

The AROC Annual Report:

The state of rehabilitation in New Zealand in 2016



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of Rehabilitation
Medicine**

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Introduction

This is the fifth 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).

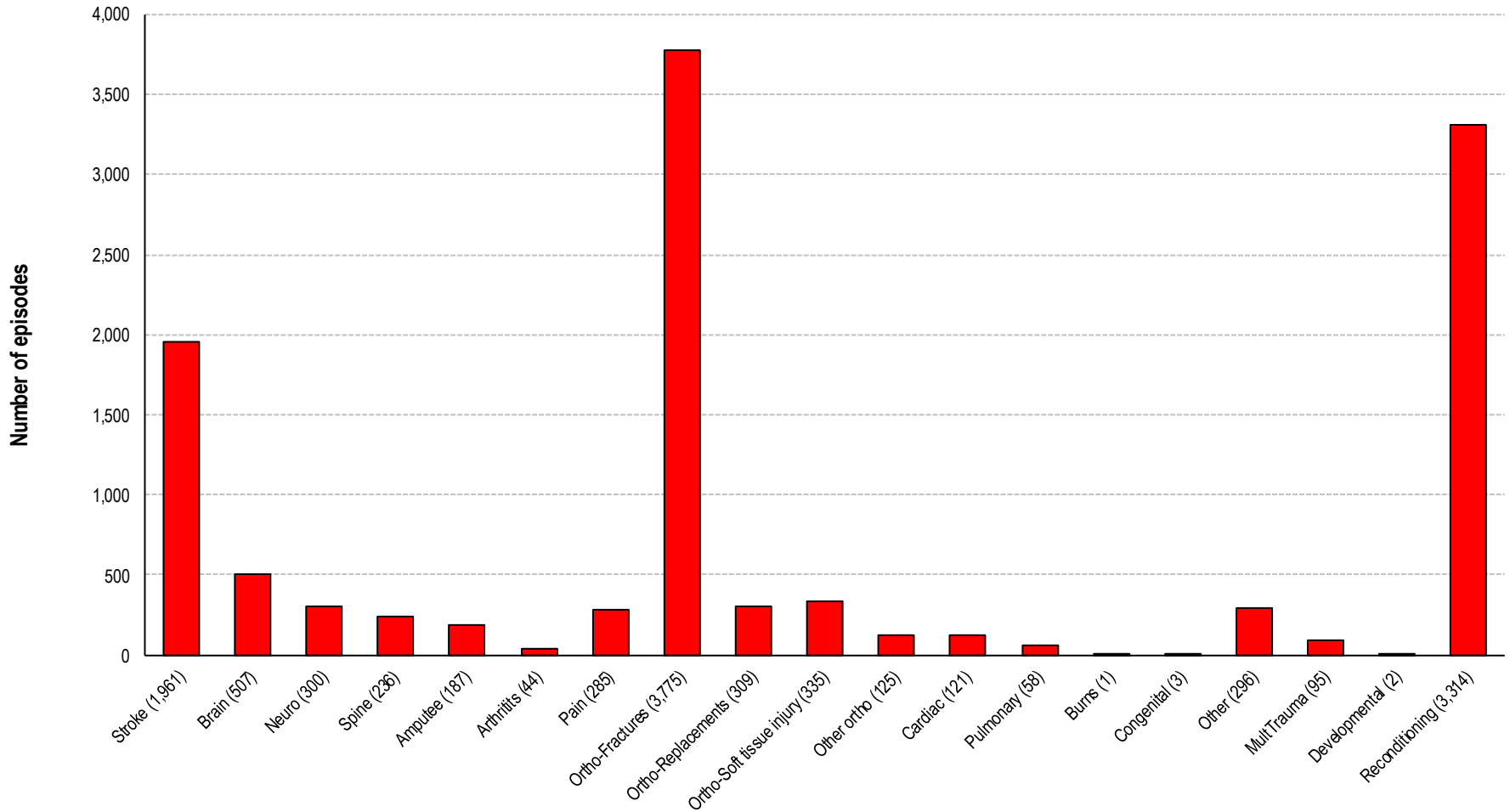
The inaugural report was published in 2013 and described the 2012 data; this fifth instalment describes the 2016 data.

This report is the second 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>

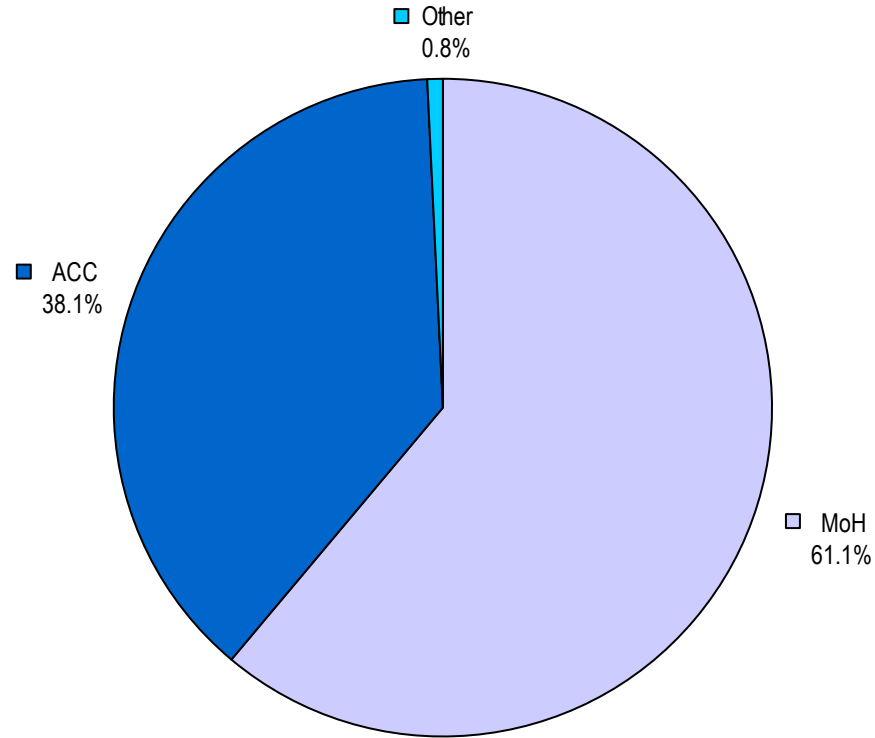
This report also includes an extended times series analysis, looking at change in various rehabilitation measures over the most recent five years.

The provision of rehabilitation in New Zealand has been relatively static over the past few years, with 2016 seeing a 1.6% real decrease in inpatient episodes of rehabilitation provided.

Number of episodes by impairment group, 2016



Funding source for rehabilitation in New Zealand, 2016

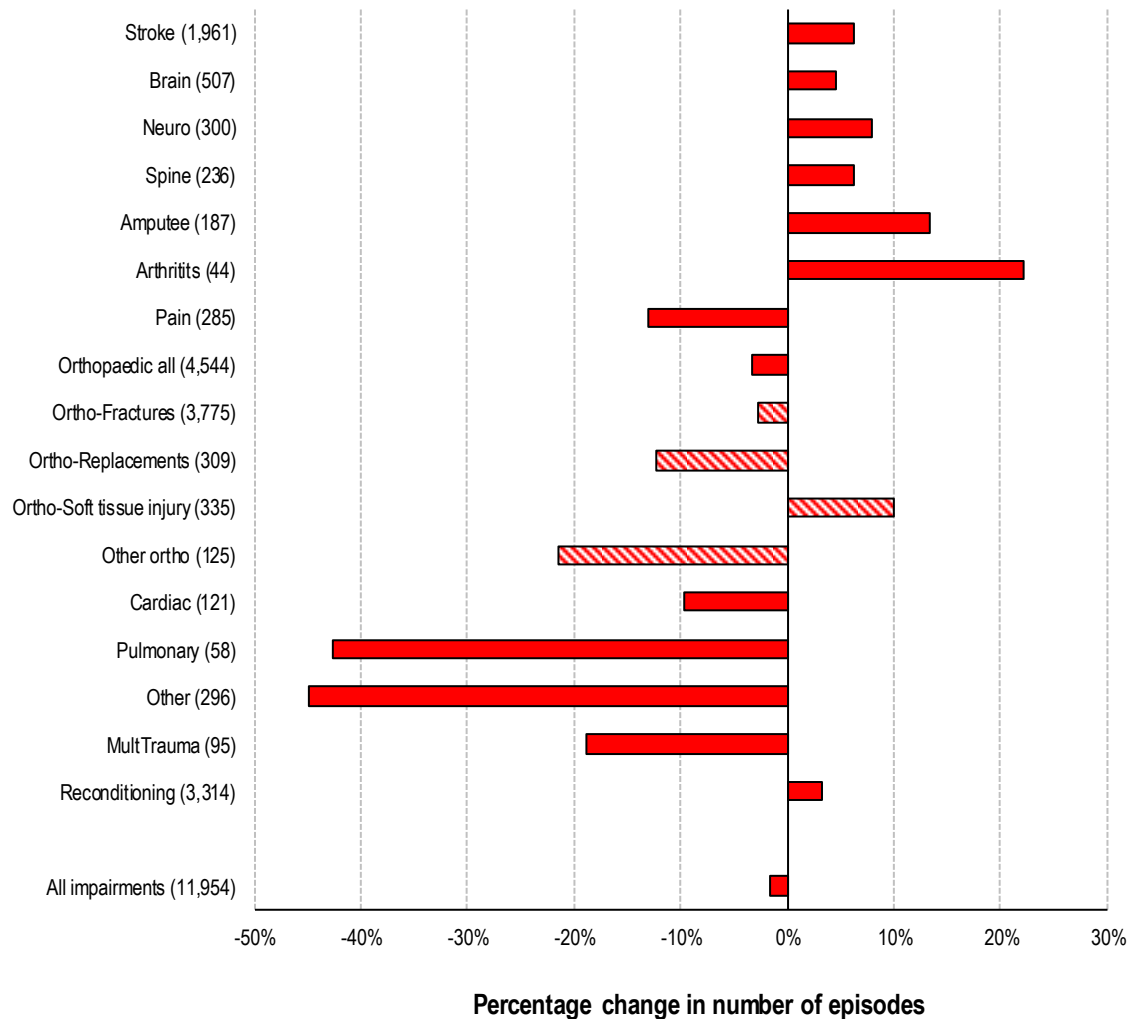


Changes in rehabilitation – compared to last year

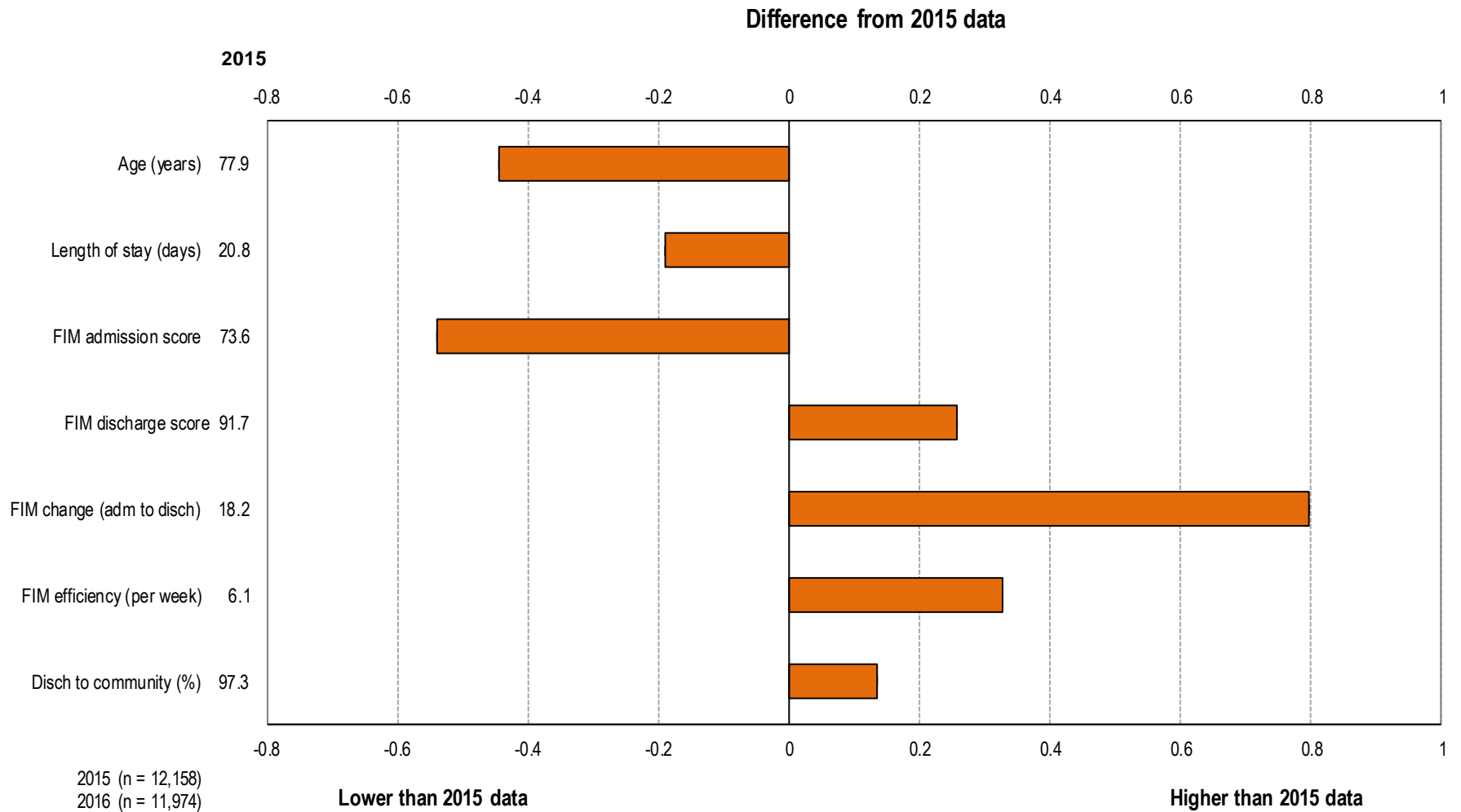
The following figures look at changes in rehabilitation between last year and this year:

- 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, 2015 to 2016



Change in outcome measures, 2015 to 2016

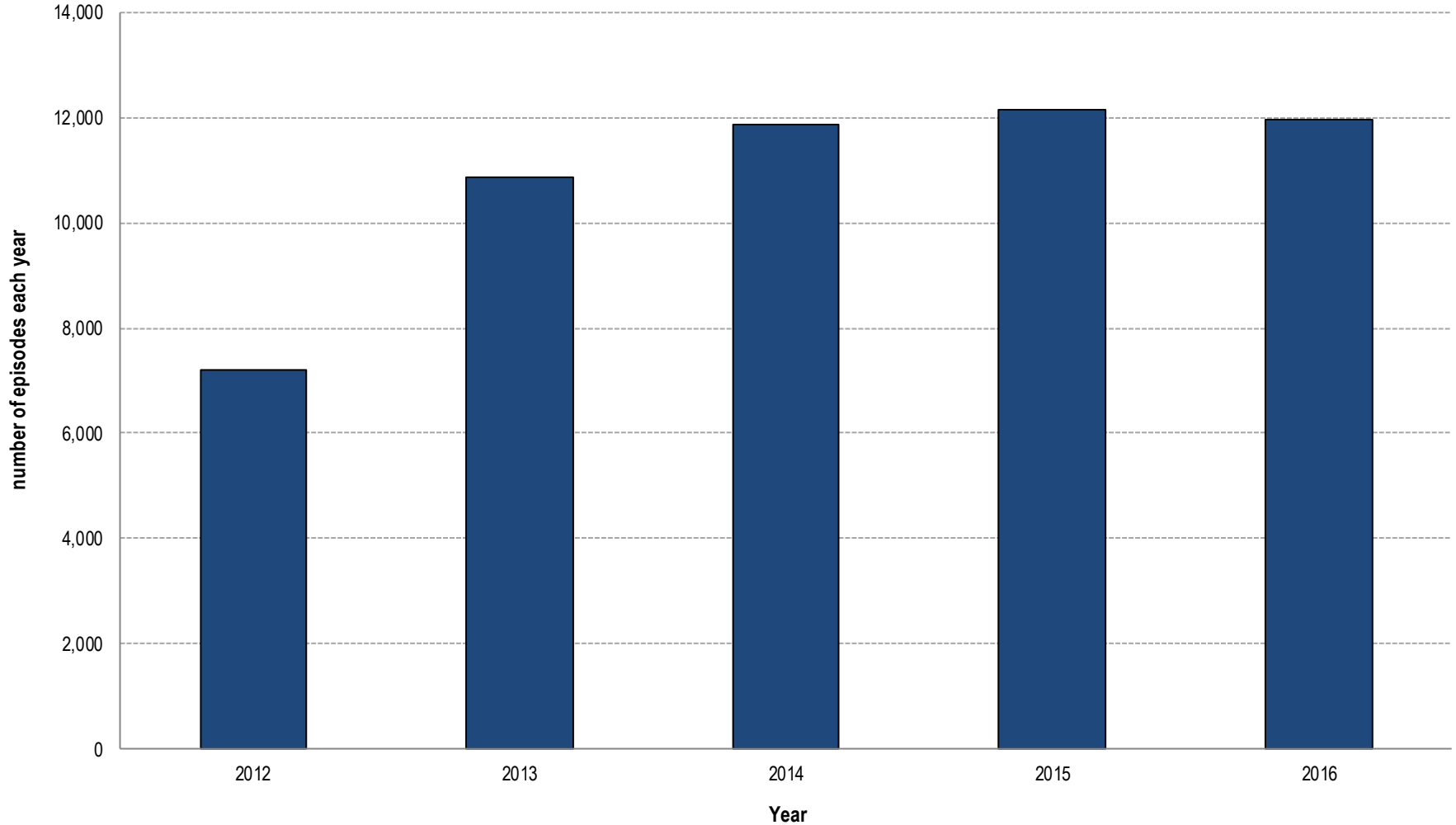


Changes in rehabilitation – compared to five years ago

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

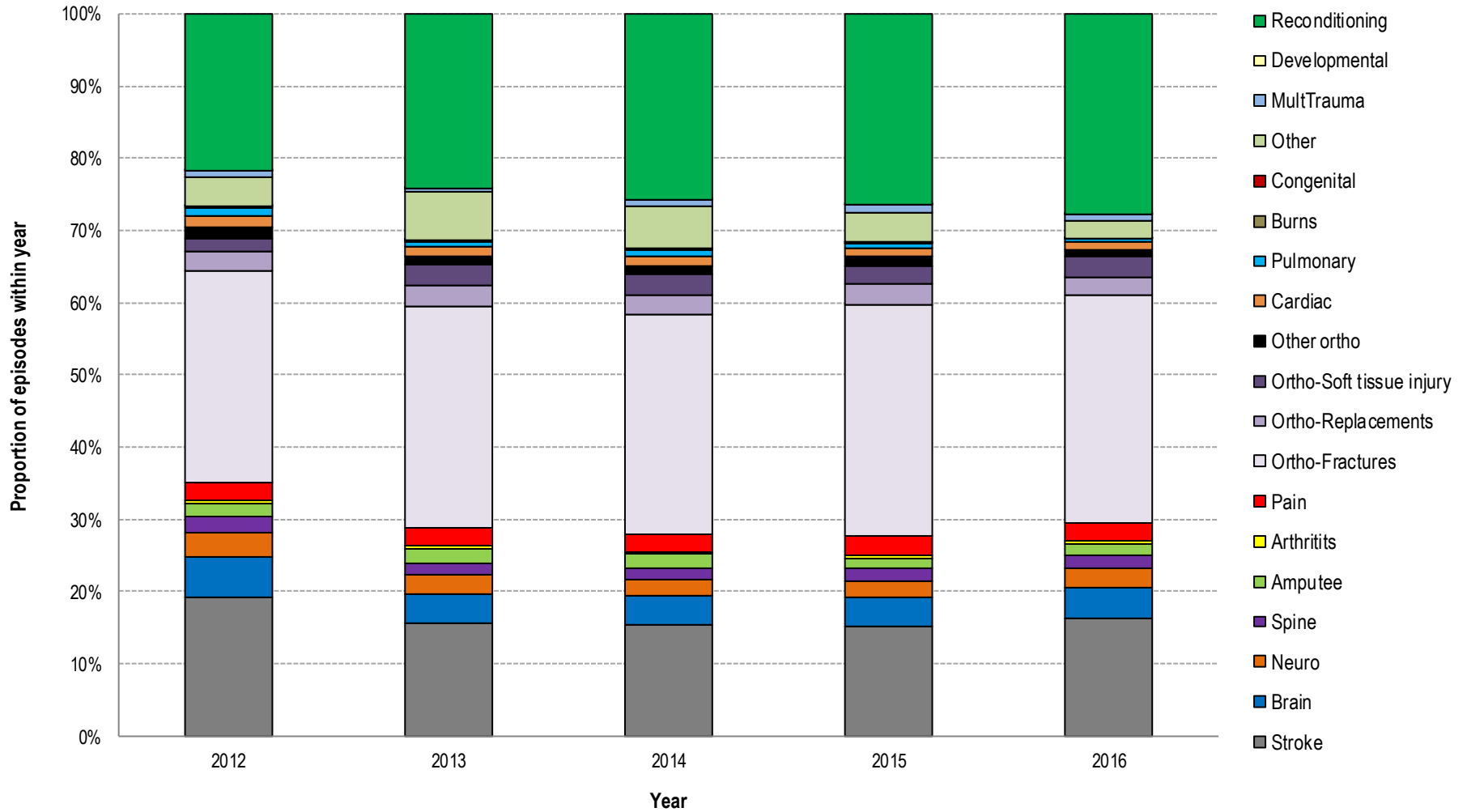
- The first figure shows the total number of episodes each year over the past 5 years.
- The second figure outlines the changing proportion of episodes within each impairment group over the past five years as a proportion of all episodes each year.
- The third figure presents the key changes in rehabilitation 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 - 2012 to 2016

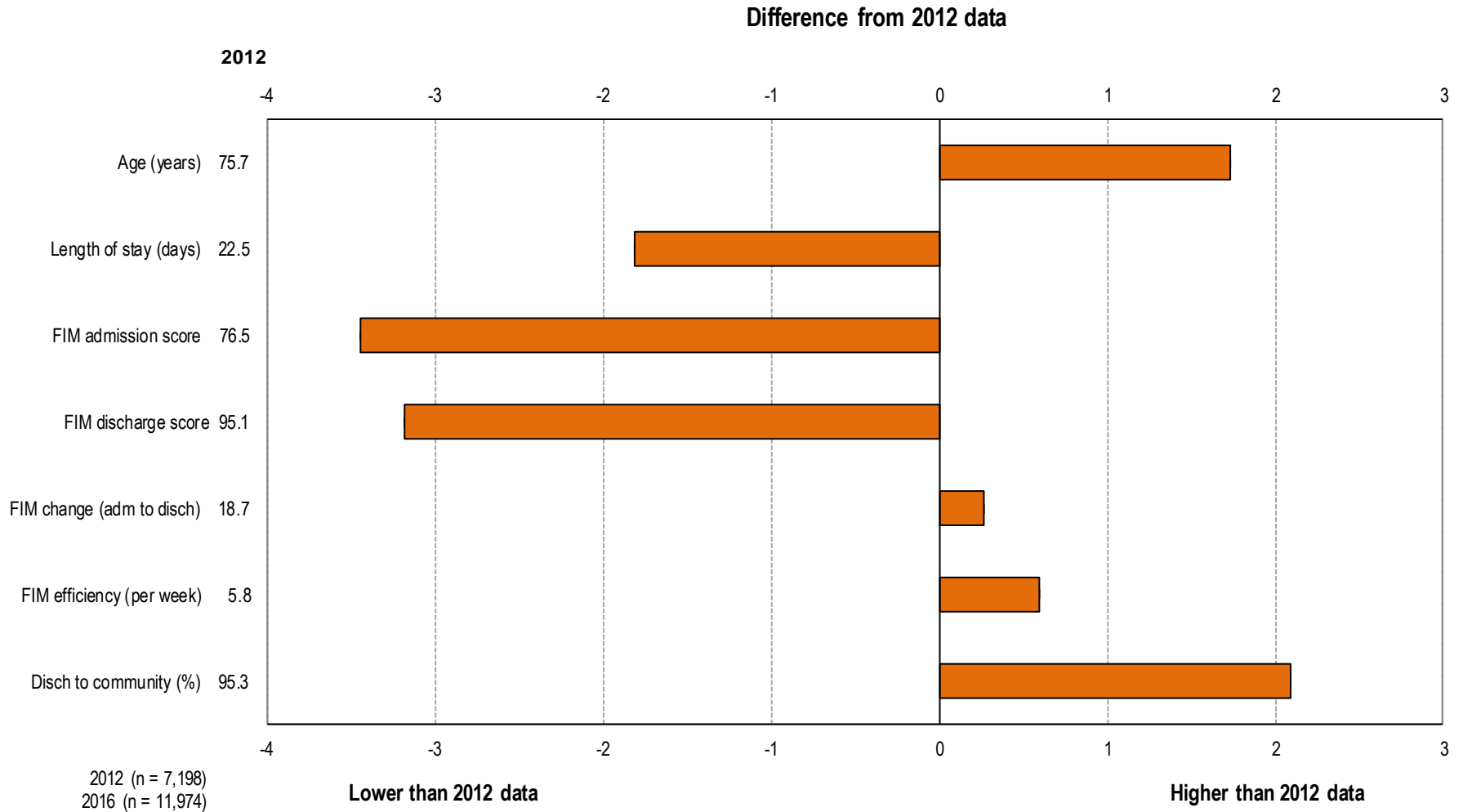


A large number of the New Zealand facilities joined AROC during the 2011-2012 period. This increase in data submitting facilities is responsible for most of the growth in number of episodes during 2011-2013.

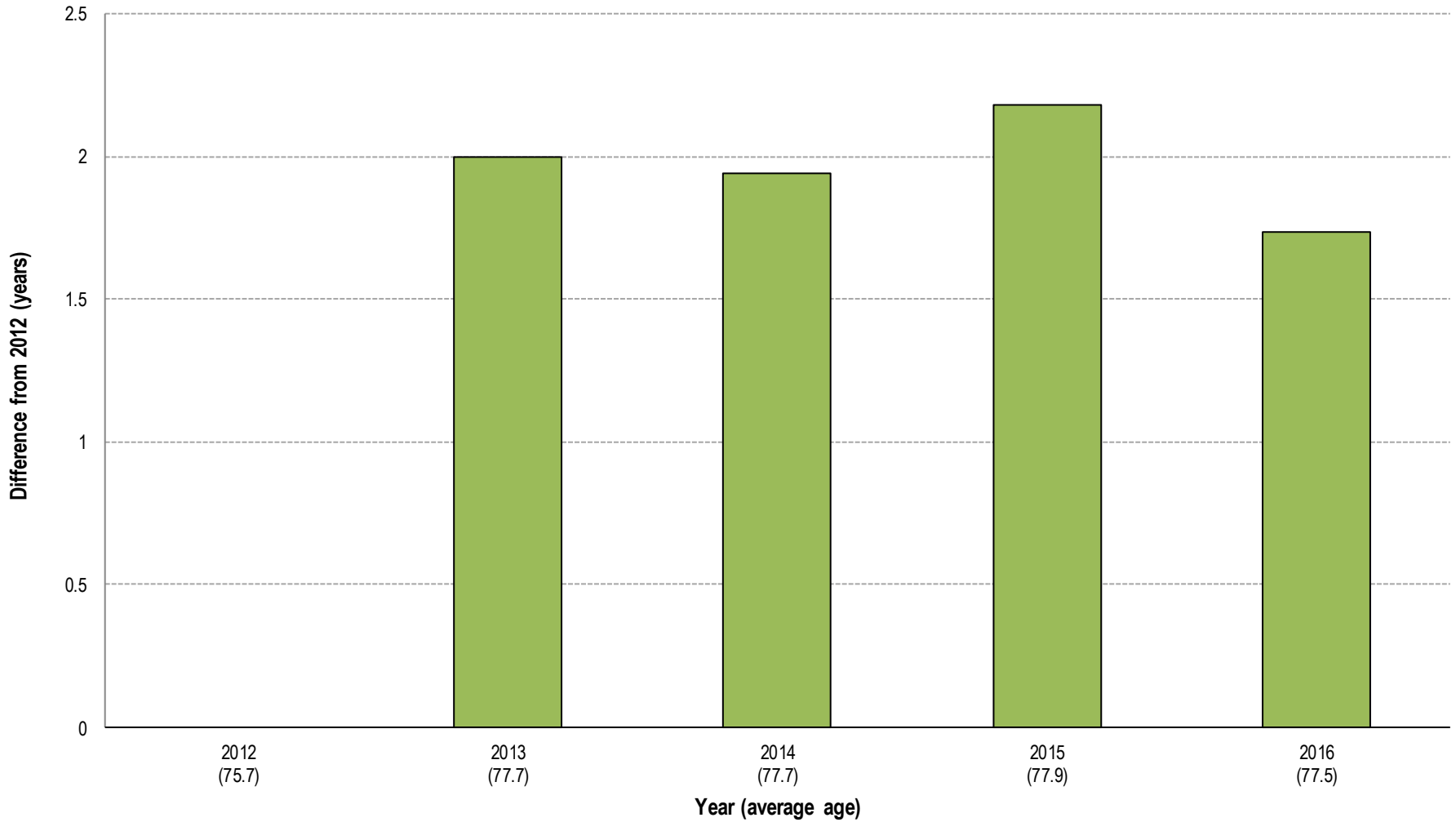
Proportion of episodes by impairment group, 2012 to 2016



Change in outcome measures, 2012 to 2016

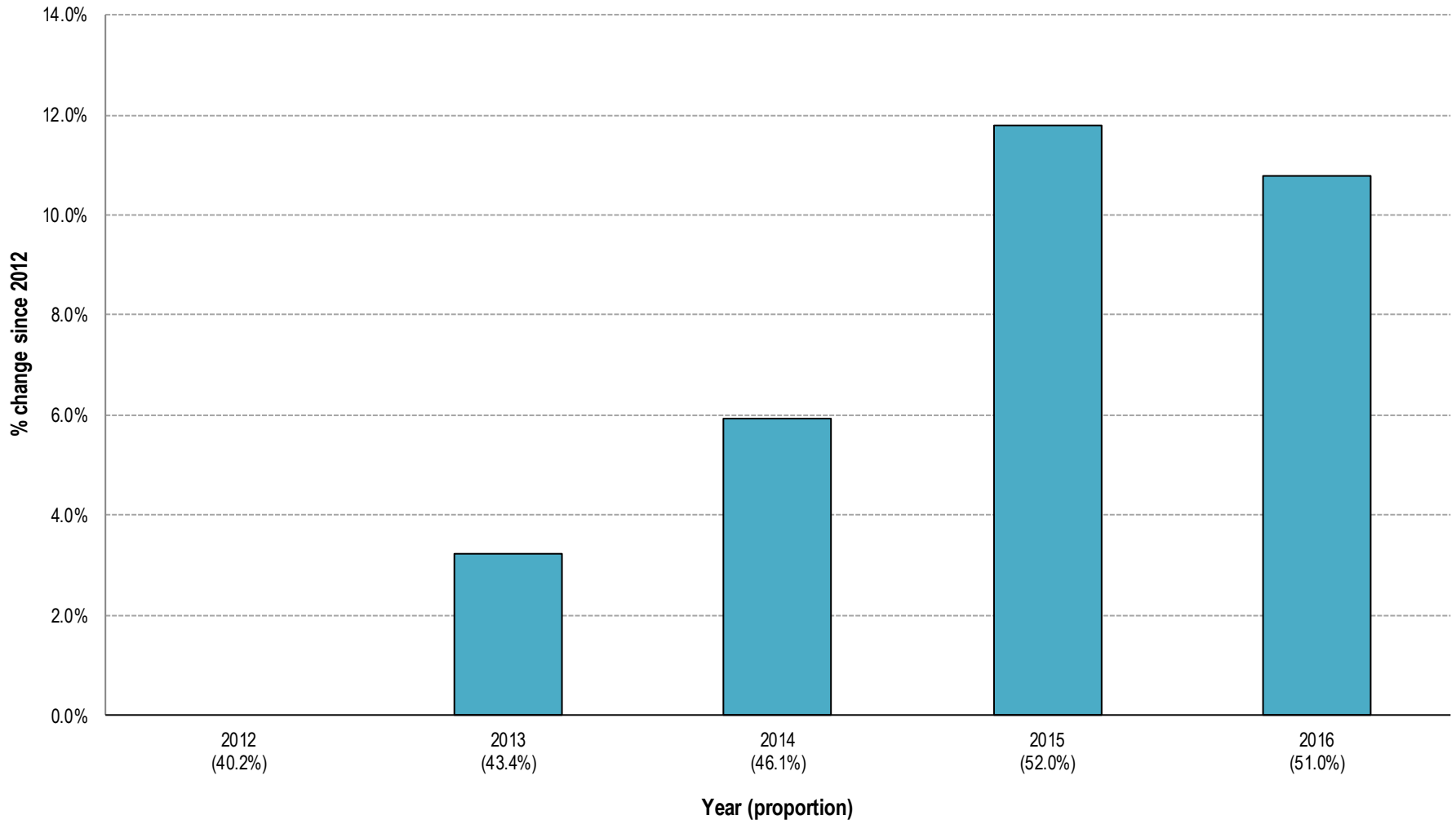


Average age compared to five years ago



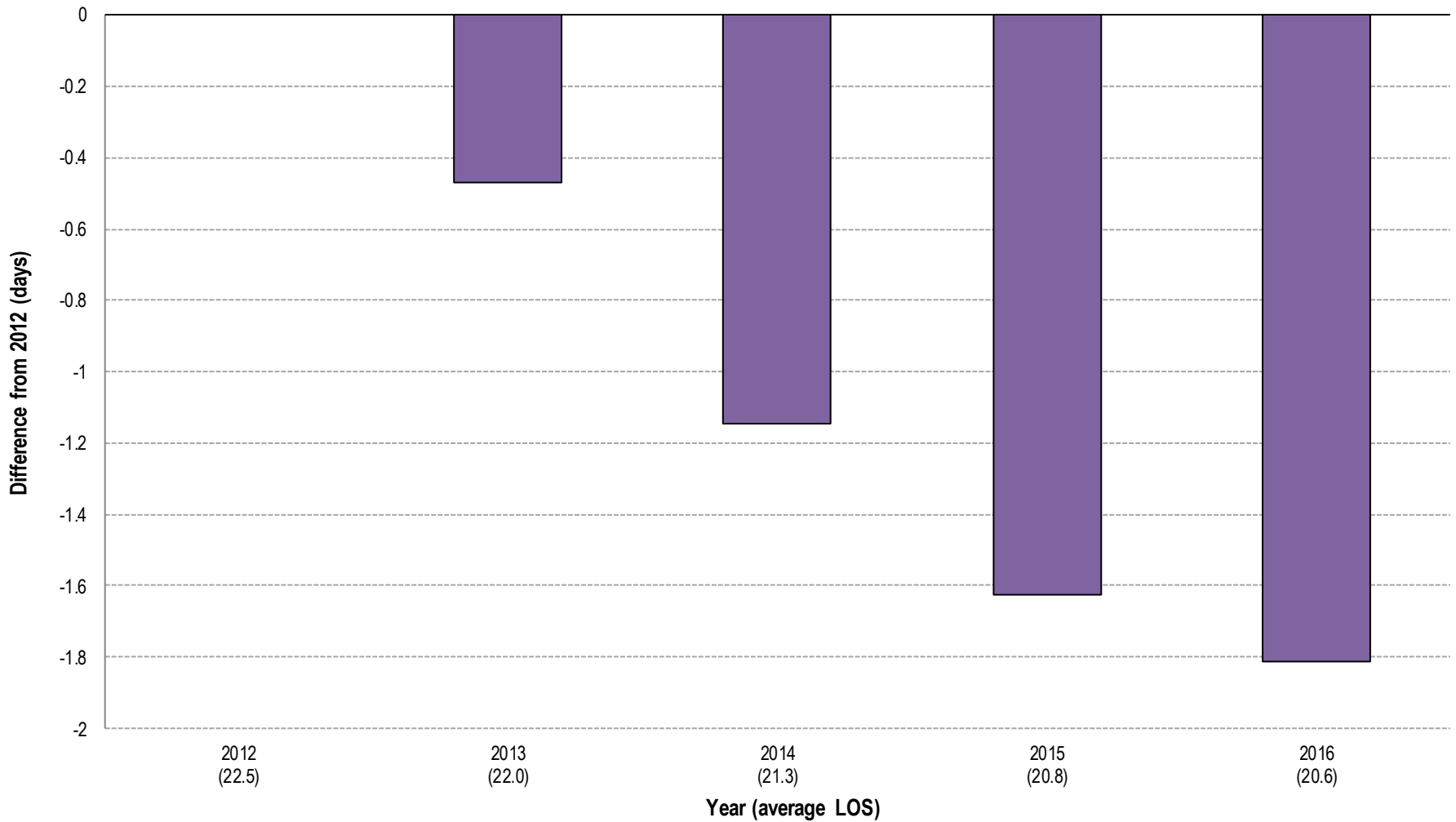
Over the last four years patients have been around 2 years older than patients in 2012.

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



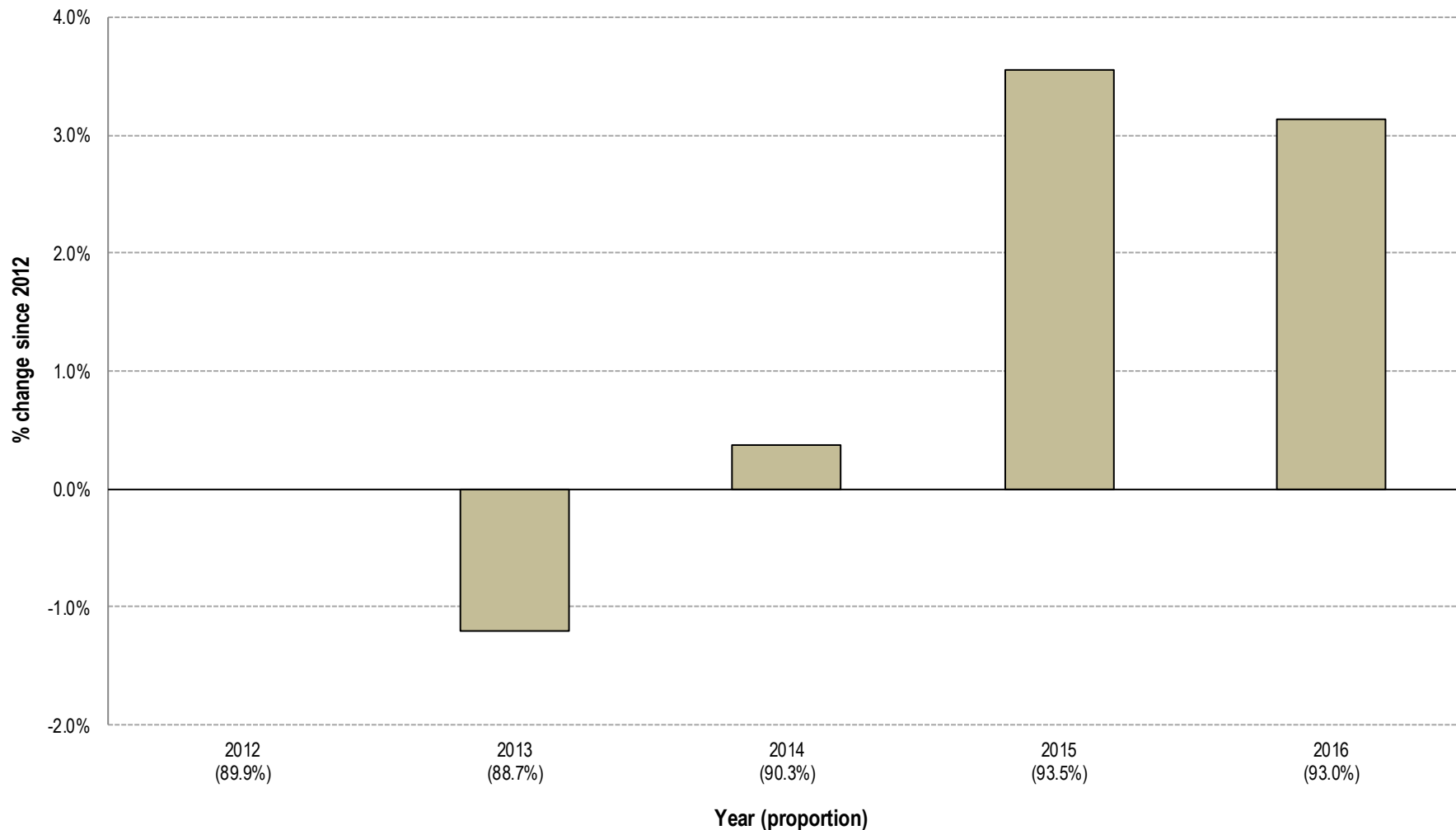
Over the last five years patients have been commencing rehabilitation sooner after their injury /onset of symptoms; in 2016 11% more patients were admitted to rehabilitation within a week of onset compared to in 2012.

