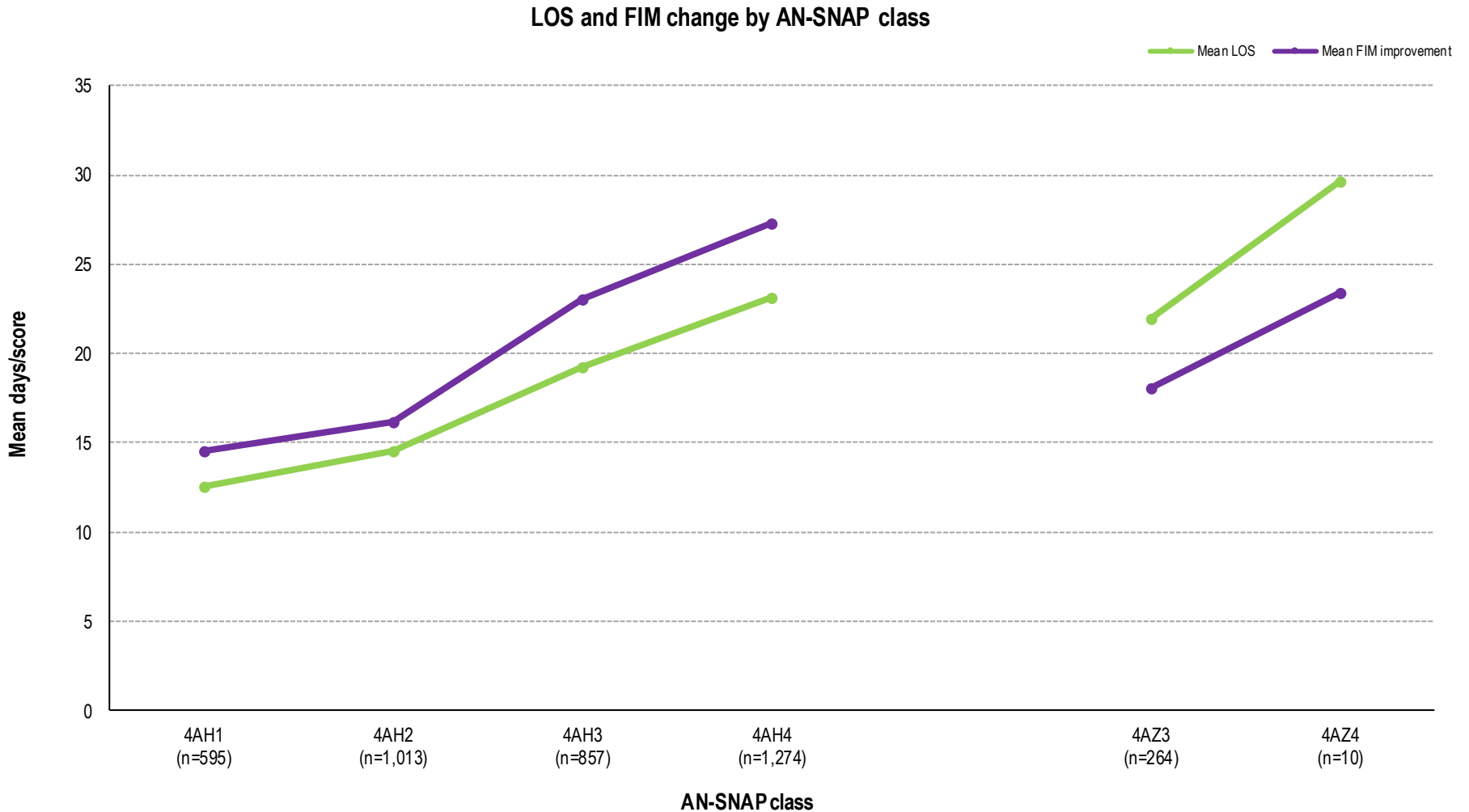
AN-SNAP class:	4AH1	4AH2	4AH3	4AH4	4AZ3	4AZ4	All Orthopaedic fractures
Number of episodes	595	1,013	857	1,274	264	10	4,032
Proportion of episodes	14.8%	25.1%	21.3%	31.6%	6.5%	0.2%	100.0%
Gender (%)							
<i>Female</i>	72.3%	72.1%	73.3%	73.7%	64.8%	50.0%	72.4%
<i>Male</i>	27.7%	27.9%	26.7%	26.3%	35.2%	50.0%	27.6%
Age group (%)							
<i>Under 65</i>	9.4%	3.6%	4.3%	3.1%	0.0%	100.0%	4.4%
<i>Over 65</i>	89.2%	96.2%	94.6%	96.3%	100.0%	0.0%	94.8%
Age (Mean+95%CI)	78.2 (77.3-79.1)	82.1 (81.5-82.7)	83.6 (83.0-84.2)	84.1 (83.6-84.6)	86.0 (85.1-86.9)	52.0 (47.6-56.4)	82.7 (82.3-83.0)
Admission FIM (Mean+95%CI)	95.6 (94.9-96.3)	83.2 (82.6-83.8)	68.5 (68.0-69.1)	51.4 (50.8-52.0)	29.2 (28.1-30.2)	30.1 (22.8-37.4)	68.5 (67.8-69.2)
LOS (Mean+95%CI)	12.5 (11.2-13.9)	14.5 (14.0-15.1)	19.3 (18.5-20.0)	23.1 (22.3-23.9)	22.0 (20.3-23.6)	29.6 (12.5-46.7)	18.5 (18.1-18.9)
Discharge destination (%)							
<i>Discharged to community</i>	99.5%	98.7%	98.4%	95.4%	94.0%	80.0%	97.4%
<i>Remaining in hospital system</i>	0.5%	1.3%	1.6%	4.6%	6.0%	20.0%	2.6%
FIM change (Mean+95%CI)	14.5 (13.8-15.2)	16.2 (15.6-16.8)	23.1 (22.2-23.9)	27.3 (26.3-28.2)	18.1 (15.7-20.5)	23.4 (7.5-39.3)	21.0 (20.6-21.5)
FIM efficiency (FIM change/LOS)	1.2	1.1	1.2	1.2	0.8	0.8	1.1

Orthopaedic fracture discharge destination by AN-SNAP class

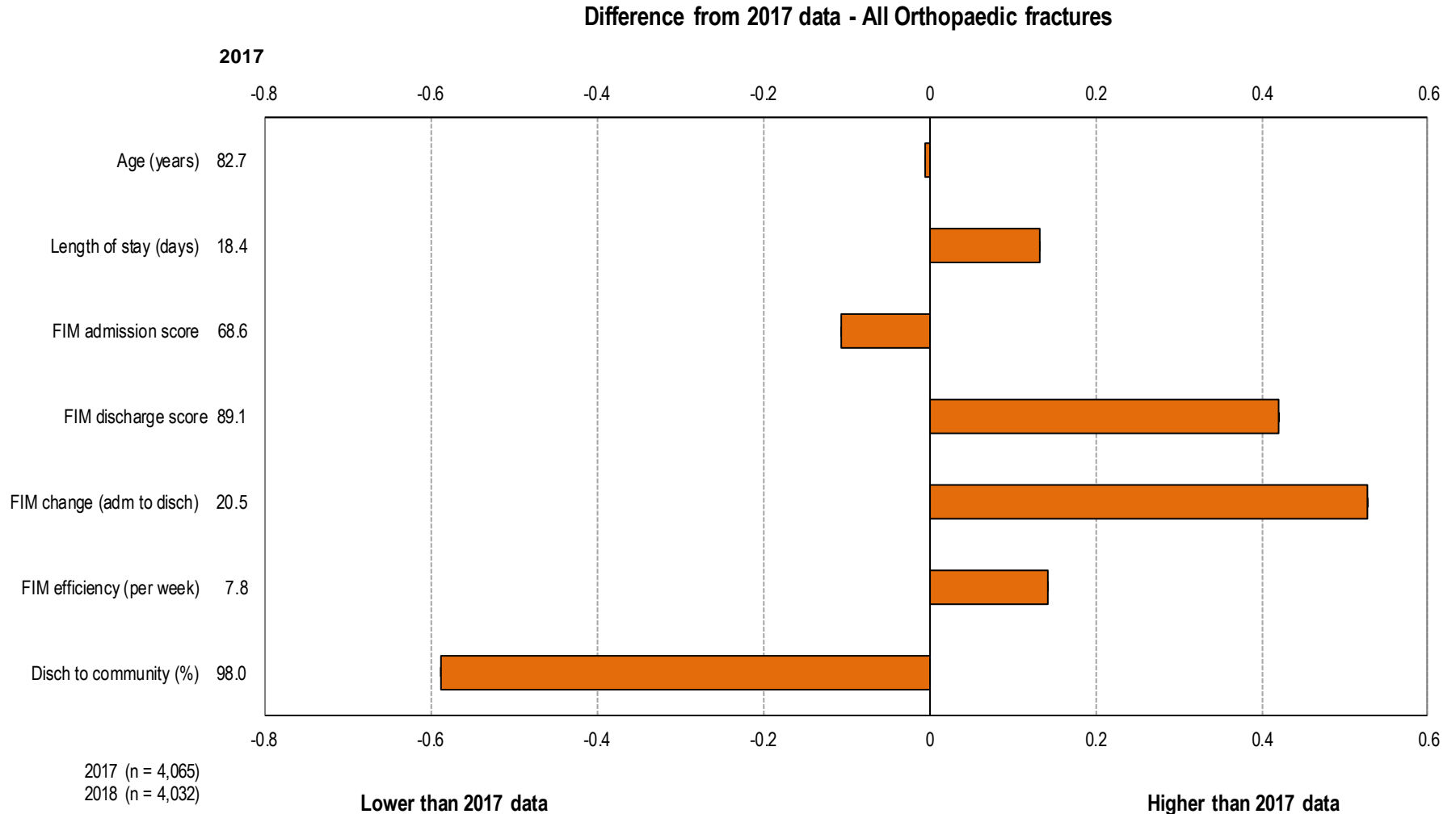
Discharge destination - Orthopaedic fractures



Orthopaedic fracture LOS and FIM change by AN-SNAP class



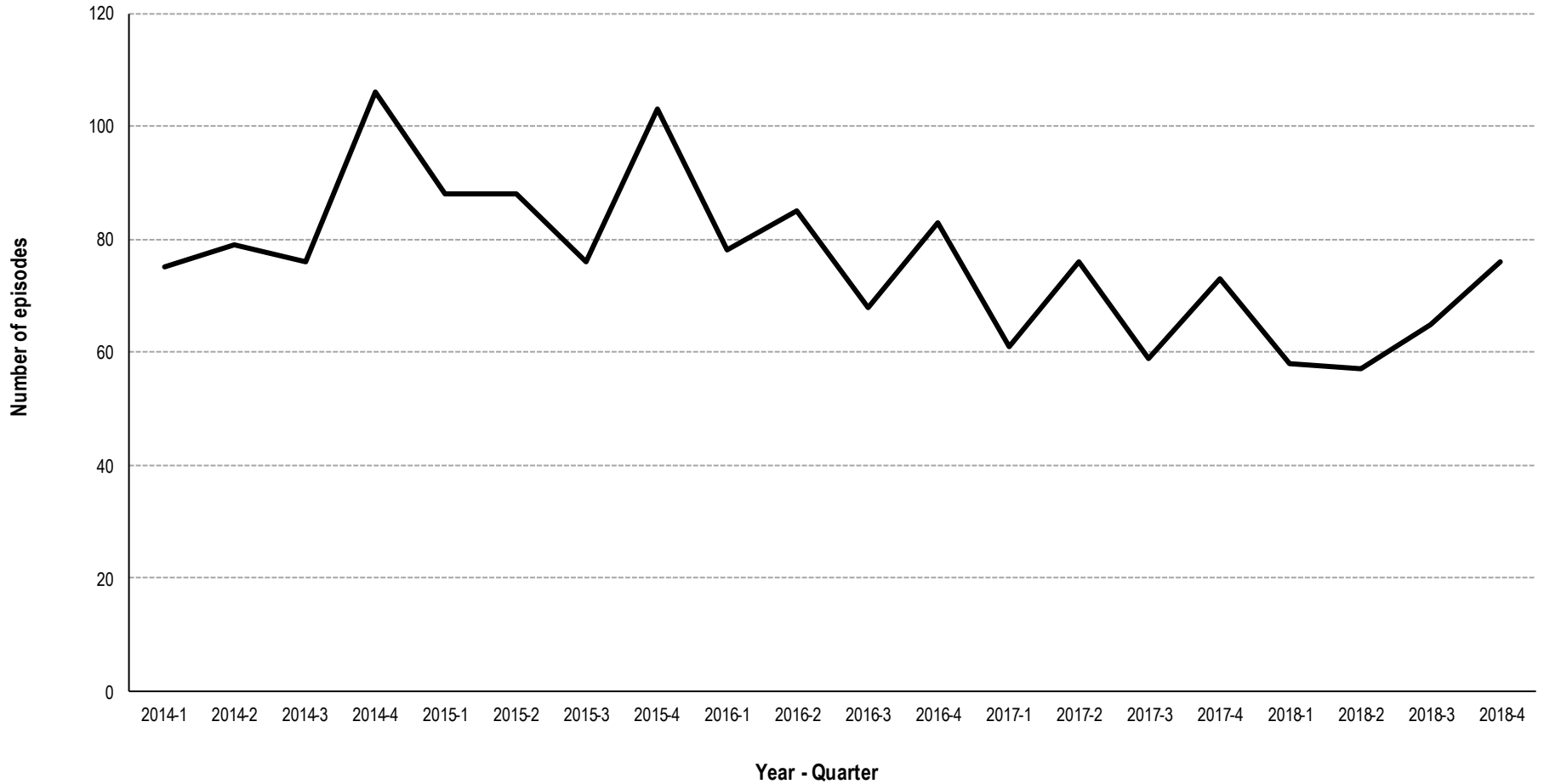
Change in outcome measures in orthopaedic fracture, 2017 to 2018



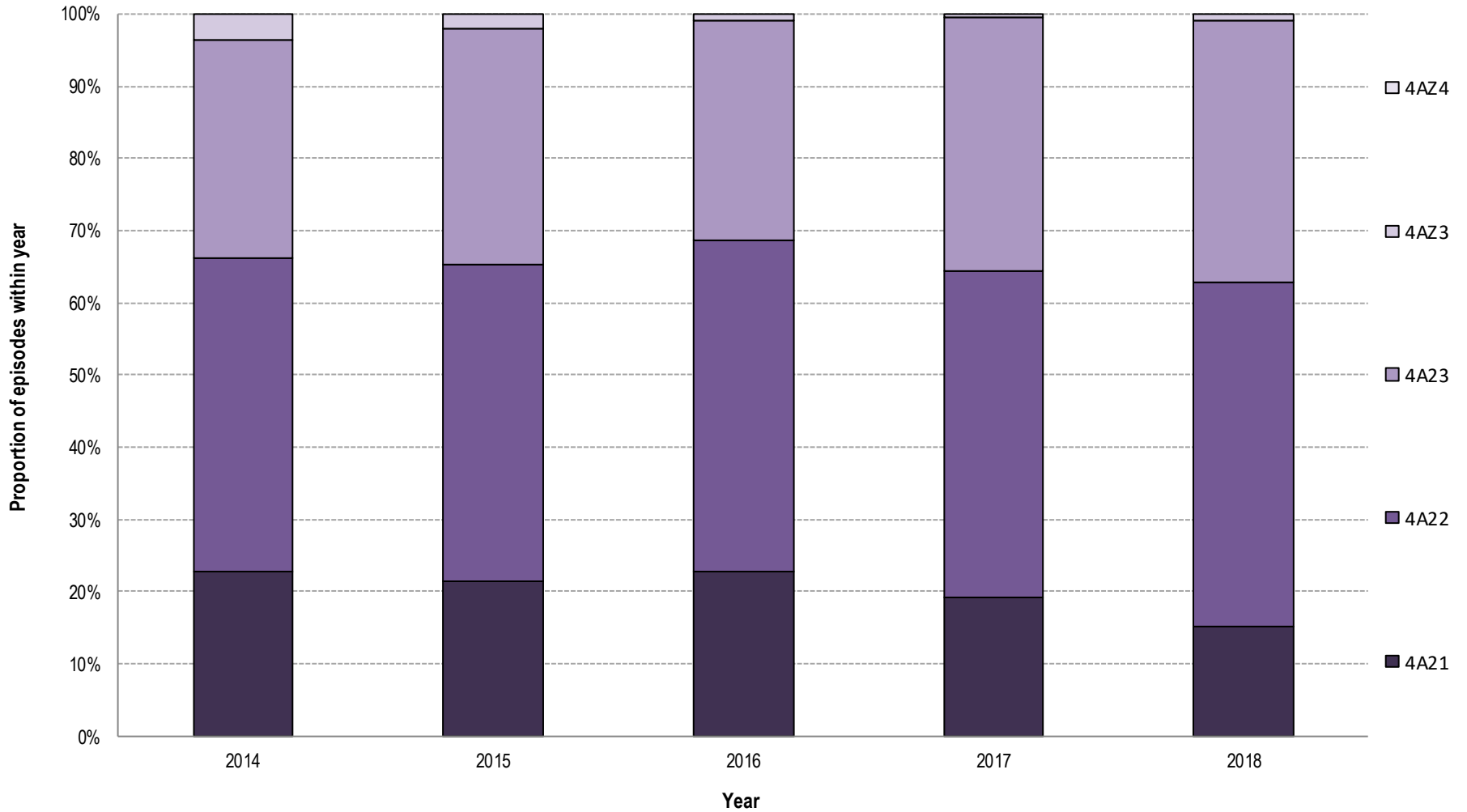
Orthopaedic replacement episodes over time