Length of stay compared to five years ago



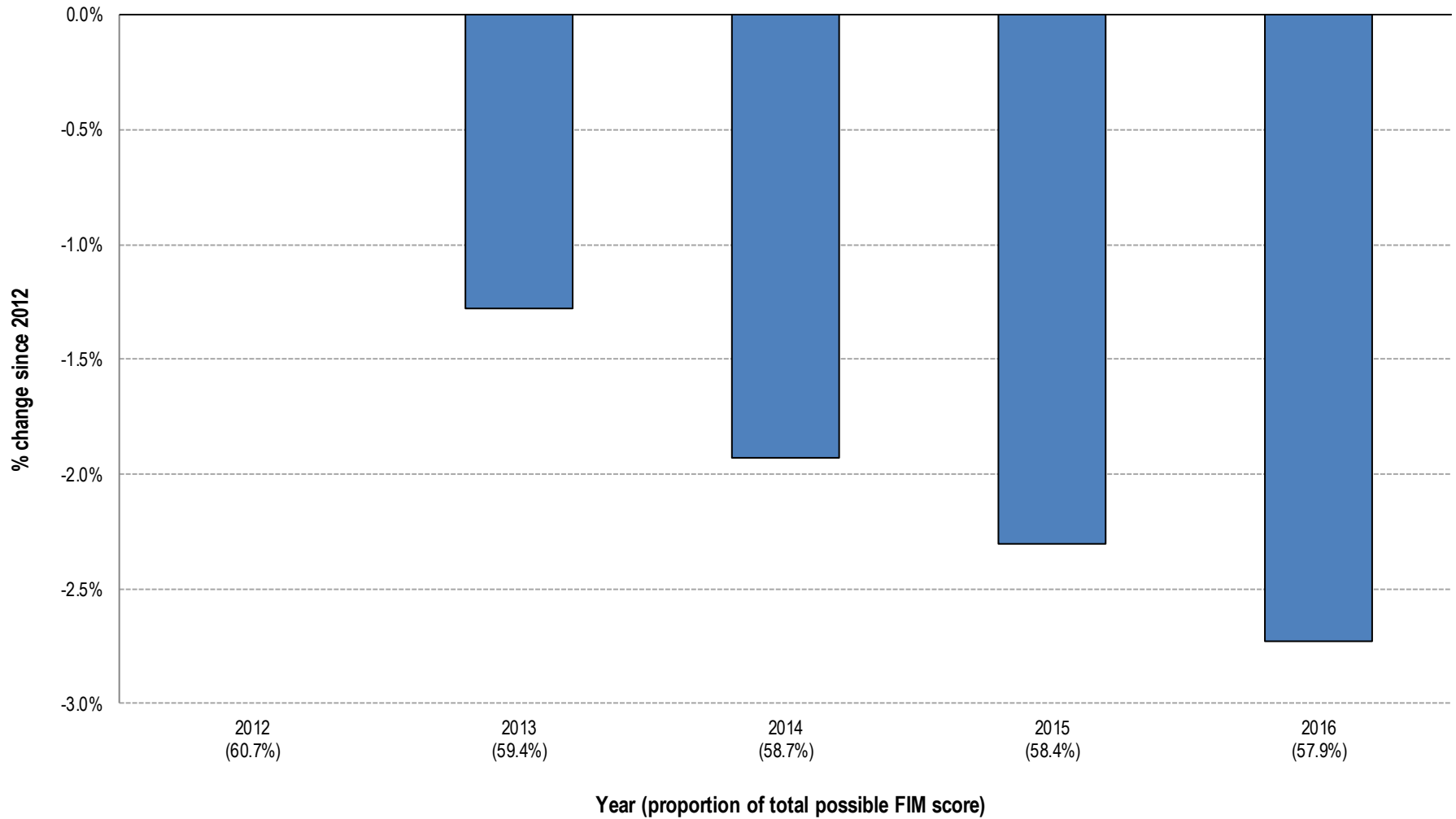
Over the last five years rehabilitation length of stay (LOS) has been declining; in 2016 patients stayed just under 2 days less than they did in 2012.

Timeliness of FIM assessment within 72 hours compared to five years ago



Over the last five years the number of patients assessed for their functional ability within three days of rehabilitation commencing has fluctuated.

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

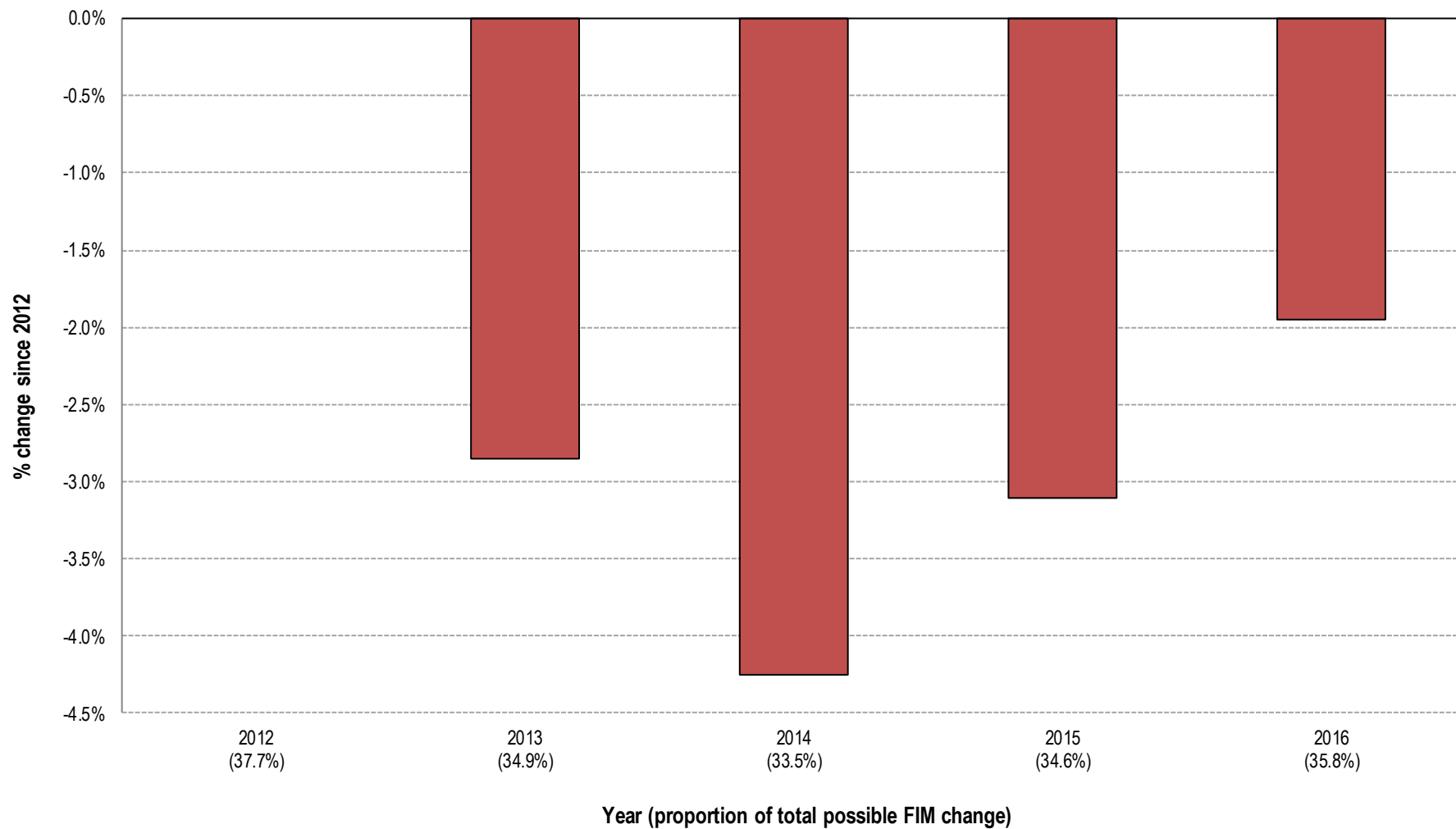


Over the last five years the FIM admission score has declined, nearly 3% lower in 2016 compared to in 2012.

Relative functional gain in FIM compared to five years ago

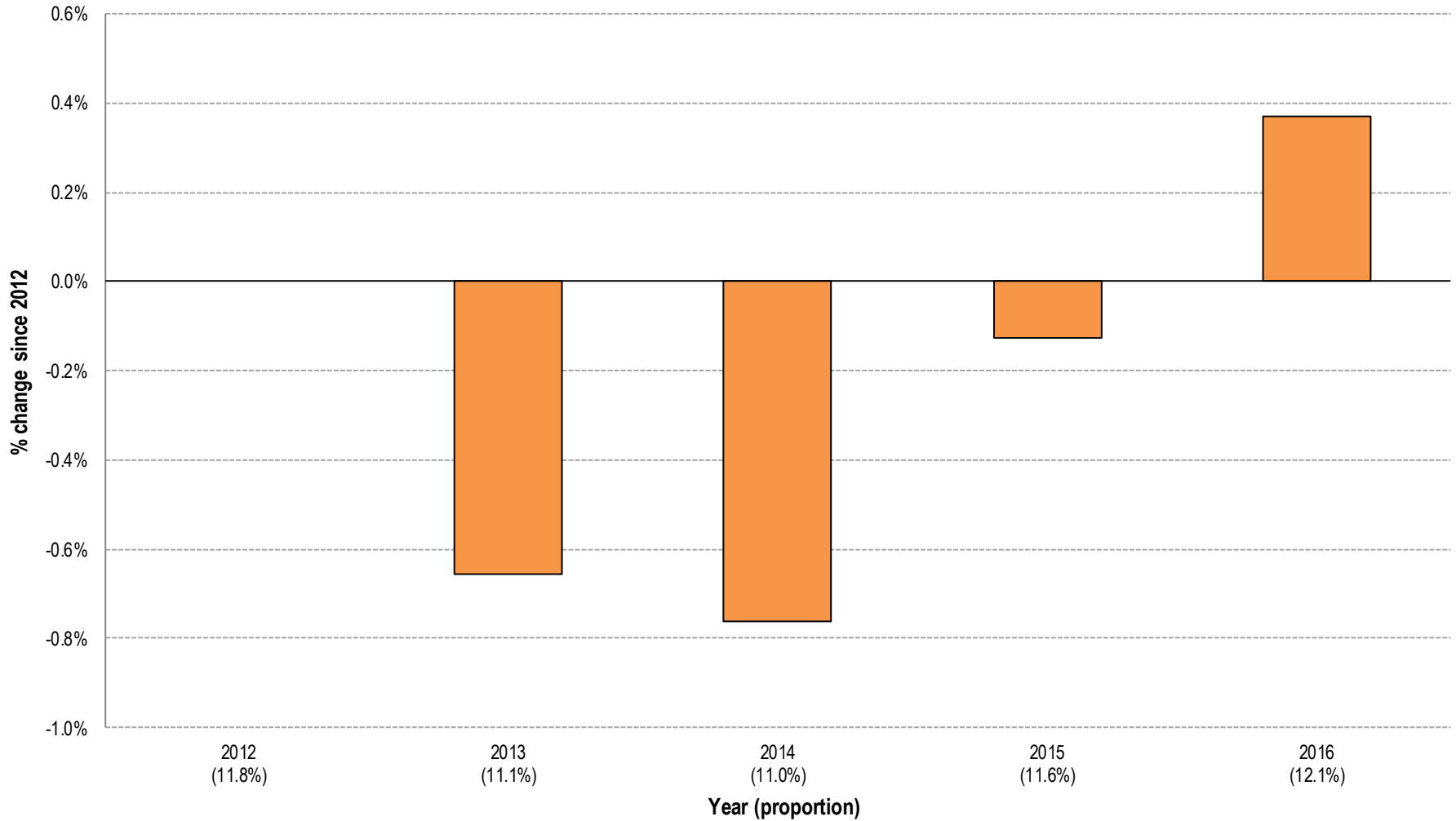


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FIM Relative Functional Gain (RFG), or change in FIM score possible from admission to discharge, over the last few years has been 2%-4% lower than it was in 2012, dropping slightly in 2016. In 2016 36% of FIM relative functional gain was achieved.

FIM efficiency per week compared to five years ago



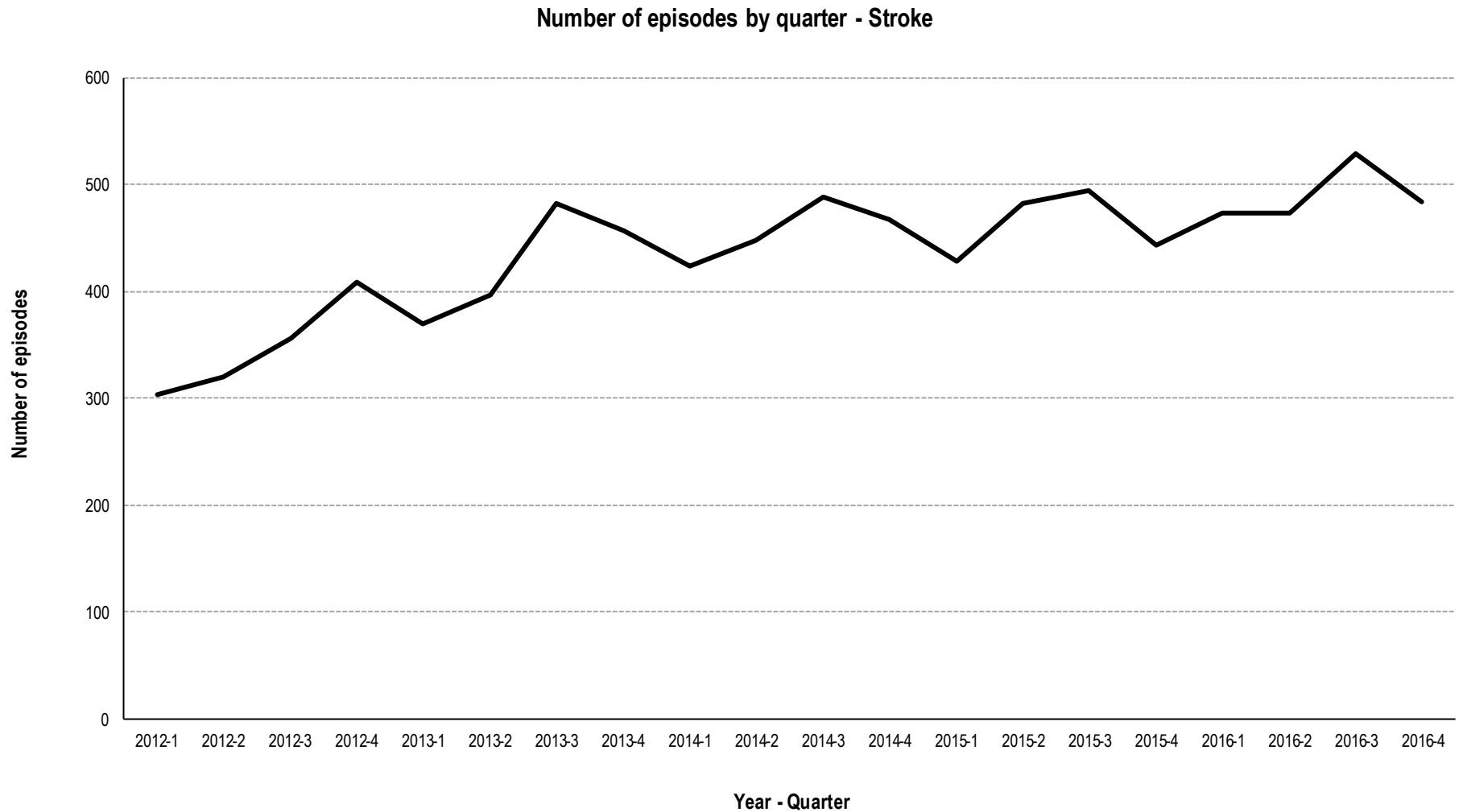
Over the last three years weekly FIM efficiency (change in FIM score possible from admission to discharge divided by length of stay x7) has increased slightly; in 2016 it was marginally higher than it was in 2011.

Outcomes by impairment

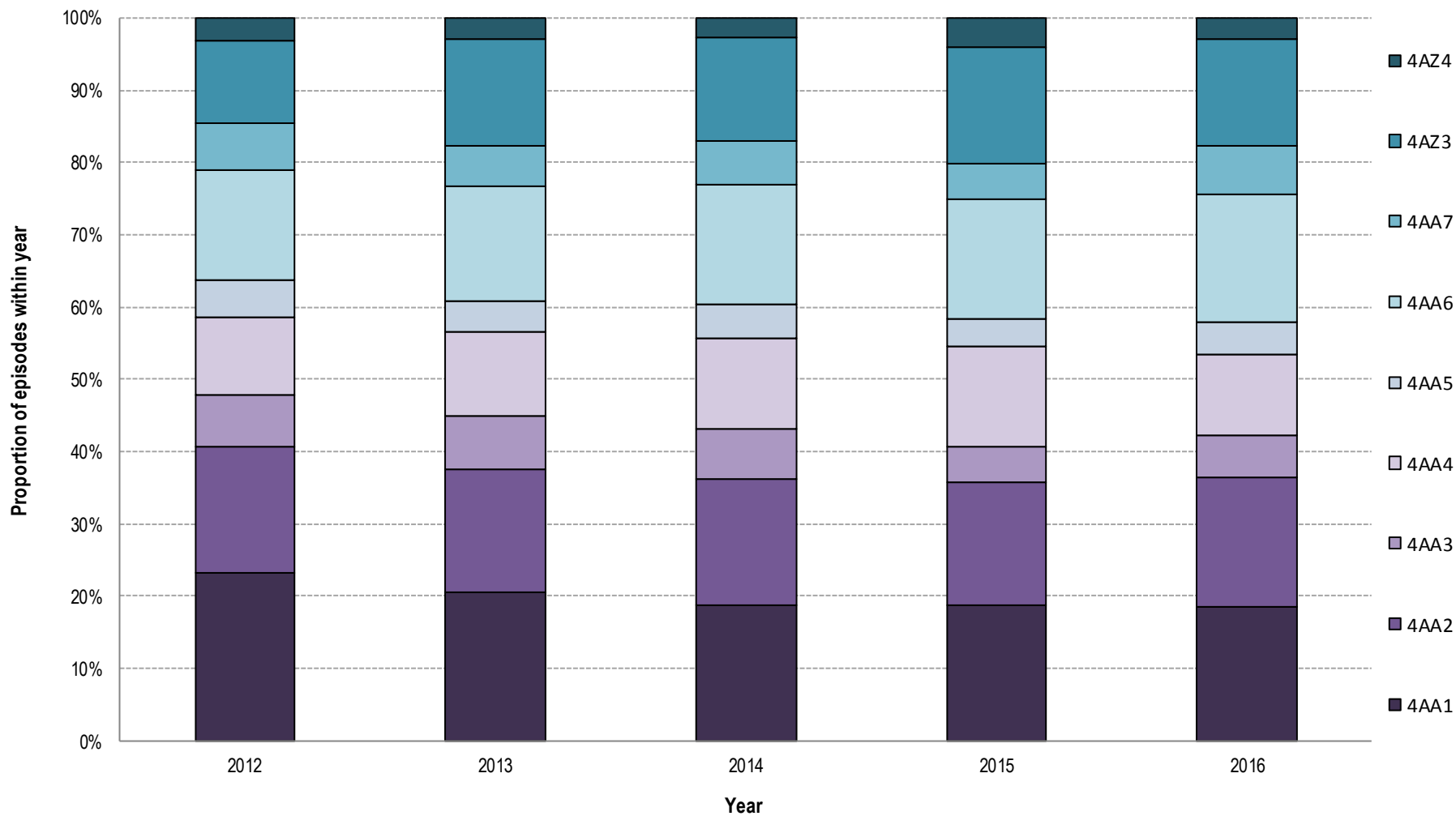
A series of figures and tables are provided for each impairment group; these outline the key descriptive data for this year, changes in episode volumes over the last 5 years, and changes in rehabilitation outcome measures between last year and this year:

- 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

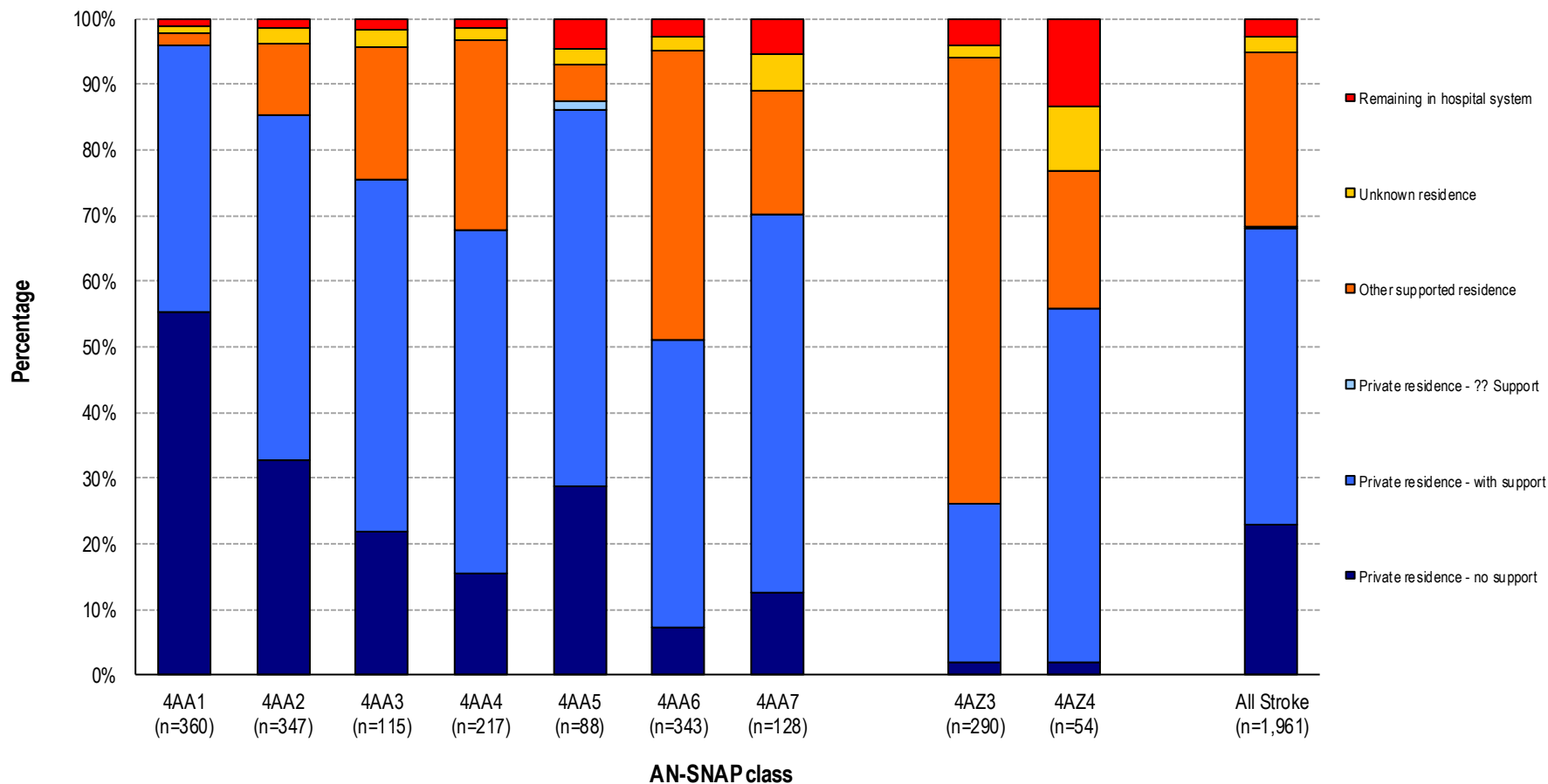


Stroke episodes in 2016

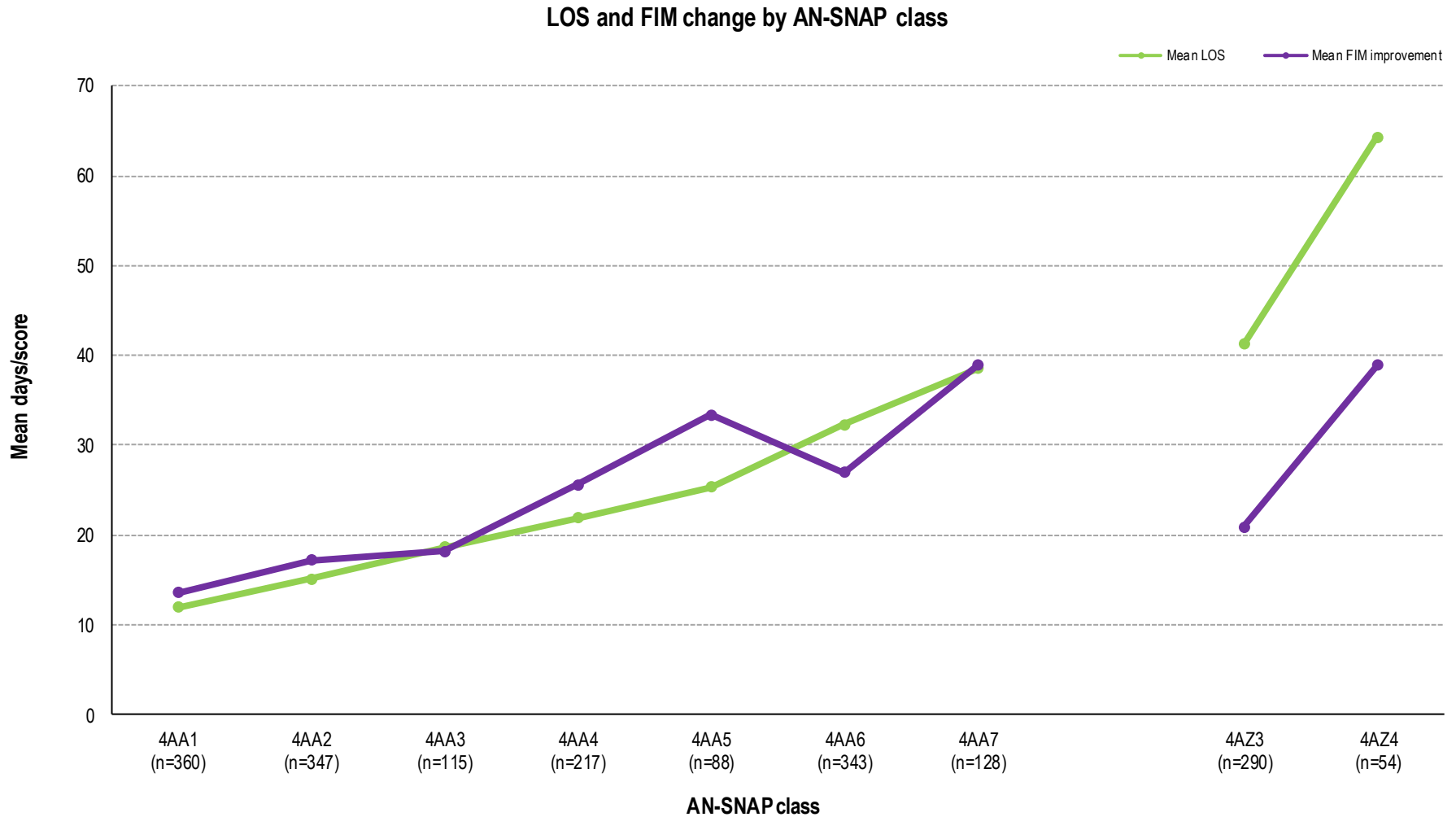
AN-SNAP class:	4AA1	4AA2	4AA3	4AA4	4AA5	4AA6	4AA7	4AZ3	4AZ4	All Stroke
Number of episodes	360	347	115	217	88	343	128	290	54	1,961
Proportion of episodes	18.4%	17.7%	5.9%	11.1%	4.5%	17.5%	6.5%	14.8%	2.8%	100.0%
Gender (%)										
<i>Female</i>	45.6%	52.2%	40.0%	50.7%	45.5%	50.1%	49.2%	53.8%	48.1%	49.5%
<i>Male</i>	54.4%	47.6%	60.0%	49.3%	54.5%	49.9%	50.8%	46.2%	51.9%	50.5%
Age group (%)										
<i>Under 65</i>	28.6%	20.7%	23.5%	0.0%	76.1%	0.0%	80.5%	0.0%	100.0%	21.8%
<i>Over 65</i>	70.8%	78.7%	76.5%	100.0%	23.9%	100.0%	19.5%	100.0%	0.0%	77.4%
Age (Mean+95%CI)	70.4 (69.0-71.8)	74.5 (73.0-76.0)	72.8 (70.3-75.2)	82.1 (81.1-83.1)	56.0 (53.9-58.2)	81.2 (80.5-81.9)	57.1 (55.6-58.6)	80.9 (80.0-81.8)	54.6 (52.3-56.9)	74.1 (73.5-74.7)
Admission FIM (Mean+95%CI)	101.4 (100.2-102.5)	89.2 (88.0-90.3)	79.2 (77.0-81.4)	65.5 (64.2-66.8)	66.5 (64.6-68.4)	48.1 (47.0-49.2)	46.5 (44.8-48.3)	29.2 (28.2-30.2)	30.4 (28.0-32.7)	67.4 (66.2-68.6)
LOS (Mean+95%CI)	11.9 (11.1-12.8)	15.2 (14.0-16.3)	18.6 (16.6-20.7)	21.9 (20.5-23.4)	25.3 (22.3-28.4)	32.3 (30.0-34.5)	38.5 (34.9-42.2)	41.3 (37.5-45.0)	64.3 (56.2-72.3)	25.4 (24.4-26.3)
Discharge destination (%)										
<i>Discharged to community</i>	98.9%	98.6%	98.2%	98.6%	95.4%	97.3%	94.5%	96.0%	86.5%	97.3%
<i>Remaining in hospital system</i>	1.1%	1.4%	1.8%	1.4%	4.6%	2.7%	5.5%	4.0%	13.5%	2.7%
FIM change (Mean+95%CI)	13.5 (12.6-14.5)	17.2 (16.0-18.3)	18.2 (15.8-20.6)	25.6 (23.5-27.8)	33.3 (30.2-36.5)	26.9 (24.8-29.1)	38.9 (35.1-42.8)	20.9 (18.4-23.5)	38.9 (32.0-45.8)	22.5 (21.7-23.3)
FIM efficiency (FIM change/LOS)	1.1	1.1	1.0	1.2	1.3	0.8	1.0	0.5	0.6	0.9

Stroke discharge destination by AN-SNAP class

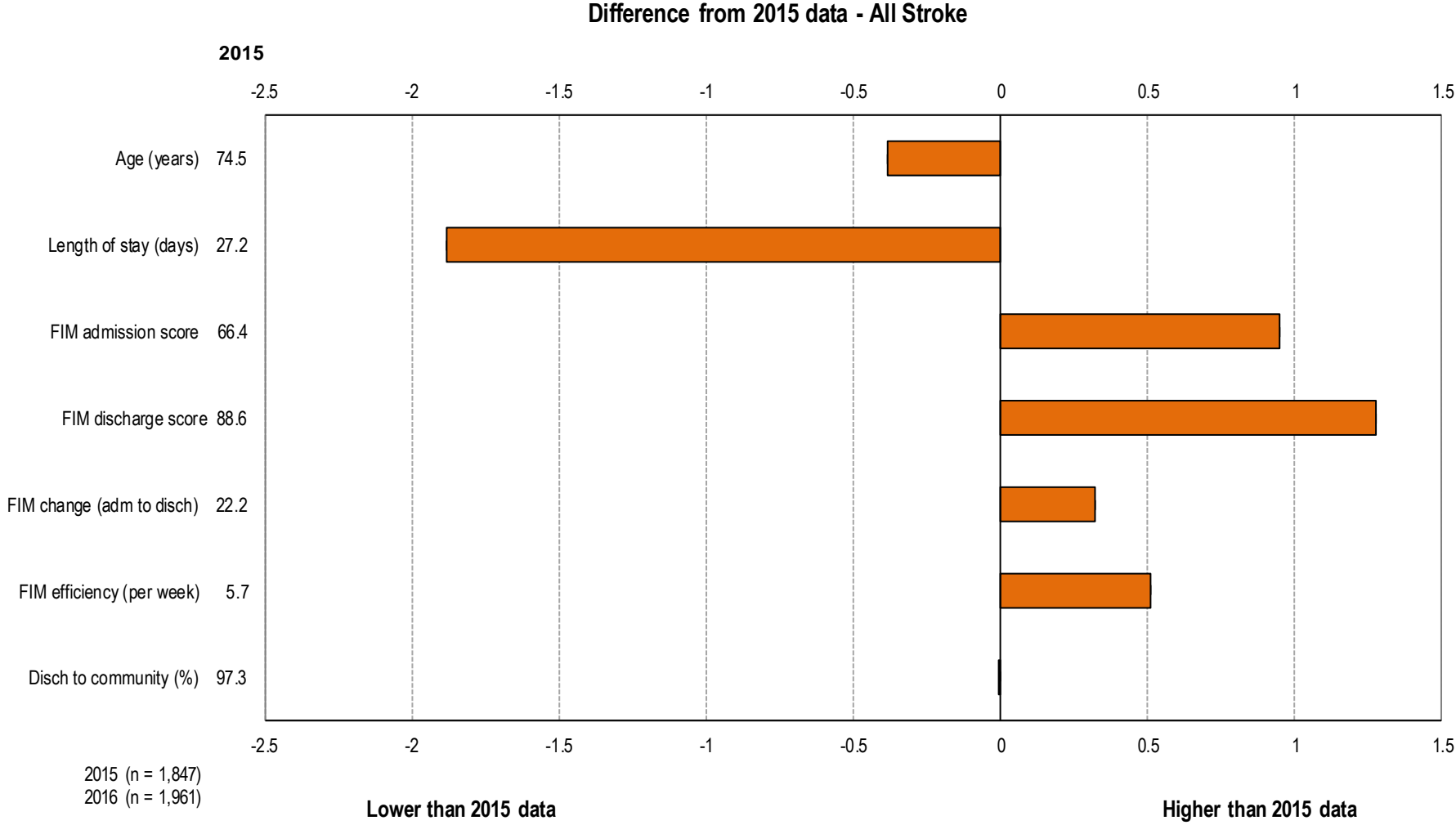
Discharge destination - Stroke



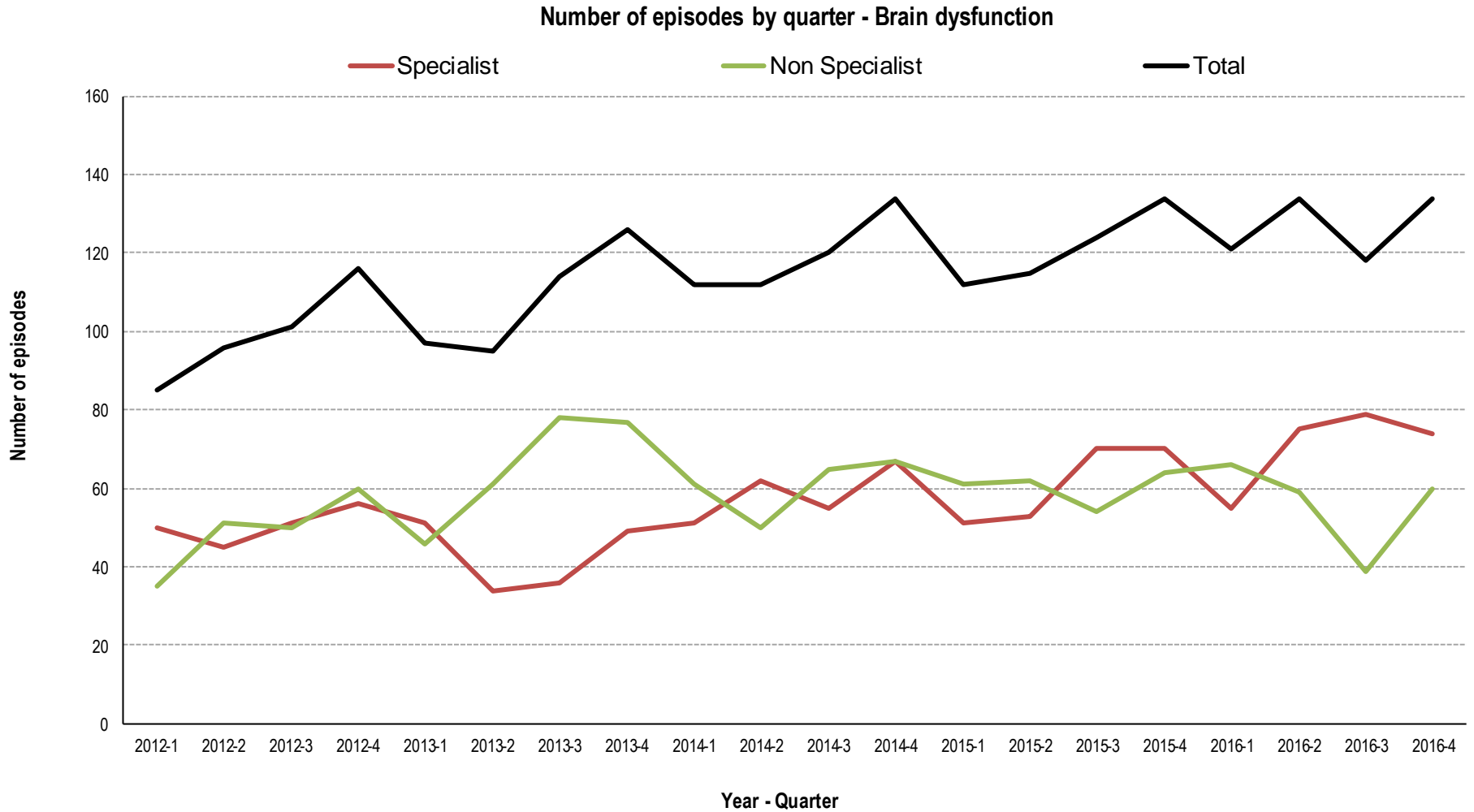
Stroke LOS and FIM change by AN-SNAP class



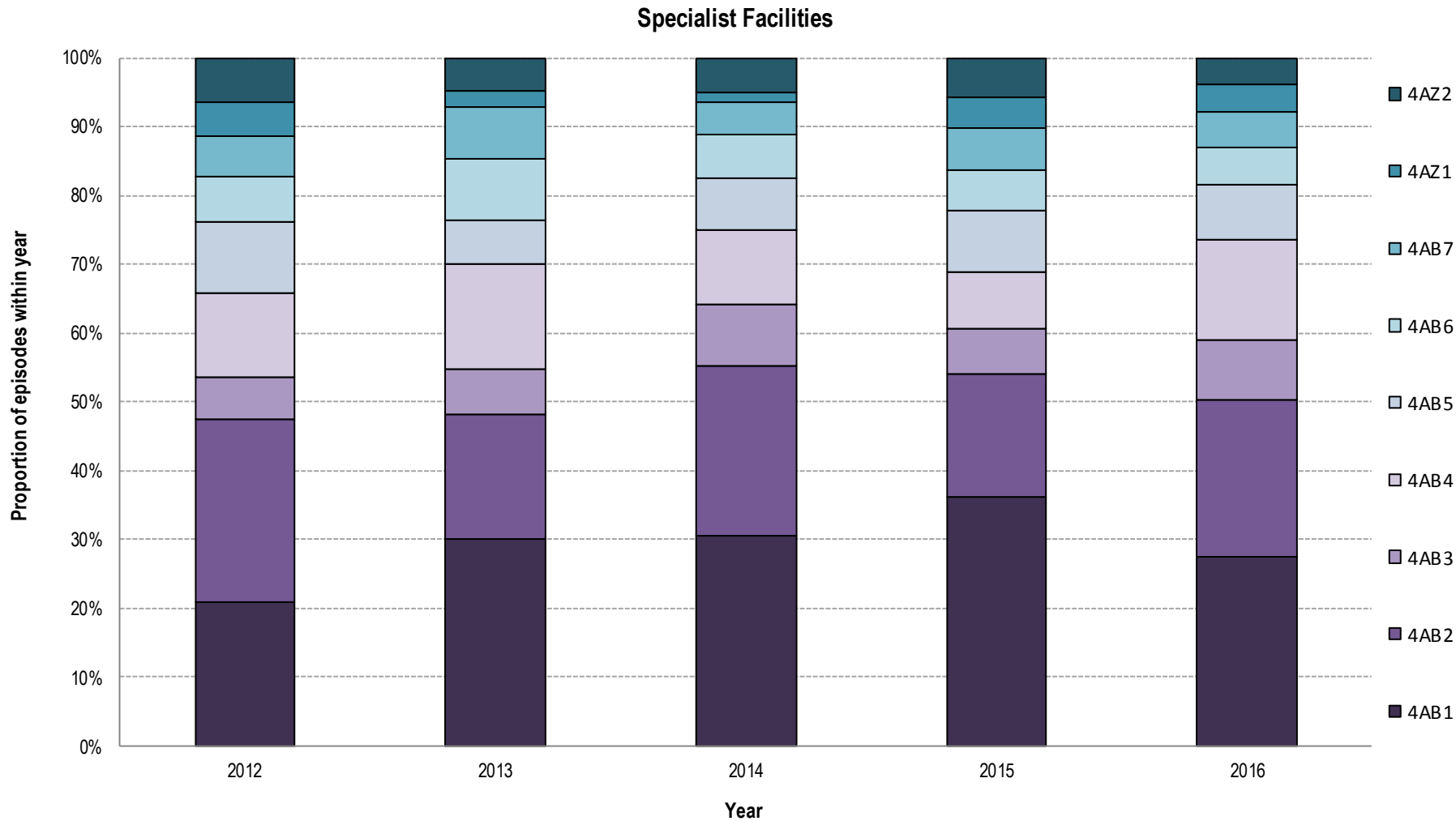
Change in outcome measures in stroke, 2015 to 2016



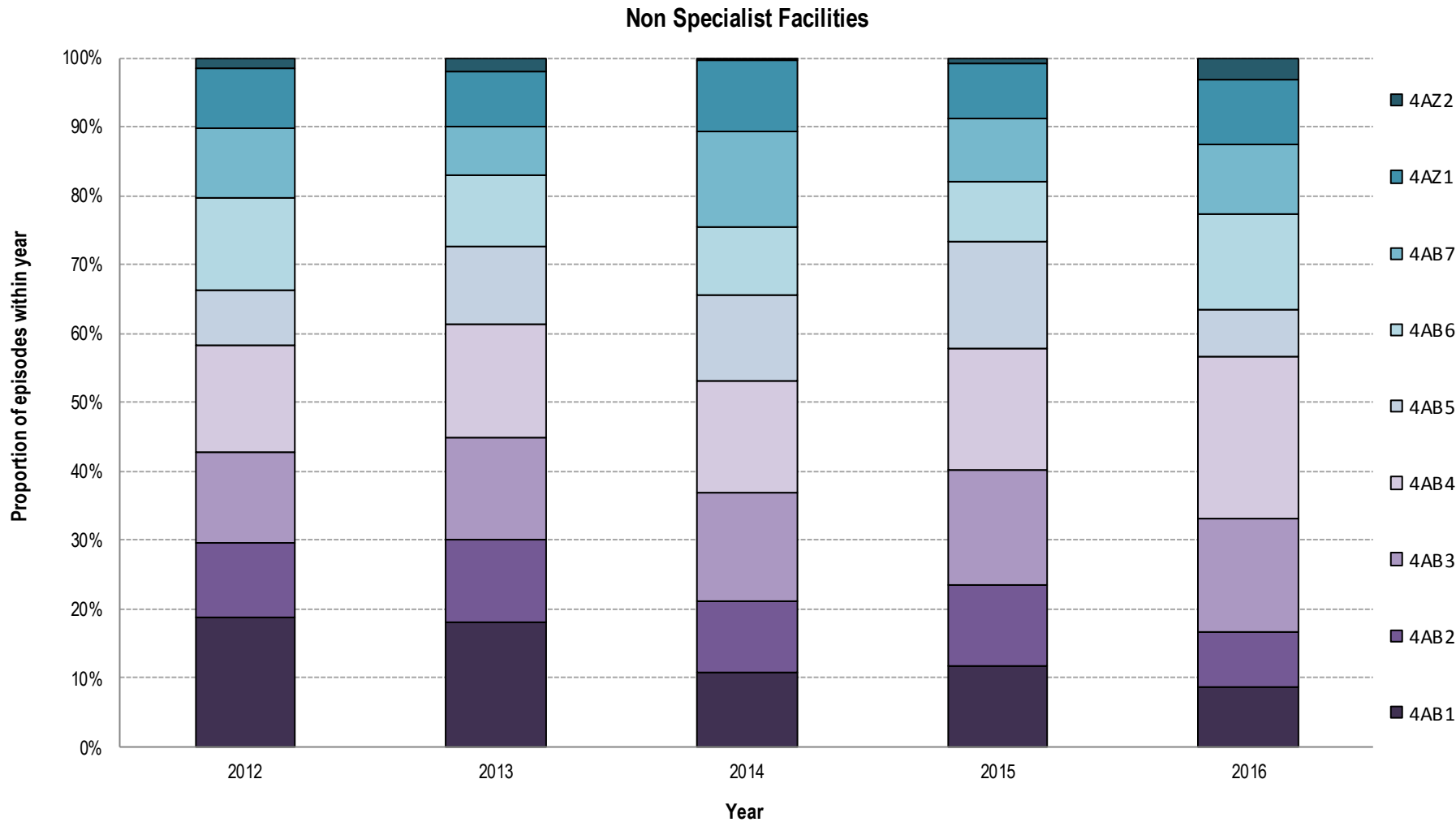
Brain dysfunction episodes over time



Brain dysfunction casemix over time – Specialist facilities



Brain dysfunction casemix over time – Non specialist facilities



Brain dysfunction episodes in 2016 - Specialist facilities

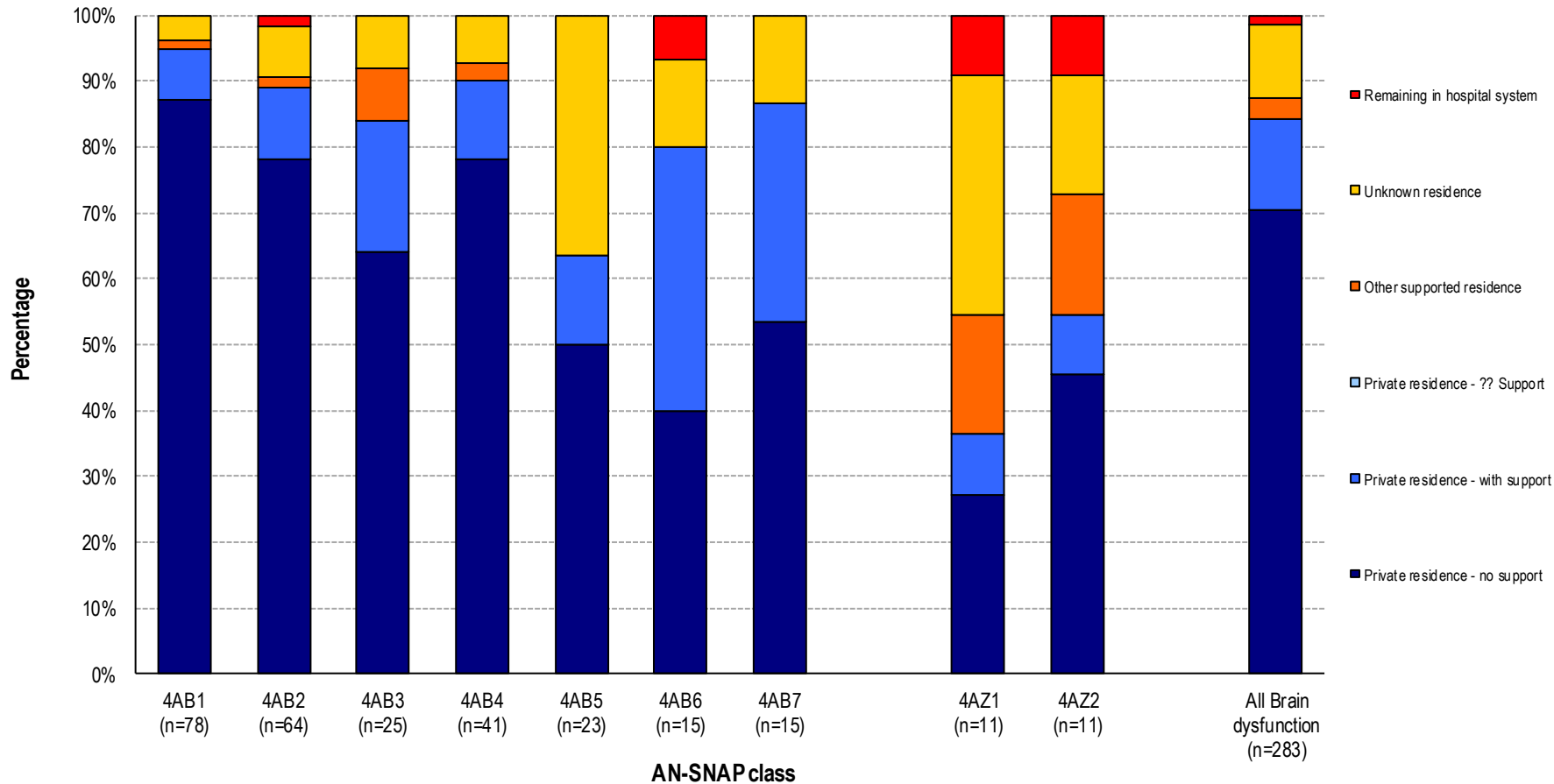
AN-SNAP class:	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AZ1	4AZ2	All Brain dysfunction
Number of episodes	78	64	25	41	23	15	15	11	11	283
Proportion of episodes	27.6%	22.6%	8.8%	14.5%	8.1%	5.3%	5.3%	3.9%	3.9%	100.0%
Gender (%)										
<i>Female</i>	23.1%	20.3%	48.0%	31.7%	26.1%	53.3%	20.0%	27.3%	27.3%	27.9%
<i>Male</i>	76.9%	79.7%	52.0%	68.3%	73.9%	46.7%	80.0%	72.7%	72.7%	72.1%
Age group (%)										
<i>Under 65</i>	89.7%	82.8%	68.0%	78.0%	82.6%	73.3%	93.3%	63.6%	100.0%	82.7%
<i>Over 65</i>	10.3%	17.2%	32.0%	22.0%	17.4%	26.7%	6.7%	36.4%	0.0%	17.3%
Age (Mean+95%CI)	44.2 (40.2-48.2)	43.8 (39.2-48.3)	53.4 (45.3-61.5)	49.7 (43.7-55.7)	48.4 (41.0-55.8)	49.3 (37.3-61.3)	41.5 (32.3-50.8)	61.5 (56.2-66.9)	32.8 (26.8-38.9)	46.4 (44.2-48.6)
Admission FIM (Mean+95%CI)	111.2 (109.5-113.0)	00.4 (98.3-102.4)	88.3 (85.1-91.4)	78.9 (75.9-81.9)	62.8 (59.3-66.4)	48.3 (45.5-51.1)	34.2 (30.9-37.5)	21.7 (18.4-25.0)	19.1 (18.1-20.1)	84.9 (81.4-88.4)
LOS (Mean+95%CI)	12.4 (10.9-13.9)	22.1 (17.8-26.4)	23.2 (17.8-28.6)	29.6 (23.3-35.9)	59.1 (39.8-78.4)	71.6 (45.5-97.6)	80.5 (56.2-104.8)	90.7 (61.2-120.1)	83.3 (54.6-112.1)	33.3 (29.1-37.5)
Discharge destination (%)										
<i>Discharged to community</i>	98.7%	98.4%	100.0%	95.3%	100.0%	87.5%	100.0%	83.3%	83.3%	96.5%
<i>Remaining in hospital system</i>	1.3%	1.6%	0.0%	4.7%	0.0%	12.5%	0.0%	16.7%	16.7%	3.5%
FIM change (Mean+95%CI)	11.1 (9.4-12.8)	20.1 (17.9-22.4)	30.3 (27.7-32.9)	37.7 (33.5-41.8)	41.5 (32.6-50.4)	56.0 (46.3-65.7)	75.9 (69.6-82.1)	68.4 (49.5-87.4)	70.0 (51.7-88.3)	30.8 (27.9-33.6)
FIM efficiency (FIM change/LOS)	0.9	0.9	1.3	1.3	0.7	0.8	0.9	0.8	0.8	0.9

Brain dysfunction episodes in 2016 - Non specialist facilities

AN-SNAP class:	4AB1	4AB2	4AB3	4AB4	4AB5	4AB6	4AB7	4AZ1	4AZ2	All Brain dysfunction
Number of episodes	19	18	36	52	15	31	22	21	7	224
Proportion of episodes	8.5%	8.0%	16.1%	23.2%	6.7%	13.8%	9.8%	9.4%	3.1%	100.0%
Gender (%)										
Female	47.4%	66.7%	52.8%	50.0%	60.0%	35.5%	54.5%	61.9%	71.4%	52.7%
Male	52.6%	33.3%	47.2%	50.0%	40.0%	64.5%	45.5%	38.1%	28.6%	47.3%
Age group (%)										
Under 65	42.1%	50.0%	25.0%	23.1%	13.3%	3.2%	18.2%	47.6%	100.0%	28.1%
Over 65	57.9%	50.0%	75.0%	75.0%	80.0%	93.5%	81.8%	52.4%	0.0%	70.5%
Age (Mean+95%CI)	64.6 (56.5-72.8)	64.1 (55.8-72.3)	74.3 (69.1-79.4)	72.1 (67.2-77.0)	74.2 (67.7-80.8)	80.4 (75.9-85.0)	75.2 (70.0-80.5)	69.3 (62.8-75.8)	42.4 (36.3-48.6)	71.4 (69.1-73.6)
Admission FIM (Mean+95%CI)	109.2 (105.8-112.6)	97.6 (93.8-101.4)	84.5 (81.2-87.9)	75.5 (72.9-78.2)	60.8 (56.4-65.2)	48.3 (45.4-51.3)	37.1 (33.0-41.3)	21.3 (18.5-24.1)	29.0 (23.4-34.6)	67.4 (63.7-71.1)
LOS (Mean+95%CI)	12.9 (6.7-19.2)	19.2 (13.9-24.5)	17.0 (13.0-21.0)	22.9 (18.3-27.6)	24.9 (21.3-28.5)	20.4 (15.7-25.2)	25.4 (19.3-31.4)	61.6 (21.1-102.0)	57.0 (28.8-85.2)	24.9 (20.6-29.1)
Discharge destination (%)										
Discharged to community	94.7%	94.7%	100.0%	96.2%	100.0%	93.8%	100.0%	90.5%	75.0%	95.6%
Remaining in hospital system	5.3%	5.3%	0.0%	3.8%	0.0%	6.3%	0.0%	9.5%	25.0%	4.4%
FIM change (Mean+95%CI)	7.2 (4.4-10.0)	7.8 (4.9-10.8)	19.8 (16.5-23.2)	19.2 (14.9-23.5)	23.7 (15.1-32.4)	28.7 (21.1-36.3)	25.6 (14.1-37.1)	27.6 (19.3-35.8)	42.8 (12.4-73.1)	20.8 (18.3-23.2)
FIM efficiency (FIM change/LOS)	0.6	0.4	1.2	0.8	1.0	1.4	1.0	0.4	0.8	0.8

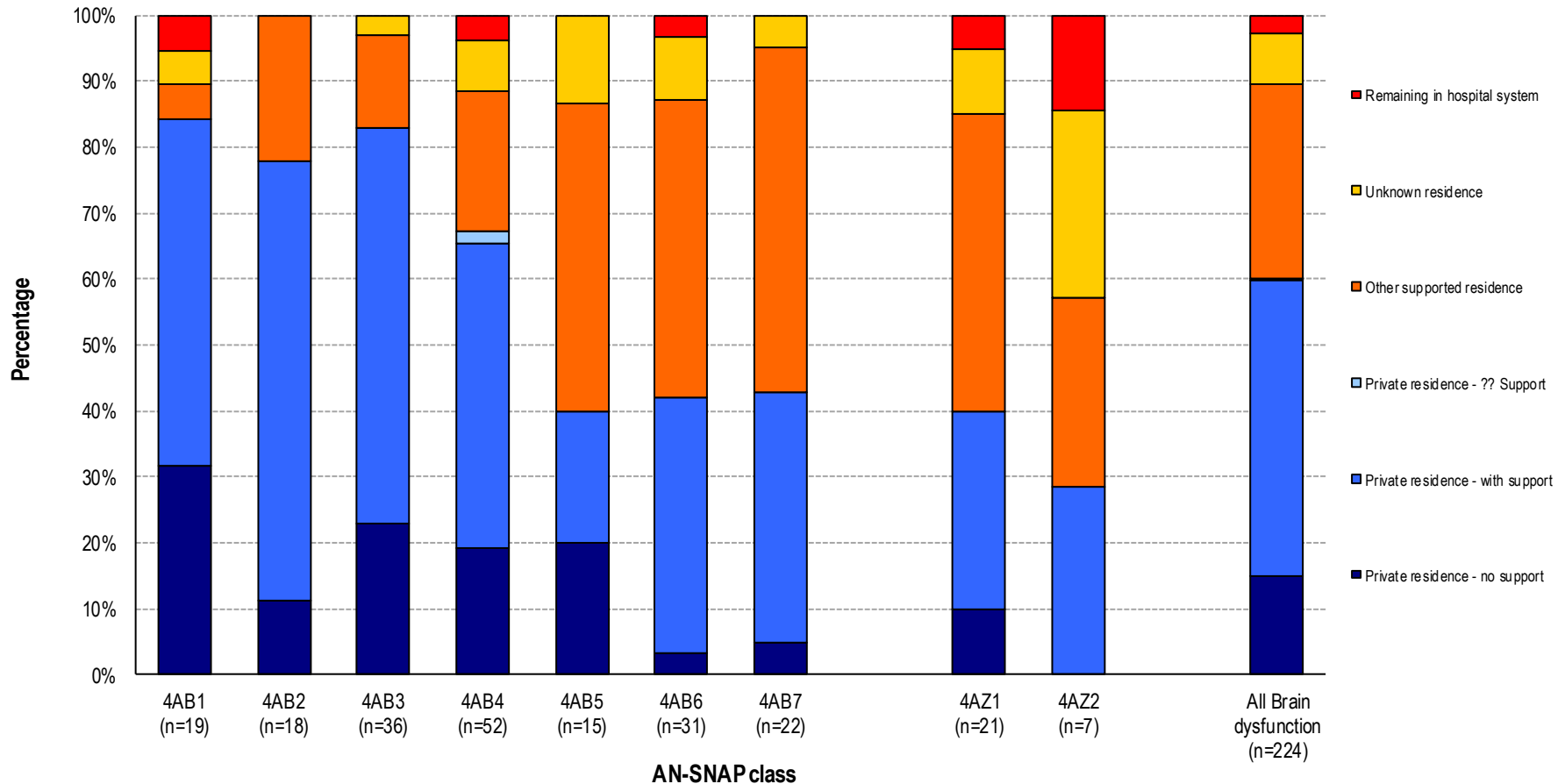
Brain dysfunction discharge destination by AN-SNAP Class – Specialist facilities

Specialist - Discharge destination - Brain dysfunction



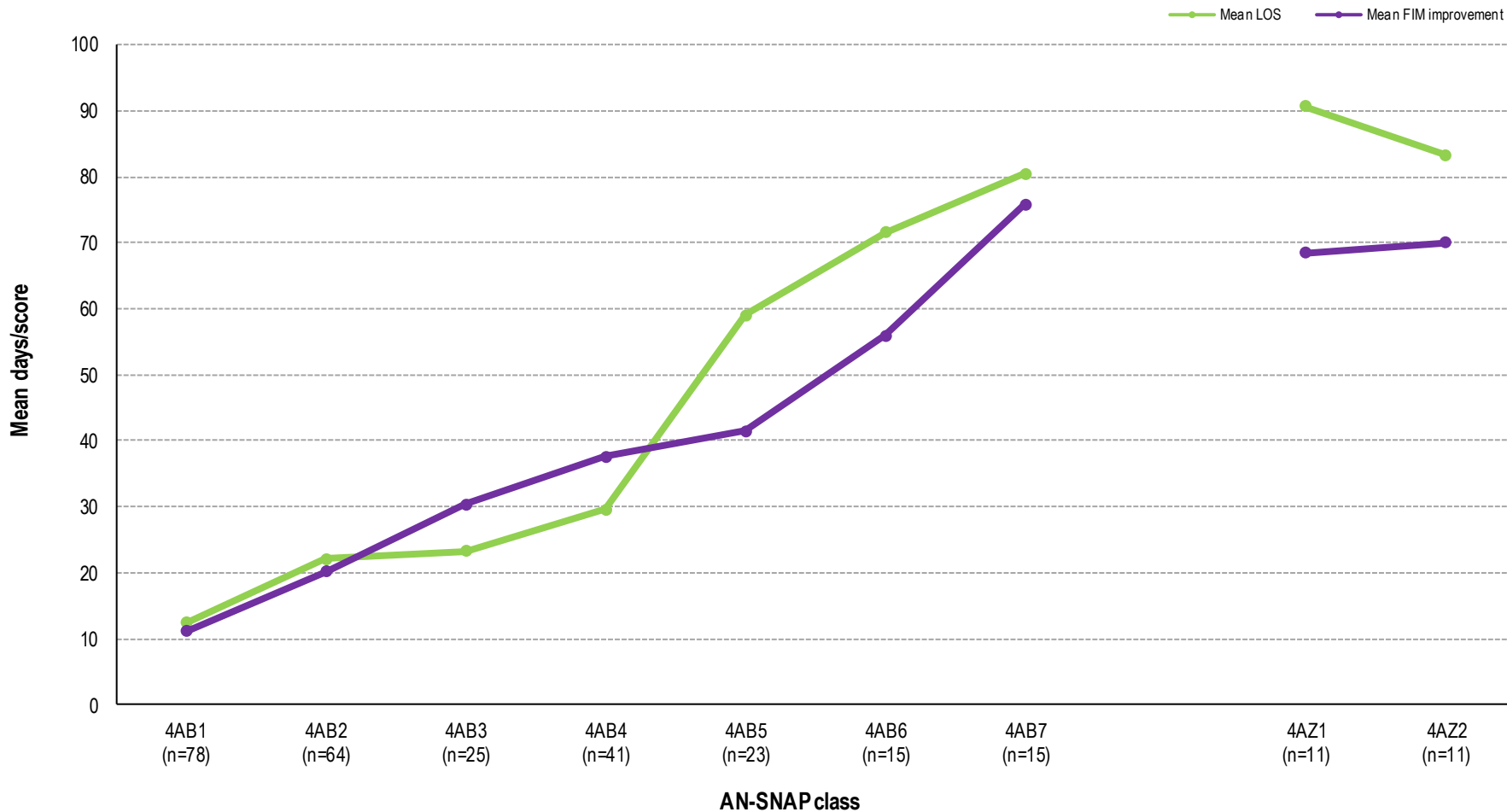
Brain dysfunction discharge destination by AN-SNAP Class – Non specialist facilities

Non specialist - Discharge destination - Brain dysfunction



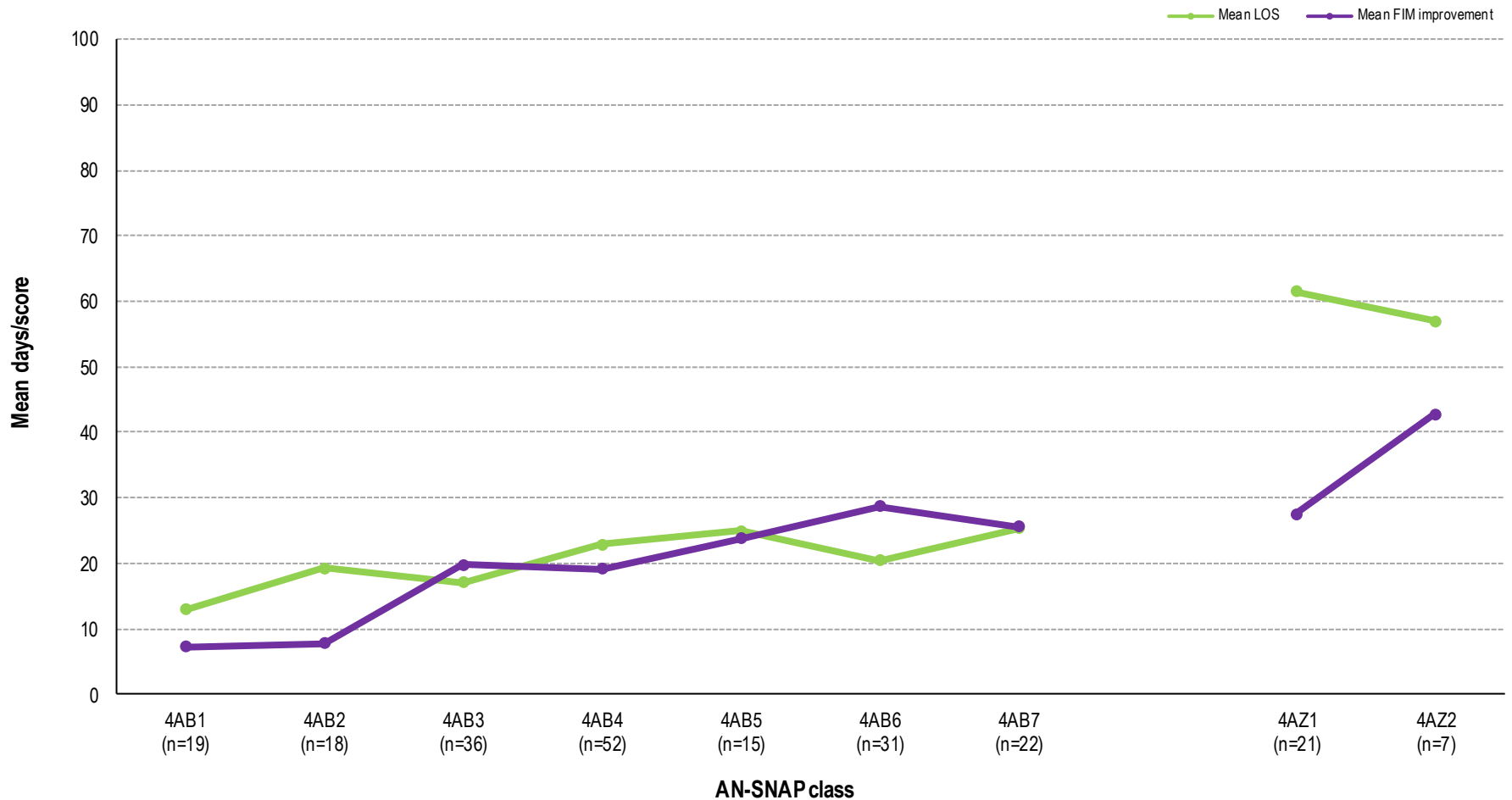
Brain dysfunction LOS and FIM change by AN-SNAP Class – Specialist facilities

Specialist - LOS and FIM change by AN-SNAP class



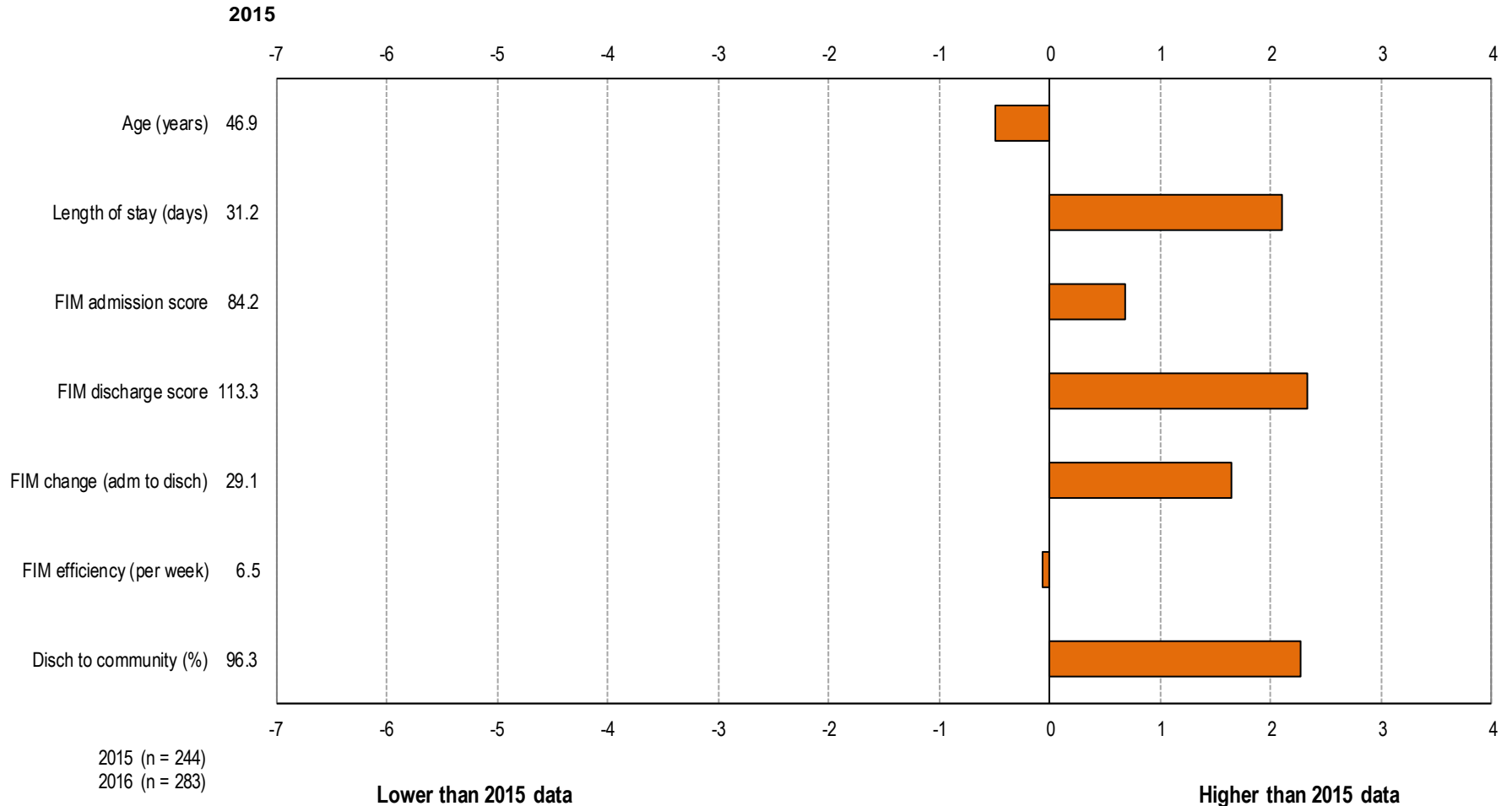
Brain dysfunction LOS and FIM change by AN-SNAP Class – Non specialist facilities

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



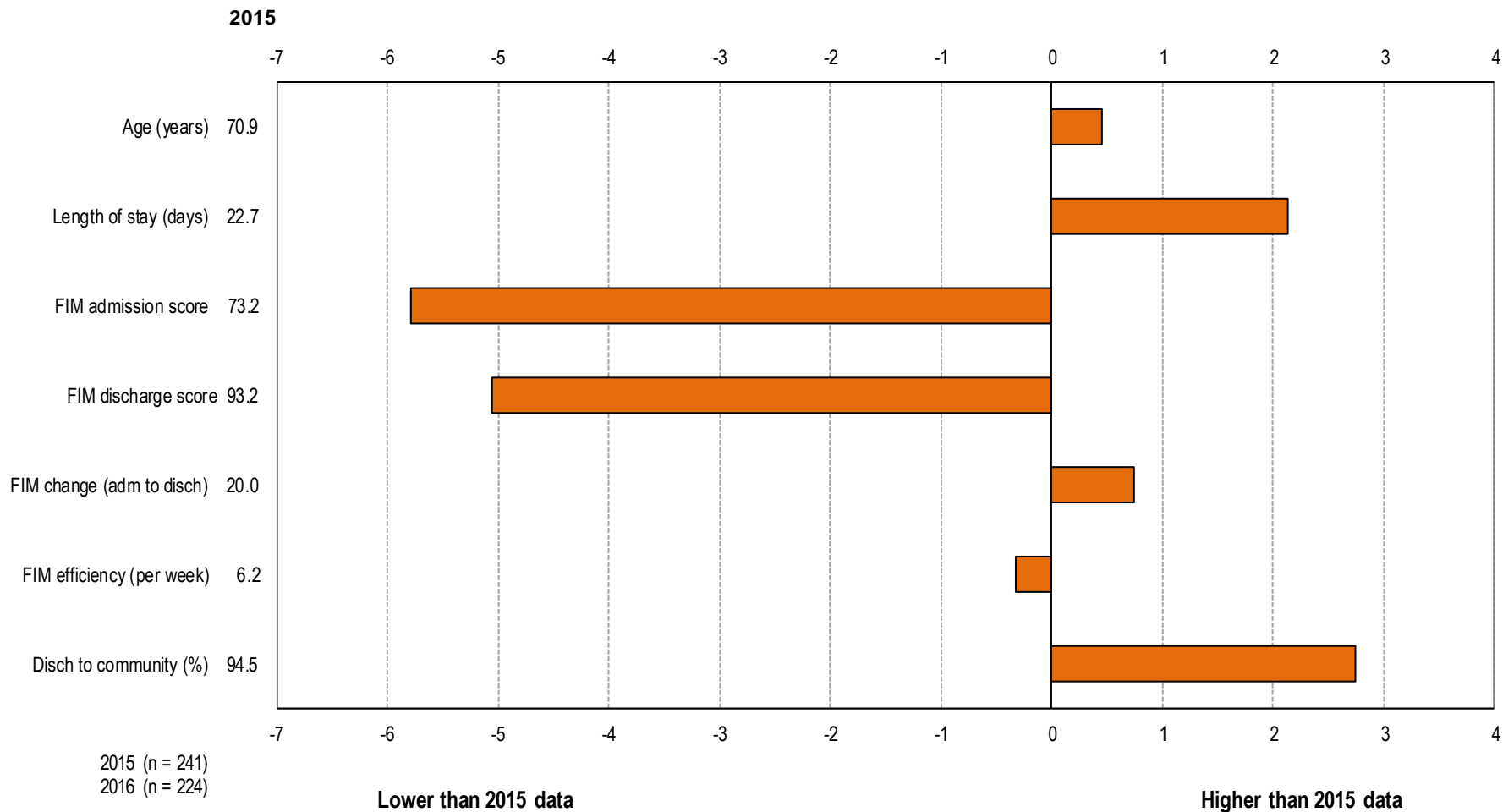
Change in outcome measures in brain dysfunction, 2015 to 2016 - Specialist facilities

Specialist - Difference from 2015 data - All Brain dysfunction



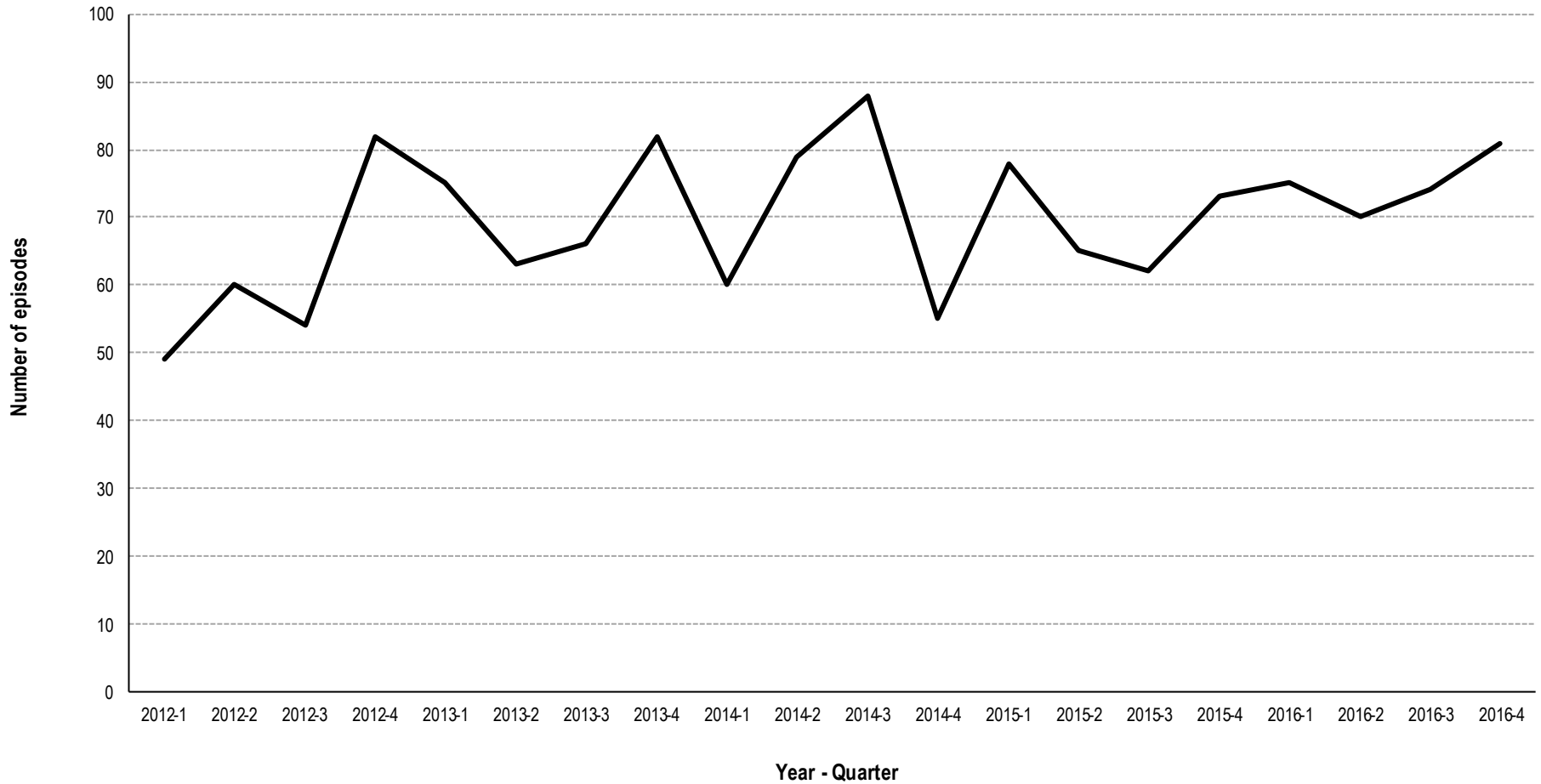
Change in outcome measures in brain dysfunction, 2015 to 2016 - Non specialist facilities