Number of episodes by quarter - Orthopaedic replacements



Orthopaedic replacement casemix over time



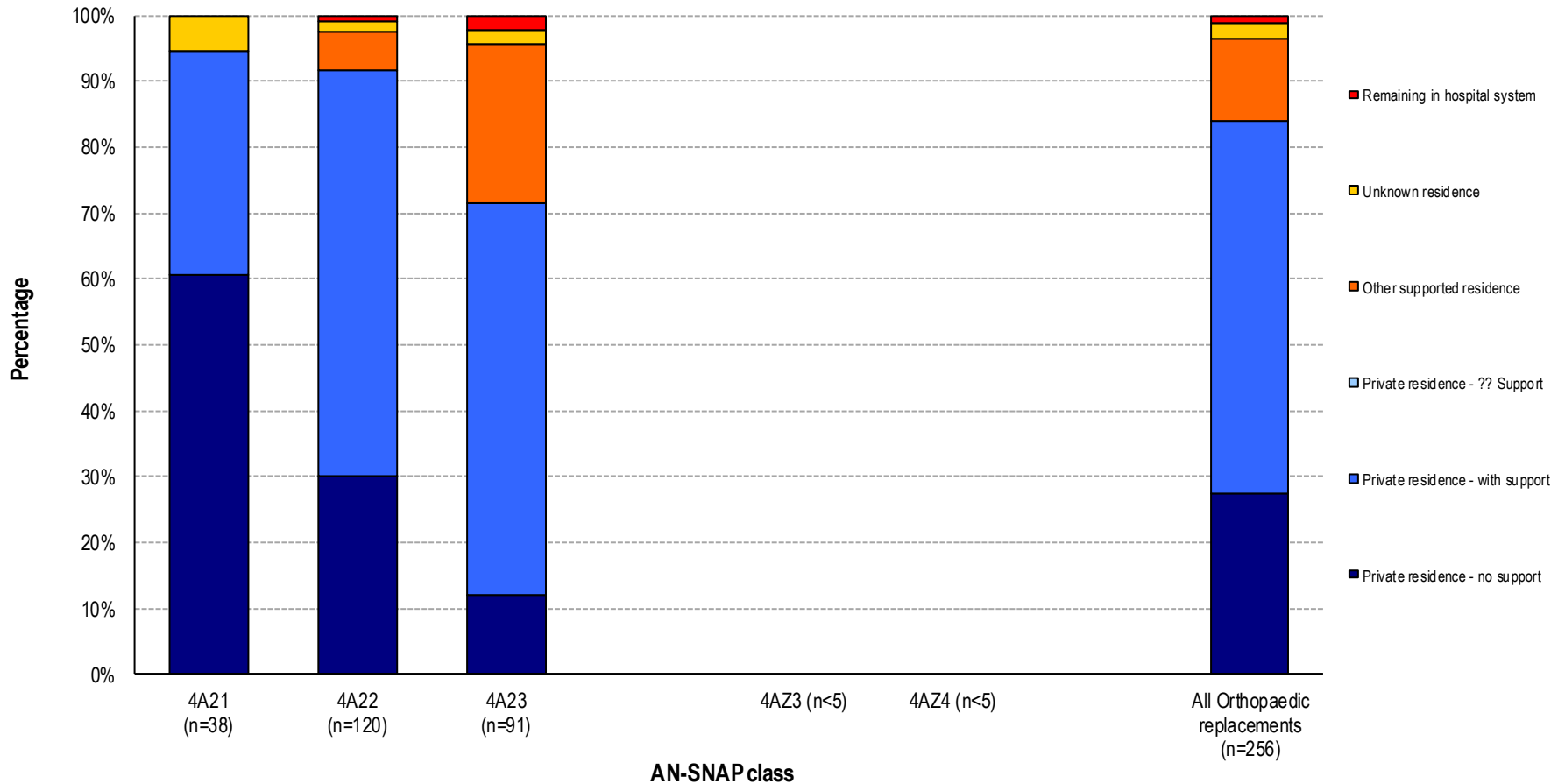
Orthopaedic replacement episodes in 2018



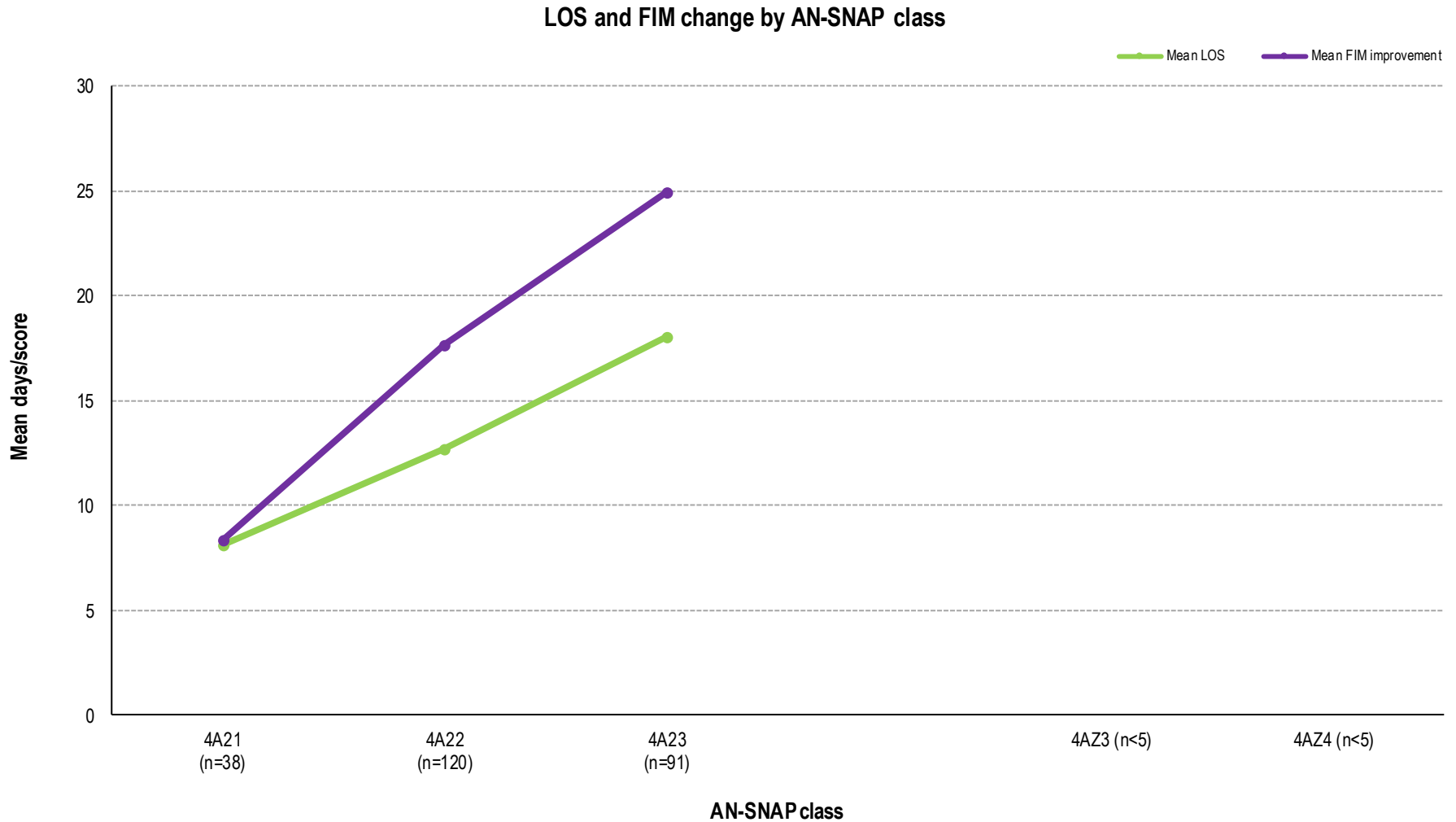
AN-SNAP class:	4A21	4A22	4A23	4AZ3	4AZ4	All Orthopaedic replacements
Number of episodes	38	120	91	2	0	256
Proportion of episodes	14.8%	46.9%	35.5%	n < 5	n < 5	100.0%
Gender (%)						
<i>Female</i>	55.3%	60.0%	59.3%	n < 5	n < 5	59.0%
<i>Male</i>	44.7%	40.0%	40.7%	n < 5	n < 5	41.0%
Age group (%)						
<i>Under 65</i>	2.6%	5.0%	5.5%	n < 5	n < 5	4.7%
<i>Over 65</i>	97.4%	93.3%	94.5%	n < 5	n < 5	94.1%
Age (Mean+95%CI)	80.7 (78.3-83.1)	78.9 (77.4-80.3)	78.8 (76.8-80.7)	n < 5	n < 5	79.2 (78.1-80.2)
Admission FIM (Mean+95%CI)	102.7 (101.1-104.2)	86.9 (85.6-88.3)	61.3 (58.6-64.0)	n < 5	n < 5	79.7 (77.5-82.0)
LOS (Mean+95%CI)	8.1 (6.6-9.6)	12.7 (11.2-14.2)	18.0 (15.5-20.5)	n < 5	n < 5	13.9 (12.7-15.2)
Discharge destination (%)						
<i>Discharged to community</i>	100.0%	99.2%	97.8%	n < 5	n < 5	98.8%
<i>Remaining in hospital system</i>	0.0%	0.8%	2.2%	n < 5	n < 5	1.2%
FIM change (Mean+95%CI)	8.4 (6.8-9.9)	17.6 (16.2-19.0)	25.0 (22.4-27.6)	n < 5	n < 5	18.8 (17.4-20.2)
FIM efficiency (FIM change/LOS)	1.0	1.4	1.4	n < 5	n < 5	1.3

Orthopaedic replacement discharge destination by AN-SNAP class

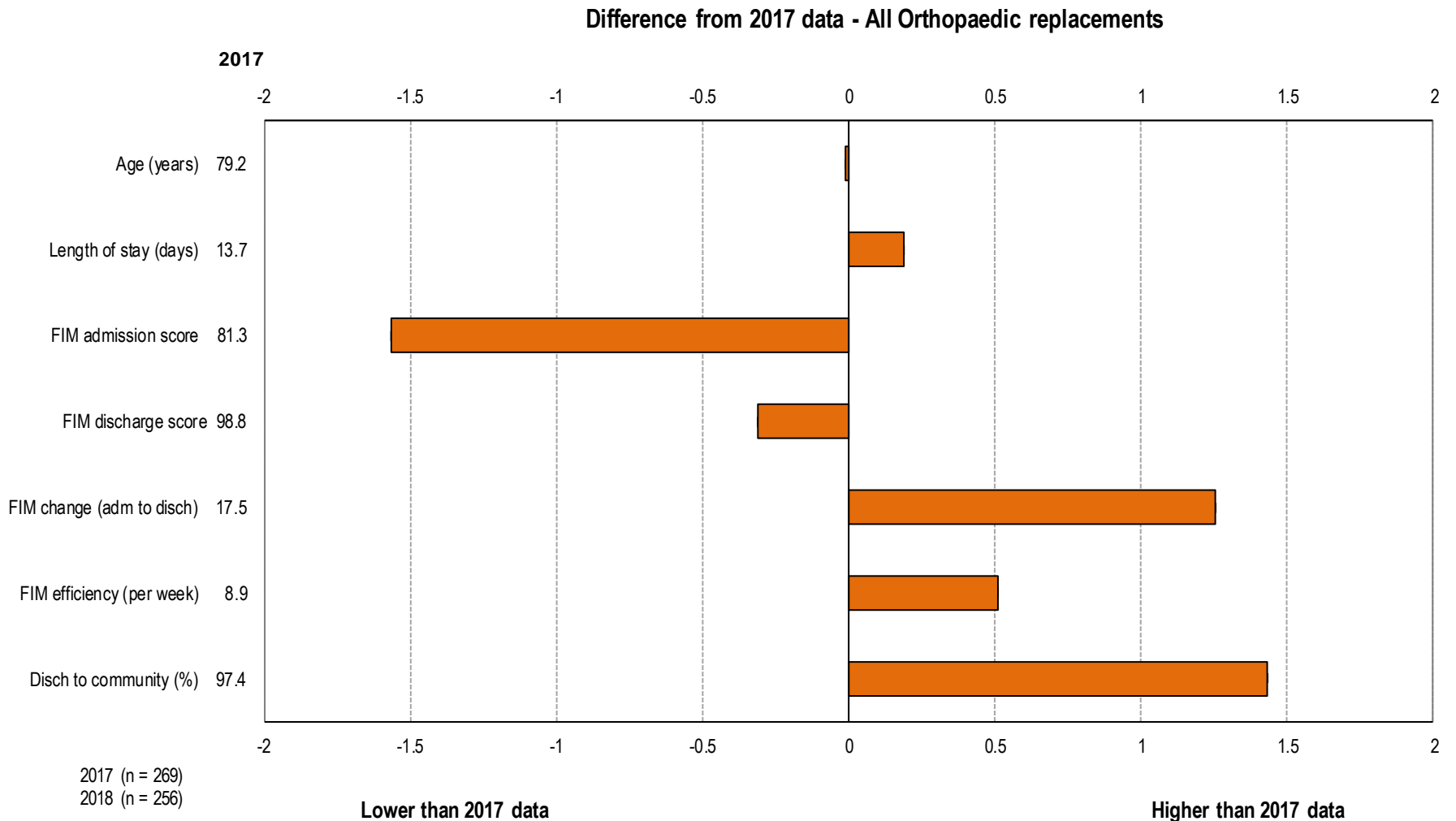
Discharge destination - Orthopaedic replacements



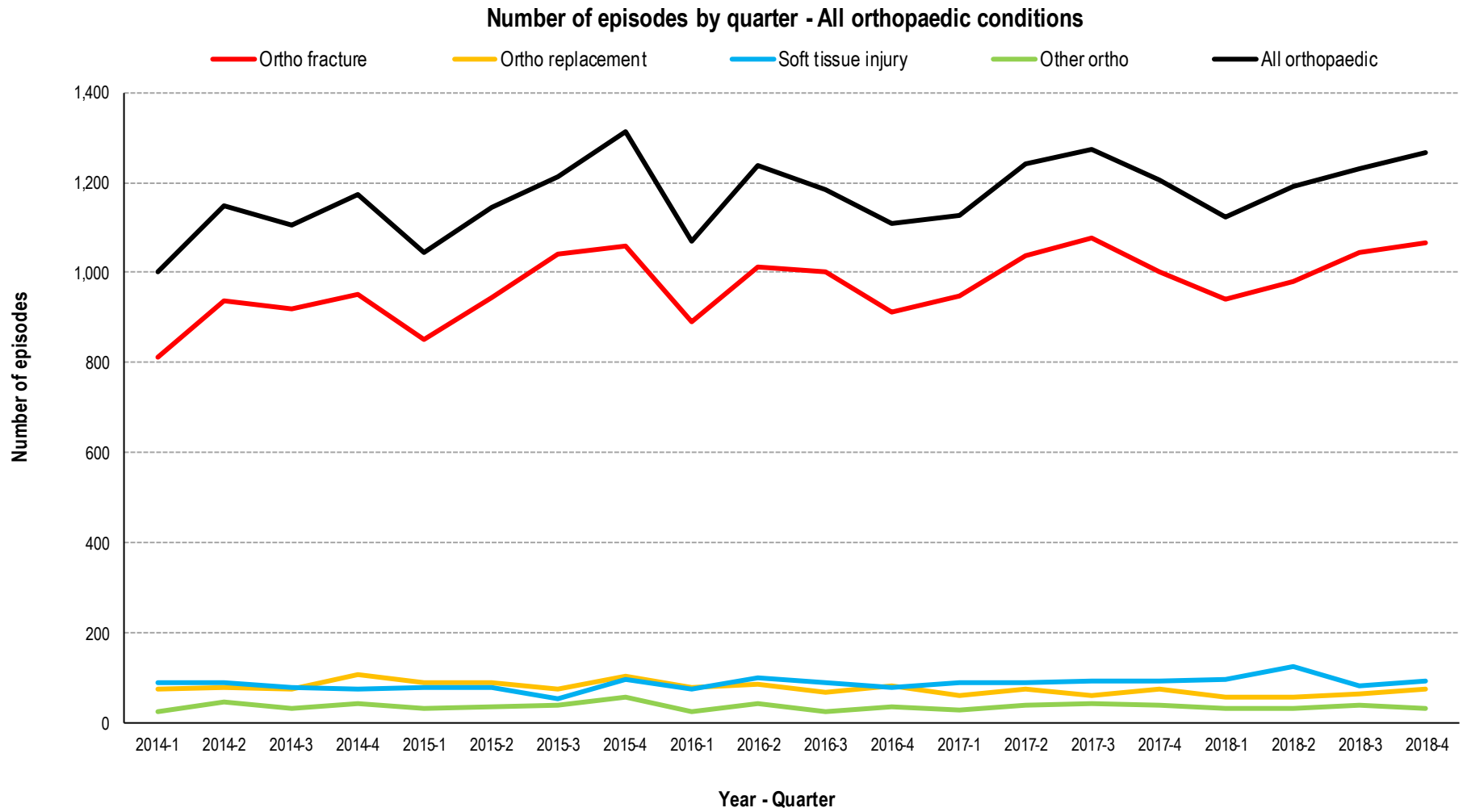
Orthopaedic replacement LOS and FIM change by AN-SNAP class