Non specialist - Difference from 2015 data - All Brain dysfunction

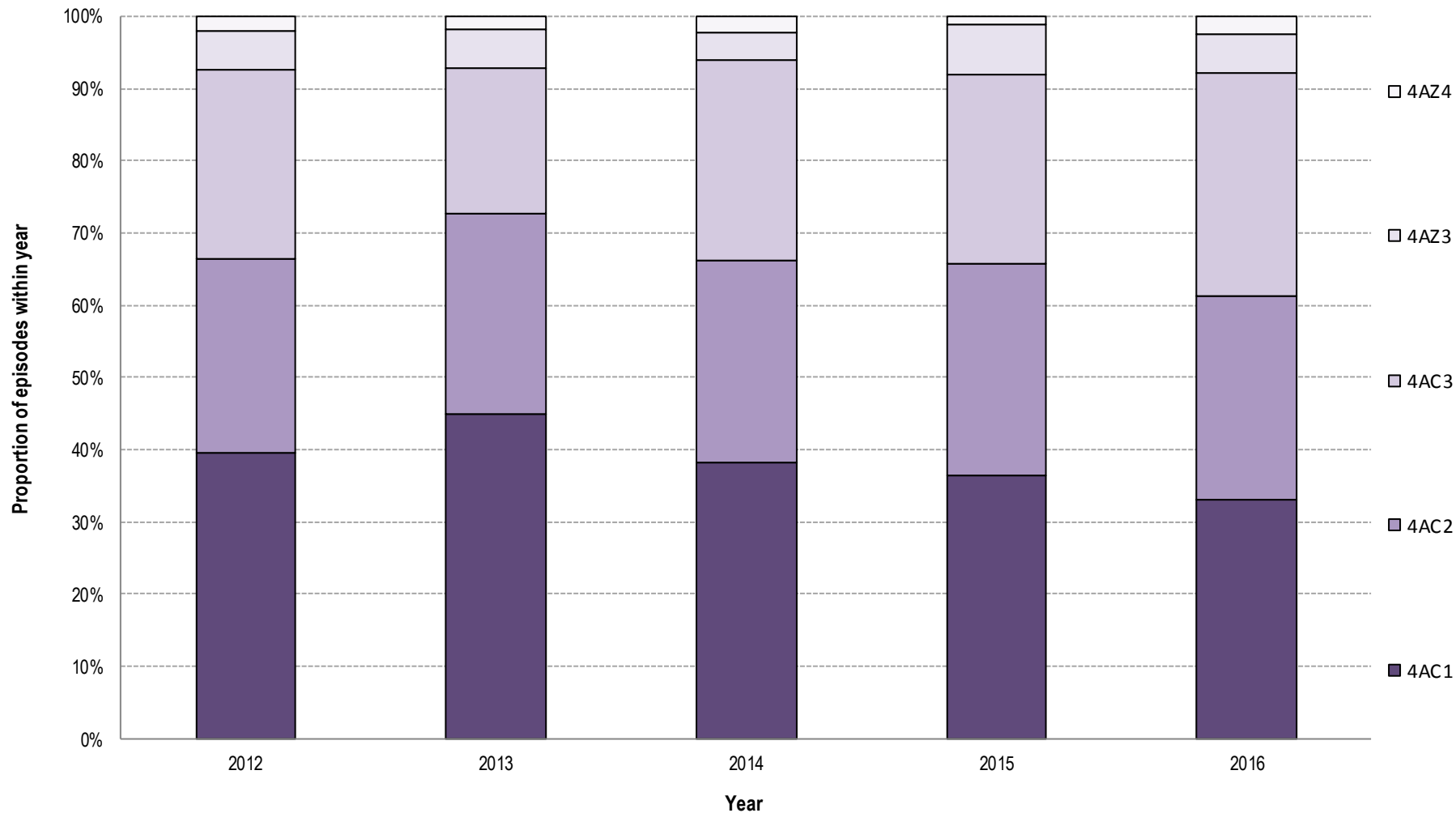


Neurological conditions episodes over time

Number of episodes by quarter - Neurological conditions



Neurological conditions casemix over time



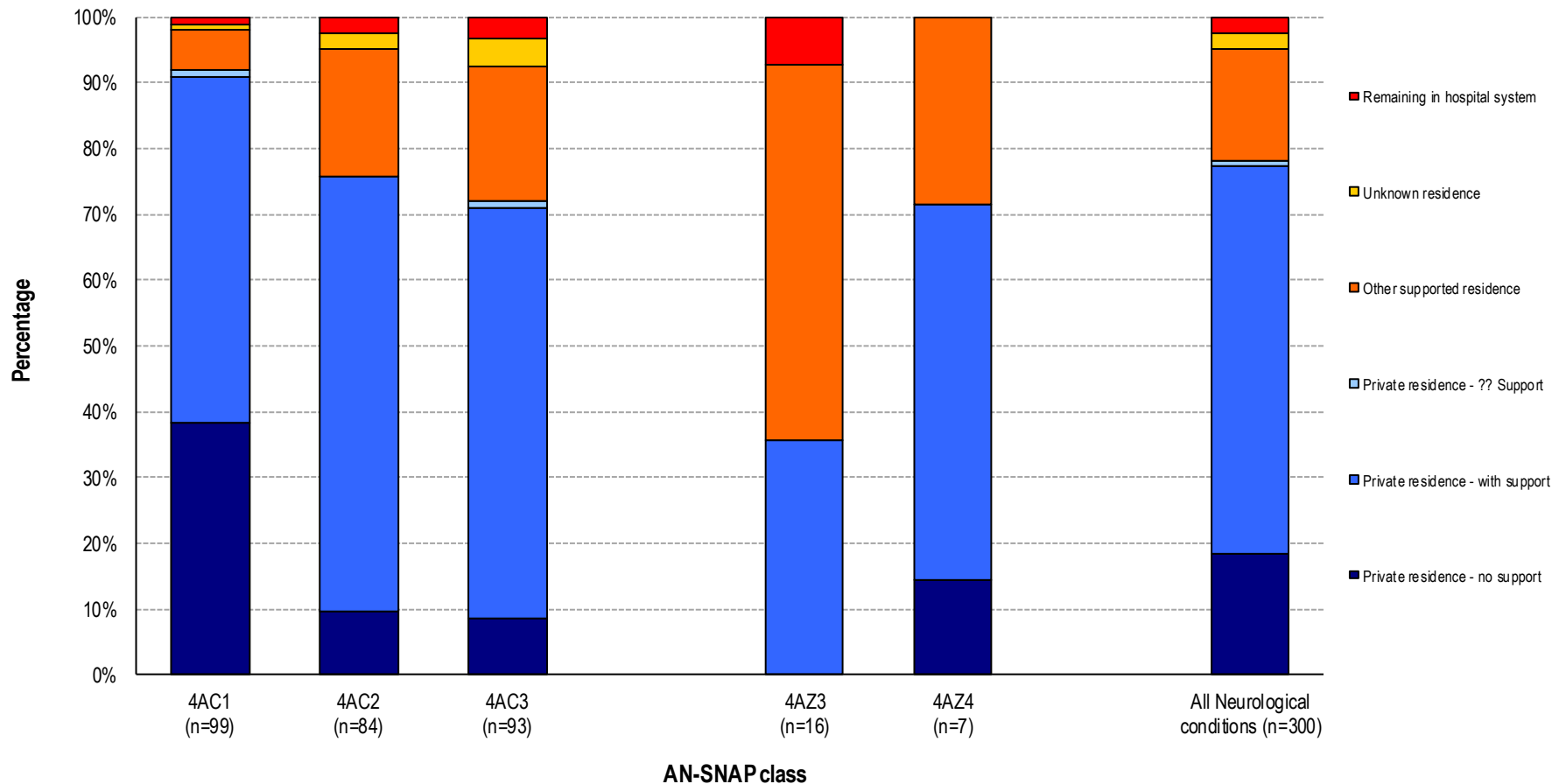
Neurological conditions episodes in 2016



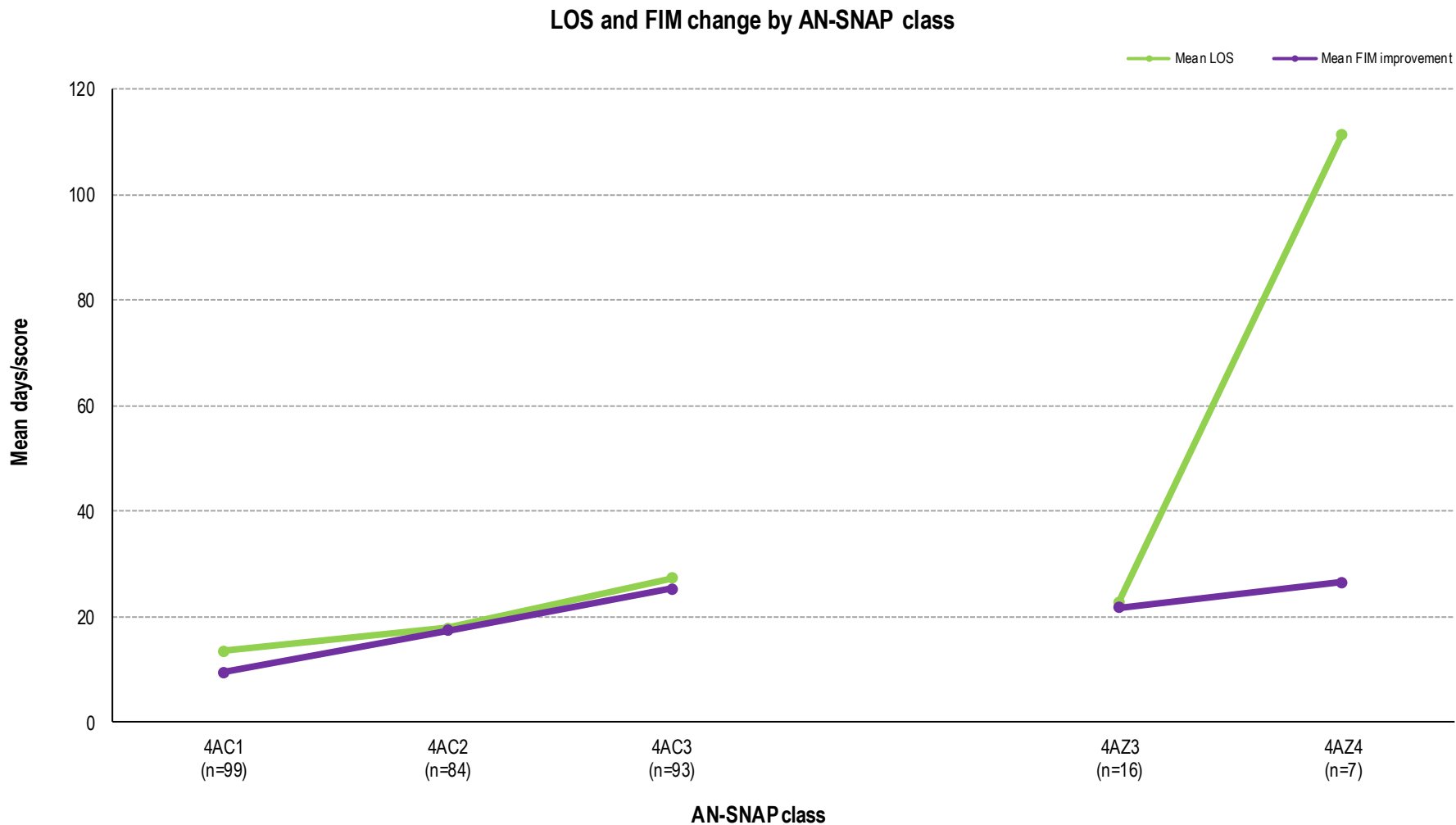
AN-SNAP class:	4AC1	4AC2	4AC3	4AZ3	4AZ4	All Neurological conditions
Number of episodes	99	84	93	16	7	300
Proportion of episodes	33.0%	28.0%	31.0%	5.3%	2.3%	100.0%
Gender (%)						
<i>Female</i>	58.6%	47.6%	44.1%	25.0%	57.1%	49.3%
<i>Male</i>	41.4%	52.4%	55.9%	75.0%	42.9%	50.7%
Age group (%)						
<i>Under 65</i>	46.5%	21.4%	37.6%	0.0%	100.0%	35.3%
<i>Over 65</i>	53.5%	77.4%	62.4%	100.0%	0.0%	64.3%
Age (Mean+95%CI)	63.1 (59.4-66.8)	72.5 (69.4-75.5)	66.8 (63.6-70.1)	77.8 (74.0-81.6)	48.0 (35.5-60.5)	67.3 (65.4-69.2)
Admission FIM (Mean+95%CI)	100.5 (98.4-102.6)	76.5 (74.2-78.7)	54.7 (52.4-56.9)	29.6 (24.6-34.6)	40.1 (32.5-47.8)	75.0 (72.3-77.8)
LOS (Mean+95%CI)	13.5 (11.5-15.5)	17.9 (15.0-20.8)	27.3 (21.9-32.8)	22.7 (11.6-33.7)	111.4 (37.8-185.1)	21.8 (18.6-25.0)
Discharge destination (%)						
<i>Discharged to community</i>	99.0%	97.6%	96.8%	92.9%	100.0%	97.6%
<i>Remaining in hospital system</i>	1.0%	2.4%	3.2%	7.1%	0.0%	2.4%
FIM change (Mean+95%CI)	9.4 (7.5-11.3)	17.3 (14.7-19.9)	25.3 (21.0-29.6)	21.8 (9.6-33.9)	26.6 (7.2-45.9)	17.5 (15.6-19.4)
FIM efficiency (FIM change/LOS)	0.7	1.0	0.9	1.0	0.2	0.8

Neurological conditions discharge destination by AN-SNAP class

Discharge destination - Neurological conditions

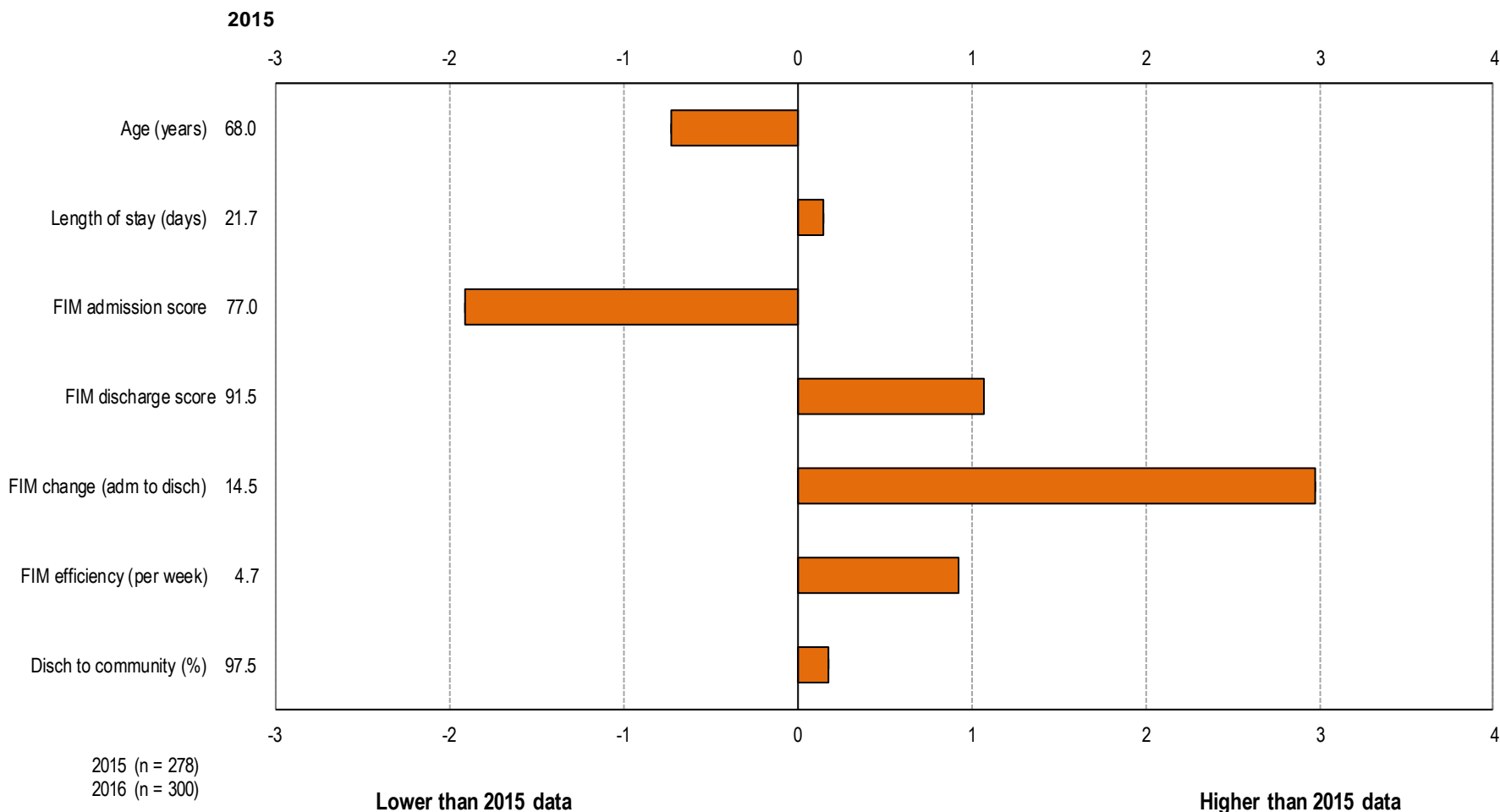


Neurological conditions LOS and FIM change by AN-SNAP class

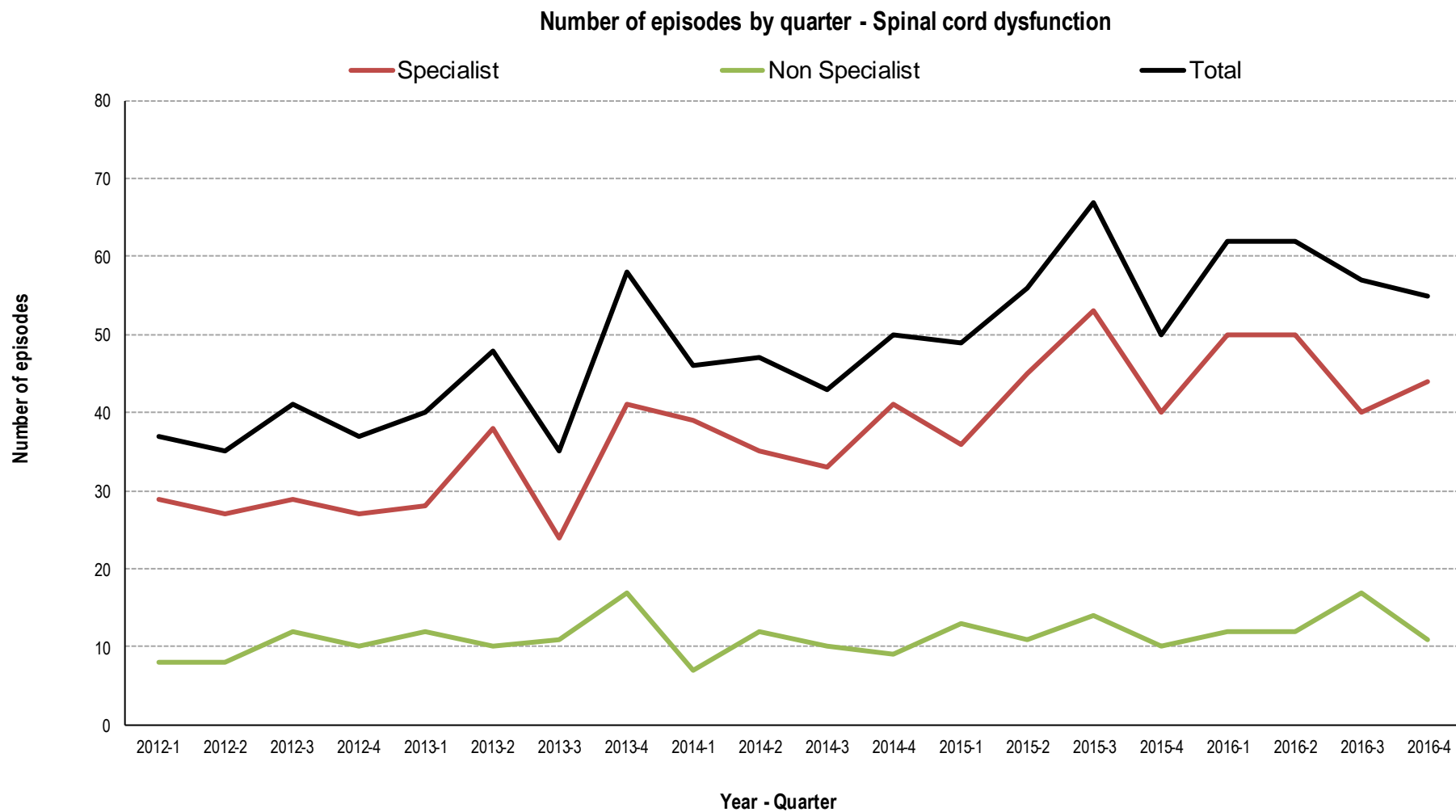


Change in outcome measures in neurological conditions, 2015 to 2016

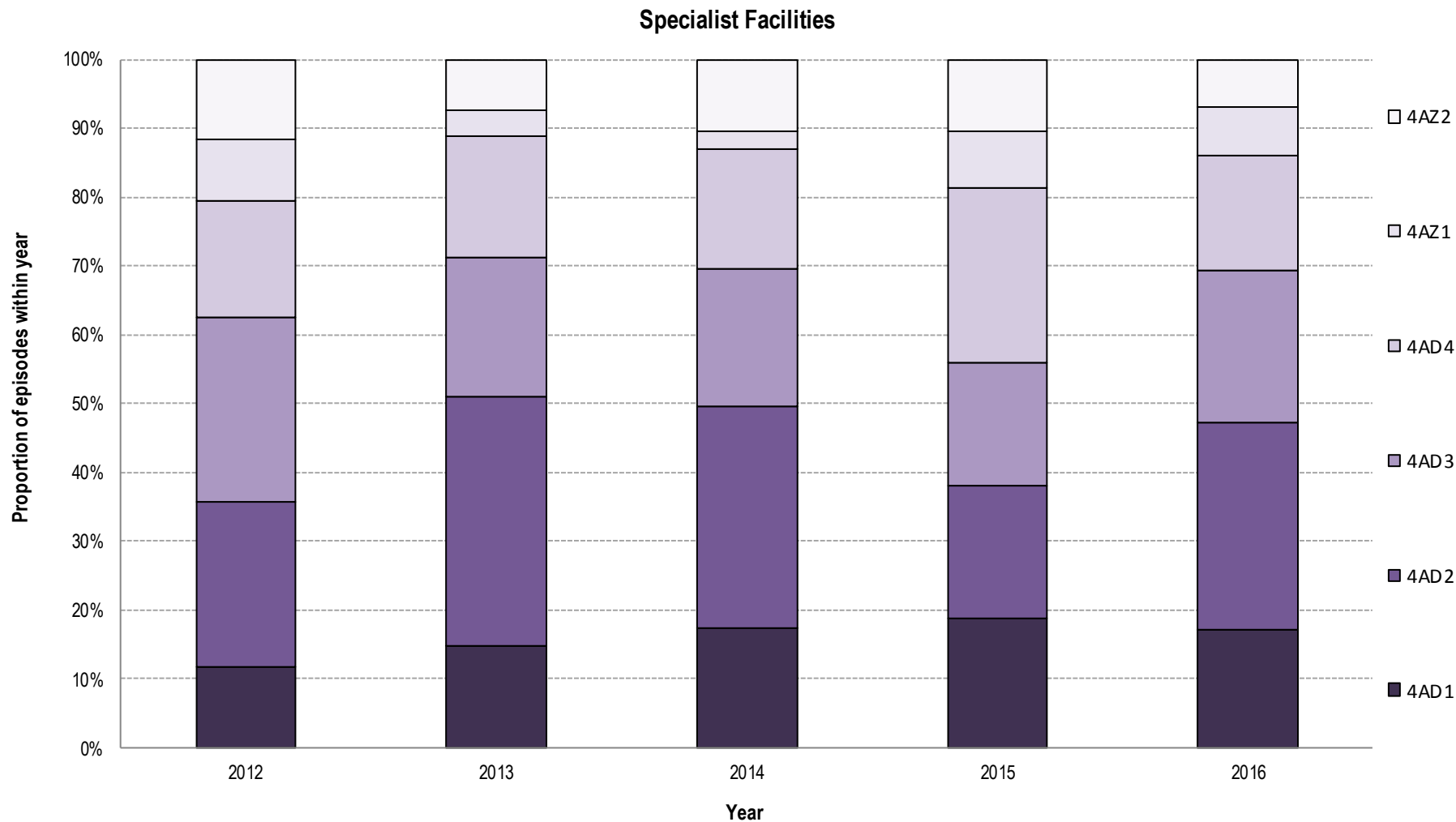
Difference from 2015 data - All Neurological conditions



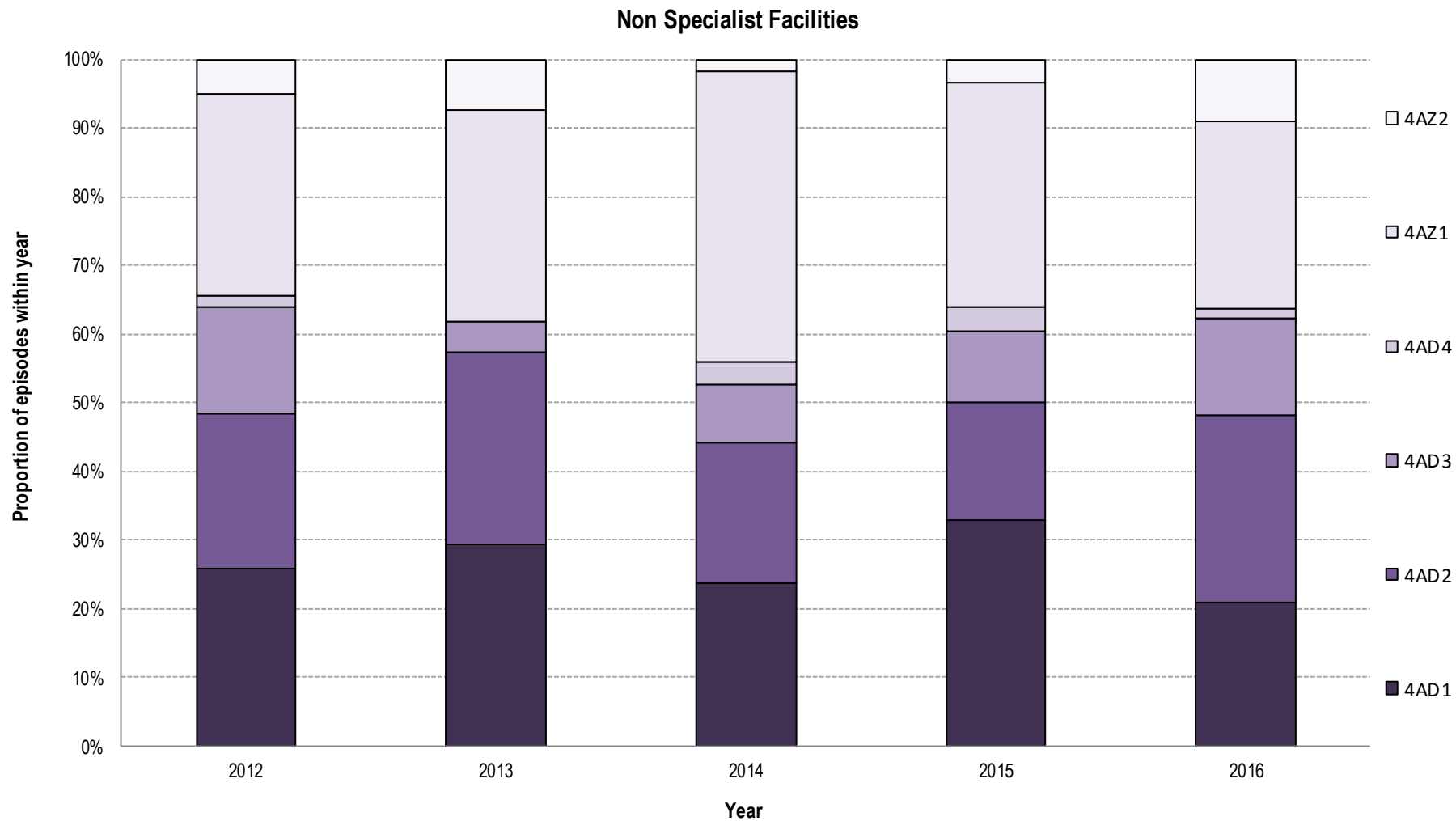
Spinal cord dysfunction episodes over time



Spinal cord dysfunction casemix over time – Specialist facilities



Spinal cord dysfunction episodes over time – Non specialist facilities



Spinal cord dysfunction episodes in 2016 - Specialist facilities



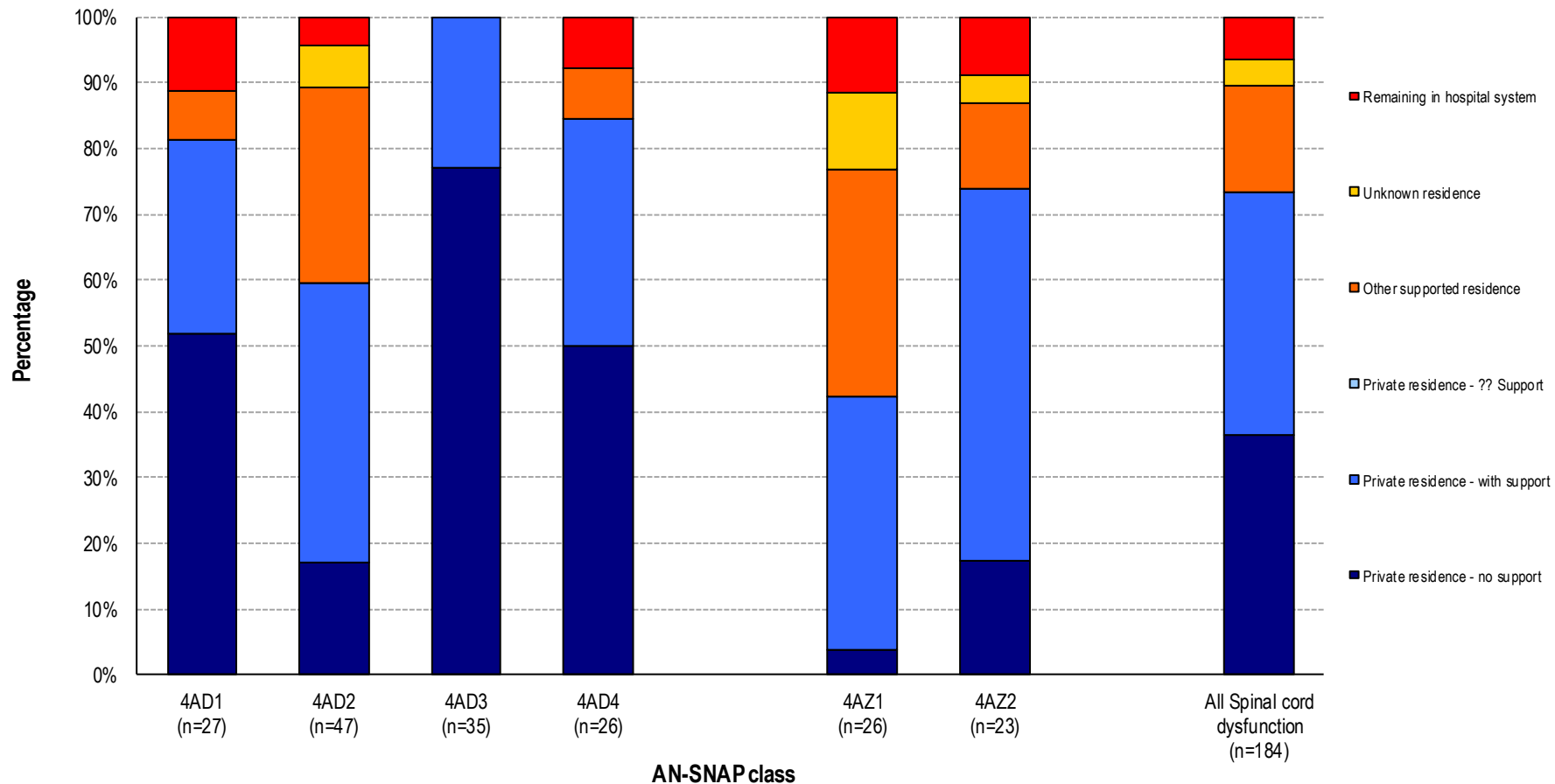
AN-SNAP class:	4AD1	4AD2	4AD3	4AD4	4AZ1	4AZ2	All Spinal cord dysfunction
Number of episodes	27	47	35	26	26	23	184
Proportion of episodes	14.7%	25.5%	19.0%	14.1%	14.1%	12.5%	100.0%
Gender (%)							
<i>Female</i>	55.6%	38.3%	54.3%	50.0%	23.1%	17.4%	40.8%
<i>Male</i>	44.4%	61.7%	45.7%	50.0%	76.9%	82.6%	59.2%
Age group (%)							
<i>Under 65</i>	44.4%	40.4%	100.0%	100.0%	57.7%	100.0%	70.7%
<i>Over 65</i>	55.6%	59.6%	0.0%	0.0%	42.3%	0.0%	29.3%
Age (Mean+95%CI)	65.4 (62.2-68.5)	68.5 (65.3-71.8)	34.7 (31.5-37.9)	30.9 (26.7-35.0)	65.0 (61.2-68.7)	27.6 (23.4-31.7)	50.7 (47.7-53.6)
Admission FIM (Mean+95%CI)	91.9 (86.0-97.9)	58.7 (56.2-61.2)	101.9 (96.7-107.2)	61.3 (58.6-64.1)	42.1 (38.5-45.7)	46.2 (43.9-48.5)	68.9 (65.2-72.7)
LOS (Mean+95%CI)	30.1 (24.3-35.9)	60.1 (51.1-69.1)	20.0 (16.6-23.4)	70.2 (56.6-83.8)	75.4 (63.4-87.4)	91.9 (75.3-108.4)	54.8 (49.3-60.2)
Discharge destination (%)							
<i>Discharged to community</i>	82.8%	84.9%	97.2%	92.3%	88.5%	91.3%	89.1%
<i>Remaining in hospital system</i>	17.2%	15.1%	2.8%	7.7%	11.5%	8.7%	10.9%
FIM change (Mean+95%CI)	20.9 (15.9-25.9)	29.8 (23.9-35.7)	16.0 (11.3-20.7)	47.5 (40.3-54.8)	18.9 (10.1-27.6)	25.7 (13.6-37.7)	26.1 (22.9-29.3)
FIM efficiency (FIM change/LOS)	0.7	0.5	0.8	0.7	0.3	0.3	0.5

Spinal cord dysfunction episodes in 2016 - Non specialist facilities

AN-SNAP class:	4AD1	4AD2	4AD3	4AD4	4AZ1	4AZ2	All Spinal cord dysfunction
Number of episodes	16	21	11	1	3	0	52
Proportion of episodes	30.8%	40.4%	21.2%	n < 5	n < 5	n < 5	100.0%
Gender (%)							
<i>Female</i>	31.3%	38.1%	36.4%	n < 5	n < 5	n < 5	34.6%
<i>Male</i>	68.8%	61.9%	63.6%	n < 5	n < 5	n < 5	65.4%
Age group (%)							
<i>Under 65</i>	37.5%	38.1%	100.0%	n < 5	n < 5	n < 5	51.9%
<i>Over 65</i>	62.5%	61.9%	0.0%	n < 5	n < 5	n < 5	48.1%
Age (Mean+95%CI)	69.1 (63.9-74.3)	70.4 (65.7-75.0)	35.1 (28.3-41.9)	n < 5	n < 5	n < 5	61.5 (56.5-66.5)
Admission FIM (Mean+95%CI)	91.6 (84.5-98.8)	60.0 (54.7-65.3)	94.4 (84.9-103.9)	n < 5	n < 5	n < 5	76.7 (69.9-83.4)
LOS (Mean+95%CI)	13.4 (9.3-17.5)	27.3 (19.2-35.4)	15.4 (9.2-21.6)	n < 5	n < 5	n < 5	24.4 (17.3-31.5)
Discharge destination (%)							
<i>Discharged to community</i>	73.7%	65.2%	90.9%	n < 5	n < 5	n < 5	67.2%
<i>Remaining in hospital system</i>	26.3%	34.8%	9.1%	n < 5	n < 5	n < 5	32.8%
FIM change (Mean+95%CI)	15.4 (9.7-21.2)	18.8 (9.7-27.9)	14.3 (6.7-21.9)	n < 5	n < 5	n < 5	16.5 (12.3-20.7)
FIM efficiency (FIM change/LOS)	1.1	0.7	0.9	n < 5	n < 5	n < 5	0.7

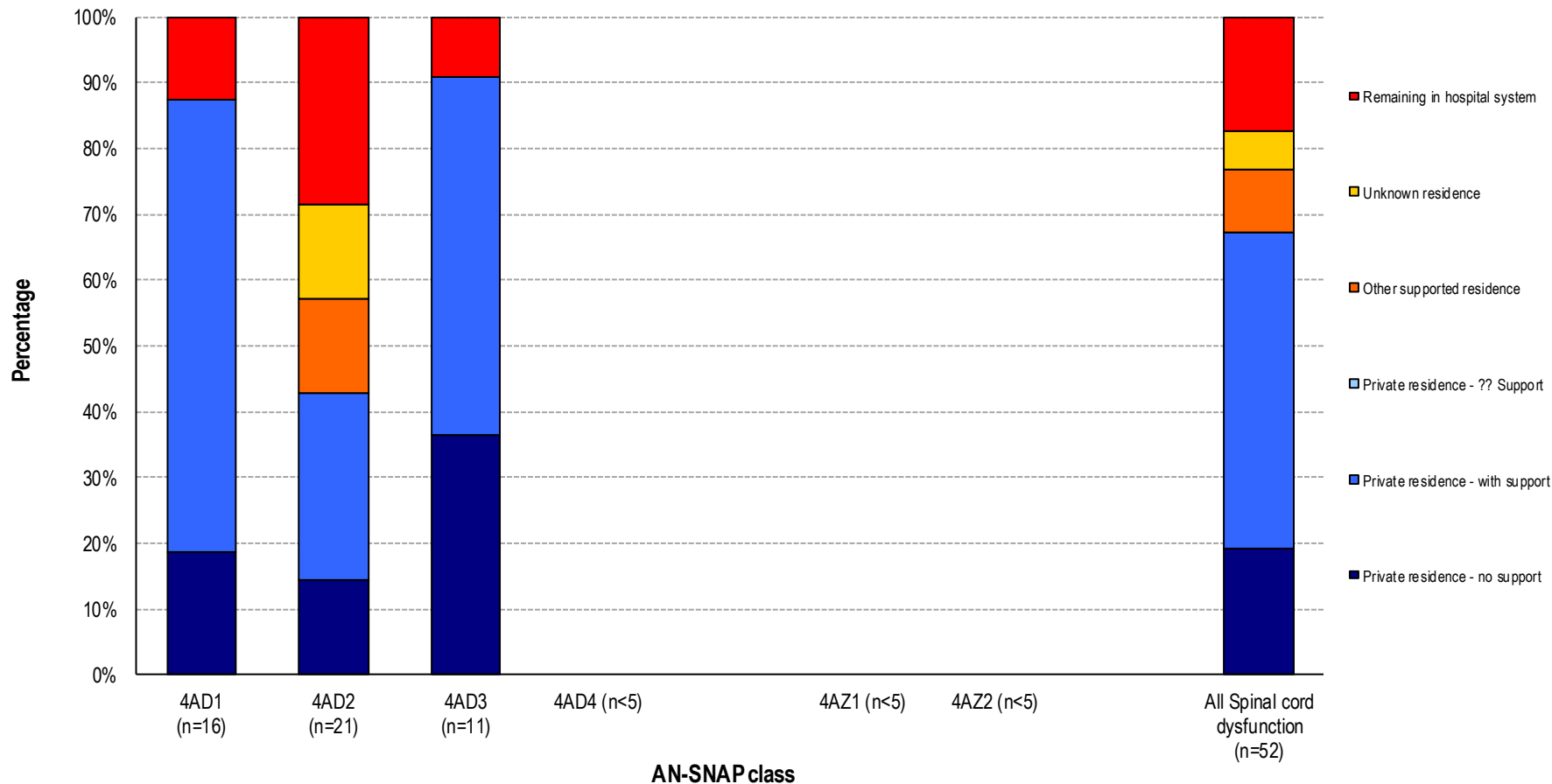
Spinal cord dysfunction discharge destination by AN-SNAP class – Specialist facilities