Change in outcome measures in orthopaedic replacement, 2017 to 2018



All orthopaedic episodes over time

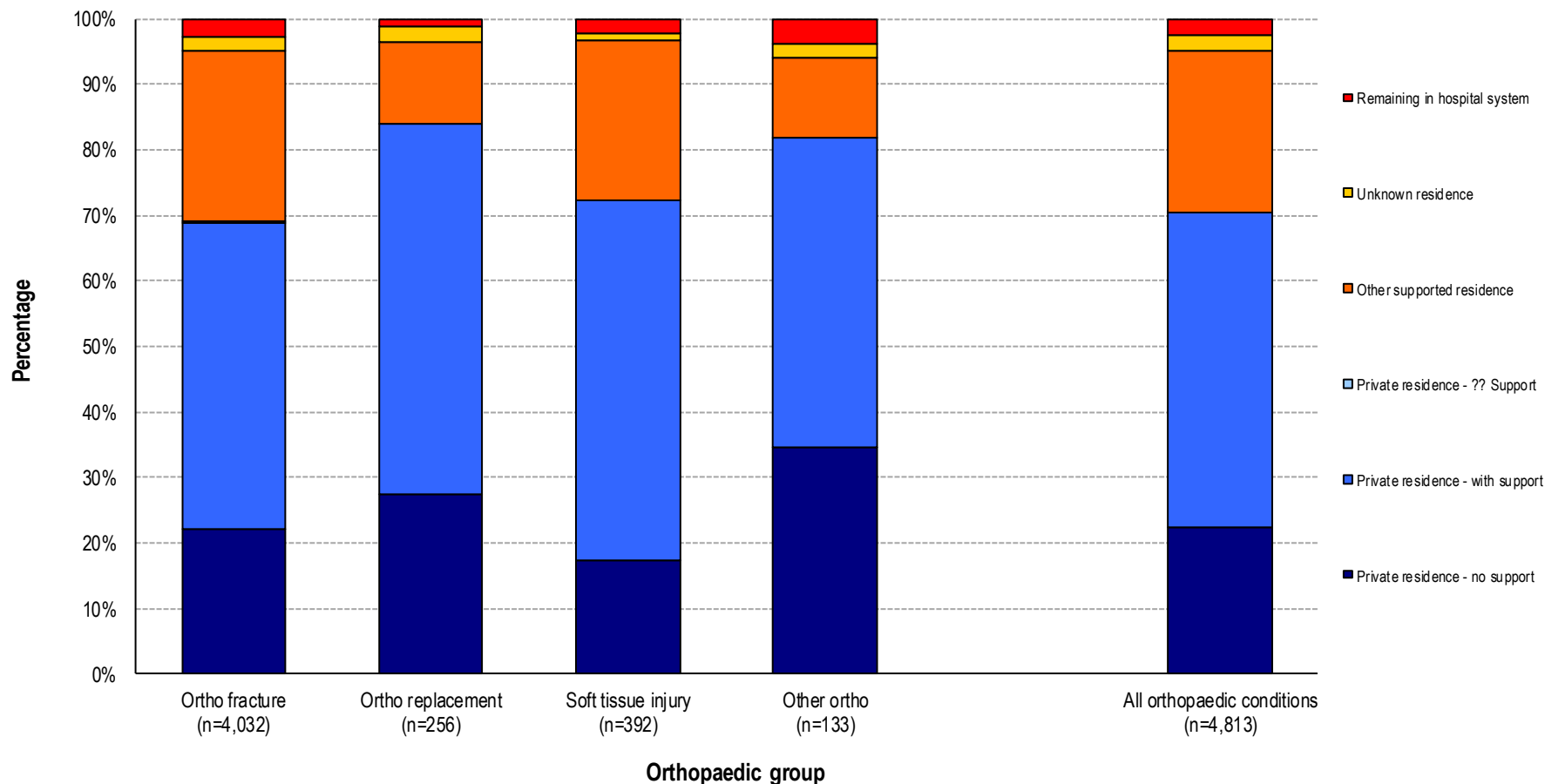


All orthopaedic episodes in 2018

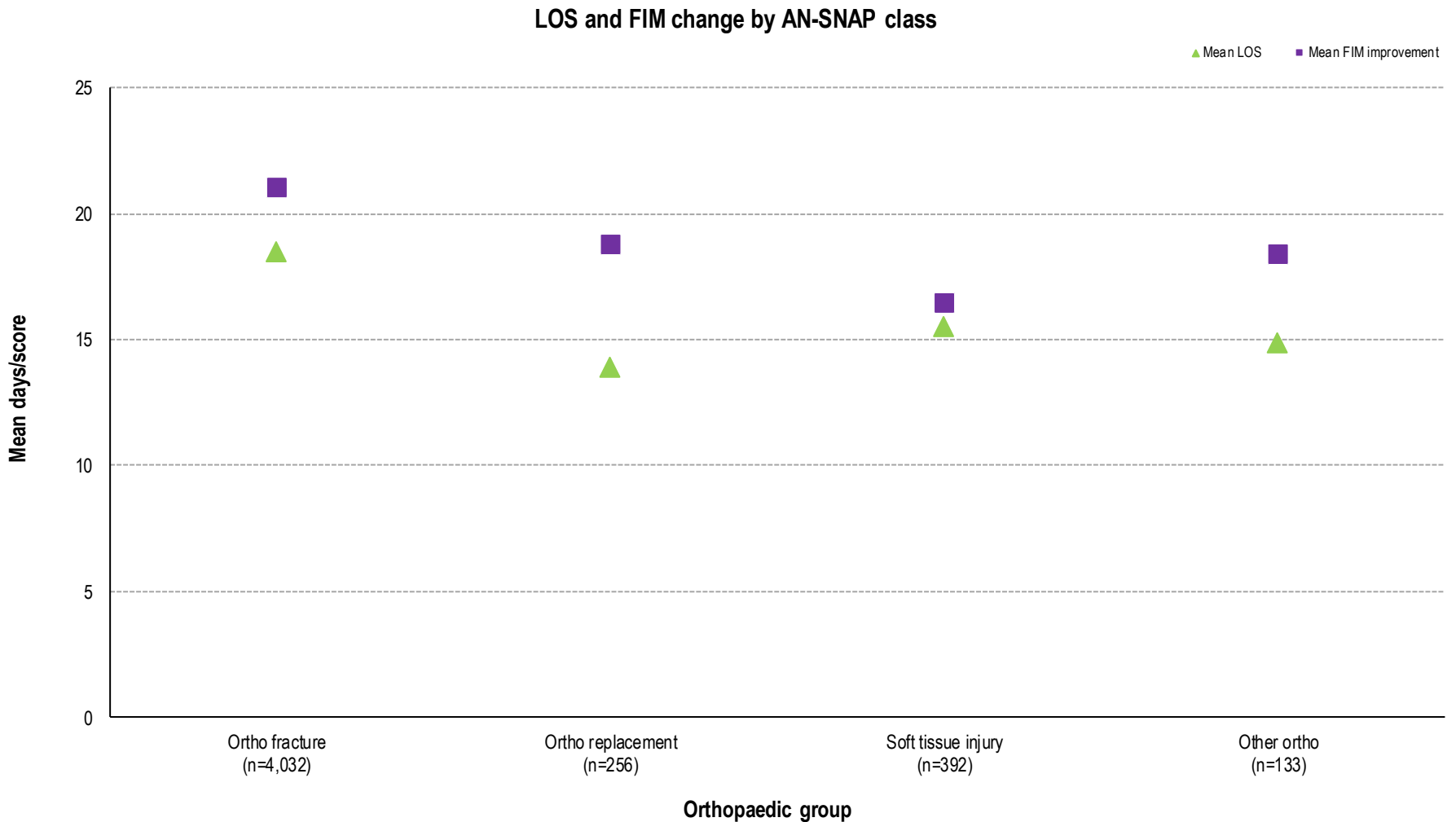
AN-SNAP class:	Ortho fracture	Ortho replacement	Soft tissue injury	Other ortho	All orthopaedic conditions
Number of episodes	4,032	256	392	133	4,813
Proportion of episodes	83.8%	5.3%	8.1%	2.8%	100.0%
Gender (%)					
<i>Female</i>	72.4%	59.0%	64.5%	57.1%	70.6%
<i>Male</i>	27.6%	41.0%	35.5%	42.9%	29.4%
Age group (%)					
<i>Under 65</i>	4.4%	4.7%	3.6%	15.0%	4.7%
<i>Over 65</i>	94.8%	94.1%	95.4%	82.7%	94.5%
Age (Mean+95%CI)	82.7 (82.3-83.0)	79.2 (78.1-80.2)	83.6 (82.6-84.5)	74.0 (72.1-75.9)	82.3 (82.0-82.6)
Admission FIM (Mean+95%CI)	68.5 (67.8-69.2)	79.7 (77.5-82.0)	72.2 (70.2-74.3)	80.4 (77.3-83.5)	69.7 (69.1-70.3)
LOS (Mean+95%CI)	18.5 (18.1-18.9)	13.9 (12.7-15.2)	15.5 (14.5-16.5)	14.8 (12.9-16.7)	17.9 (17.5-18.3)
Discharge destination (%)					
<i>Discharged to community</i>	97.4%	98.8%	97.9%	96.2%	97.5%
<i>Remaining in hospital system</i>	2.6%	1.2%	2.1%	3.8%	2.5%
FIM change (Mean+95%CI)	21.0 (20.6-21.5)	18.8 (17.4-20.2)	16.5 (15.1-17.8)	18.4 (16.2-20.5)	20.5 (20.1-20.9)
FIM efficiency (FIM change/LOS)	1.1	1.3	1.1	1.2	1.1

All Orthopaedic episodes discharge destination by orthopaedic group

Discharge destination - All orthopaedic conditions

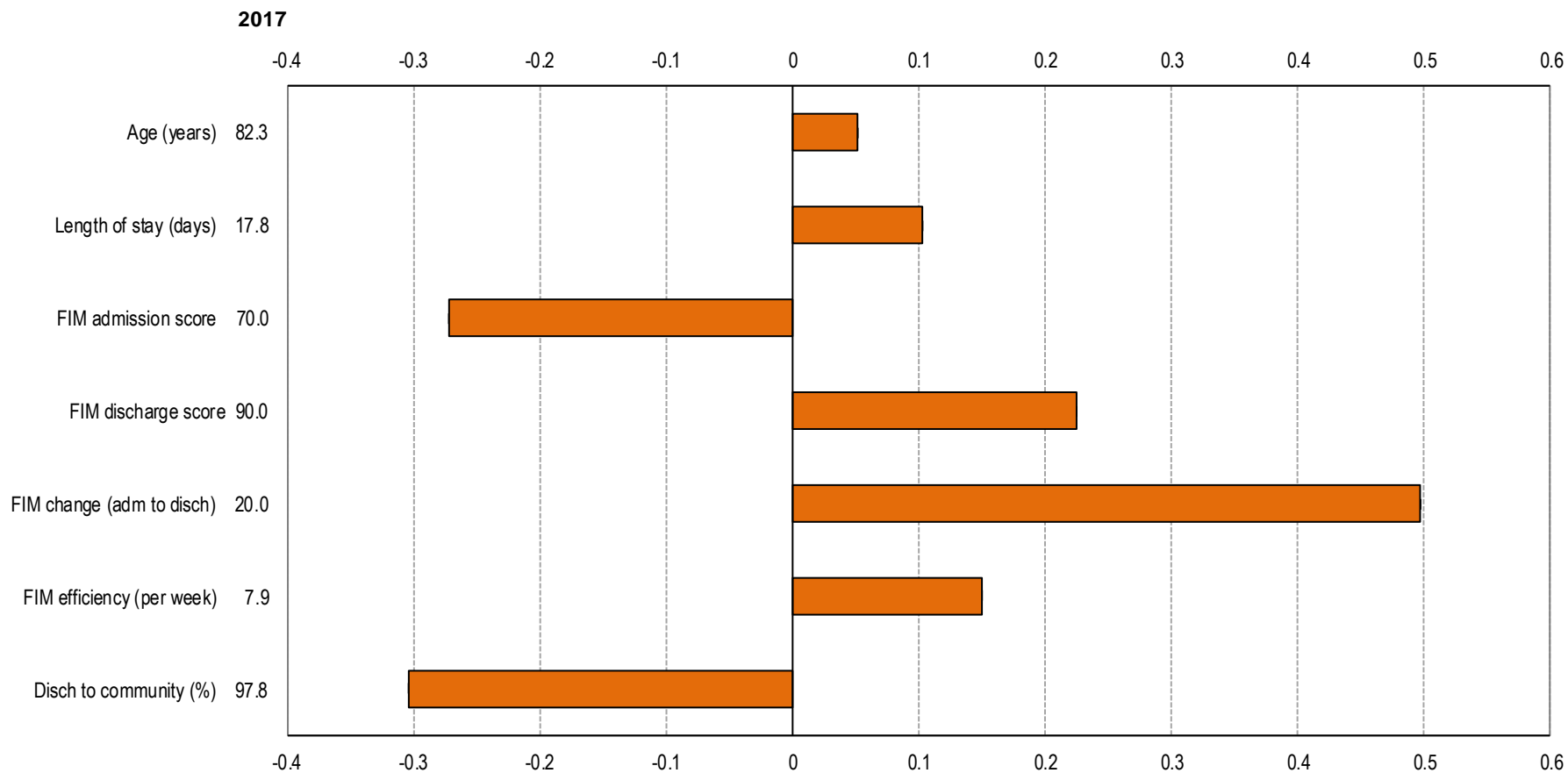


All orthopaedic conditions LOS and FIM change by orthopaedic group



Change in outcome measures in orthopaedic conditions, 2017 to 2018

Difference from 2017 data - All orthopaedic conditions



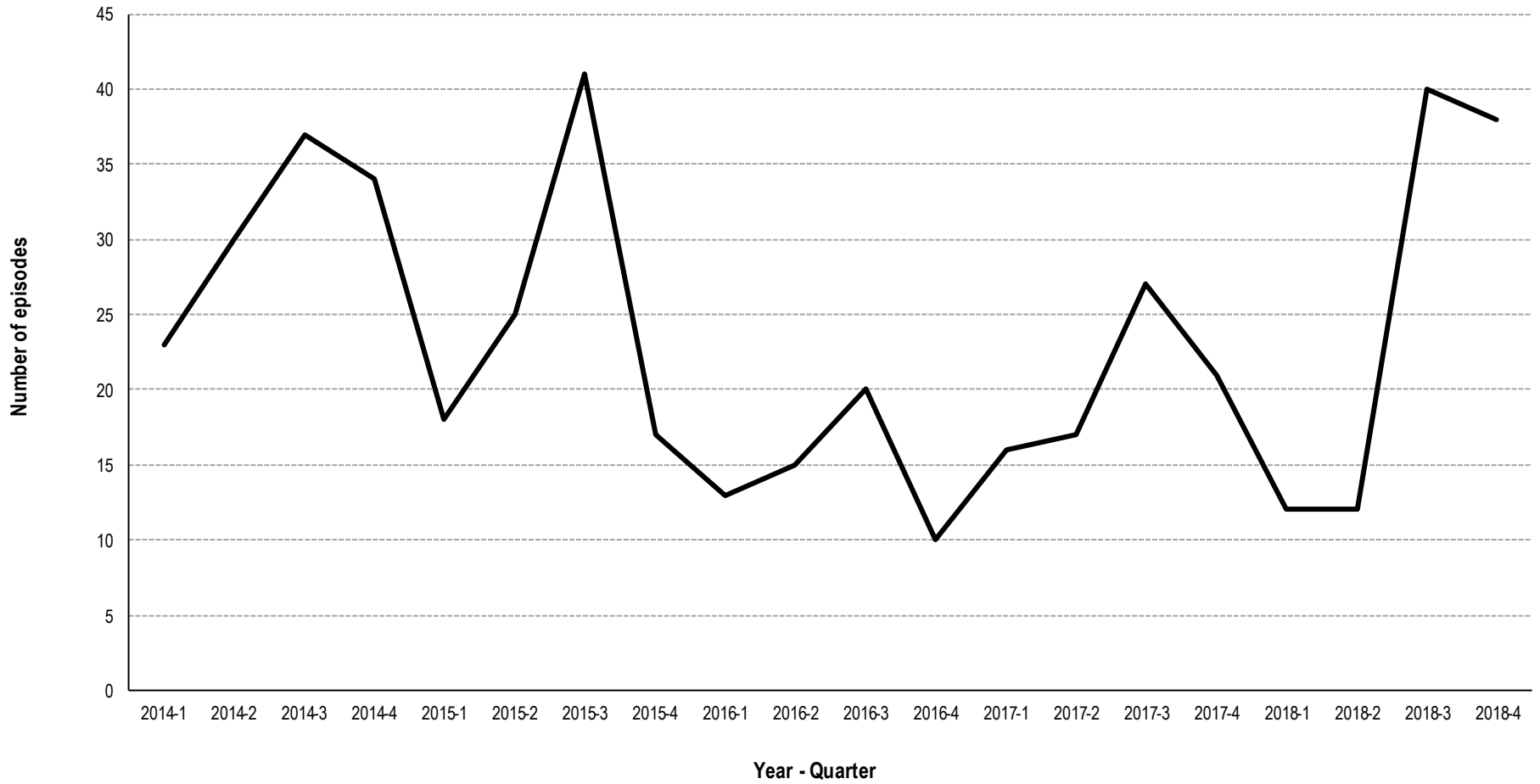
2017 (n = 4,845)
2018 (n = 4,813)