Specialist - Discharge destination - Spinal cord dysfunction



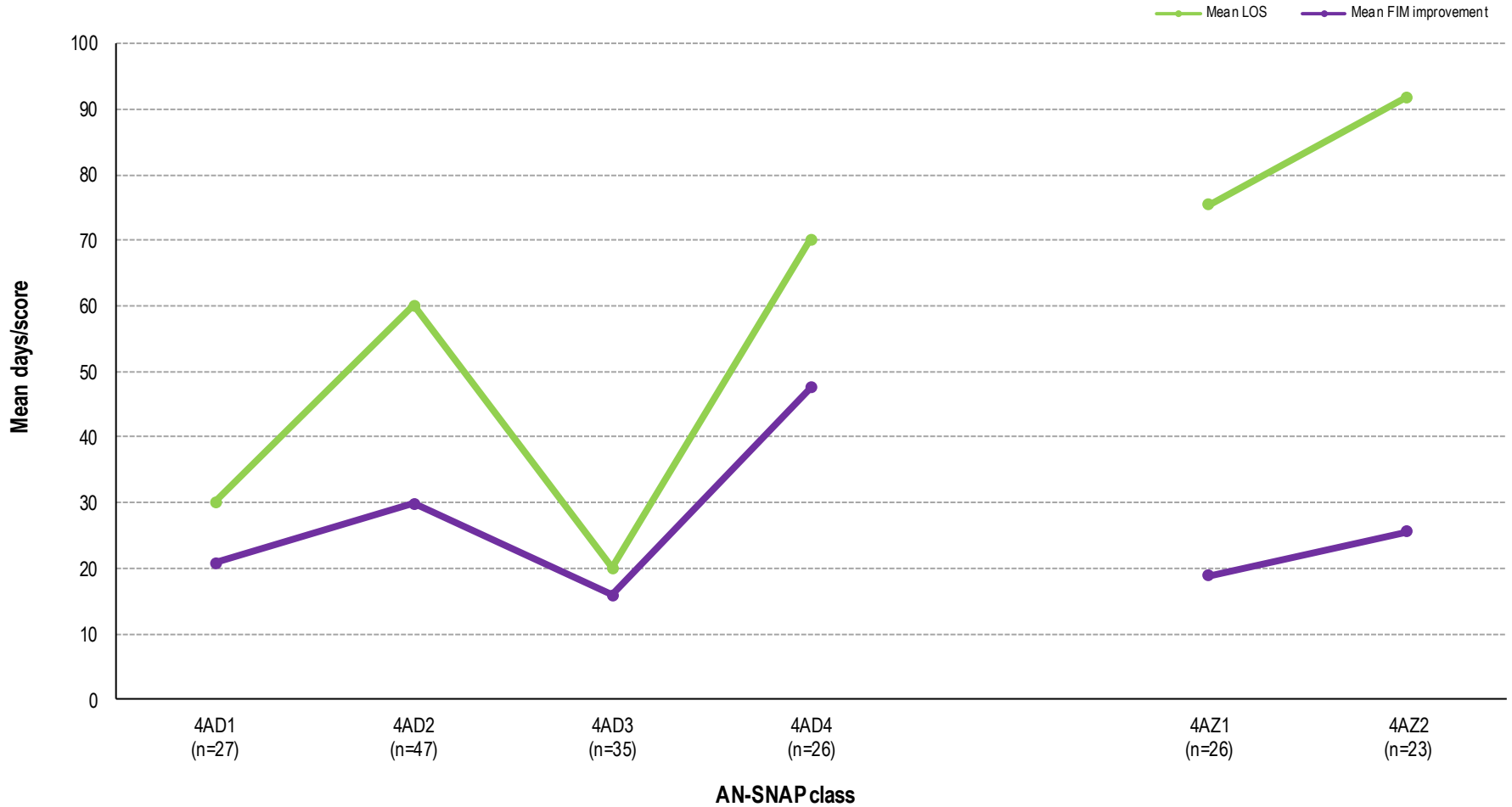
Spinal cord dysfunction discharge destination by AN-SNAP class – Non specialist facilities

Non specialist - Discharge destination - Spinal cord dysfunction



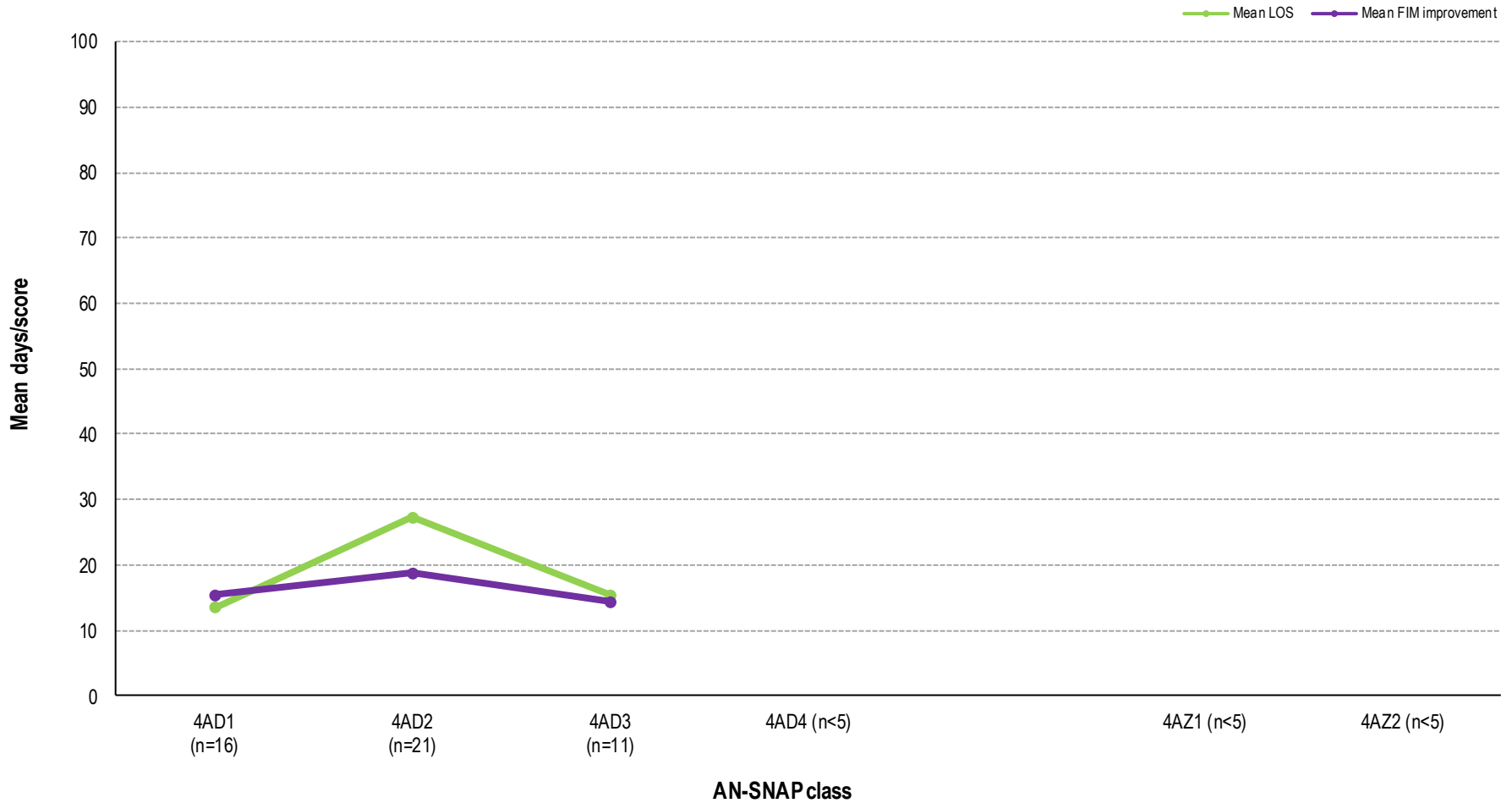
Spinal cord dysfunction LOS and FIM change by AN-SNAP class – Specialist facilities

Specialist - LOS and FIM change by AN-SNAP class



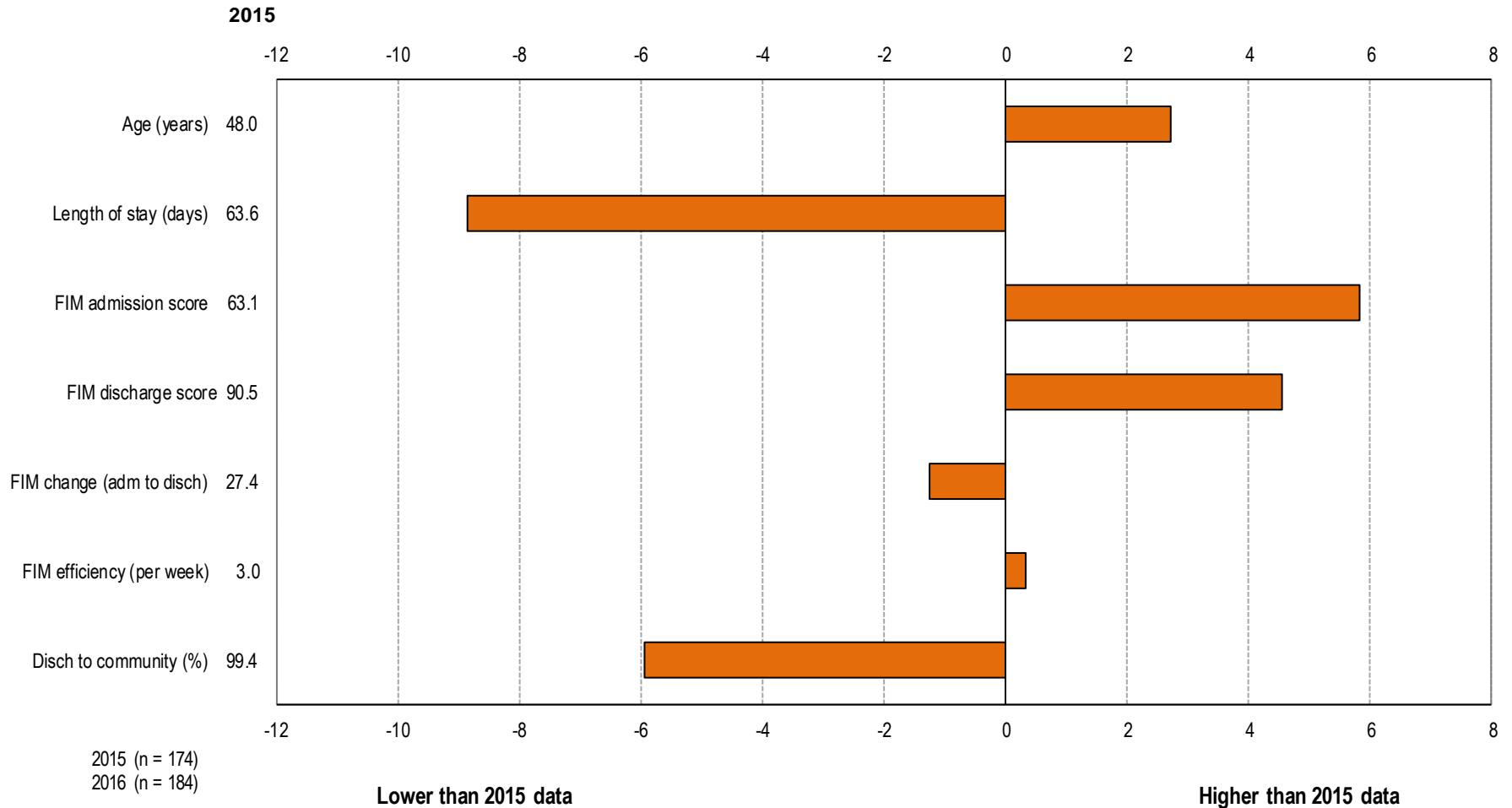
Spinal cord dysfunction LOS and FIM change by AN-SNAP class – Non specialist facilities

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



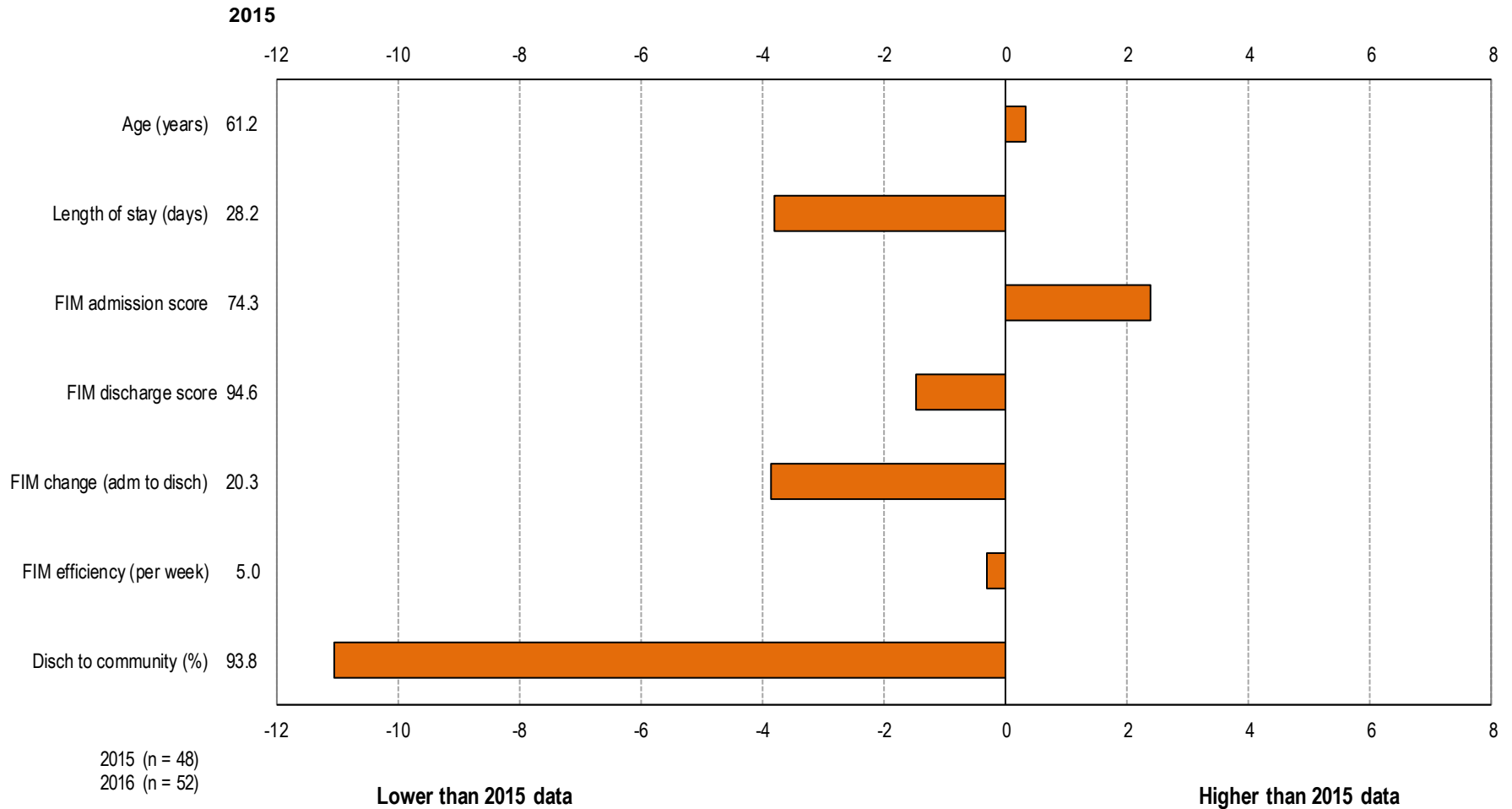
Change in outcome measures in spinal cord dysfunction, 2015 to 2016 - Specialist facilities

Specialist - Difference from 2015 data - All Spinal cord dysfunction



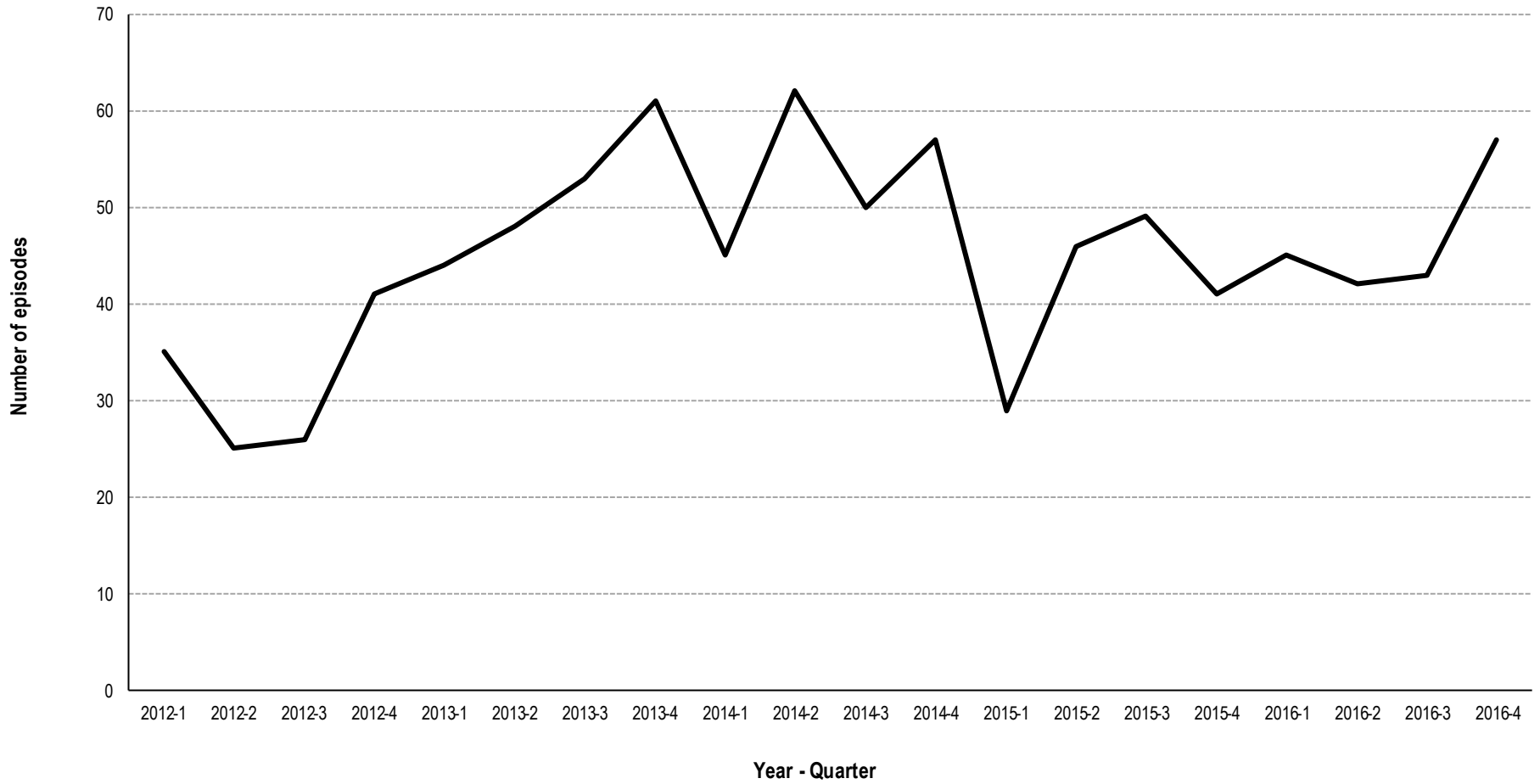
Change in outcome measures in spinal cord dysfunction, 2015 to 2016 - Non specialist facilities

Non specialist - Difference from 2015 data - All Spinal cord dysfunction

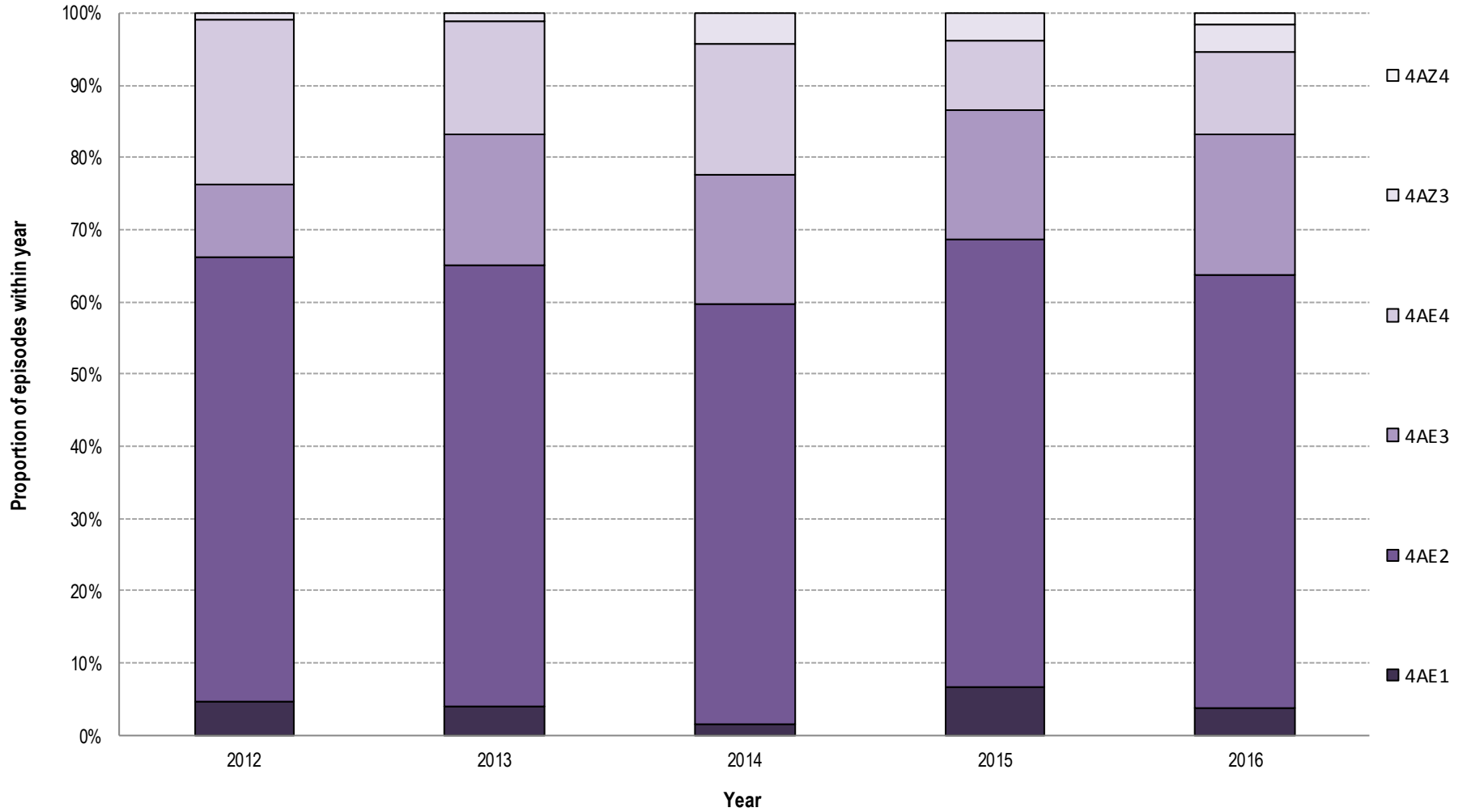


Amputation episodes over time

Number of episodes by quarter - Amputation of limb



Amputation casemix over time



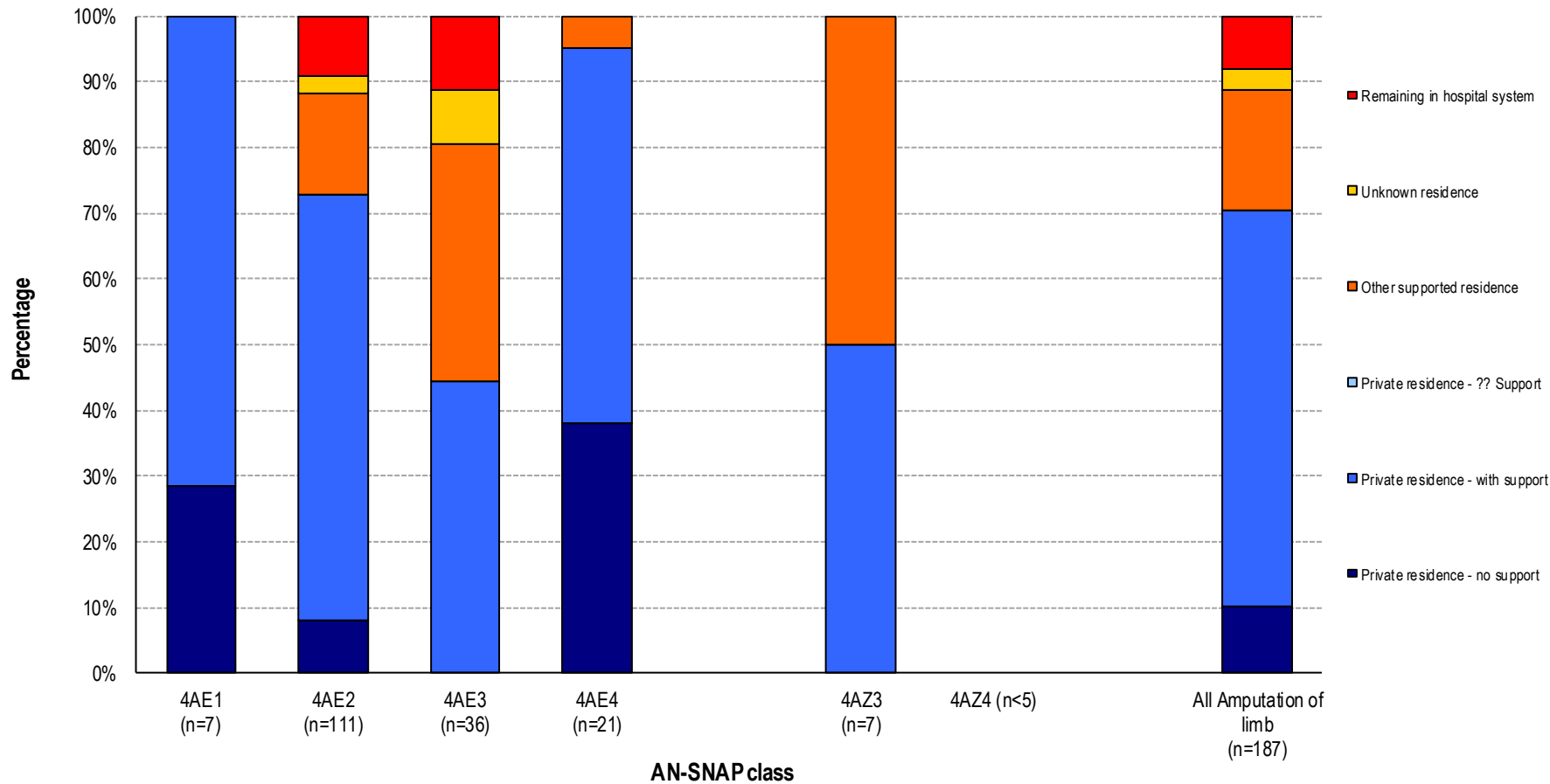
Amputation episodes in 2016



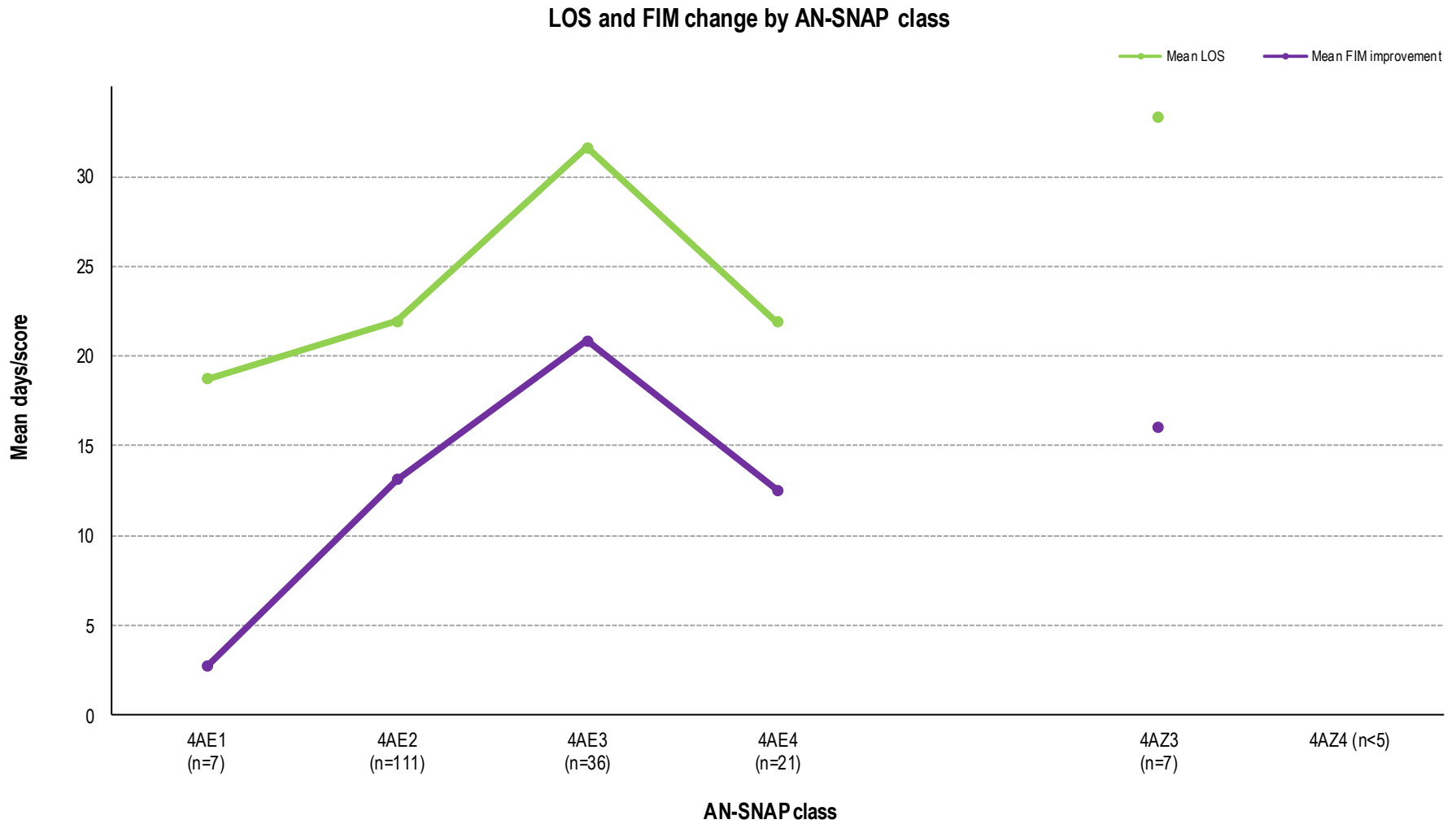
AN-SNAP class:	4AE1	4AE2	4AE3	4AE4	4AZ3	4AZ4	All Amputation of limb
Number of episodes	7	111	36	21	7	3	187
Proportion of episodes	3.7%	59.4%	19.3%	11.2%	3.7%	n < 5	100.0%
Gender (%)							
<i>Female</i>	42.9%	40.5%	55.6%	33.3%	57.1%	n < 5	43.3%
<i>Male</i>	57.1%	59.5%	44.4%	66.7%	42.9%	n < 5	56.7%
Age group (%)							
<i>Under 65</i>	28.6%	22.5%	2.8%	100.0%	0.0%	n < 5	27.8%
<i>Over 65</i>	71.4%	77.5%	97.2%	0.0%	100.0%	n < 5	72.2%
Age (Mean+95%CI)	68.0 (60.5-75.5)	71.3 (69.7-72.9)	81.4 (78.8-84.0)	45.4 (42.4-48.3)	78.7 (70.9-86.6)	n < 5	70.1 (68.1-72.0)
Admission FIM (Mean+95%CI)	114.0 (112.1-115.9)	82.8 (79.6-86.0)	51.8 (49.1-54.5)	98.1 (93.4-102.9)	29.0 (24.4-33.6)	n < 5	77.8 (74.3-81.3)
LOS (Mean+95%CI)	18.7 (6.3-31.2)	21.9 (19.5-24.3)	31.6 (23.8-39.4)	21.9 (14.9-28.9)	33.3 (5.7-60.9)	n < 5	24.2 (21.7-26.8)
Discharge destination (%)							
<i>Discharged to community</i>	100.0%	91.0%	88.9%	100.0%	100.0%	n < 5	91.9%
<i>Remaining in hospital system</i>	0.0%	9.0%	11.1%	0.0%	0.0%	n < 5	8.1%
FIM change (Mean+95%CI)	2.7 (0.3-5.2)	13.1 (11.0-15.3)	20.8 (15.3-26.4)	12.5 (8.7-16.4)	16.0 (4.6-27.4)	n < 5	14.3 (12.4-16.1)
FIM efficiency (FIM change/LOS)	0.1	0.6	0.7	0.6	0.5	n < 5	0.6

Amputation discharge destination by AN-SNAP class

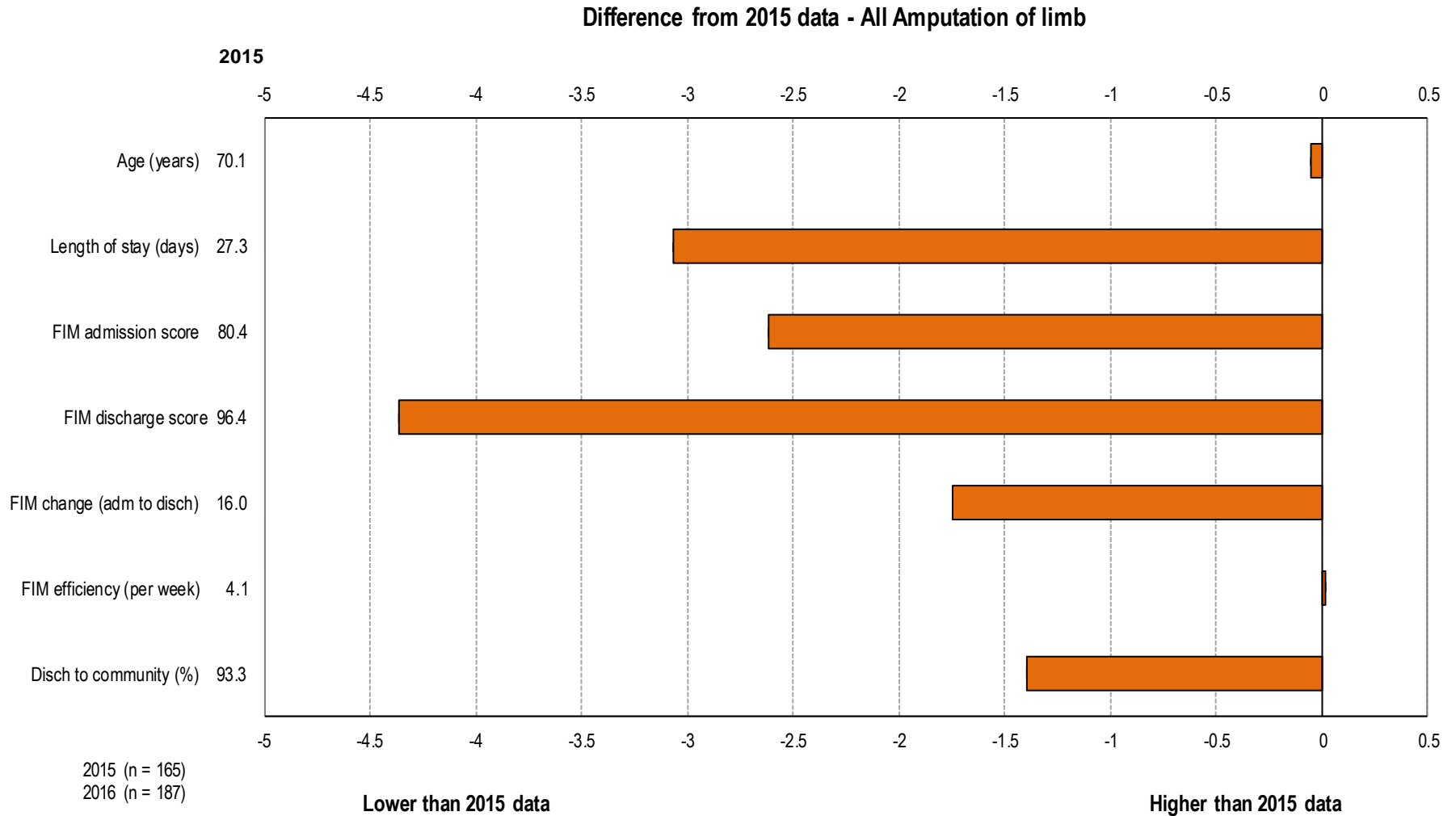
Discharge destination - Amputation of limb



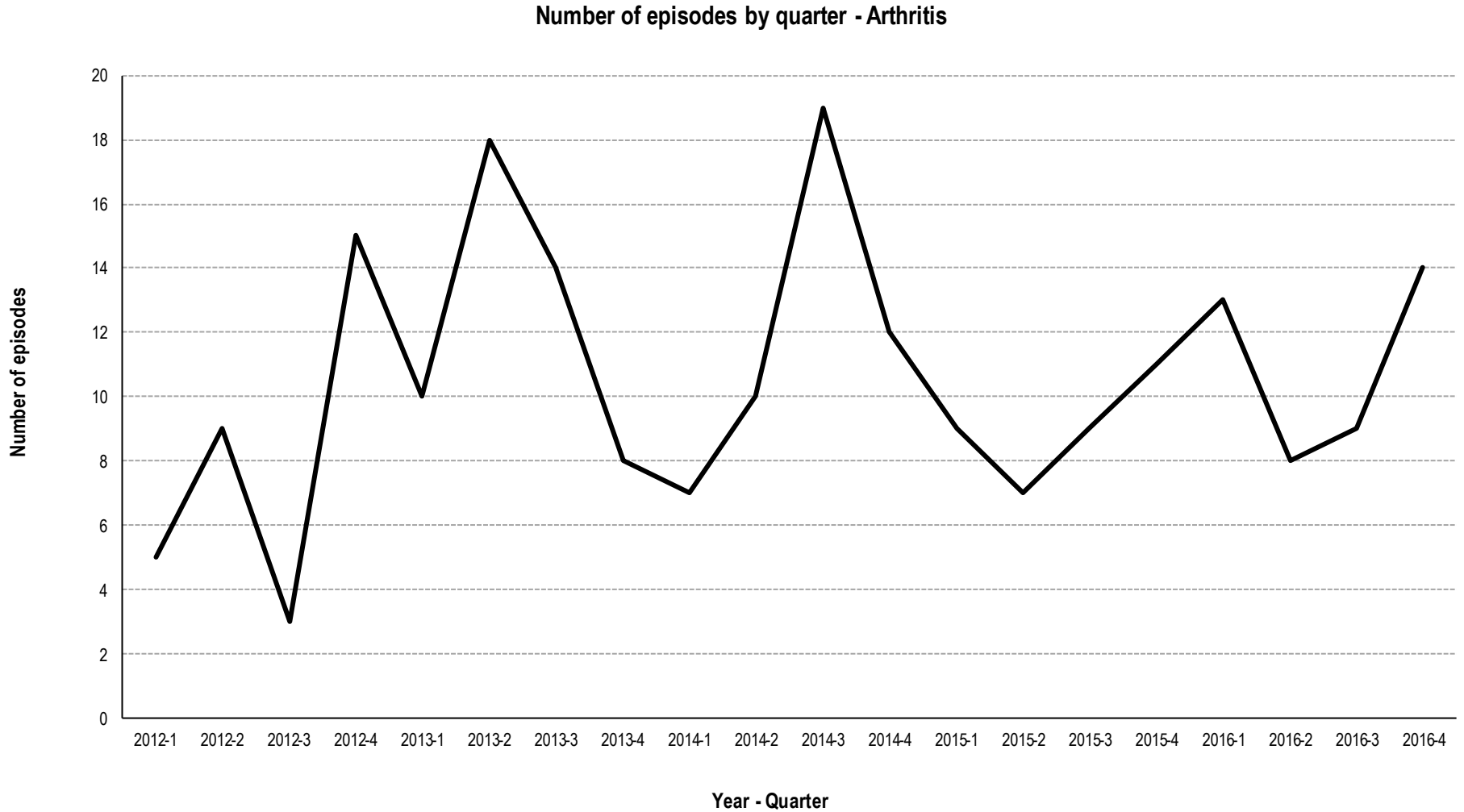
Amputation LOS and FIM change by AN-SNAP class