Lower than 2017 data

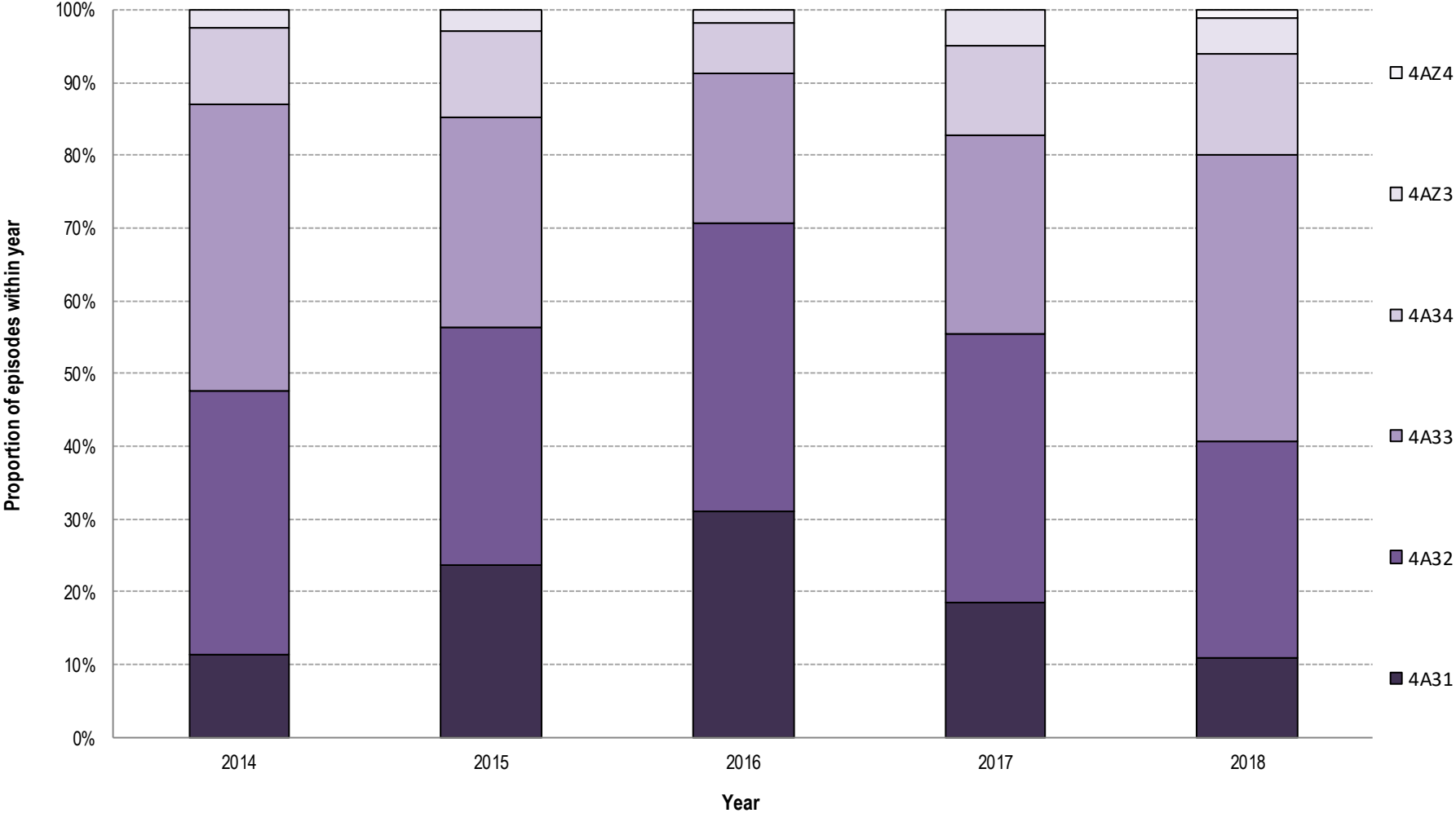
Higher than 2017 data

Pulmonary episodes over time

Number of episodes by quarter - Pulmonary



Pulmonary casemix over time



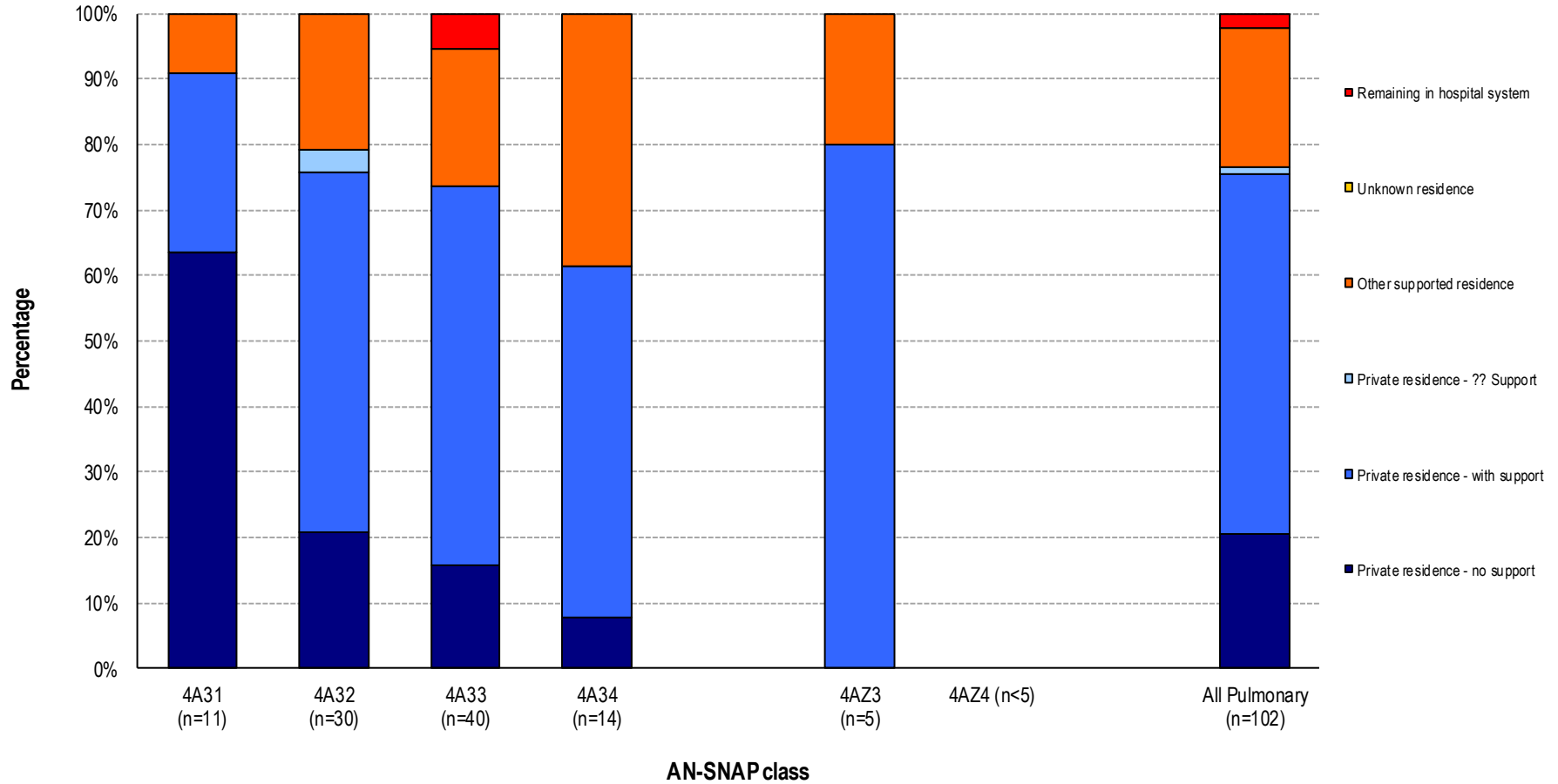
Pulmonary episodes in 2018



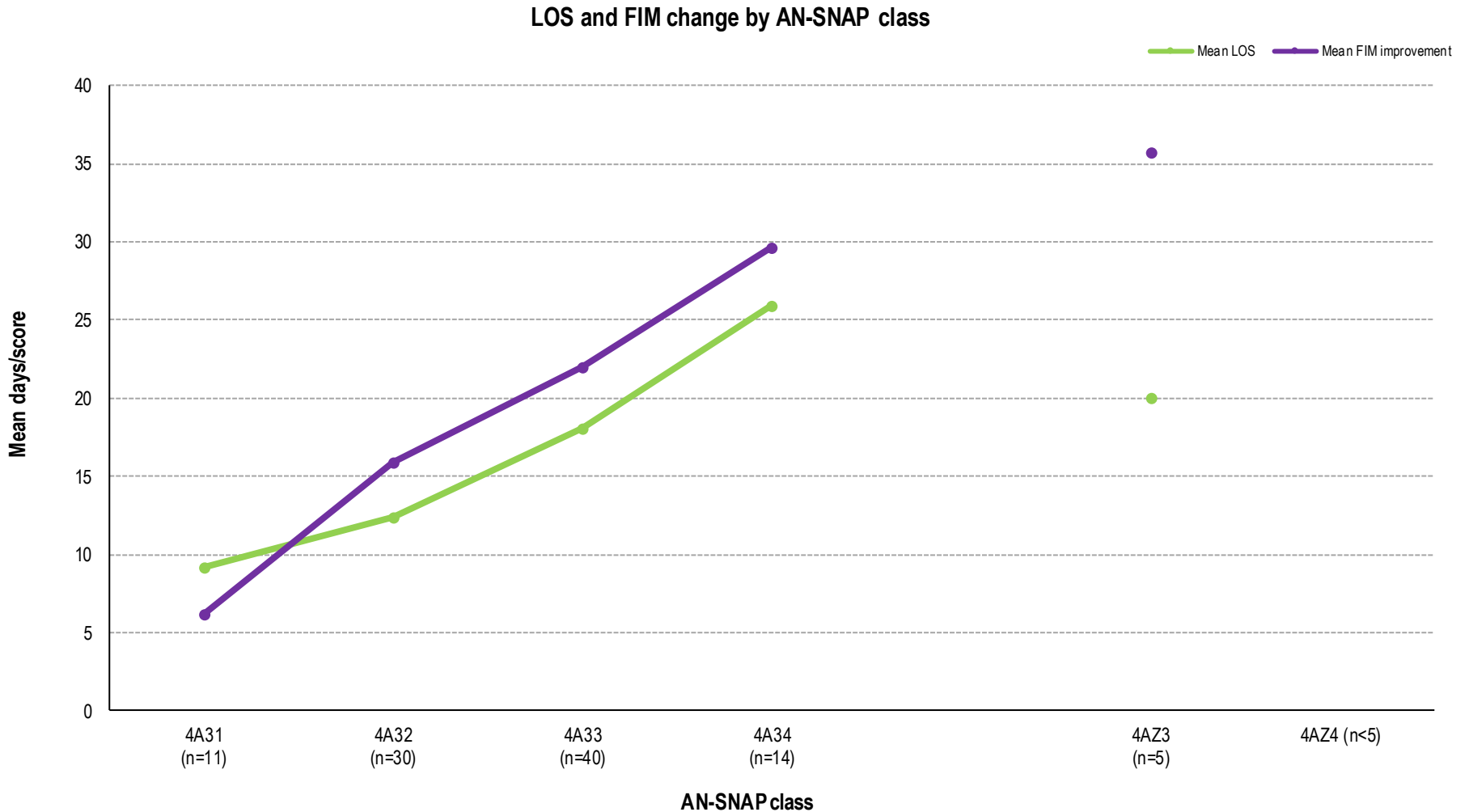
AN-SNAP class:	4A31	4A32	4A33	4A34	4AZ3	4AZ4	All Pulmonary
Number of episodes	11	30	40	14	5	1	102
Proportion of episodes	10.8%	29.4%	39.2%	13.7%	4.9%	n < 5	100.0%
Gender (%)							
<i>Female</i>	45.5%	56.7%	55.0%	57.1%	80.0%	n < 5	55.9%
<i>Male</i>	54.5%	43.3%	45.0%	42.9%	20.0%	n < 5	44.1%
Age group (%)							
<i>Under 65</i>	9.1%	0.0%	5.0%	0.0%	0.0%	n < 5	3.9%
<i>Over 65</i>	90.9%	100.0%	95.0%	100.0%	100.0%	n < 5	96.1%
Age (Mean+95%CI)	73.7 (69.7-77.8)	81.2 (78.7-83.8)	82.8 (80.0-85.5)	81.9 (78.4-85.5)	80.6 (71.8-89.4)	n < 5	80.9 (79.2-82.6)
Admission FIM (Mean+95%CI)	106.6 (102.0-111.3)	88.0 (84.9-91.1)	67.9 (64.7-71.2)	47.1 (39.8-54.4)	30.5 (13.8-47.2)	n < 5	73.8 (69.2-78.3)
LOS (Mean+95%CI)	9.2 (6.9-11.4)	12.4 (10.1-14.7)	18.0 (15.1-20.9)	25.9 (21.1-30.8)	20.0 (11.9-28.1)	n < 5	16.4 (14.6-18.3)
Discharge destination (%)							
<i>Discharged to community</i>	100.0%	100.0%	94.7%	100.0%	100.0%	n < 5	98.0%
<i>Remaining in hospital system</i>	0.0%	0.0%	5.3%	0.0%	0.0%	n < 5	2.0%
FIM change (Mean+95%CI)	6.2 (2.8-9.6)	15.9 (12.3-19.5)	22.0 (18.1-25.9)	29.6 (17.9-41.3)	35.8 (3.0-68.5)	n < 5	19.8 (16.6-22.9)
FIM efficiency (FIM change/LOS)	0.7	1.3	1.2	1.1	1.8	n < 5	1.2

Pulmonary discharge destination by AN-SNAP class

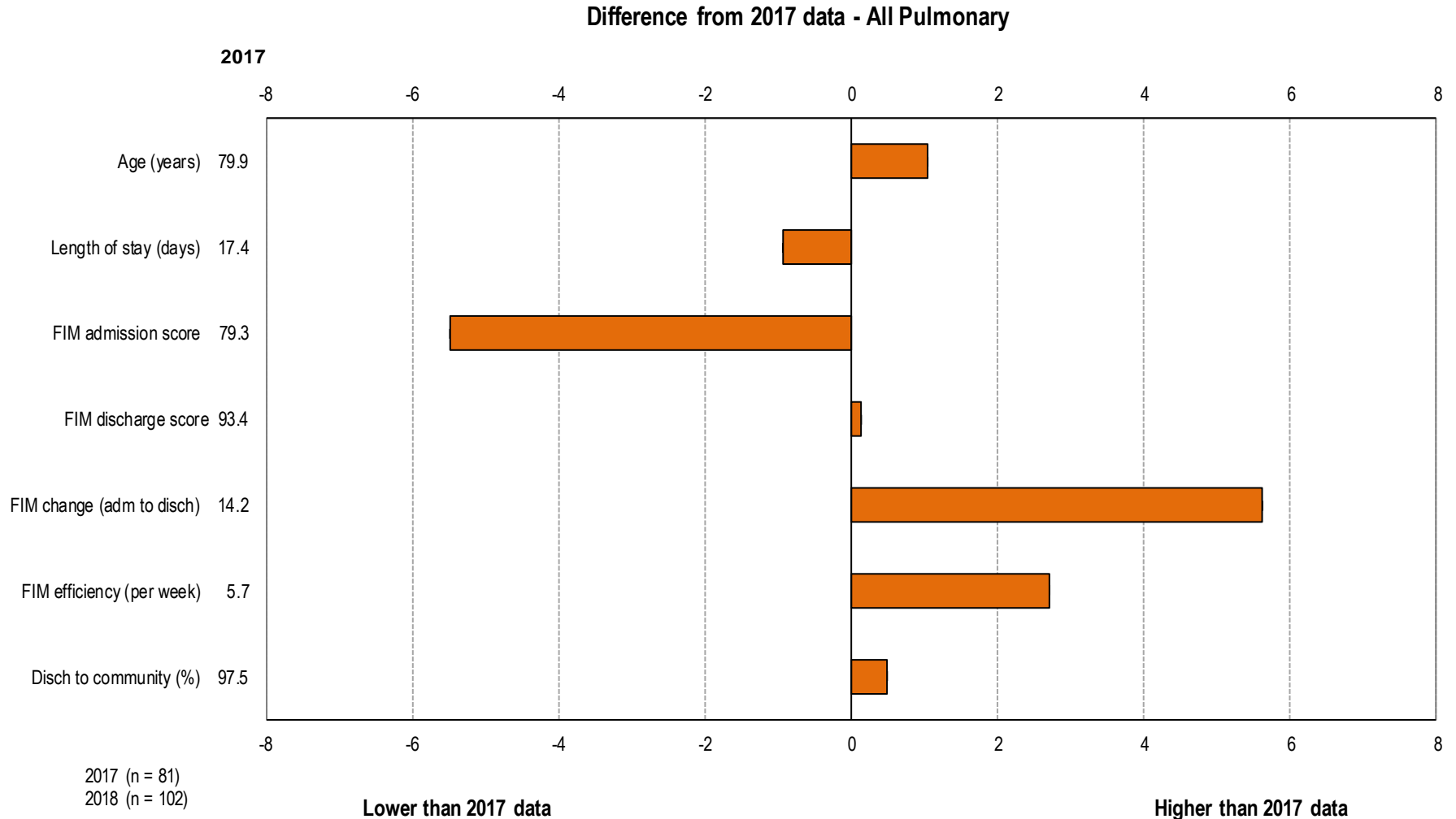
Discharge destination - Pulmonary



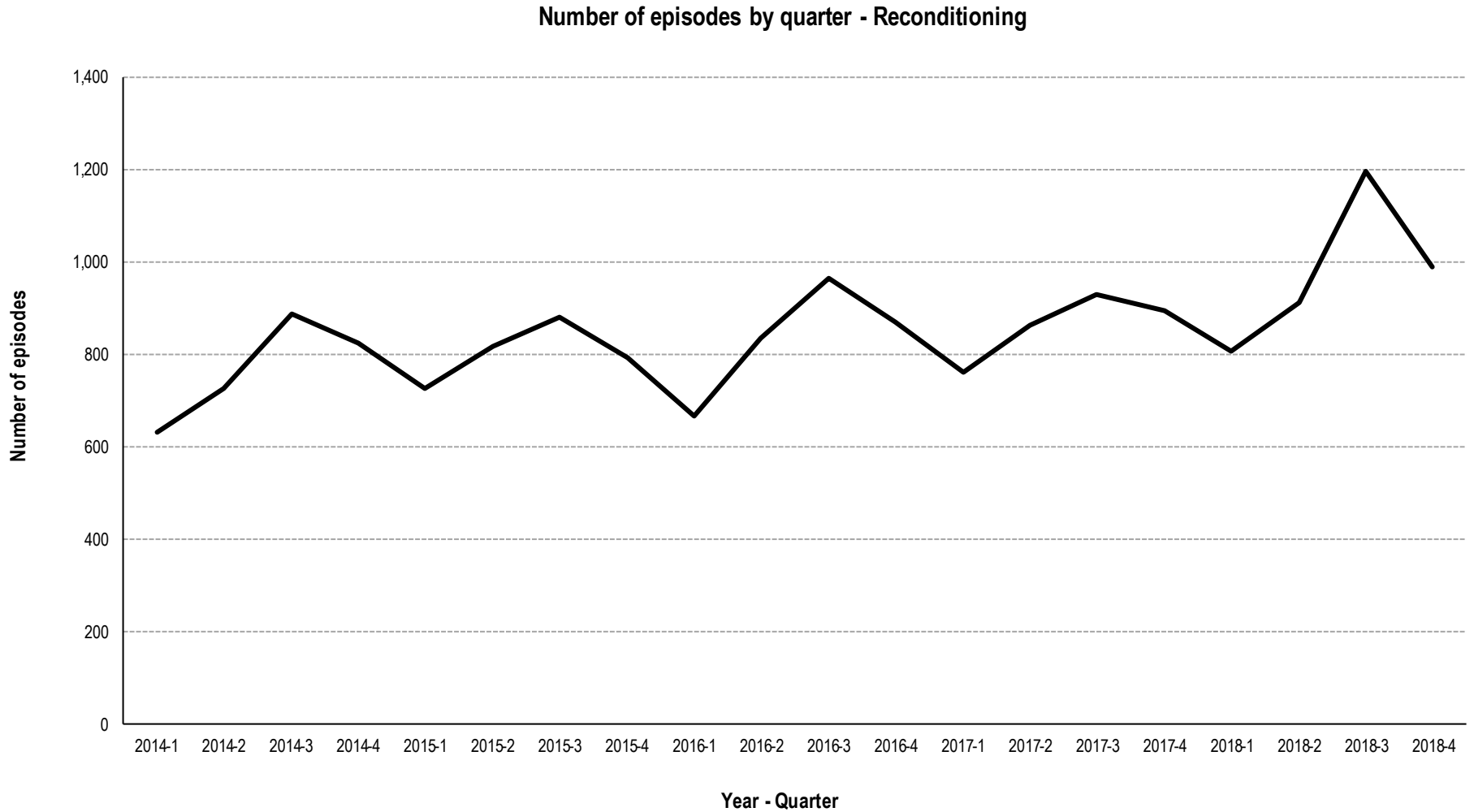
Pulmonary LOS and FIM change by AN-SNAP class



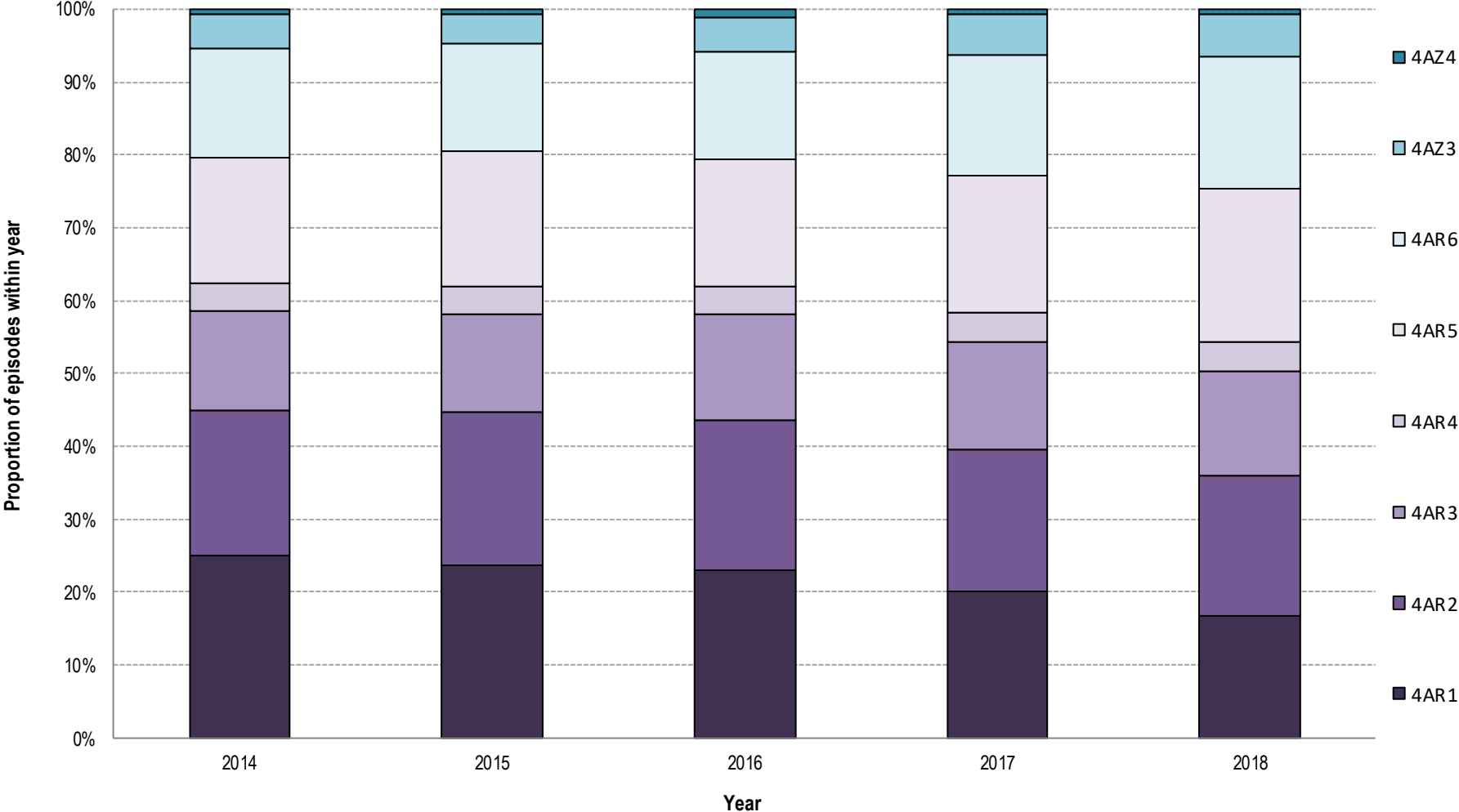
Change in outcome measures in pulmonary, 2017 to 2018



Reconditioning episodes over time



Reconditioning casemix over time



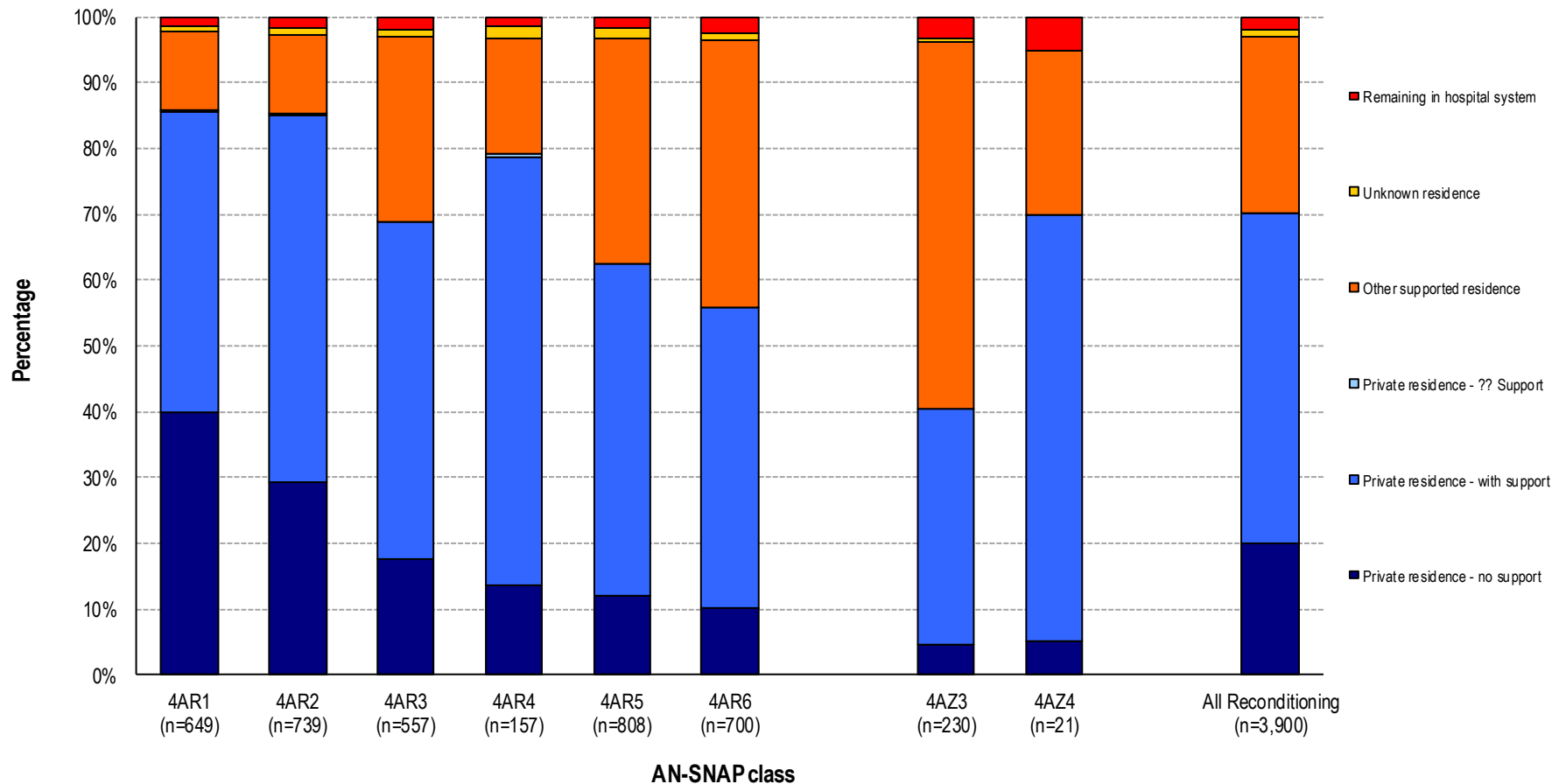
Reconditioning episodes in 2018



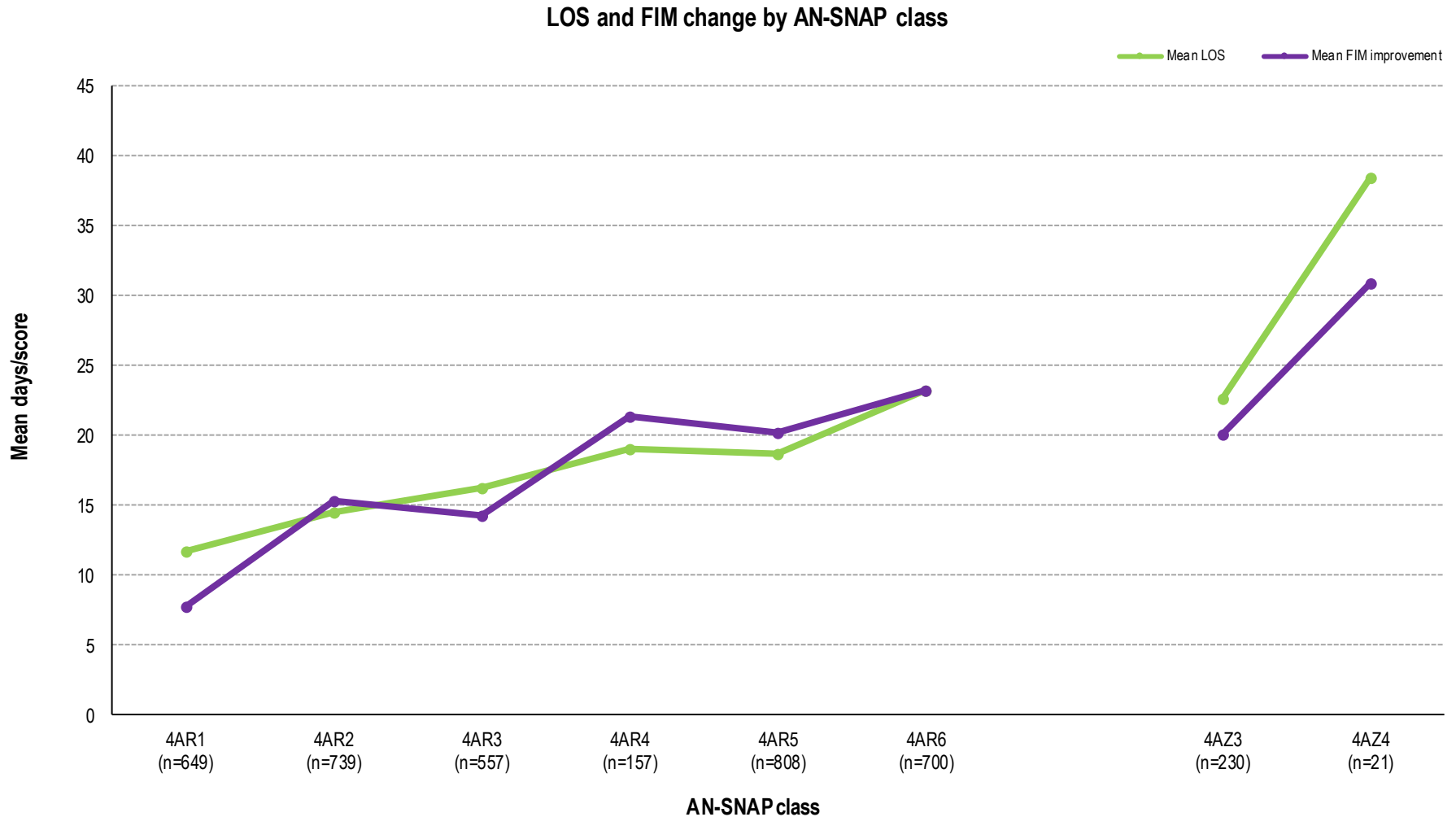
AN-SNAP class:	4AR1	4AR2	4AR3	4AR4	4AR5	4AR6	4AZ3	4AZ4	All Reconditioning
Number of episodes	649	739	557	157	808	700	230	21	3,900
Proportion of episodes	16.6%	18.9%	14.3%	4.0%	20.7%	17.9%	5.9%	0.5%	100.0%
Gender (%)									
<i>Female</i>	55.3%	59.0%	57.1%	54.1%	51.9%	49.4%	56.1%	38.1%	54.5%
<i>Male</i>	44.7%	41.0%	42.9%	45.9%	48.1%	50.1%	43.9%	61.9%	45.4%
Age group (%)									
<i>Under 65</i>	11.4%	8.0%	5.2%	9.6%	4.7%	7.9%	0.0%	100.0%	7.5%
<i>Over 65</i>	88.0%	91.7%	93.9%	88.5%	94.6%	91.6%	100.0%	0.0%	91.9%
Age (Mean+95%CI)	77.1 (76.1-78.0)	80.0 (79.3-80.7)	81.8 (81.0-82.6)	78.4 (76.5-80.2)	81.4 (80.7-82.1)	79.8 (78.9-80.6)	82.8 (81.7-83.8)	49.3 (43.7-54.9)	80.0 (79.7-80.4)
Admission FIM (Mean+95%CI)	102.1 (101.4-102.7)	87.4 (86.9-87.8)	76.2 (75.6-76.7)	75.3 (74.6-76.1)	62.1 (61.5-62.7)	48.2 (47.4-48.9)	30.2 (28.9-31.4)	38.6 (33.1-44.0)	72.1 (71.4-72.8)
LOS (Mean+95%CI)	11.8 (11.2-12.4)	14.6 (13.7-15.4)	16.2 (15.3-17.1)	19.1 (17.5-20.7)	18.7 (17.8-19.5)	23.2 (22.2-24.3)	22.7 (20.7-24.6)	38.5 (28.3-48.7)	17.5 (17.1-17.9)
Discharge destination (%)									
<i>Discharged to community</i>	98.6%	98.4%	98.2%	98.7%	98.5%	97.5%	96.7%	95.0%	98.2%
<i>Remaining in hospital system</i>	1.4%	1.6%	1.8%	1.3%	1.5%	2.5%	3.3%	5.0%	1.8%
FIM change (Mean+95%CI)	7.7 (7.1-8.3)	15.3 (14.6-16.0)	14.3 (13.4-15.2)	21.3 (19.0-23.7)	20.2 (19.2-21.2)	23.2 (21.8-24.6)	20.1 (17.0-23.3)	30.9 (16.6-45.2)	16.9 (16.4-17.4)
FIM efficiency (FIM change/LOS)	0.7	1.0	0.9	1.1	1.1	1.0	0.9	0.8	1.0