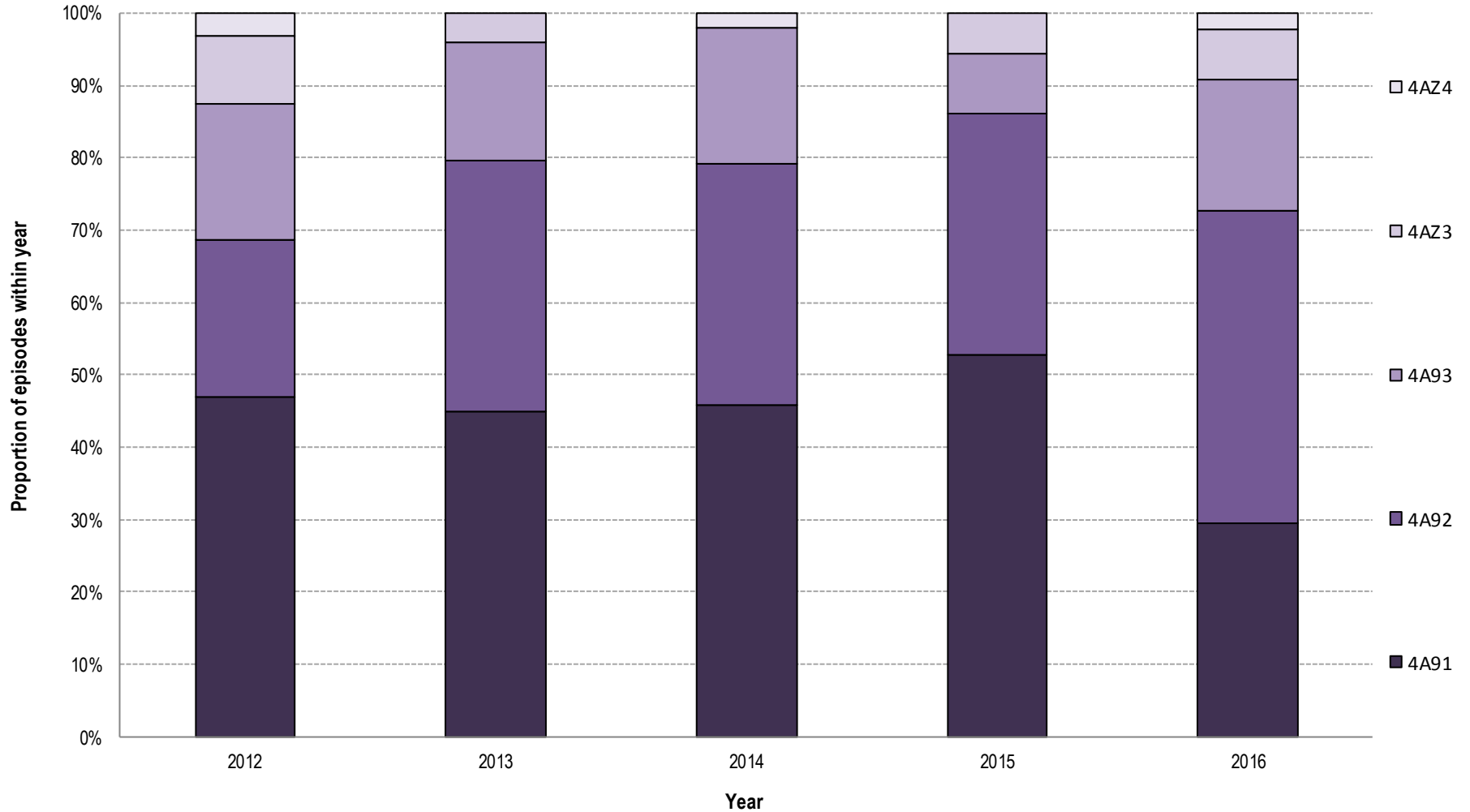
Change in outcome measures in amputation, 2015 to 2016



Arthritis episodes over time



Arthritis casemix over time



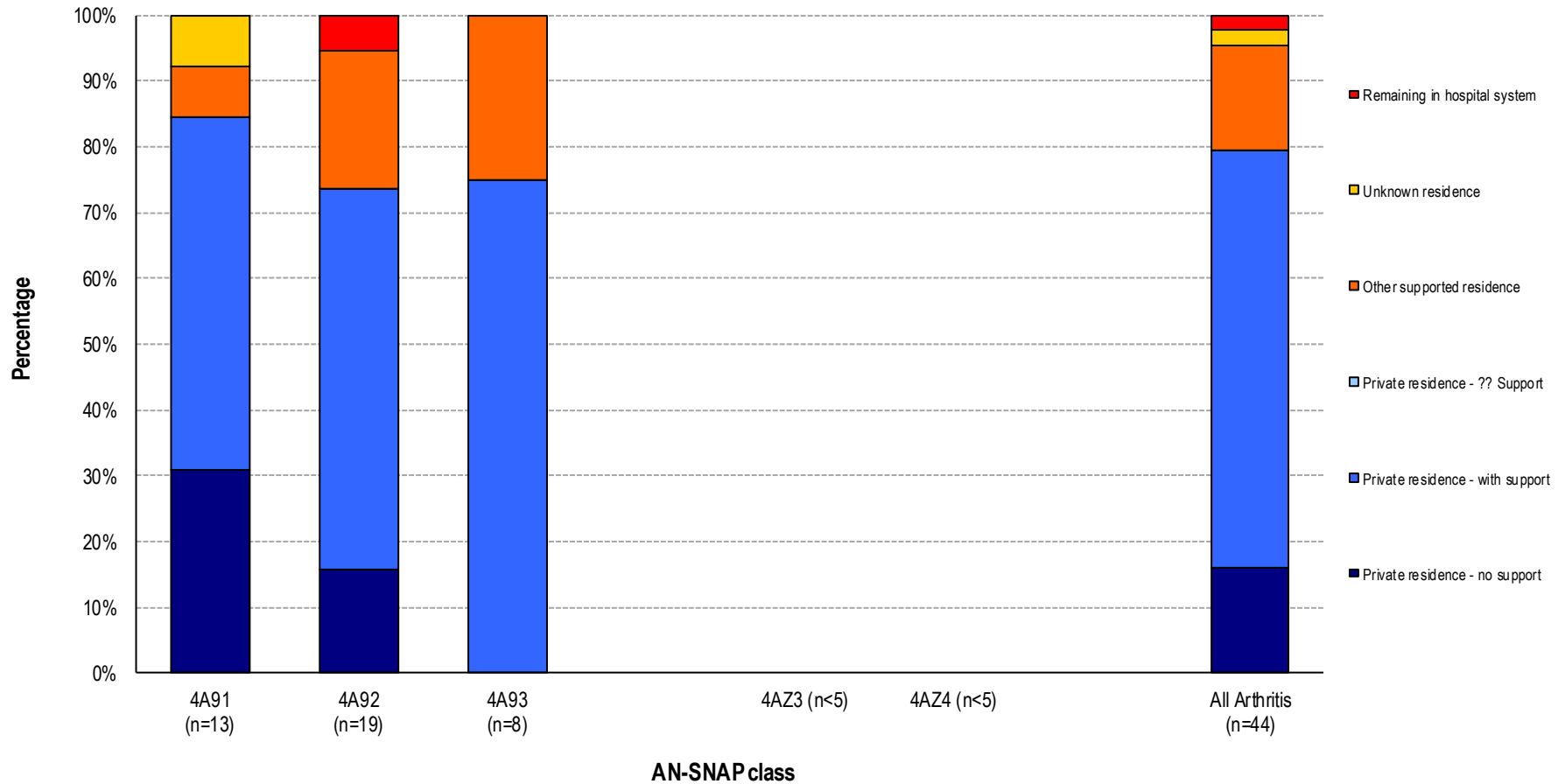
Arthritis episodes in 2016



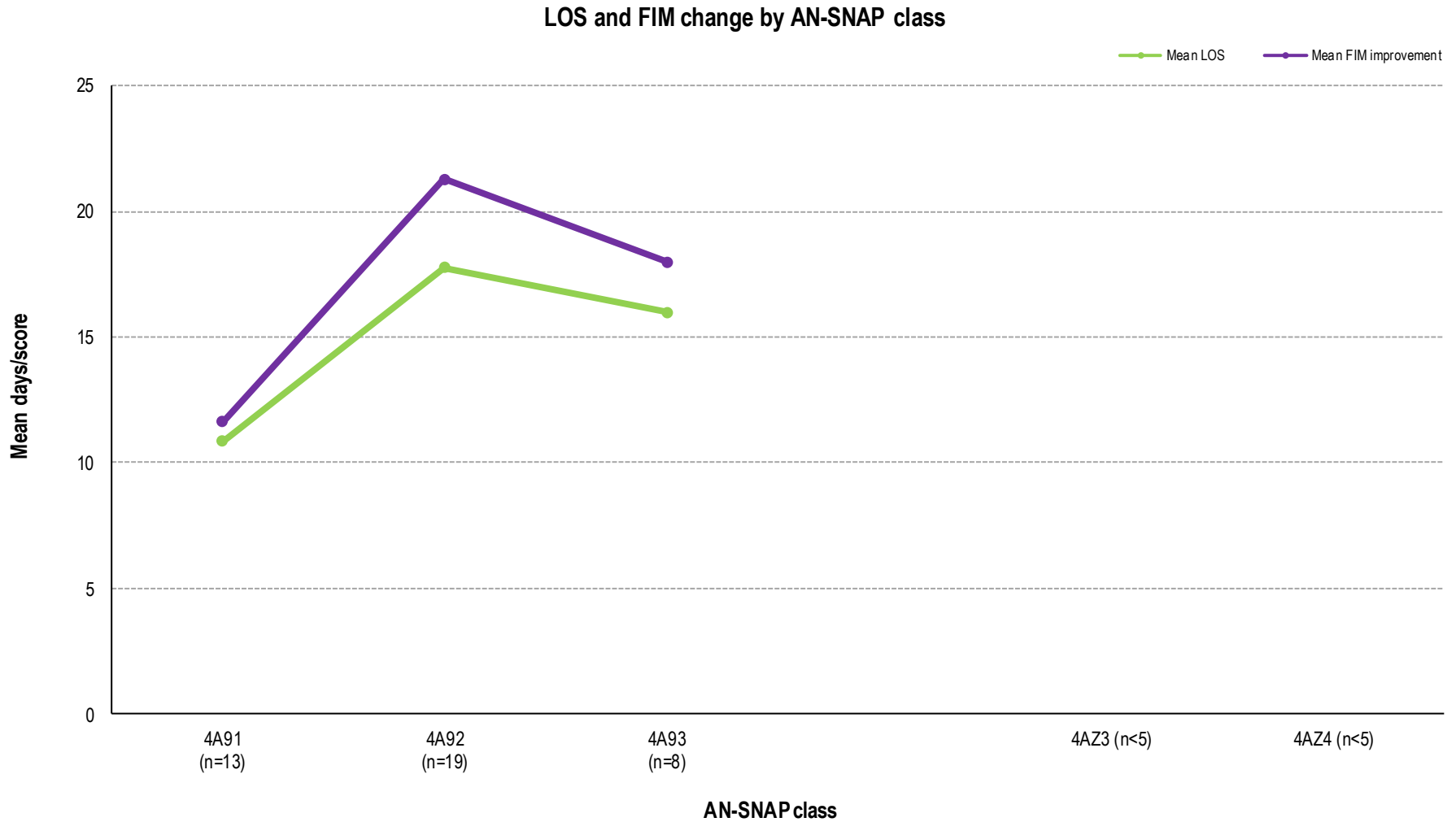
AN-SNAP class:	4A91	4A92	4A93	4AZ3	4AZ4	All Arthritis
Number of episodes	13	19	8	3	1	44
Proportion of episodes	29.5%	43.2%	18.2%	n < 5	n < 5	100.0%
Gender (%)						
<i>Female</i>	53.8%	42.1%	62.5%	n < 5	n < 5	52.3%
<i>Male</i>	46.2%	57.9%	37.5%	n < 5	n < 5	47.7%
Age group (%)						
<i>Under 65</i>	7.7%	15.8%	0.0%	n < 5	n < 5	11.4%
<i>Over 65</i>	92.3%	78.9%	100.0%	n < 5	n < 5	86.4%
Age (Mean+95%CI)	78.4 (72.8-83.9)	73.1 (67.4-78.8)	73.1 (68.6-77.7)	n < 5	n < 5	74.9 (71.7-78.1)
Admission FIM (Mean+95%CI)	96.8 (88.8-104.7)	72.3 (68.2-76.4)	53.8 (49.2-58.3)	n < 5	n < 5	73.5 (67.3-79.8)
LOS (Mean+95%CI)	10.8 (7.5-14.2)	17.8 (14.0-21.6)	16.0 (10.7-21.3)	n < 5	n < 5	15.5 (12.9-18.1)
Discharge destination (%)						
<i>Discharged to community</i>	100.0%	94.7%	100.0%	n < 5	n < 5	97.7%
<i>Remaining in hospital system</i>	0.0%	5.3%	0.0%	n < 5	n < 5	2.3%
FIM change (Mean+95%CI)	11.6 (7.5-15.7)	21.3 (13.5-29.1)	18.0 (2.8-33.2)	n < 5	n < 5	18.7 (13.9-23.6)
FIM efficiency (FIM change/LOS)	1.1	1.2	1.1	n < 5	n < 5	1.2

Arthritis discharge destination by AN-SNAP class

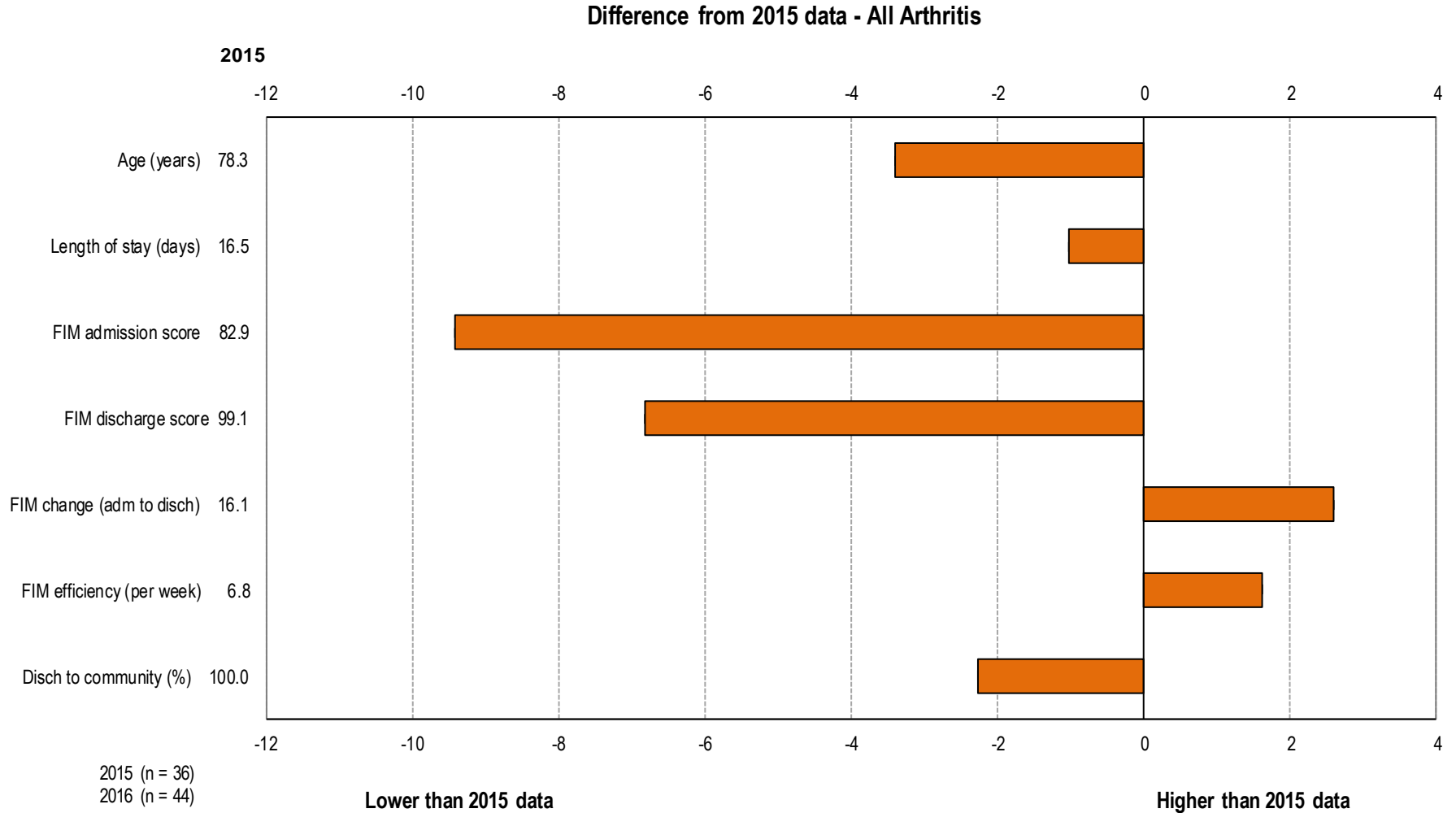
Discharge destination - Arthritis



Arthritis LOS and FIM change by AN-SNAP class

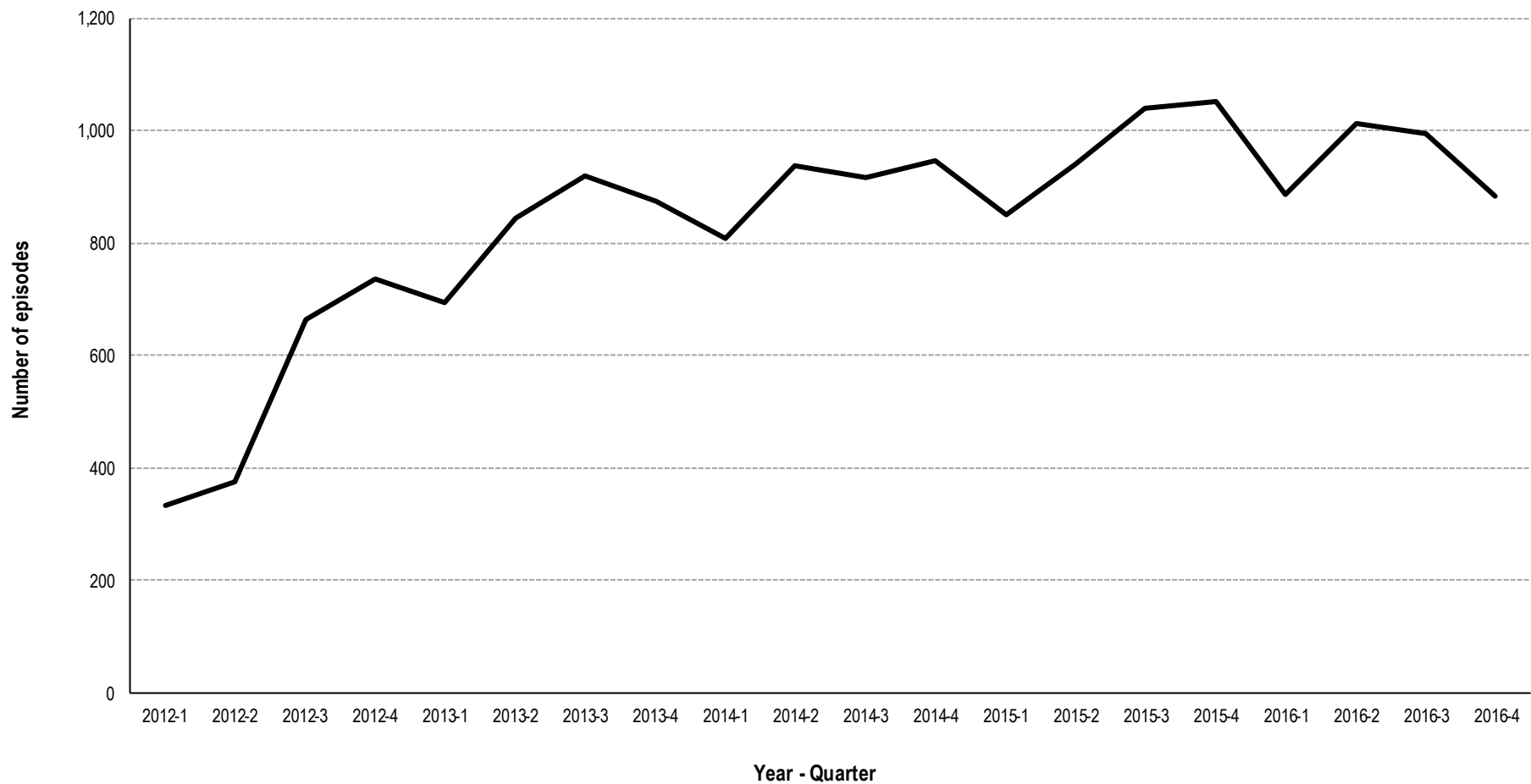


Change in outcome measures in arthritis, 2015 to 2016

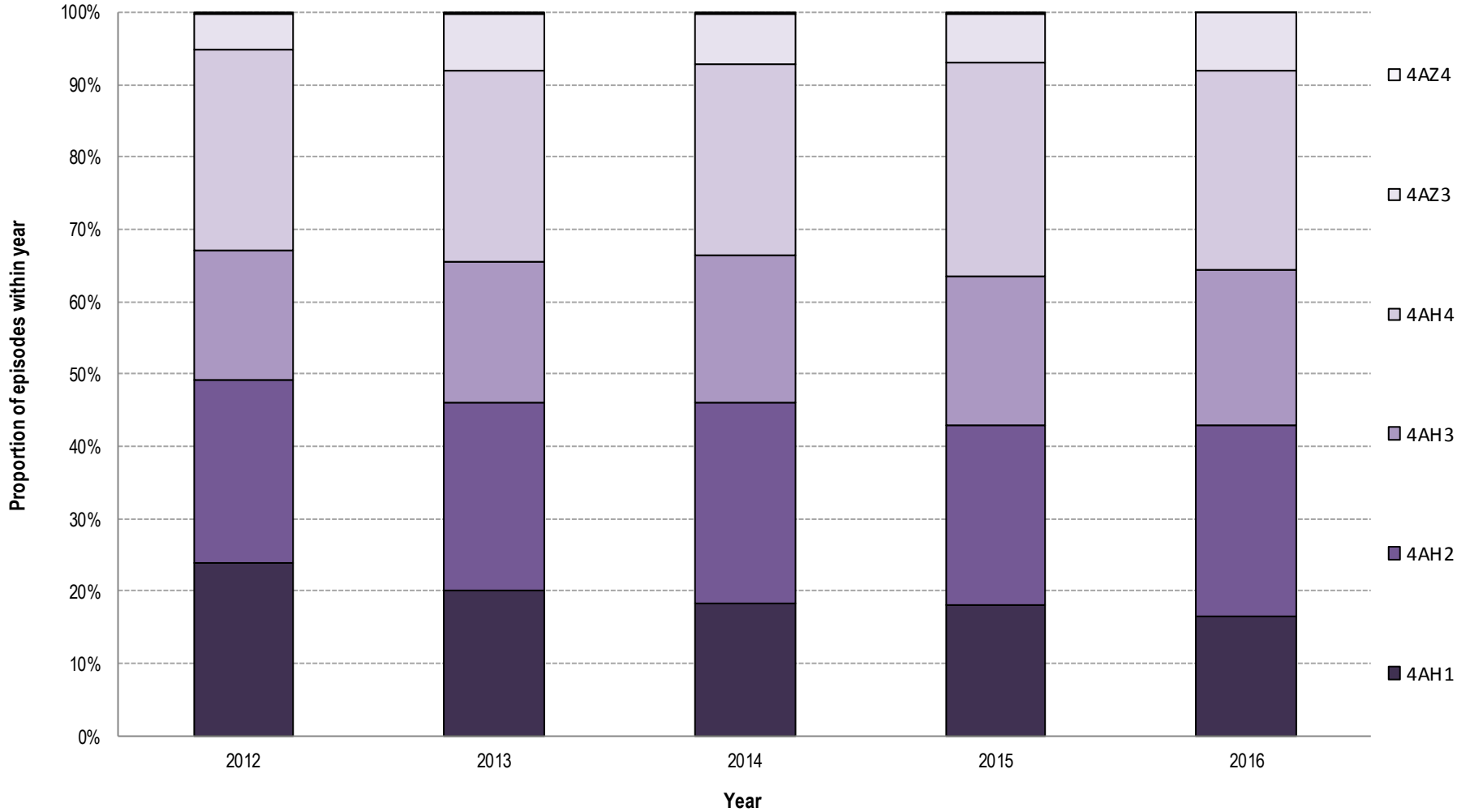


Orthopaedic fracture episodes over time

Number of episodes by quarter - Orthopaedic fractures



Orthopaedic fracture casemix over time



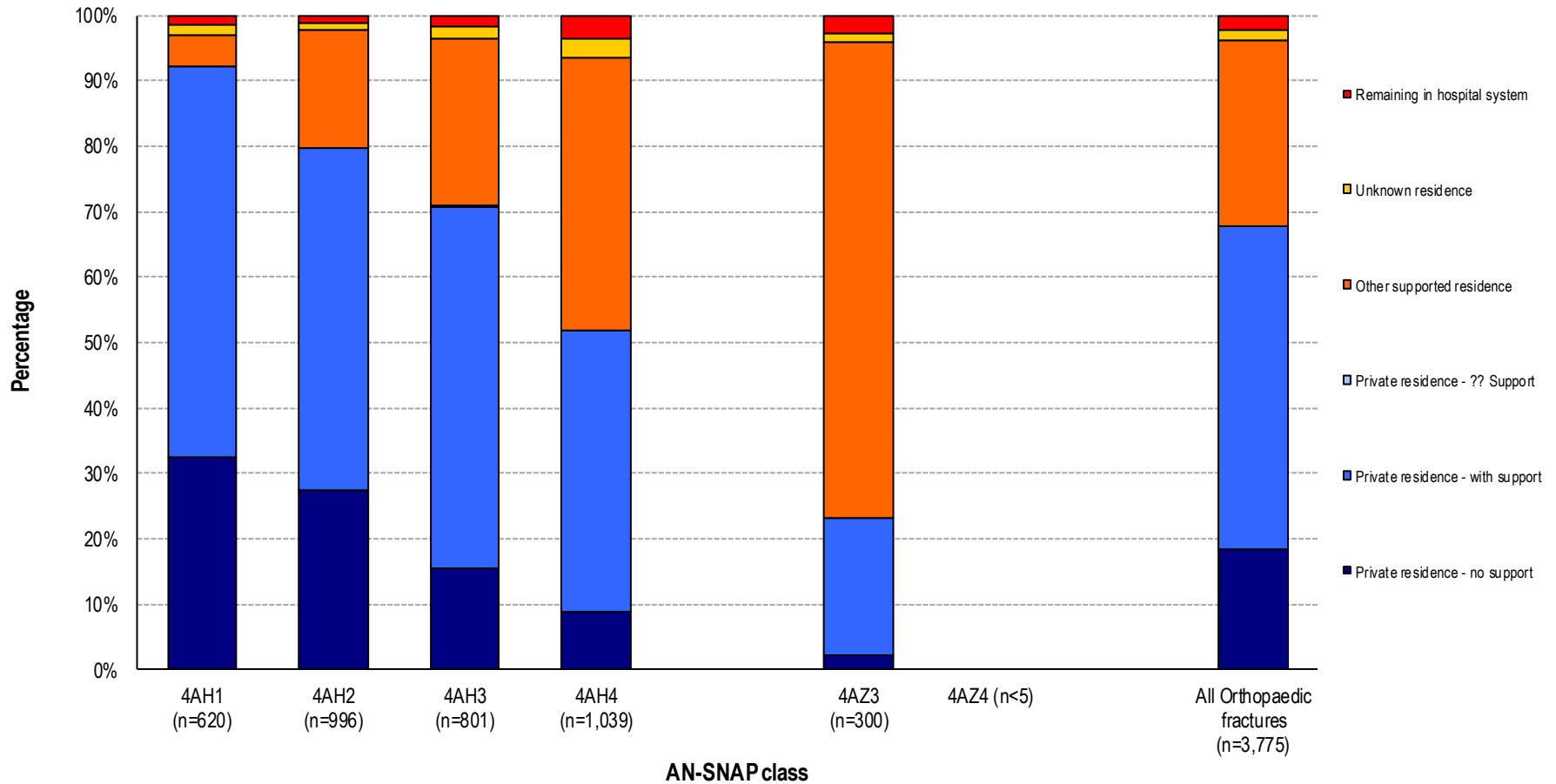
Orthopaedic fracture episodes in 2016



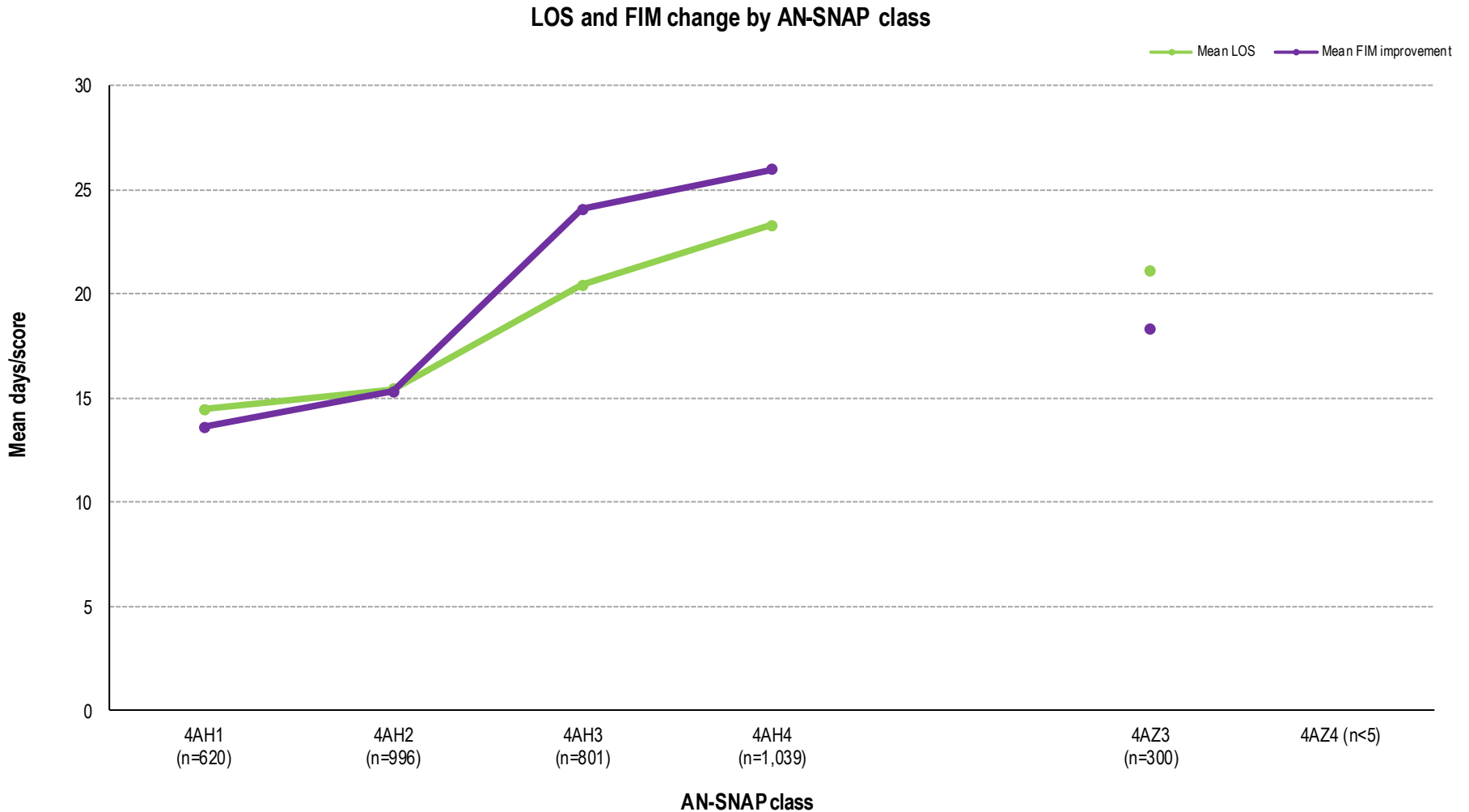
AN-SNAP class:	4AH1	4AH2	4AH3	4AH4	4AZ3	4AZ4	All Orthopaedic fractures
Number of episodes	620	996	801	1,039	300	1	3,775
Proportion of episodes	16.4%	26.4%	21.2%	27.5%	7.9%	n < 5	100.0%
Gender (%)							
<i>Female</i>	73.5%	73.3%	72.0%	73.2%	75.0%	n < 5	73.2%
<i>Male</i>	26.3%	26.6%	28.0%	26.8%	25.0%	n < 5	26.8%
Age group (%)							
<i>Under 65</i>	10.2%	4.5%	2.7%	2.8%	0.0%	n < 5	4.2%
<i>Over 65</i>	89.2%	94.8%	96.9%	96.5%	100.0%	n < 5	95.2%
Age (Mean+95%CI)	78.2 (77.3-79.1)	82.1 (81.6-82.7)	83.3 (82.7-84.0)	83.8 (83.3-84.3)	86.6 (85.9-87.4)	n < 5	82.6 (82.3-82.9)
Admission FIM (Mean+95%CI)	96.6 (95.9-97.3)	83.1 (82.5-83.7)	68.1 (67.5-68.7)	51.0 (50.3-51.6)	29.4 (28.4-30.4)	n < 5	69.3 (68.6-70.0)
LOS (Mean+95%CI)	14.4 (13.0-15.9)	15.4 (14.8-16.1)	20.4 (19.7-21.2)	23.3 (22.5-24.1)	21.1 (19.7-22.6)	n < 5	18.9 (18.5-19.4)
Discharge destination (%)							
<i>Discharged to community</i>	98.5%	99.0%	98.2%	96.5%	97.2%	n < 5	97.9%
<i>Remaining in hospital system</i>	1.5%	1.0%	1.8%	3.5%	2.8%	n < 5	2.1%
FIM change (Mean+95%CI)	13.6 (12.9-14.3)	15.3 (14.7-15.9)	24.1 (23.3-24.9)	26.0 (24.9-27.0)	18.3 (16.1-20.5)	n < 5	20.0 (19.6-20.5)
FIM efficiency (FIM change/LOS)	0.9	1.0	1.2	1.1	0.9	n < 5	1.1

Orthopaedic fracture discharge destination by AN-SNAP class

Discharge destination - Orthopaedic fractures



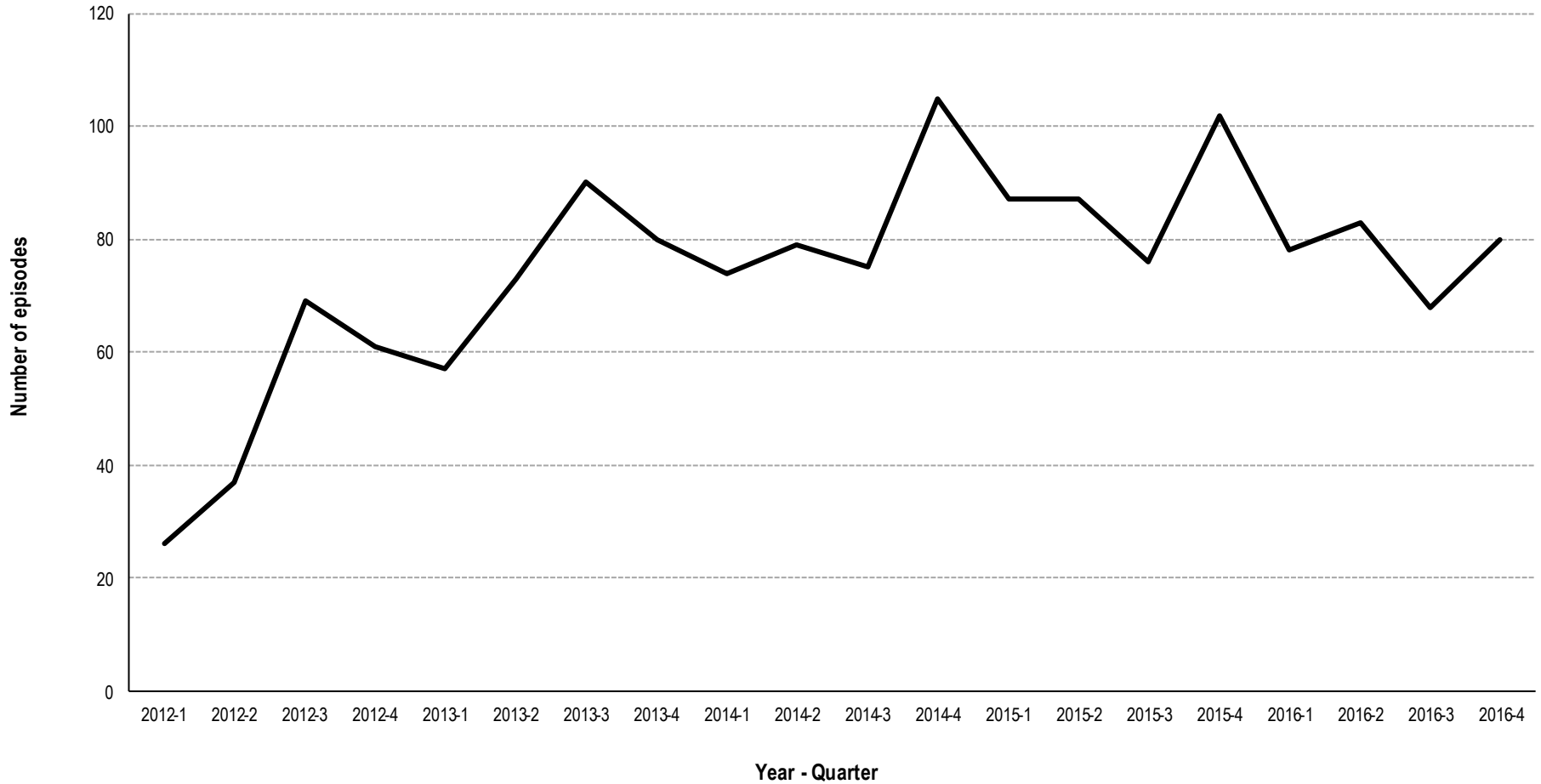
Orthopaedic fracture LOS and FIM change by AN-SNAP class



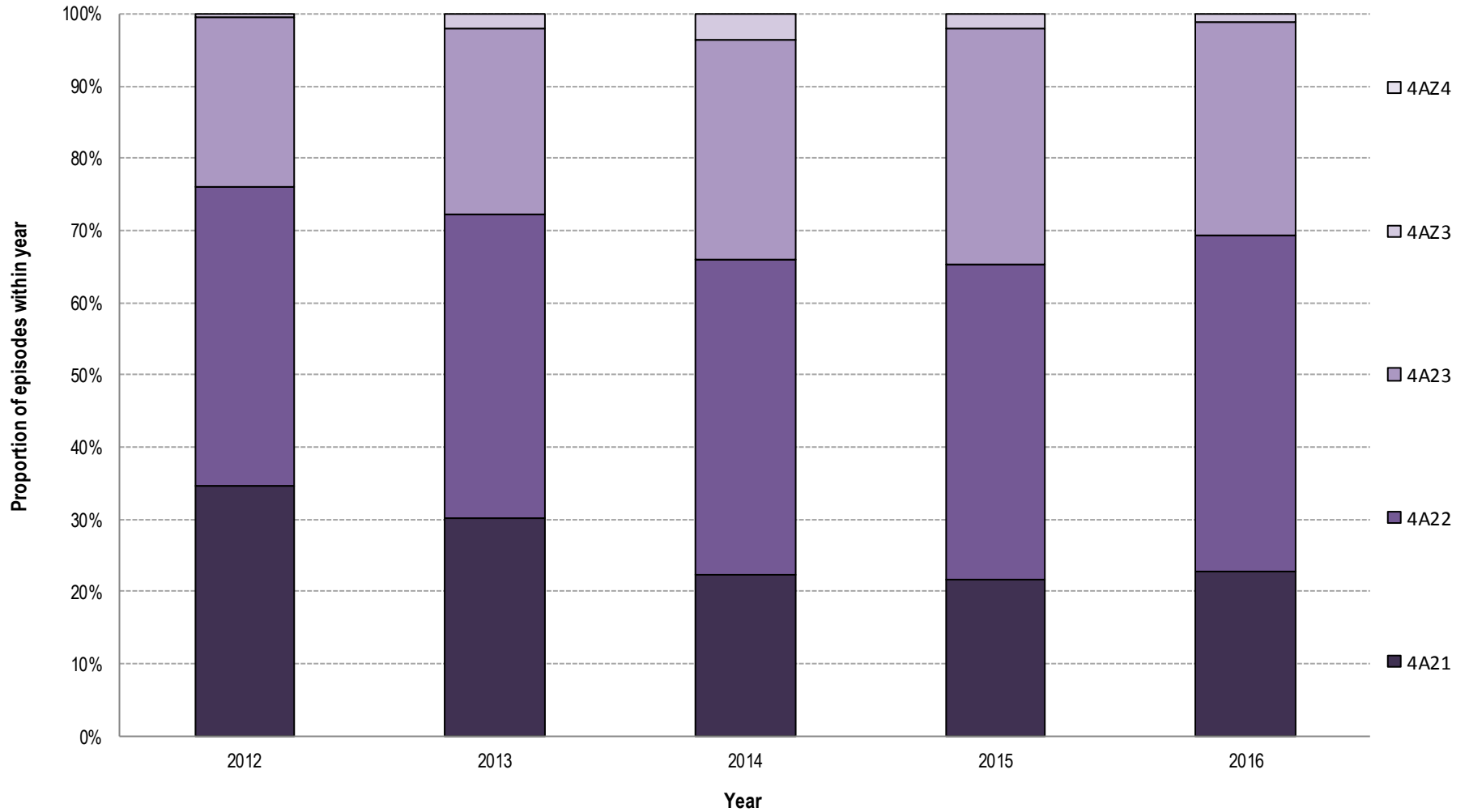
Orthopaedic replacement episodes over time