Reconditioning discharge destination by AN-SNAP class

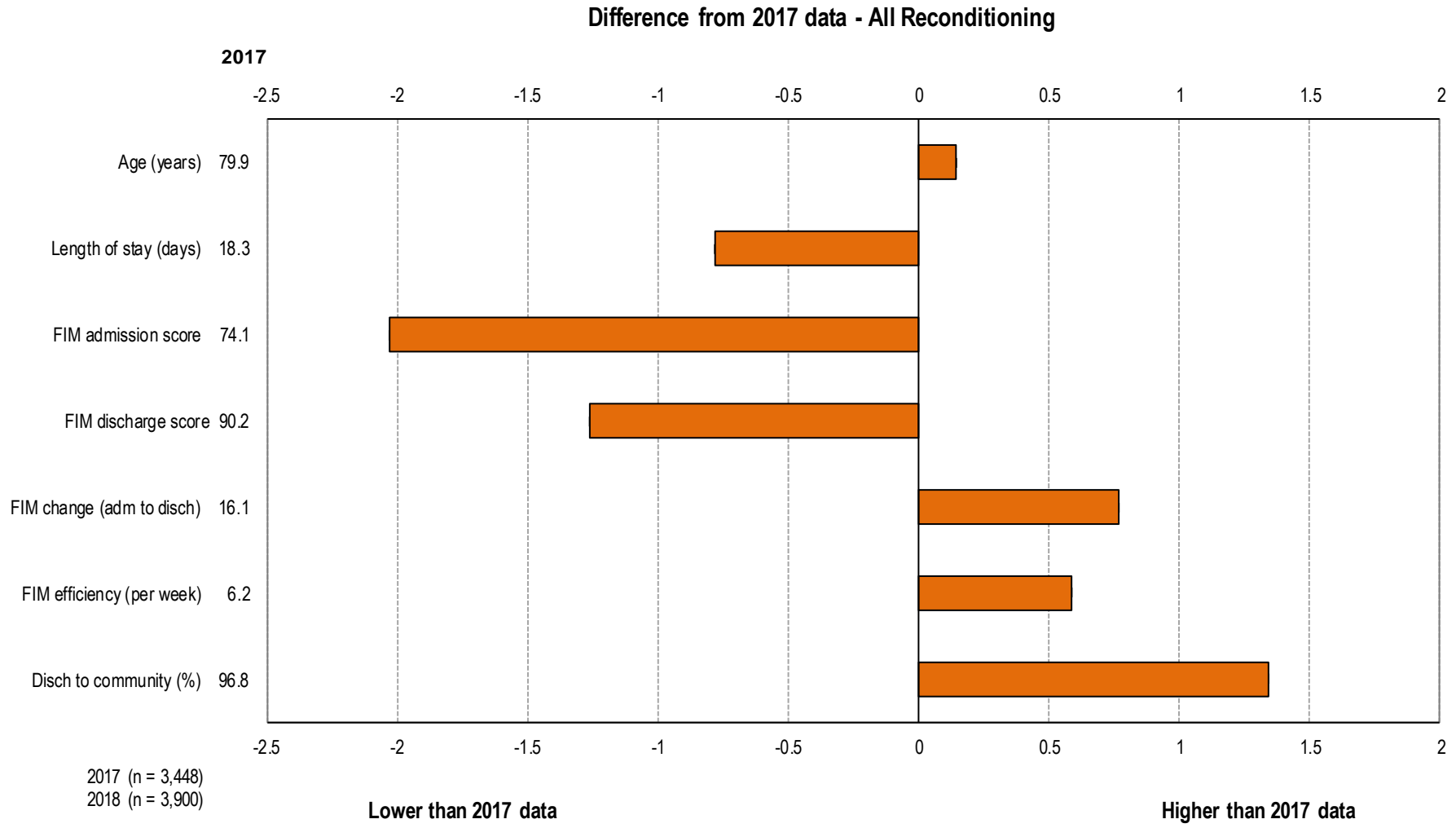
Discharge destination - Reconditioning



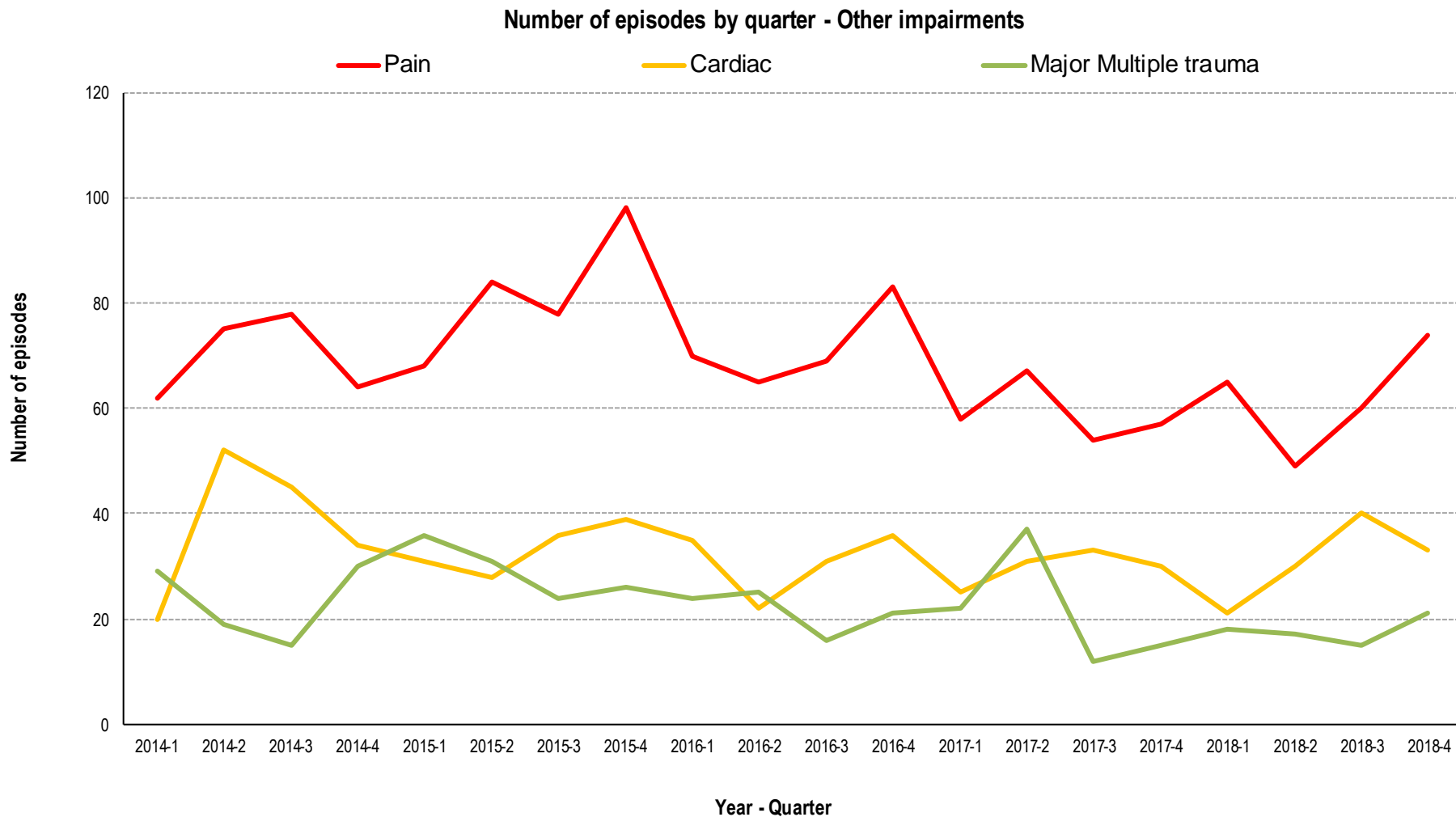
Reconditioning LOS and FIM change by AN-SNAP class



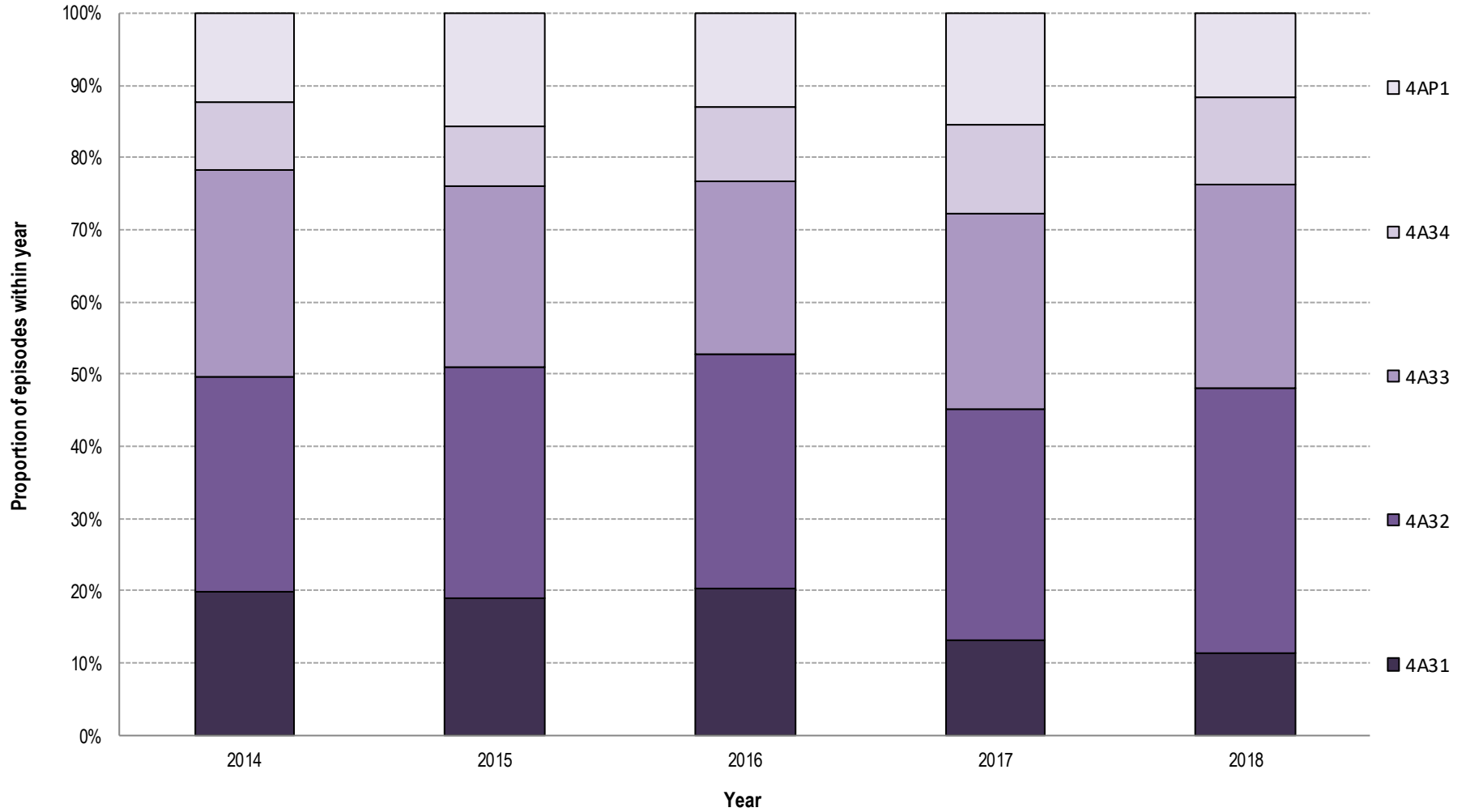
Change in outcome measures in reconditioning, 2017 to 2018