Number of episodes by quarter - Orthopaedic replacements



Orthopaedic replacement casemix over time



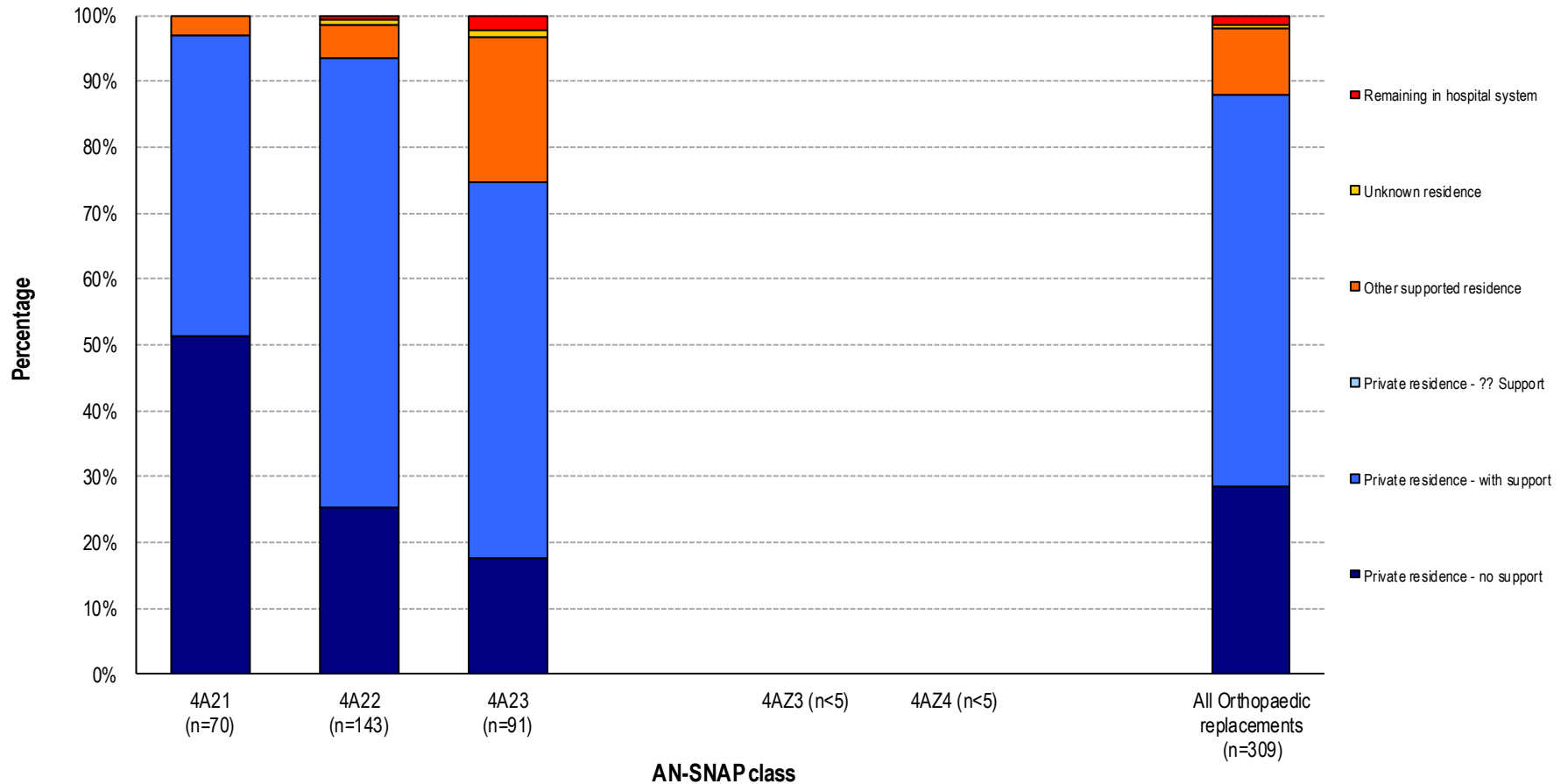
Orthopaedic replacement episodes in 2016



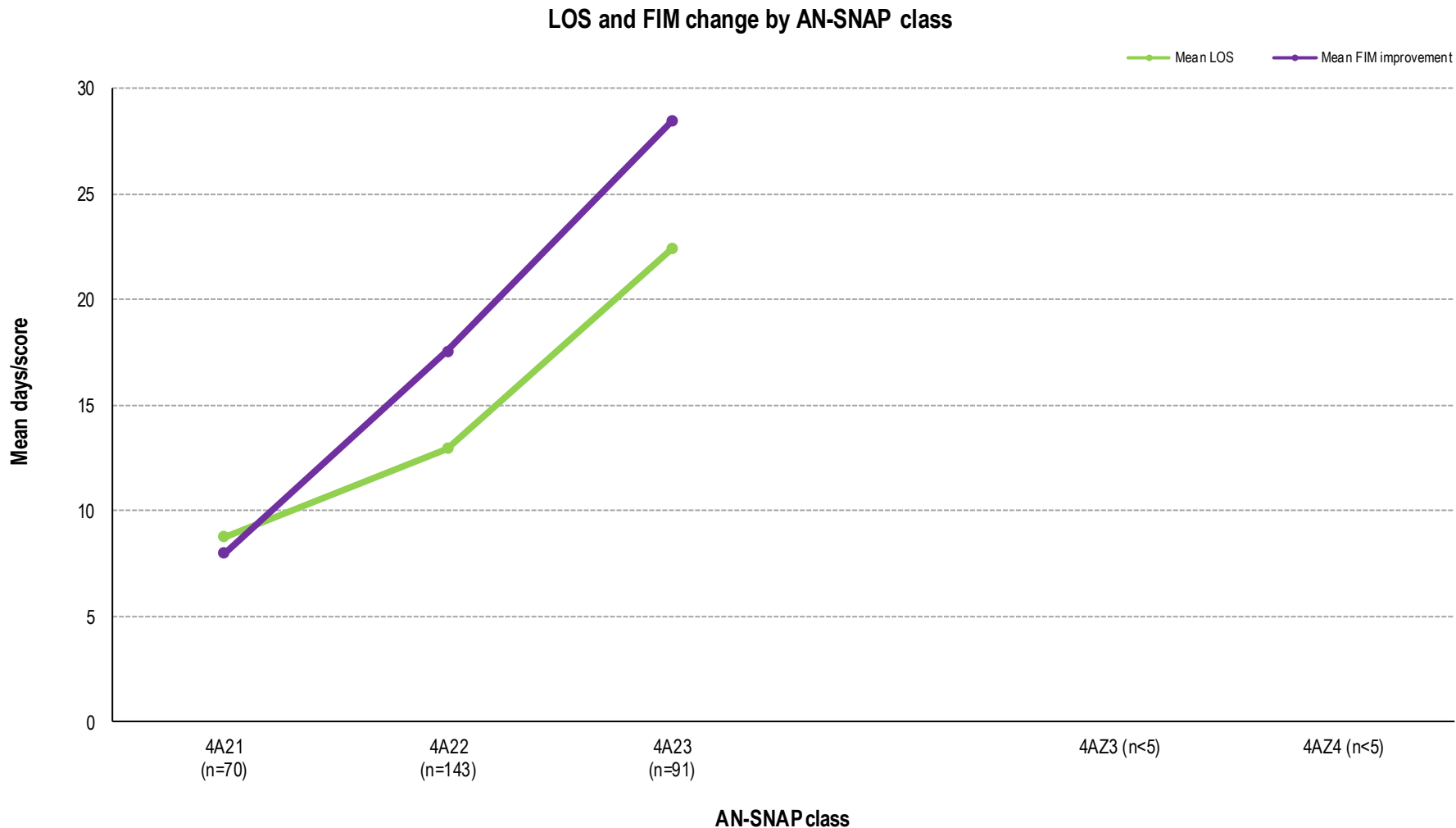
AN-SNAP class:	4A21	4A22	4A23	4AZ3	4AZ4	All Orthopaedic replacements
Number of episodes	70	143	91	3	0	309
Proportion of episodes	22.7%	46.3%	29.4%	n < 5	n < 5	100.0%
Gender (%)						
<i>Female</i>	60.0%	73.4%	69.2%	n < 5	n < 5	68.9%
<i>Male</i>	40.0%	26.6%	30.8%	n < 5	n < 5	31.1%
Age group (%)						
<i>Under 65</i>	11.4%	5.6%	5.5%	n < 5	n < 5	6.8%
<i>Over 65</i>	88.6%	92.3%	93.4%	n < 5	n < 5	91.9%
Age (Mean+95%CI)	76.7 (74.7-78.8)	79.5 (78.1-80.9)	80.3 (78.3-82.3)	n < 5	n < 5	79.1 (78.1-80.1)
Admission FIM (Mean+95%CI)	103.2 (101.6-104.8)	85.7 (84.3-87.1)	60.9 (58.2-63.6)	n < 5	n < 5	82.1 (80.0-84.2)
LOS (Mean+95%CI)	8.8 (7.8-9.7)	13.0 (11.8-14.1)	22.4 (19.3-25.5)	n < 5	n < 5	14.9 (13.6-16.1)
Discharge destination (%)						
<i>Discharged to community</i>	100.0%	99.3%	97.8%	n < 5	n < 5	98.7%
<i>Remaining in hospital system</i>	0.0%	0.7%	2.2%	n < 5	n < 5	1.3%
FIM change (Mean+95%CI)	8.0 (6.8-9.2)	17.6 (16.3-18.8)	28.4 (25.6-31.3)	n < 5	n < 5	18.7 (17.3-20.0)
FIM efficiency (FIM change/LOS)	0.9	1.4	1.3	n < 5	n < 5	1.3

Orthopaedic replacement discharge destination by AN-SNAP class

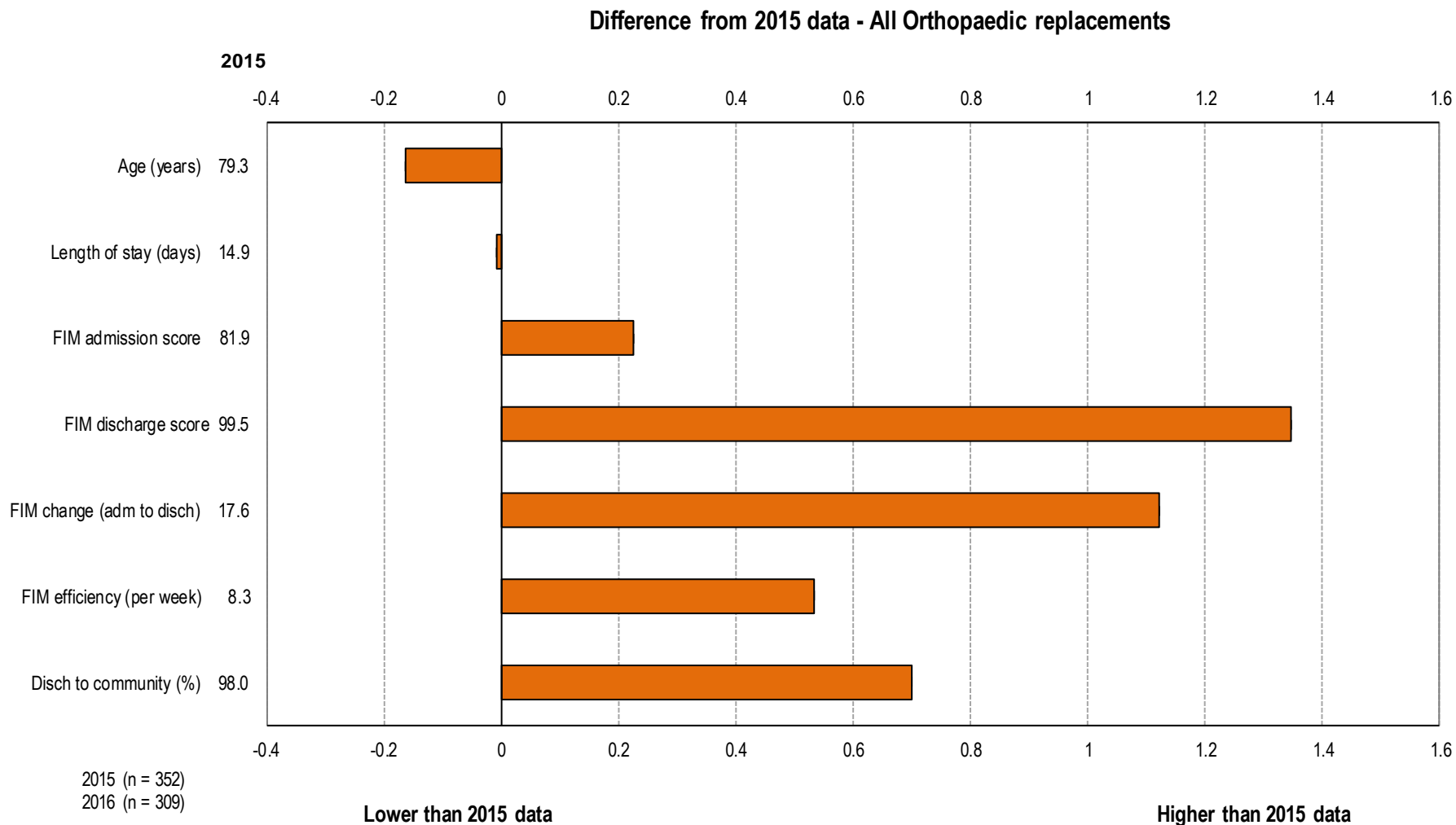
Discharge destination - Orthopaedic replacements



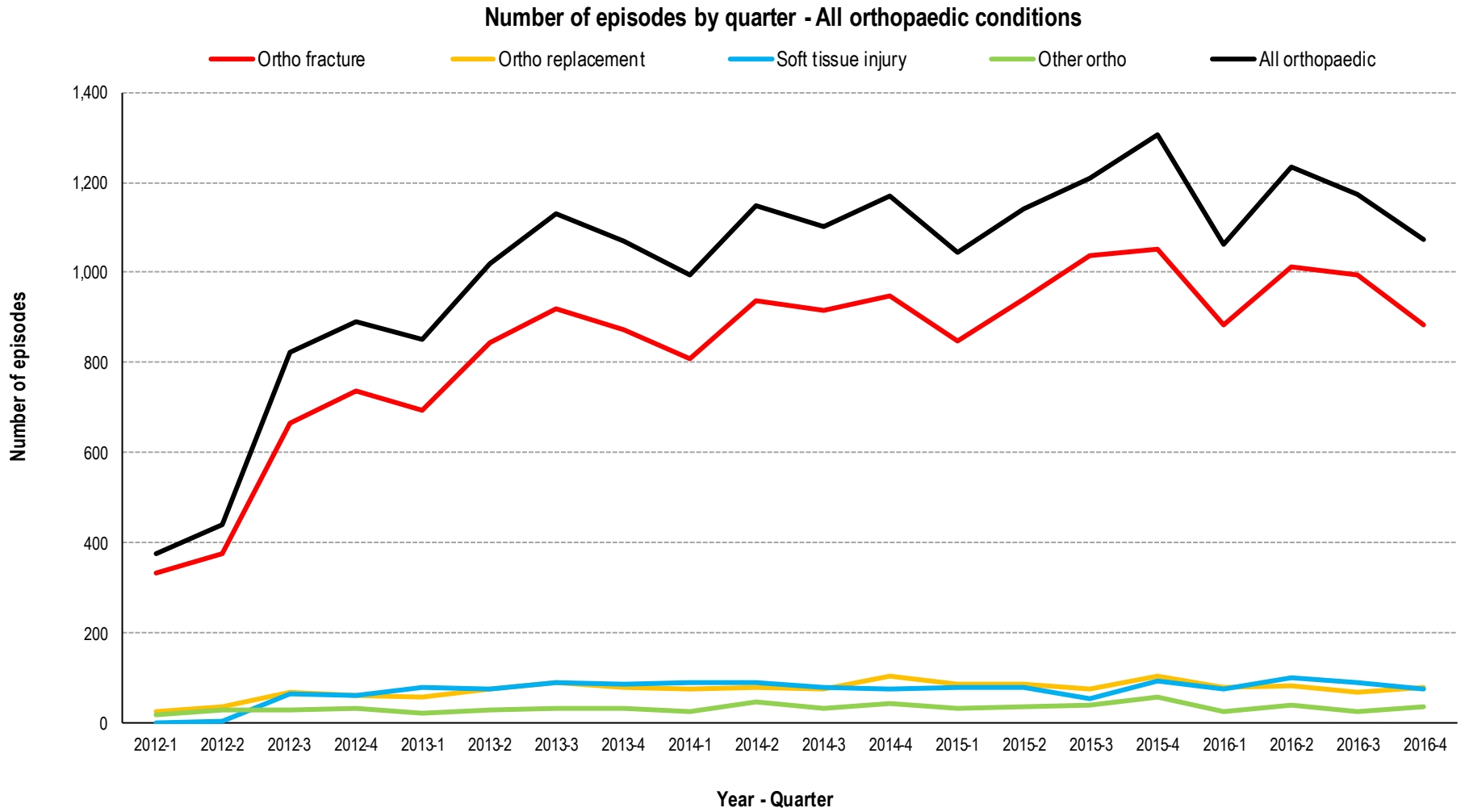
Orthopaedic replacement LOS and FIM change by AN-SNAP class



Change in outcome measures in orthopaedic replacement, 2015 to 2016



All orthopaedic episodes over time

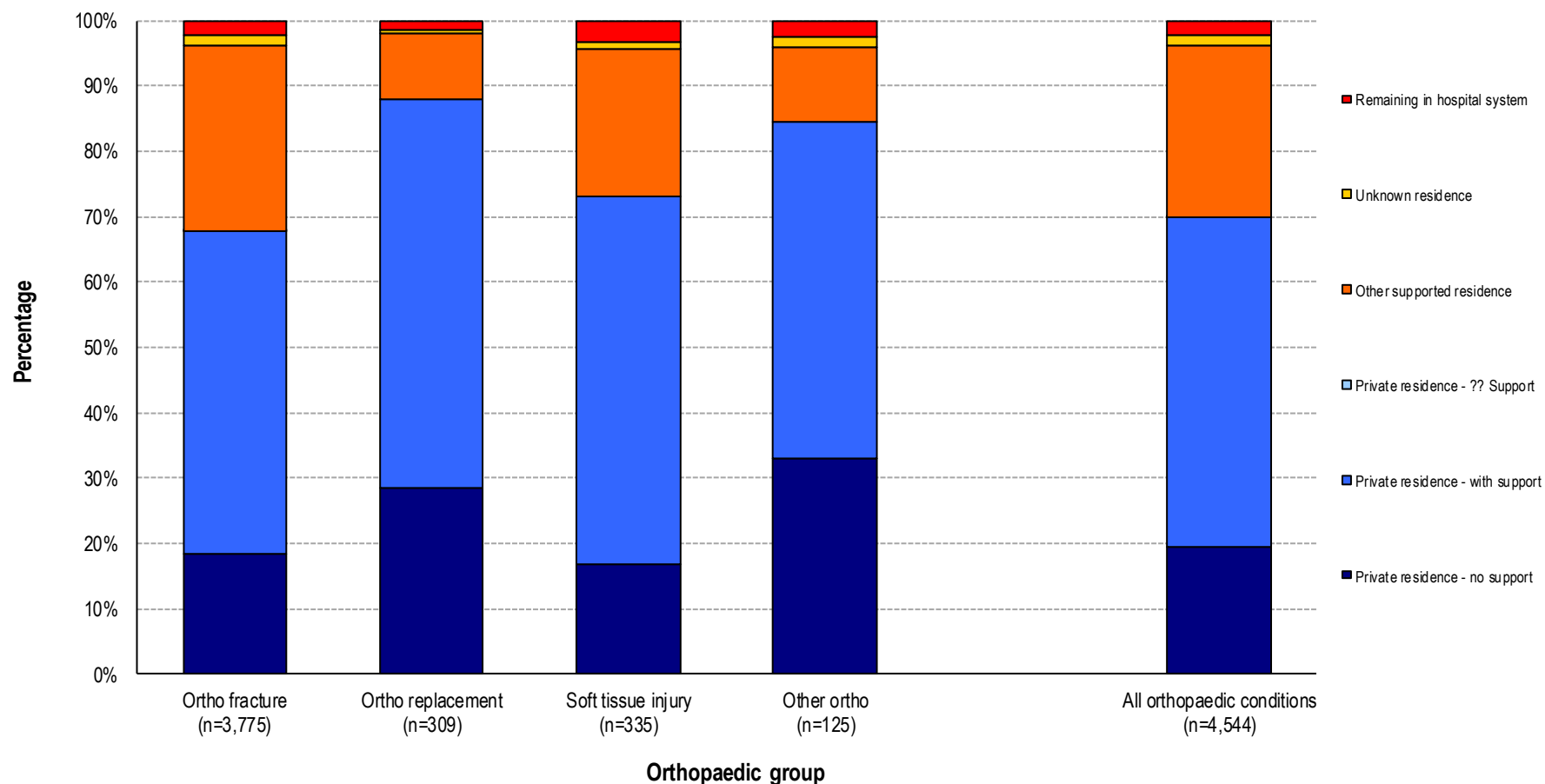


All orthopaedic episodes in 2016

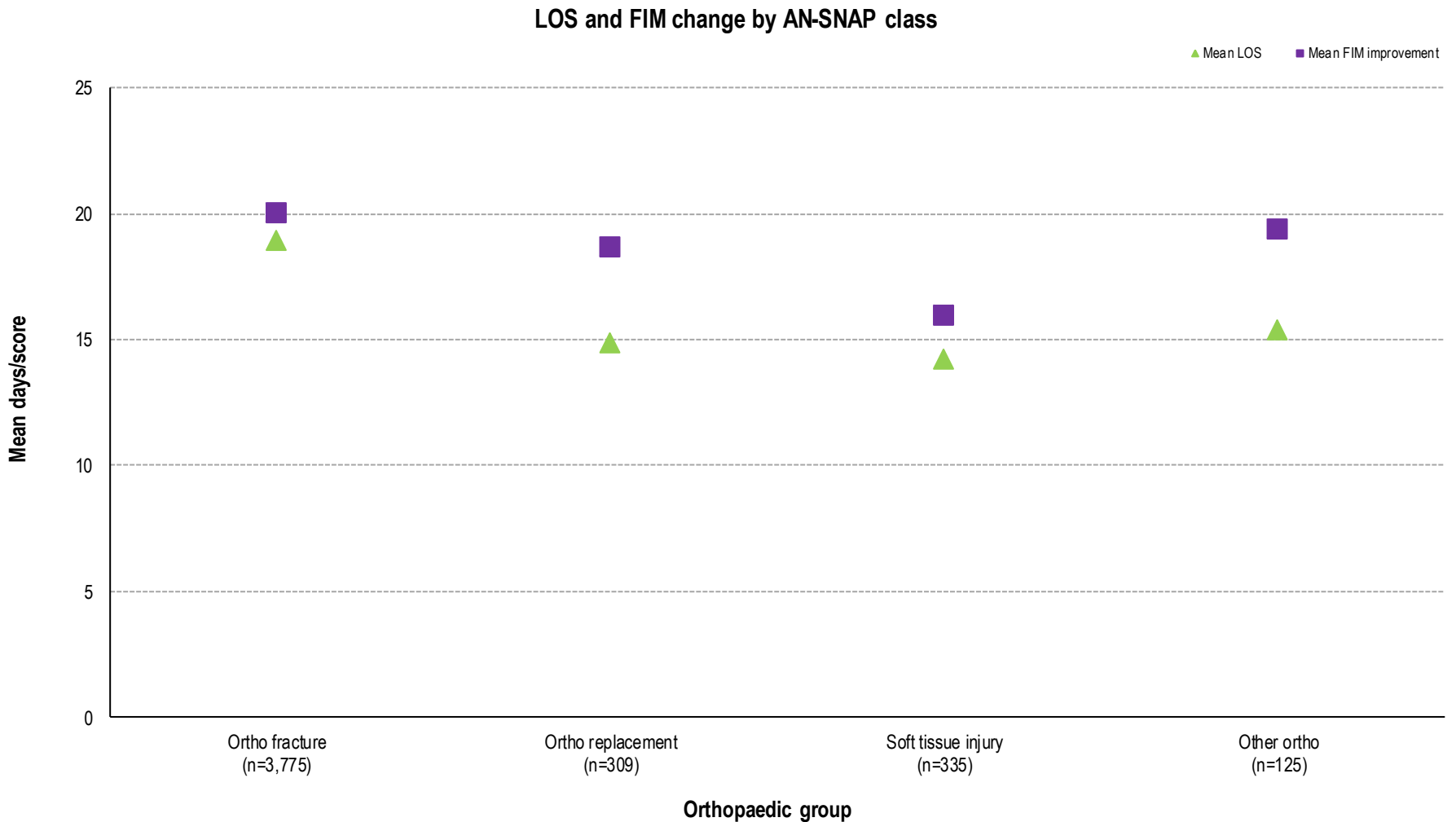
AN-SNAP class:	Ortho fracture	Ortho replacement	Soft tissue injury	Other ortho	All orthopaedic conditions
Number of episodes	3,775	309	335	125	4,544
Proportion of episodes	83.1%	6.8%	7.4%	2.8%	100.0%
Gender (%)					
<i>Female</i>	73.2%	68.9%	66.9%	52.8%	71.9%
<i>Male</i>	26.8%	31.1%	33.1%	47.2%	28.1%
Age group (%)					
<i>Under 65</i>	4.2%	6.8%	2.1%	21.6%	4.7%
<i>Over 65</i>	95.2%	91.9%	97.3%	74.4%	94.5%
Age (Mean+95%CI)	82.6 (82.3-82.9)	79.1 (78.1-80.1)	84.6 (83.7-85.5)	73.6 (71.2-75.9)	82.2 (82.0-82.5)
Admission FIM (Mean+95%CI)	69.3 (68.6-70.0)	82.1 (80.0-84.2)	76.5 (74.2-78.8)	80.4 (77.0-83.8)	71.0 (70.4-71.7)
LOS (Mean+95%CI)	18.9 (18.5-19.4)	14.9 (13.6-16.1)	14.2 (13.2-15.3)	15.4 (13.4-17.3)	18.2 (17.8-18.6)
Discharge destination (%)					
<i>Discharged to community</i>	97.9%	98.7%	96.7%	97.6%	97.9%
<i>Remaining in hospital system</i>	2.1%	1.3%	3.3%	2.4%	2.1%
FIM change (Mean+95%CI)	20.0 (19.6-20.5)	18.7 (17.3-20.0)	16.0 (14.6-17.3)	19.4 (17.3-21.5)	19.6 (19.2-20.0)
FIM efficiency (FIM change/LOS)	1.1	1.3	1.1	1.3	1.1

All Orthopaedic episodes discharge destination by orthopaedic group

Discharge destination - All orthopaedic conditions

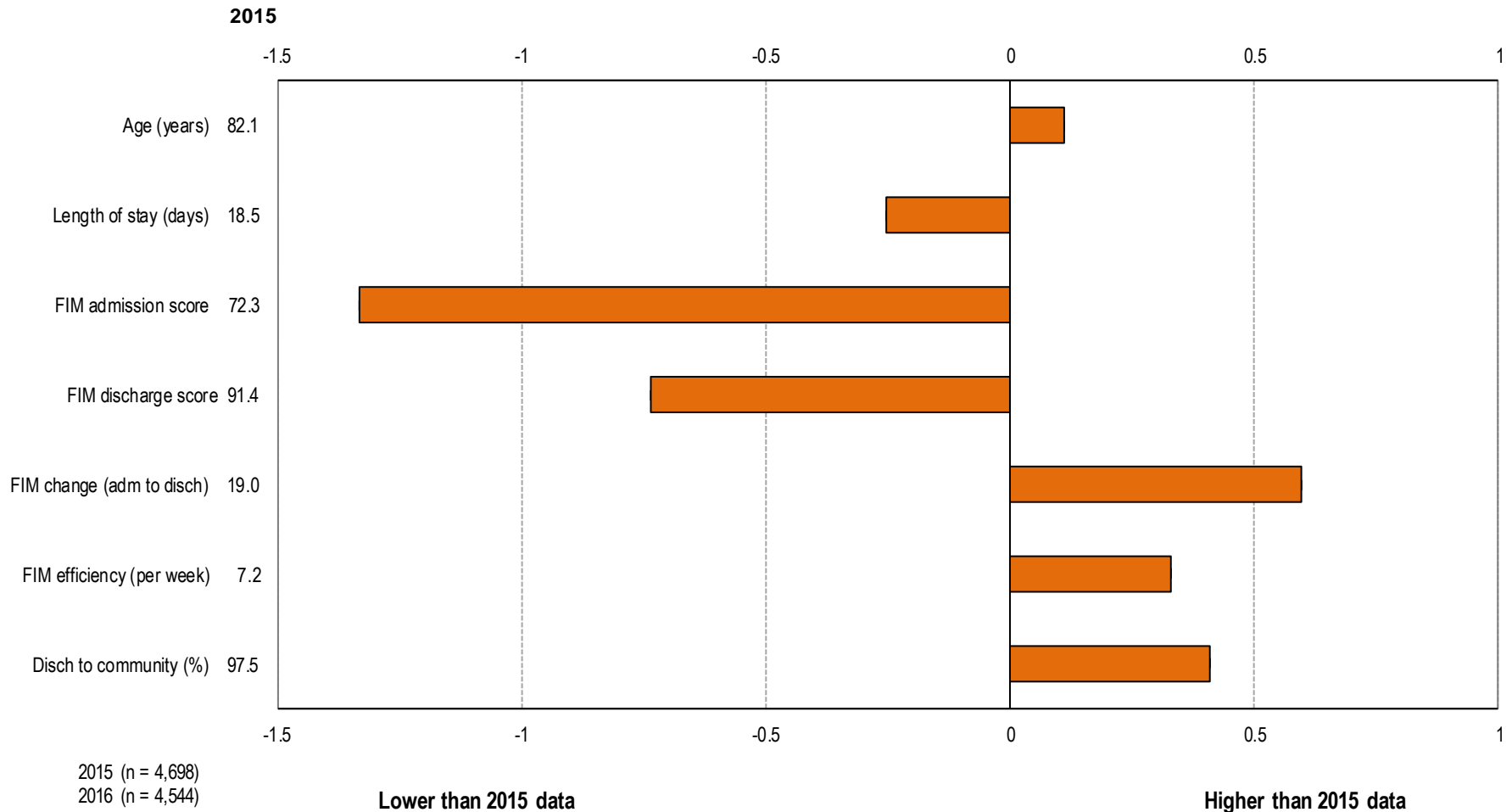


All orthopaedic conditions LOS and FIM change by orthopaedic group



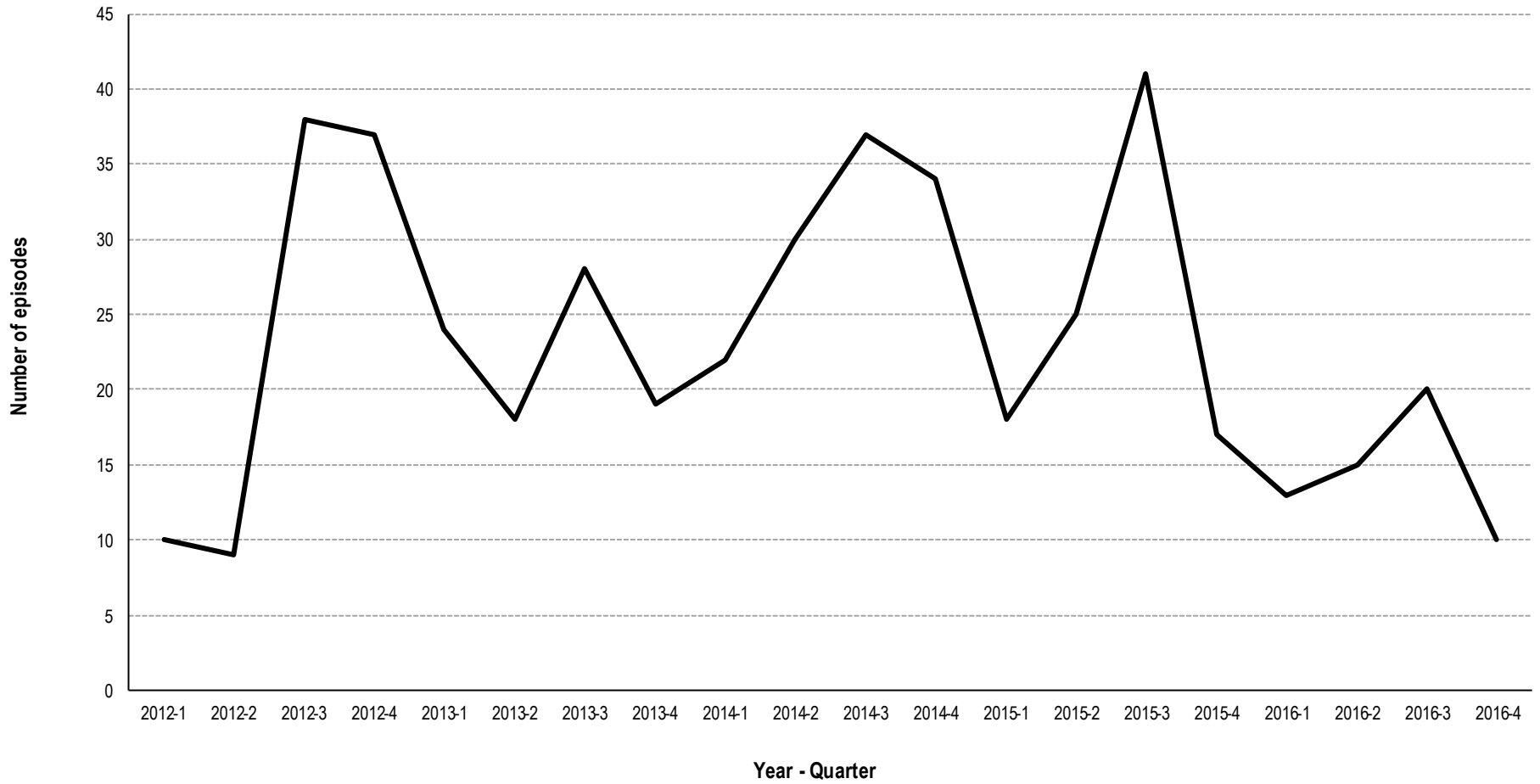
Change in outcome measures in orthopaedic conditions, 2015 to 2016