Other impairment episodes over time



Other impairments casemix over time

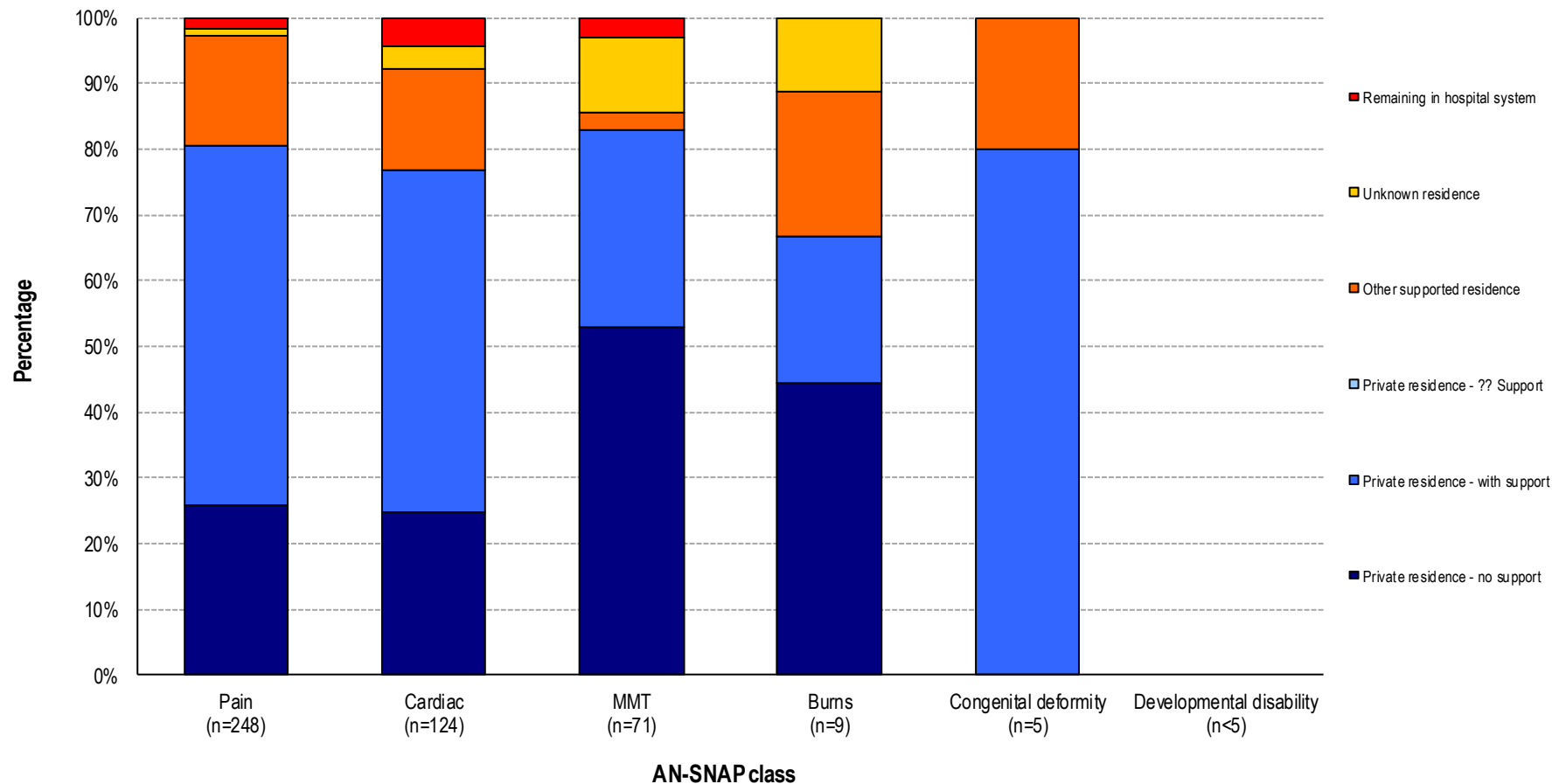


Other impairment episodes in 2018

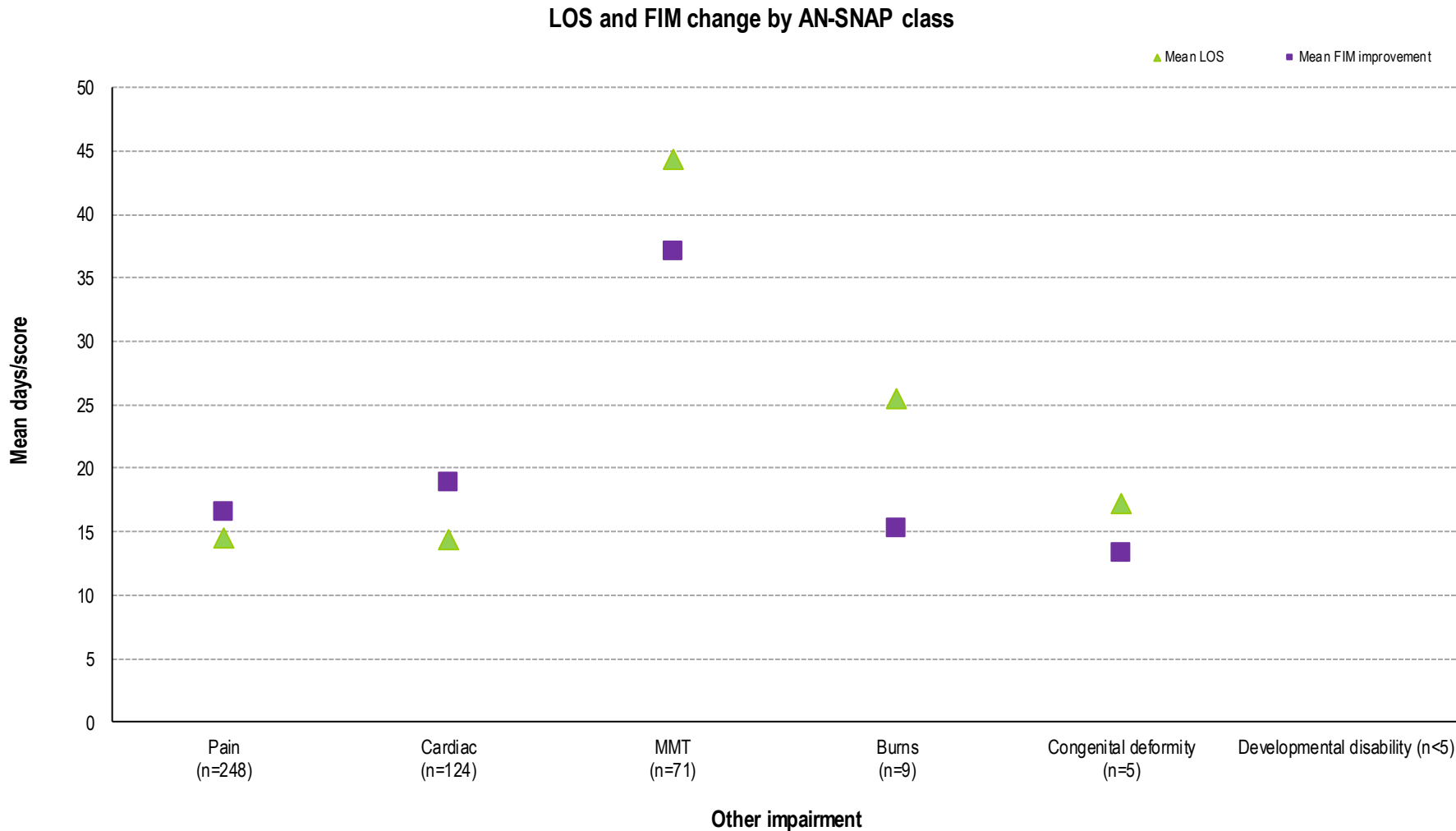
AN-SNAP class:	Pain	Cardiac	MMT	Burns	Congenital deformity	Developmental disability
Number of episodes	248	124	71	9	5	3
Proportion of total episodes in 2018	1.9%	1.0%	0.6%	0.1%	0.0%	n < 5
Gender (%)						
<i>Female</i>	67.3%	54.0%	23.9%	44.4%	20.0%	n < 5
<i>Male</i>	32.7%	46.0%	76.1%	55.6%	80.0%	n < 5
Age group (%)						
<i>Under 65</i>	4.0%	8.1%	81.7%	44.4%	40.0%	n < 5
<i>Over 65</i>	95.6%	90.3%	18.3%	55.6%	60.0%	n < 5
Age (Mean+95%CI)	82.4 (81.1-83.8)	80.1 (78.0-82.2)	44.2 (39.5-48.8)	69.6 (58.6-80.5)	67.2 (54.4-80.0)	n < 5
Admission FIM (Mean+95%CI)	79.2 (76.5-81.9)	80.3 (75.9-84.7)	64.1 (57.7-70.5)	81.4 (69.5-93.4)	69.8 (50.6-89.0)	n < 5
LOS (Mean+95%CI)	14.5 (13.1-15.8)	14.4 (12.6-16.3)	44.3 (33.9-54.7)	25.4 (9.9-41.0)	17.2 (11.1-23.3)	n < 5
Discharge destination (%)						
<i>Discharged to community</i>	98.4%	95.7%	97.1%	100.0%	100.0%	n < 5
<i>Remaining in hospital system</i>	1.6%	4.3%	2.9%	0.0%	0.0%	n < 5
FIM change (Mean+95%CI)	16.6 (15.0-18.2)	19.0 (15.5-22.4)	37.2 (31.5-42.8)	15.3 (9.9-20.8)	13.4 (2.6-24.2)	n < 5
FIM efficiency (FIM change/LOS)	1.1	1.3	0.8	0.6	0.8	n < 5

Other impairment discharge destination by impairment group

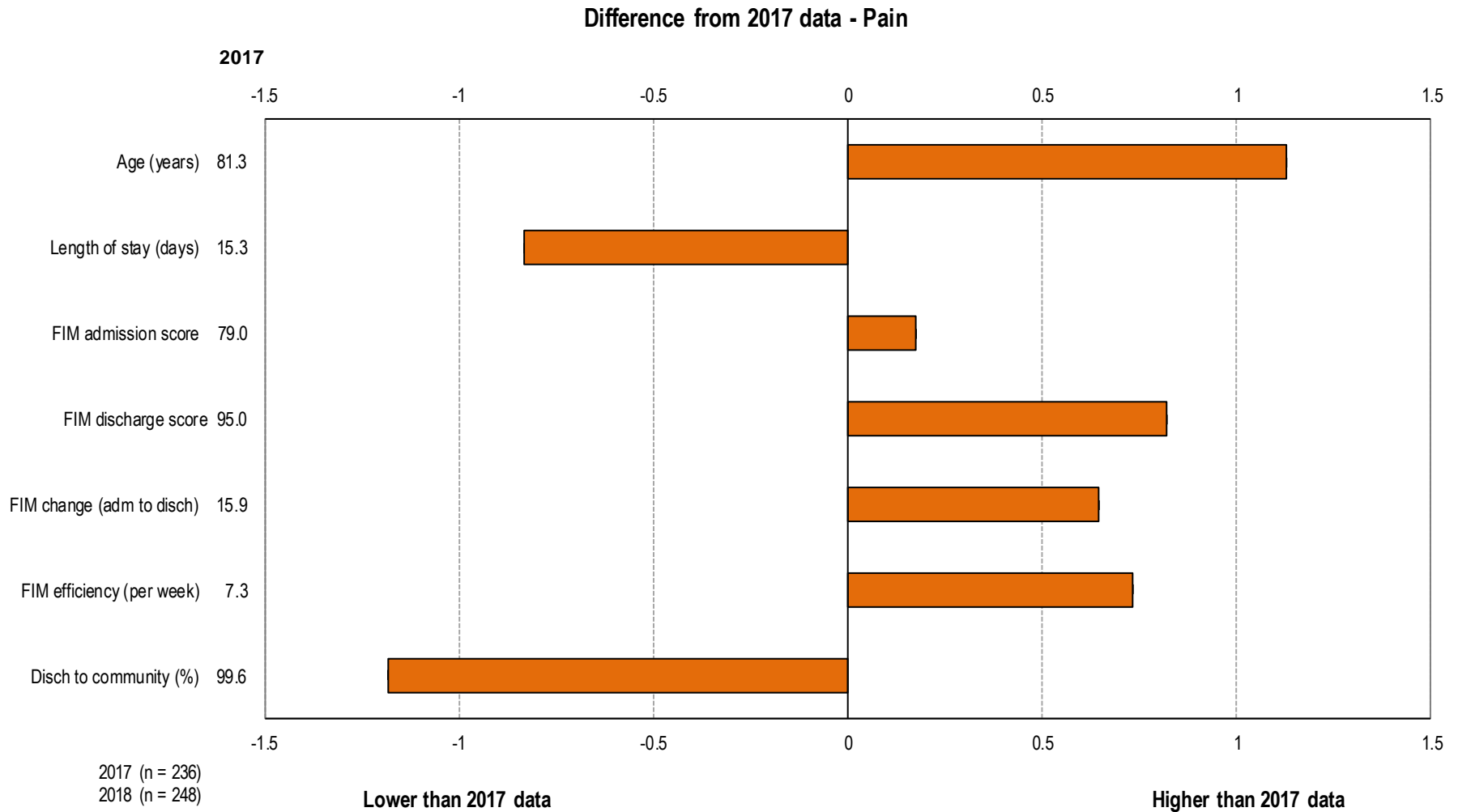
Discharge destination - Other impairments



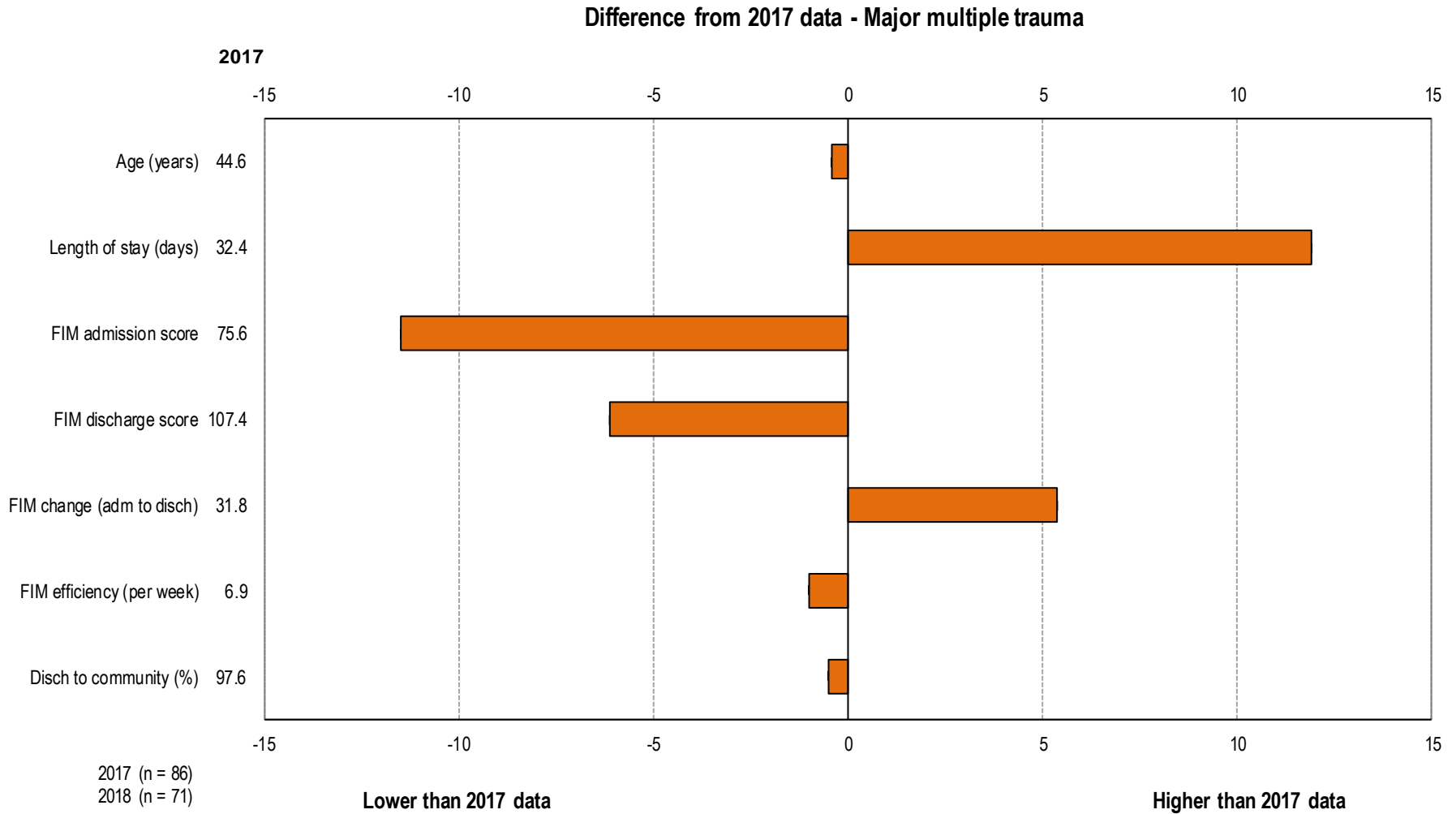
Other impairment LOS and FIM change by impairment group



Change in outcome measures in pain, 2017 to 2018



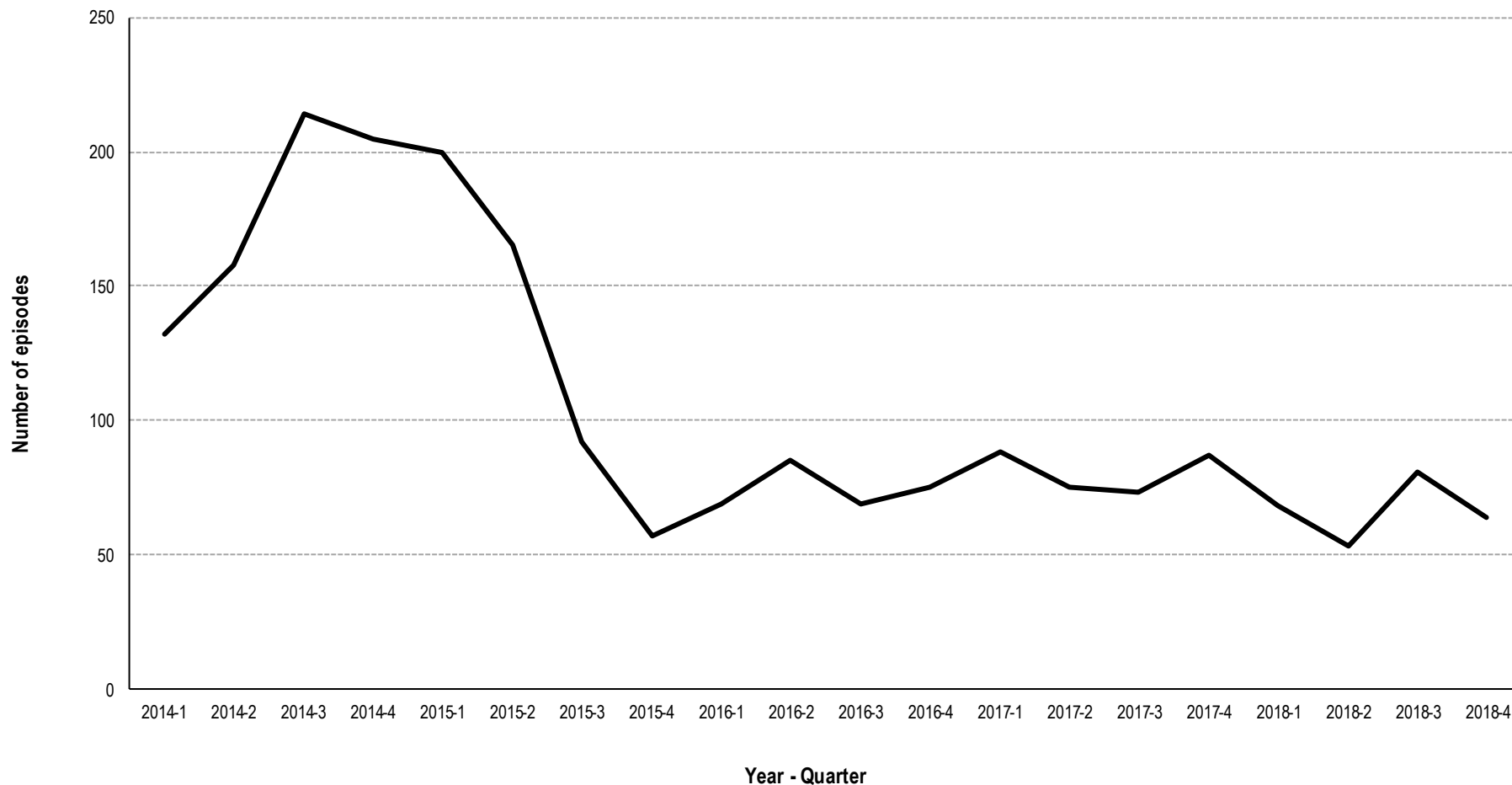
Change in outcome measures in MMT, 2017 to 2018



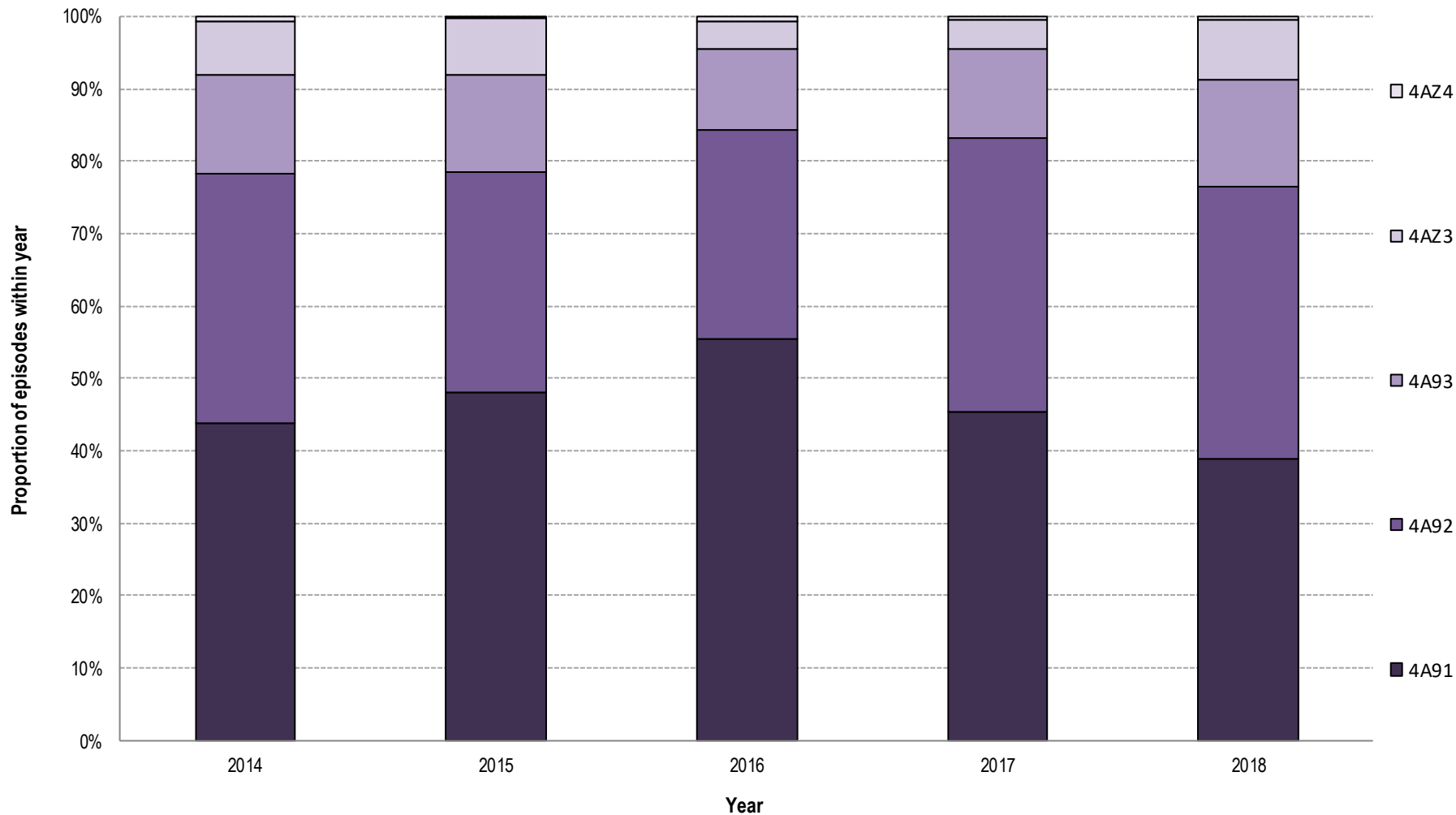
Other disabling impairment episodes over time



Number of episodes by quarter - Other disabling impairments



Other disabling impairments casemix over time



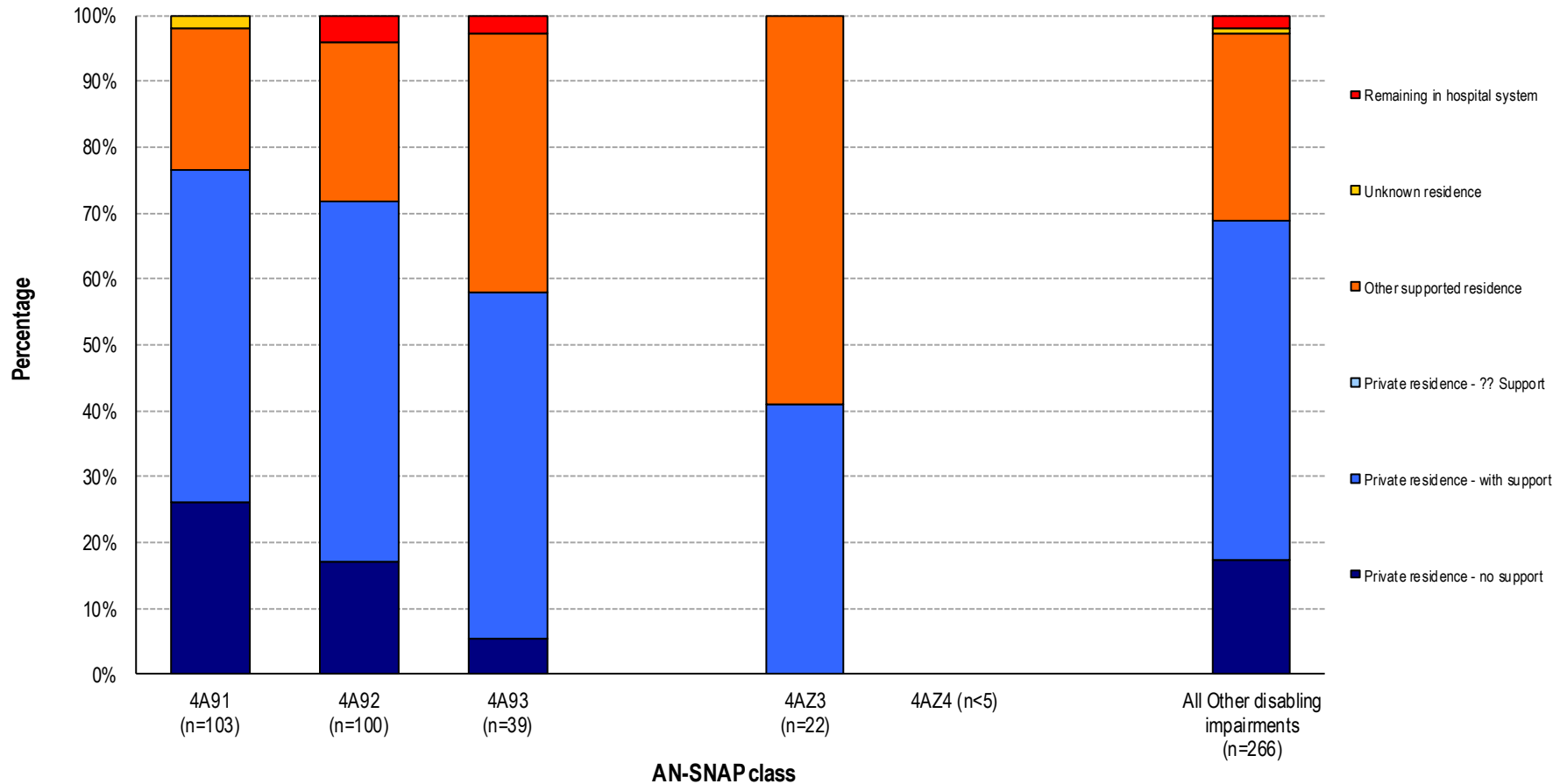
Other disabling impairment episodes in 2018



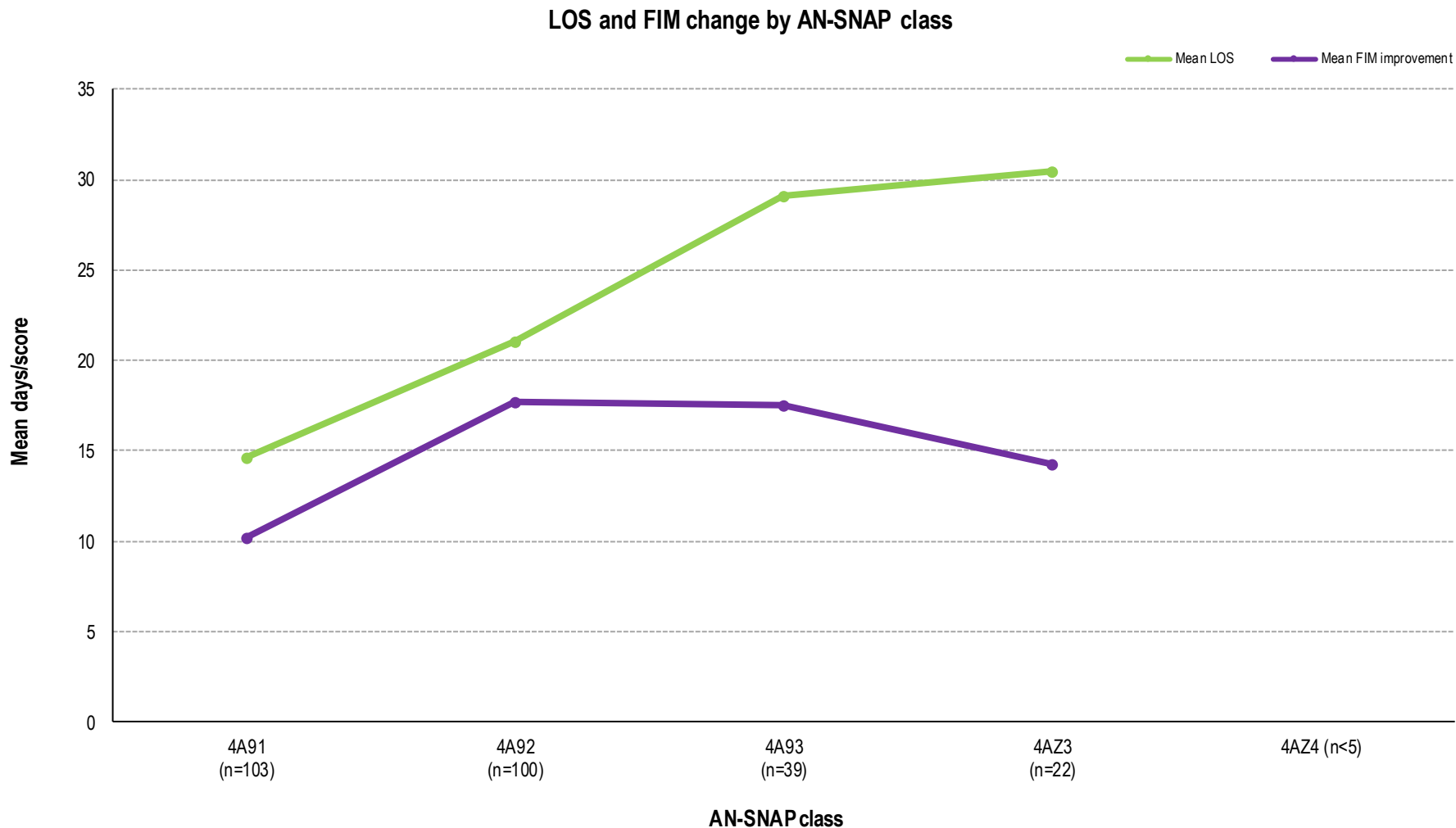
AN-SNAP class:	4A91	4A92	4A93	4AZ3	4AZ4	All Other disabling impairments
Number of episodes	103	100	39	22	1	266
Proportion of episodes	38.7%	37.6%	14.7%	8.3%	n < 5	100.0%
Gender (%)						
<i>Female</i>	51.5%	52.0%	38.5%	54.5%	n < 5	50.4%
<i>Male</i>	48.5%	48.0%	61.5%	45.5%	n < 5	49.6%
Age group (%)						
<i>Under 65</i>	12.6%	8.0%	7.7%	0.0%	n < 5	9.4%
<i>Over 65</i>	86.4%	92.0%	92.3%	100.0%	n < 5	90.2%
Age (Mean+95%CI)	78.3 (75.2-81.4)	81.5 (78.7-84.2)	81.2 (77.8-84.5)	84.5 (80.1-88.8)	n < 5	80.3 (78.6-82.1)
Admission FIM (Mean+95%CI)	92.9 (90.4-95.5)	66.8 (64.6-69.0)	46.2 (43.2-49.2)	32.1 (28.3-35.9)	n < 5	71.1 (68.3-74.0)
LOS (Mean+95%CI)	14.6 (12.5-16.7)	21.1 (18.6-23.5)	29.1 (23.2-34.9)	30.5 (23.3-37.6)	n < 5	20.5 (18.8-22.3)
Discharge destination (%)						
<i>Discharged to community</i>	100.0%	96.0%	97.4%	100.0%	n < 5	98.1%
<i>Remaining in hospital system</i>	0.0%	4.0%	2.6%	0.0%	n < 5	1.9%
FIM change (Mean+95%CI)	10.2 (8.5-11.9)	17.7 (15.3-20.0)	17.5 (11.0-24.0)	14.2 (7.5-20.9)	n < 5	14.5 (12.9-16.1)
FIM efficiency (FIM change/LOS)	0.7	0.8	0.6	0.5	n < 5	0.7

Other disabling impairment discharge destination by AN-SNAP class

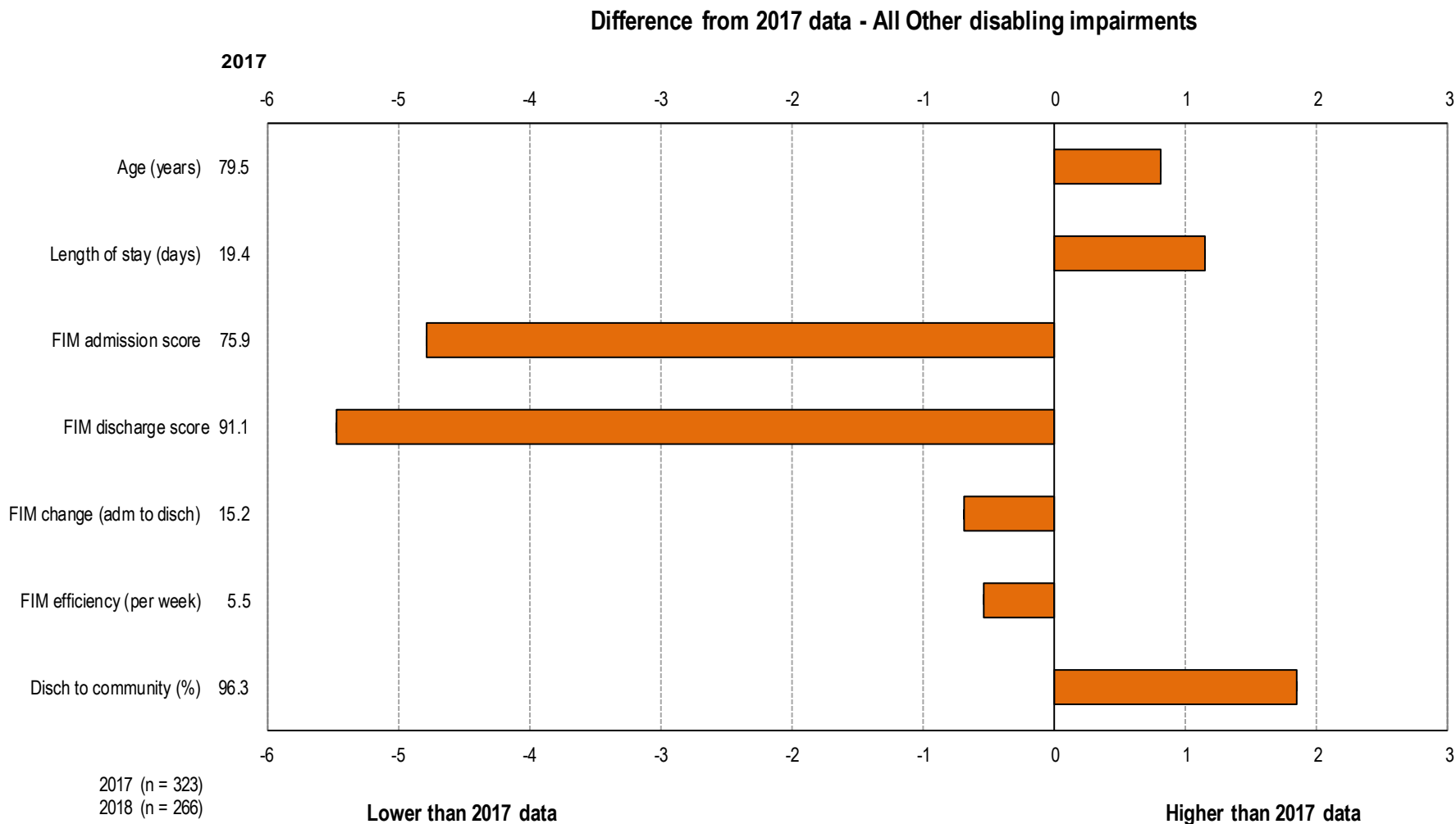
Discharge destination - Other disabling impairments



Other disabling impairment LOS and FIM change by AN-SNAP class



Change in outcome measures in other disabling impairments, 2017 to 2018



AROC Contact Details

Australasian Rehabilitation Outcomes Centre

Australian Health Services Research Institute

iC Enterprise 1, Innovation Campus

University of Wollongong NSW 2522

Phone: +61-2-4221-4411

Email: aroc@uow.edu.au

Web: aroc.org.au