Difference from 2015 data - All orthopaedic conditions

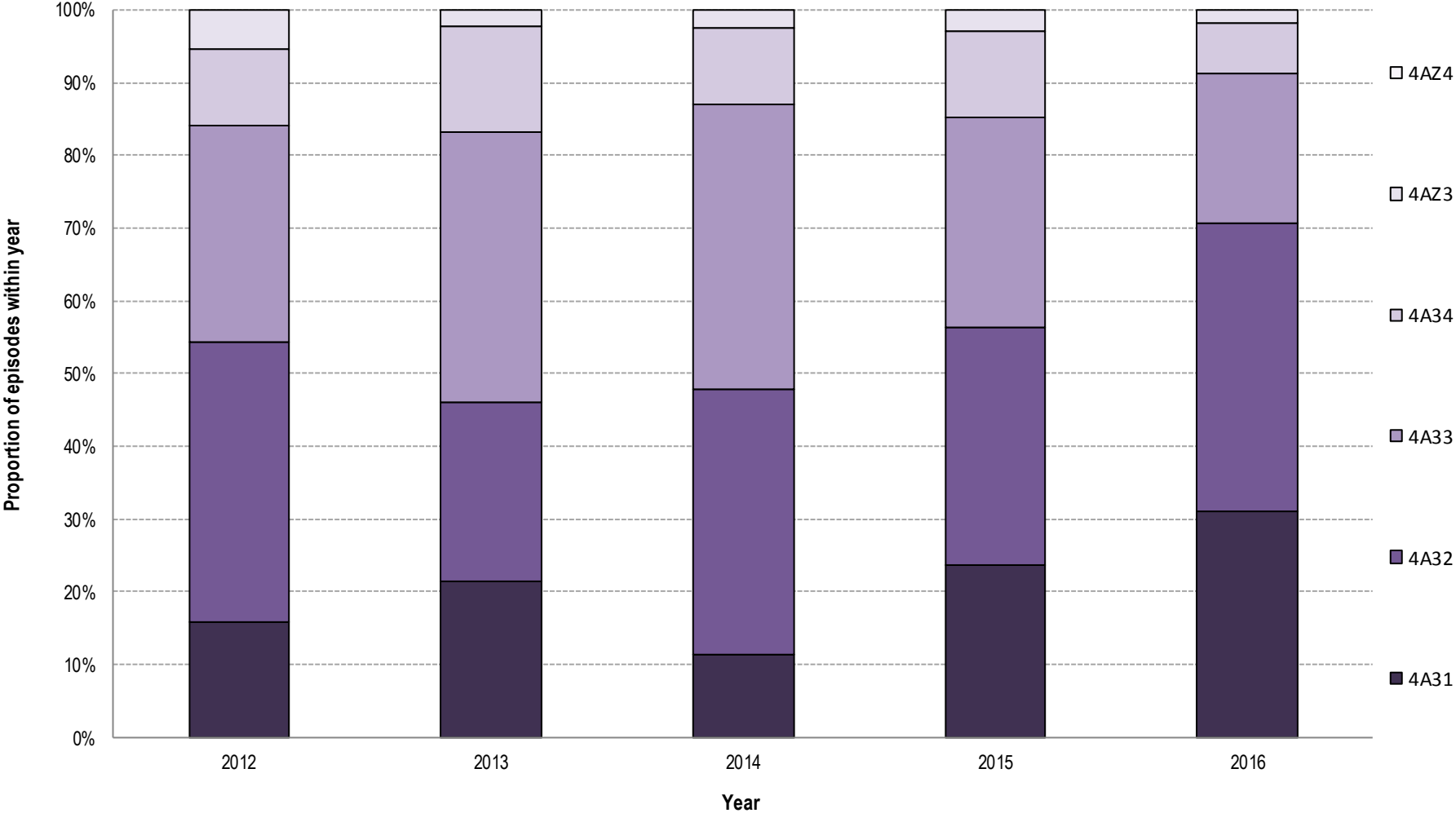


Pulmonary episodes over time

Number of episodes by quarter - Pulmonary



Pulmonary casemix over time



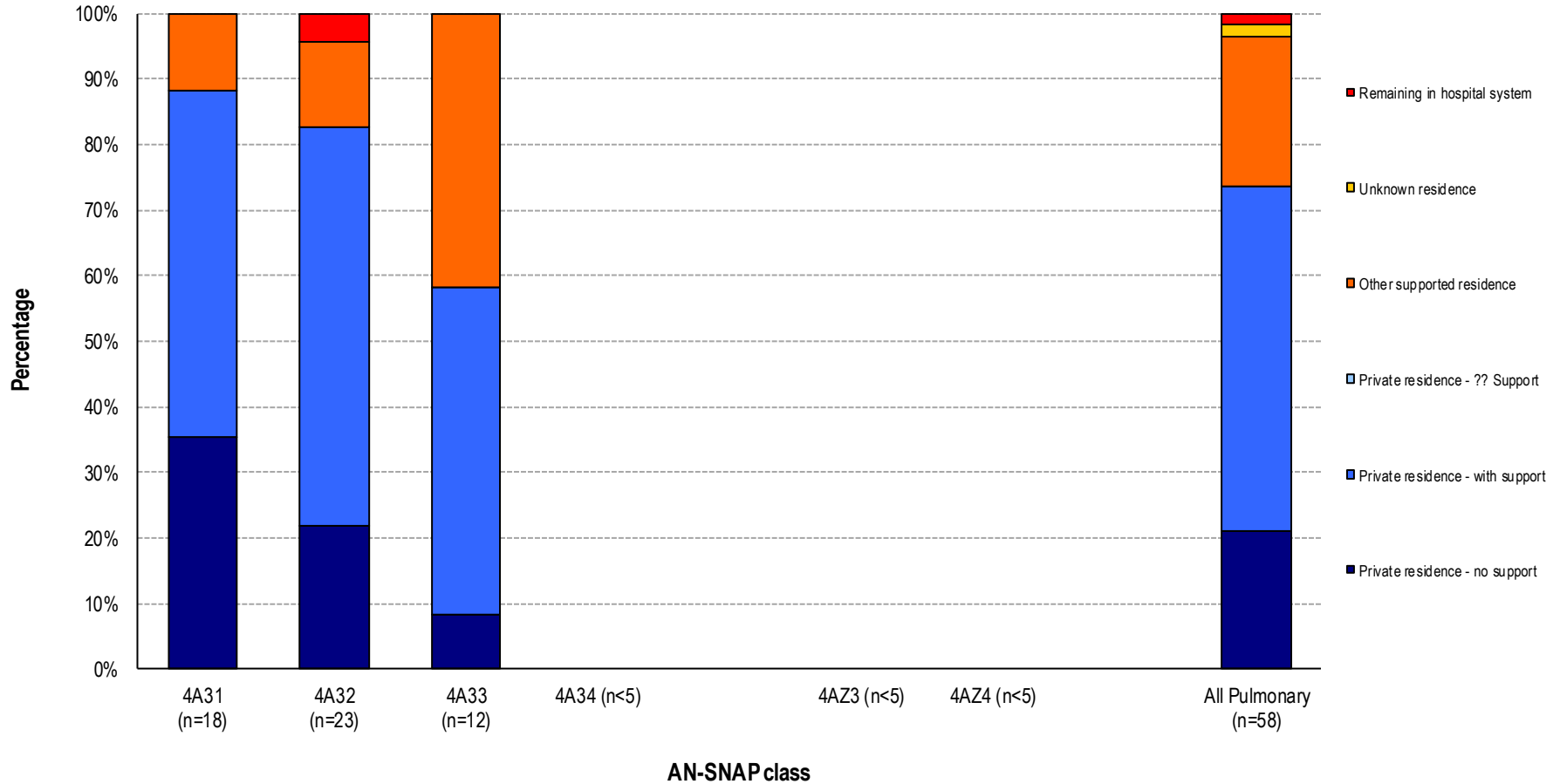
Pulmonary episodes in 2016



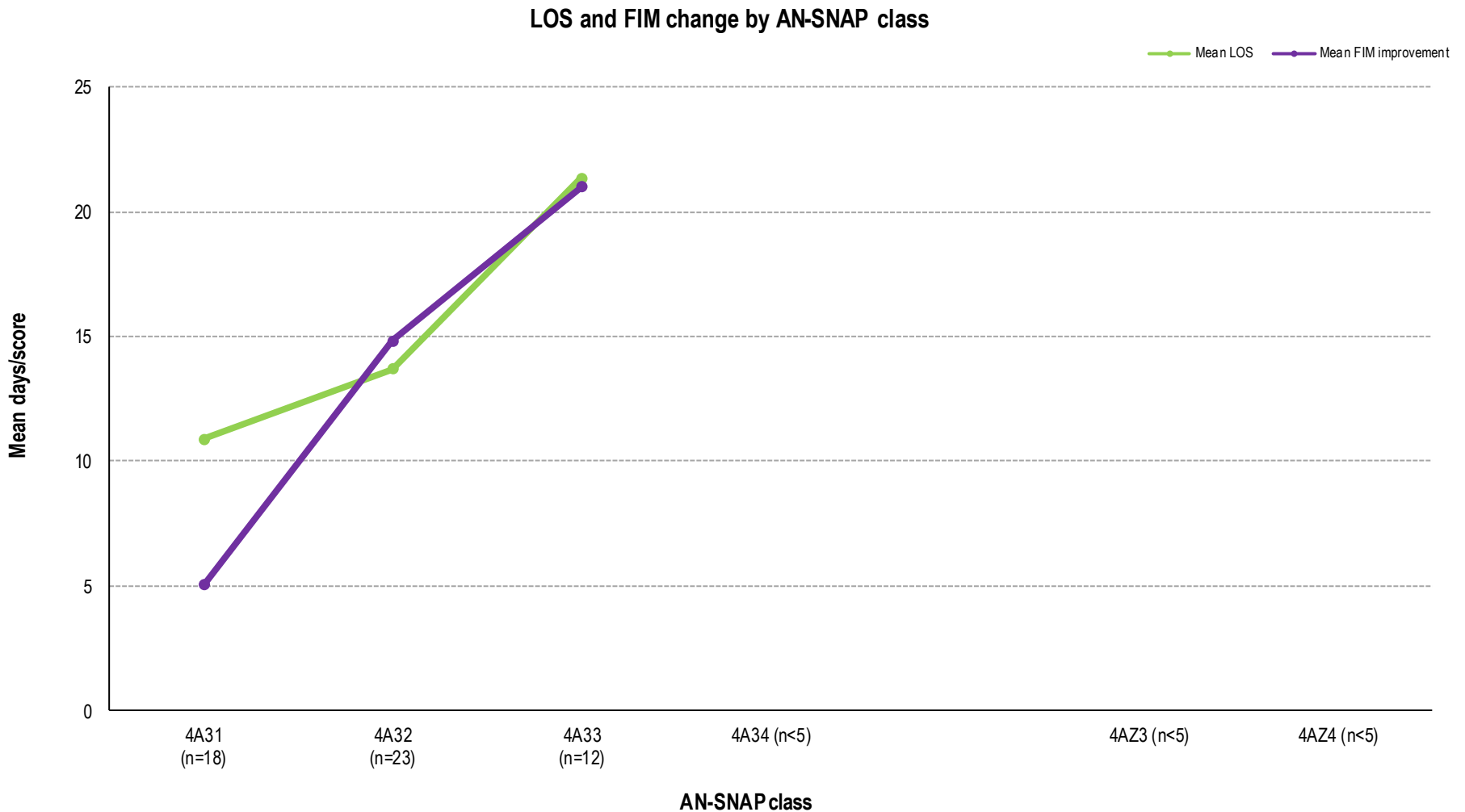
AN-SNAP class:	4A31	4A32	4A33	4A34	4AZ3	4AZ4	All Pulmonary
Number of episodes	18	23	12	4	1	0	58
Proportion of episodes	31.0%	39.7%	20.7%	n < 5	n < 5	n < 5	100.0%
Gender (%)							
<i>Female</i>	44.4%	47.8%	50.0%	n < 5	n < 5	n < 5	50.0%
<i>Male</i>	55.6%	52.2%	50.0%	n < 5	n < 5	n < 5	50.0%
Age group (%)							
<i>Under 65</i>	5.6%	0.0%	16.7%	n < 5	n < 5	n < 5	5.2%
<i>Over 65</i>	94.4%	100.0%	75.0%	n < 5	n < 5	n < 5	93.1%
Age (Mean+95%CI)	74.5 (70.2-78.8)	79.2 (75.9-82.5)	77.7 (70.2-85.2)	n < 5	n < 5	n < 5	78.0 (75.5-80.5)
Admission FIM (Mean+95%CI)	109.6 (106.0-113.3)	90.9 (88.3-93.4)	71.2 (65.0-77.3)	n < 5	n < 5	n < 5	87.7 (81.8-93.5)
LOS (Mean+95%CI)	10.9 (8.0-13.7)	13.7 (10.4-17.0)	21.3 (14.8-27.9)	n < 5	n < 5	n < 5	14.8 (12.5-17.2)
Discharge destination (%)							
<i>Discharged to community</i>	100.0%	95.7%	100.0%	n < 5	n < 5	n < 5	98.2%
<i>Remaining in hospital system</i>	0.0%	4.3%	0.0%	n < 5	n < 5	n < 5	1.8%
FIM change (Mean+95%CI)	5.1 (2.7-7.4)	14.8 (11.0-18.6)	21.0 (12.6-29.4)	n < 5	n < 5	n < 5	12.9 (9.8-15.9)
FIM efficiency (FIM change/LOS)	0.5	1.1	1.0	n < 5	n < 5	n < 5	0.9

Pulmonary discharge destination by AN-SNAP class

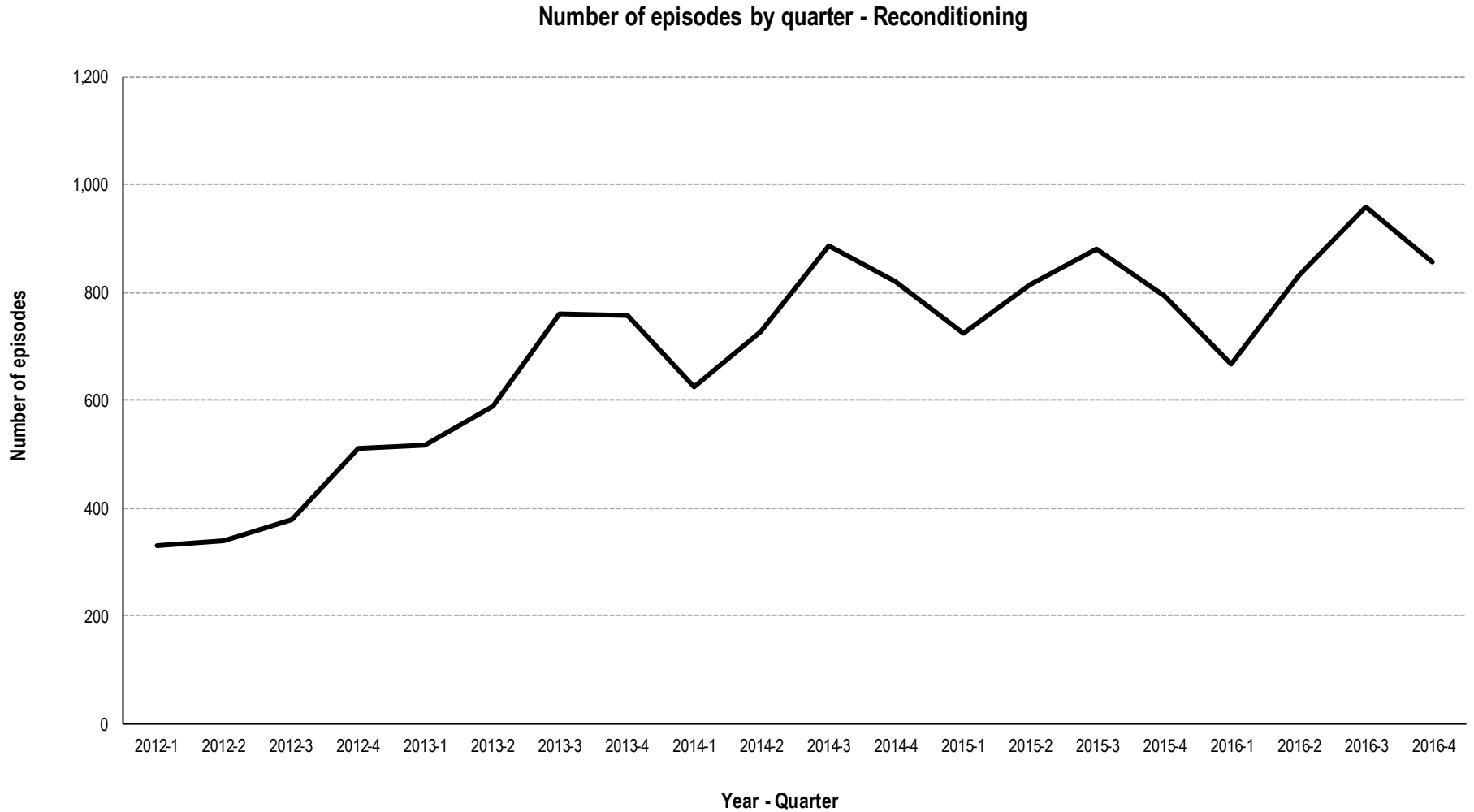
Discharge destination - Pulmonary



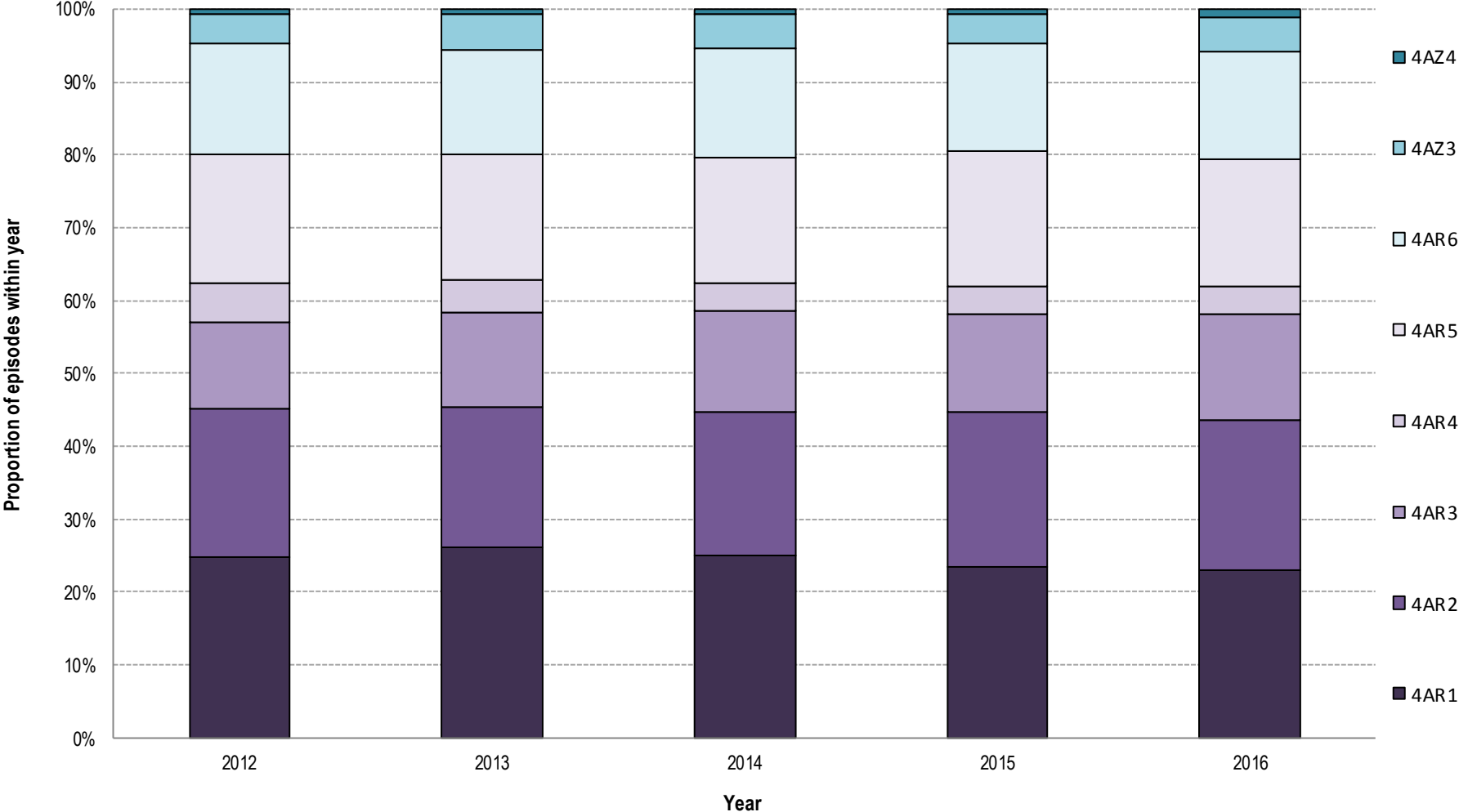
Pulmonary LOS and FIM change by AN-SNAP class



Reconditioning episodes over time



Reconditioning casemix over time



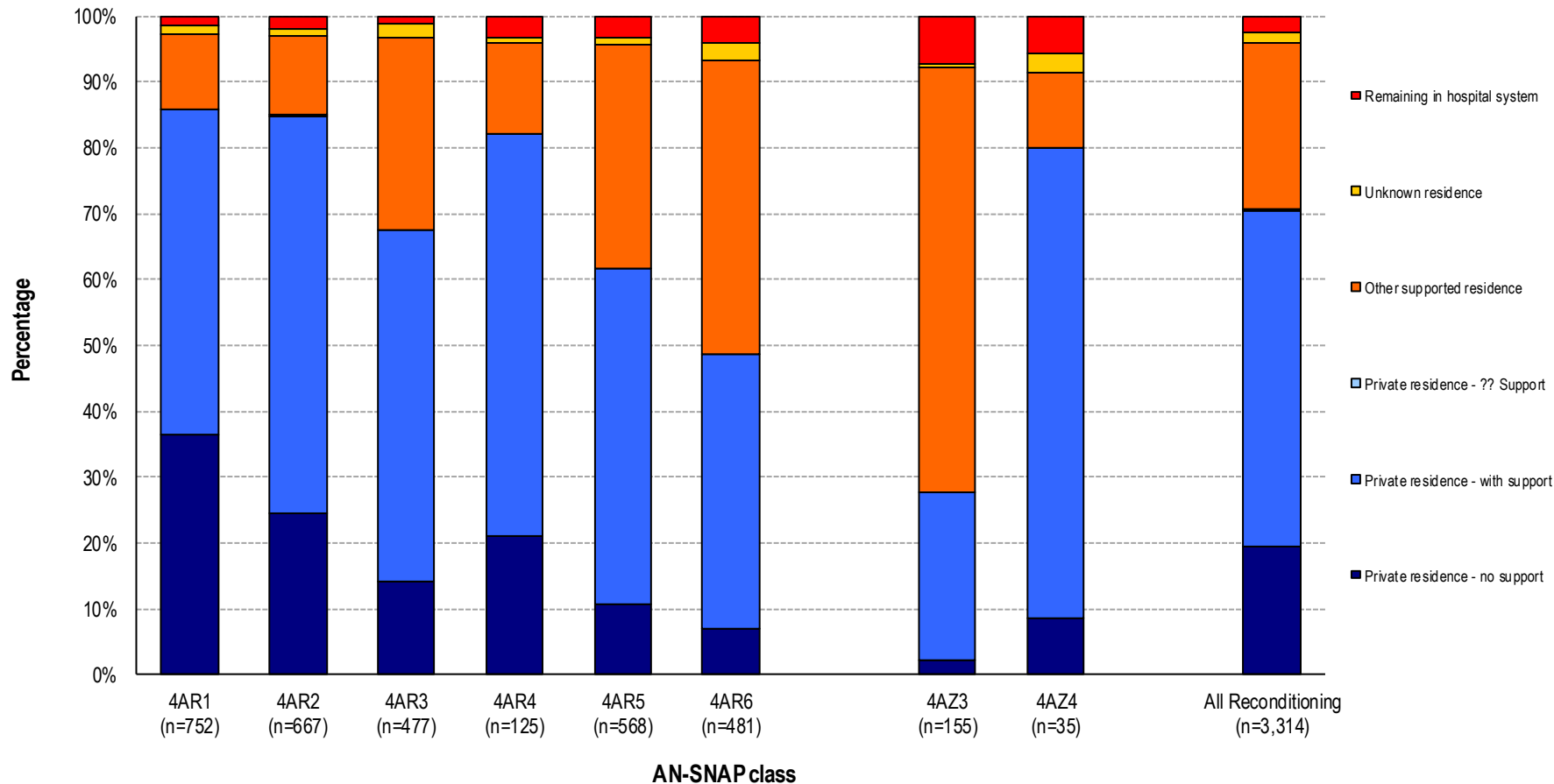
Reconditioning episodes in 2016



AN-SNAP class:	4AR1	4AR2	4AR3	4AR4	4AR5	4AR6	4AZ3	4AZ4	All Reconditioning
Number of episodes	752	667	477	125	568	481	155	35	3,314
Proportion of episodes	22.7%	20.1%	14.4%	3.8%	17.1%	14.5%	4.7%	1.1%	100.0%
Gender (%)									
<i>Female</i>	56.1%	53.2%	54.1%	53.6%	51.8%	47.8%	51.6%	37.1%	52.8%
<i>Male</i>	43.9%	46.6%	45.9%	46.4%	48.1%	51.8%	48.4%	62.9%	47.0%
Age group (%)									
<i>Under 65</i>	10.9%	6.1%	6.7%	17.6%	5.5%	8.9%	0.0%	100.0%	8.7%
<i>Over 65</i>	88.0%	93.6%	92.9%	82.4%	94.0%	90.4%	100.0%	0.0%	90.8%
Age (Mean+95%CI)	78.1 (77.3-79.0)	79.8 (79.0-80.5)	81.2 (80.3-82.2)	76.4 (73.9-78.8)	81.6 (80.8-82.5)	79.4 (78.3-80.5)	82.2 (80.9-83.4)	43.9 (39.0-48.8)	79.5 (79.1-79.9)
Admission FIM (Mean+95%CI)	102.8 (102.2-103.5)	88.2 (87.7-88.6)	75.8 (75.2-76.4)	75.6 (74.8-76.4)	63.2 (62.6-63.9)	47.5 (46.6-48.4)	30.5 (28.9-32.1)	44.3 (41.3-47.4)	76.4 (75.6-77.2)
LOS (Mean+95%CI)	12.2 (11.6-12.8)	15.2 (14.4-15.9)	16.7 (15.8-17.6)	20.0 (17.3-22.6)	19.4 (18.3-20.6)	25.6 (23.3-27.9)	24.0 (21.7-26.3)	52.7 (33.9-71.5)	17.9 (17.3-18.4)
Discharge destination (%)									
<i>Discharged to community</i>	98.5%	98.2%	98.9%	96.7%	96.7%	95.9%	92.9%	94.3%	97.5%
<i>Remaining in hospital system</i>	1.5%	1.8%	1.1%	3.3%	3.3%	4.1%	7.1%	5.7%	2.5%
FIM change (Mean+95%CI)	7.3 (6.8-7.8)	15.1 (14.4-15.7)	14.2 (13.2-15.2)	22.7 (20.3-25.1)	18.8 (17.6-19.9)	22.7 (21.0-24.5)	16.7 (13.2-20.3)	18.3 (10.0-26.7)	15.2 (14.7-15.7)
FIM efficiency (FIM change/LOS)	0.6	1.0	0.9	1.1	1.0	0.9	0.7	0.3	0.9

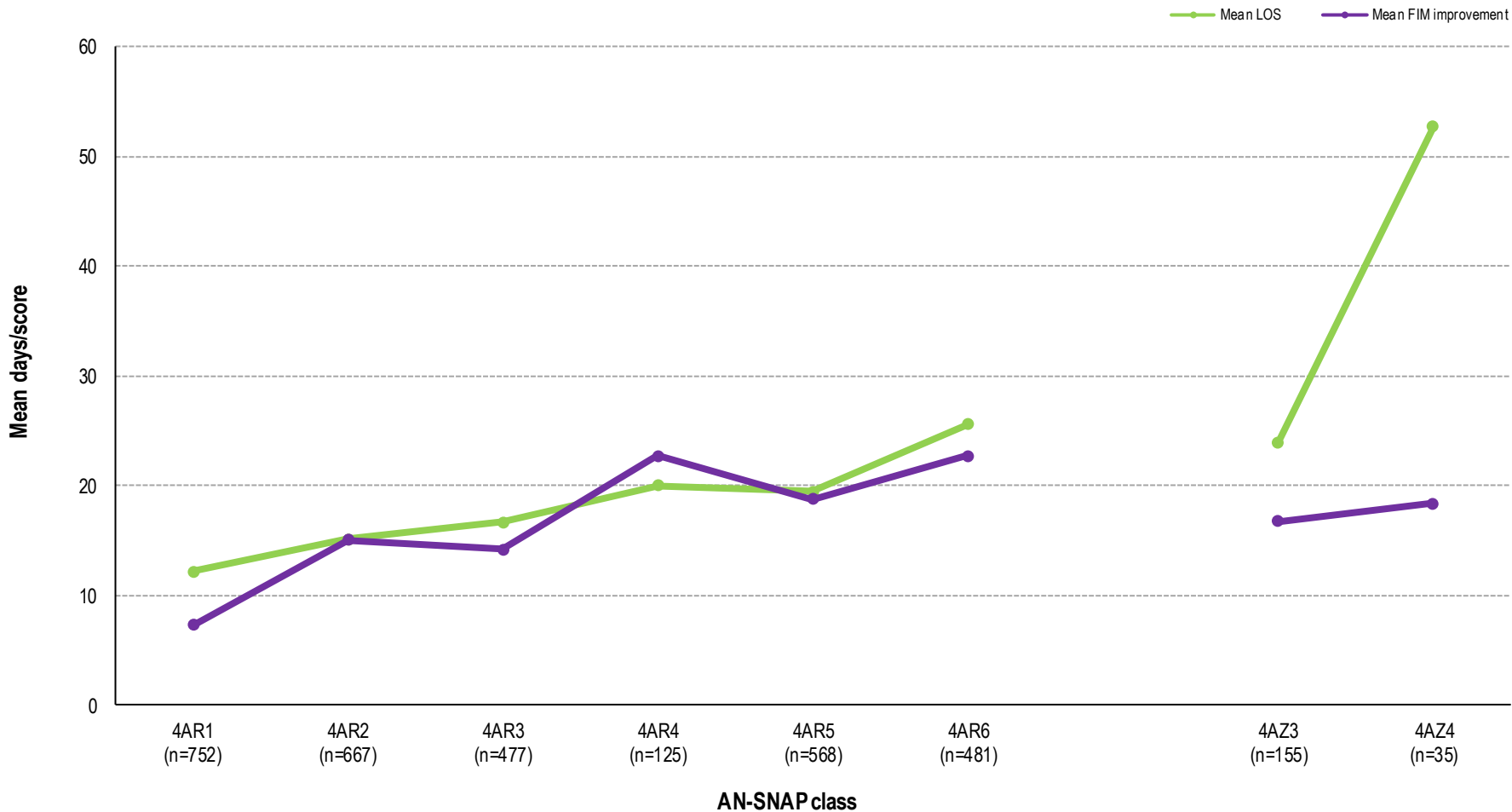
Reconditioning discharge destination by AN-SNAP class

Discharge destination - Reconditioning

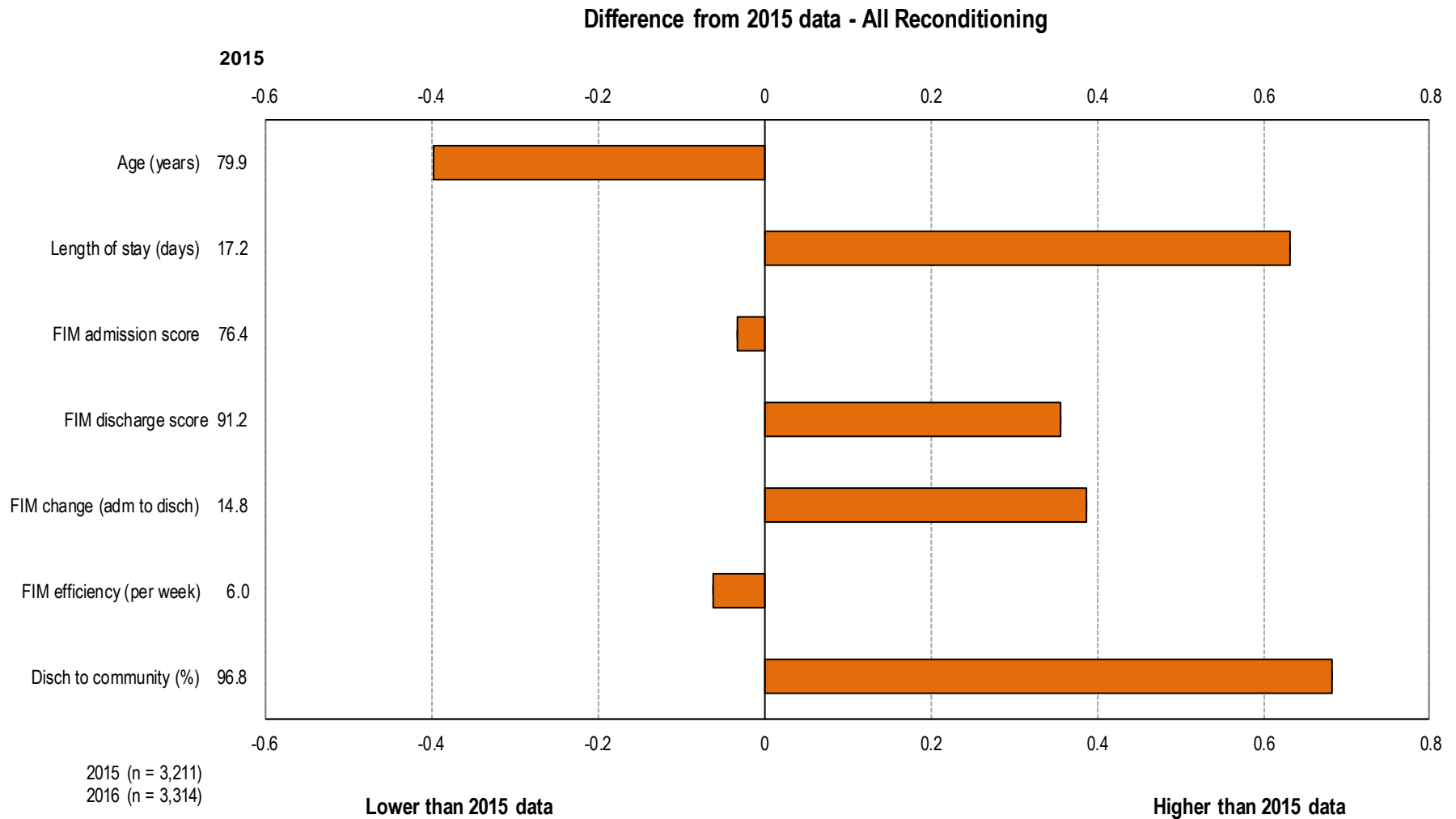


Reconditioning LOS and FIM change by AN-SNAP class

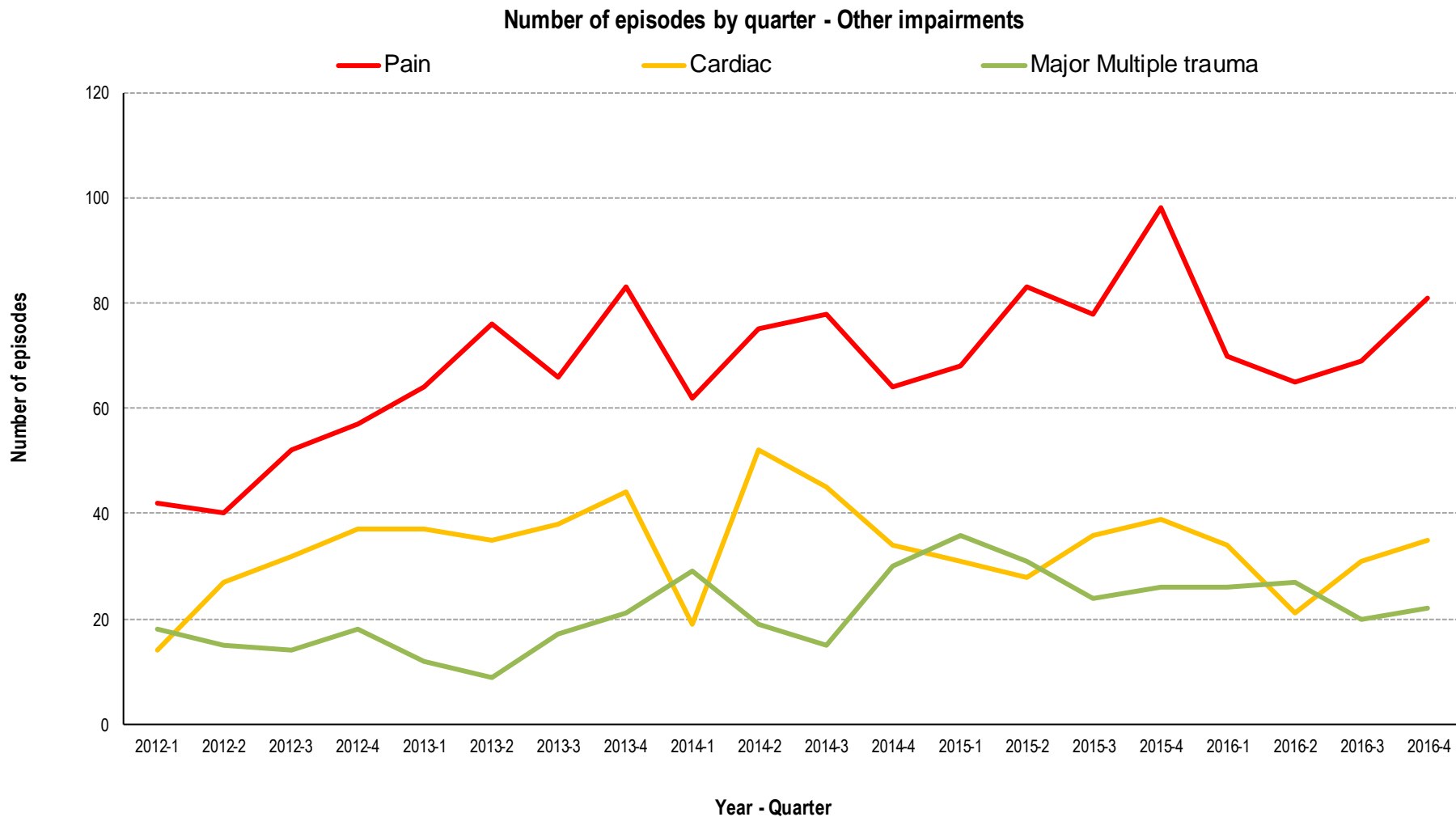
LOS and FIM change by AN-SNAP class



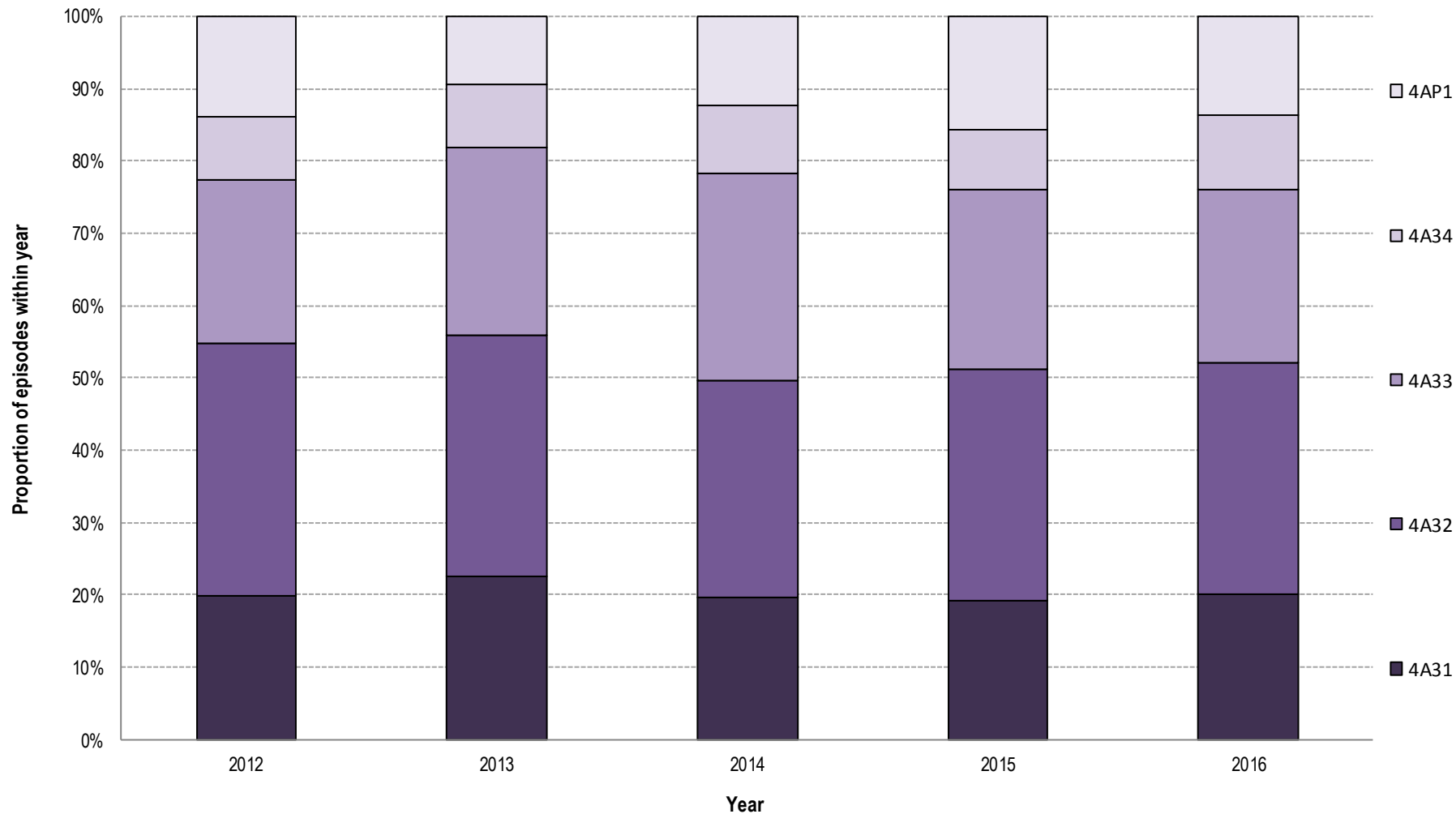
Change in outcome measures in reconditioning, 2015 to 2016



Other impairment episodes over time



Other impairments casemix over time

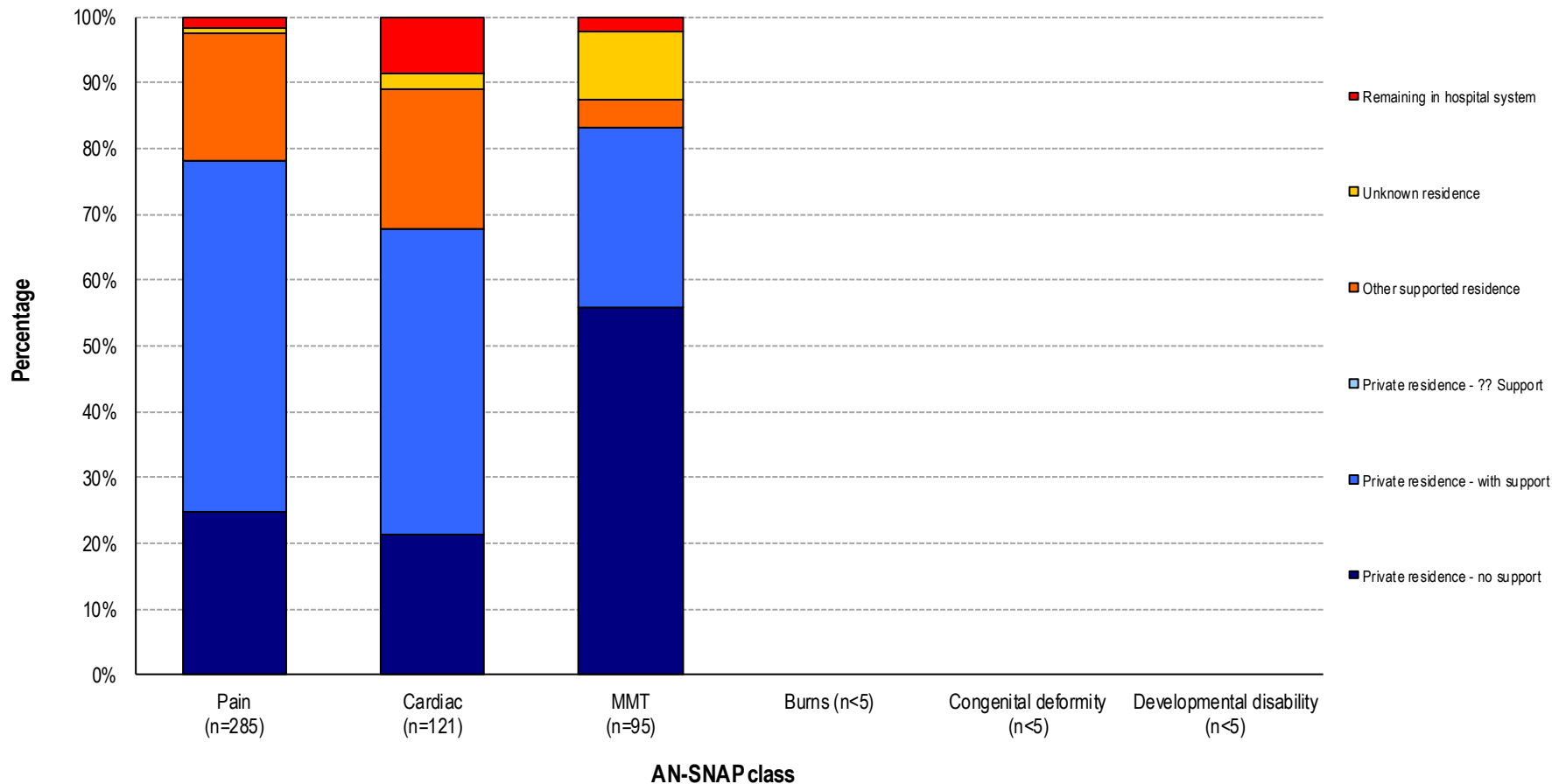


Other impairment episodes in 2016

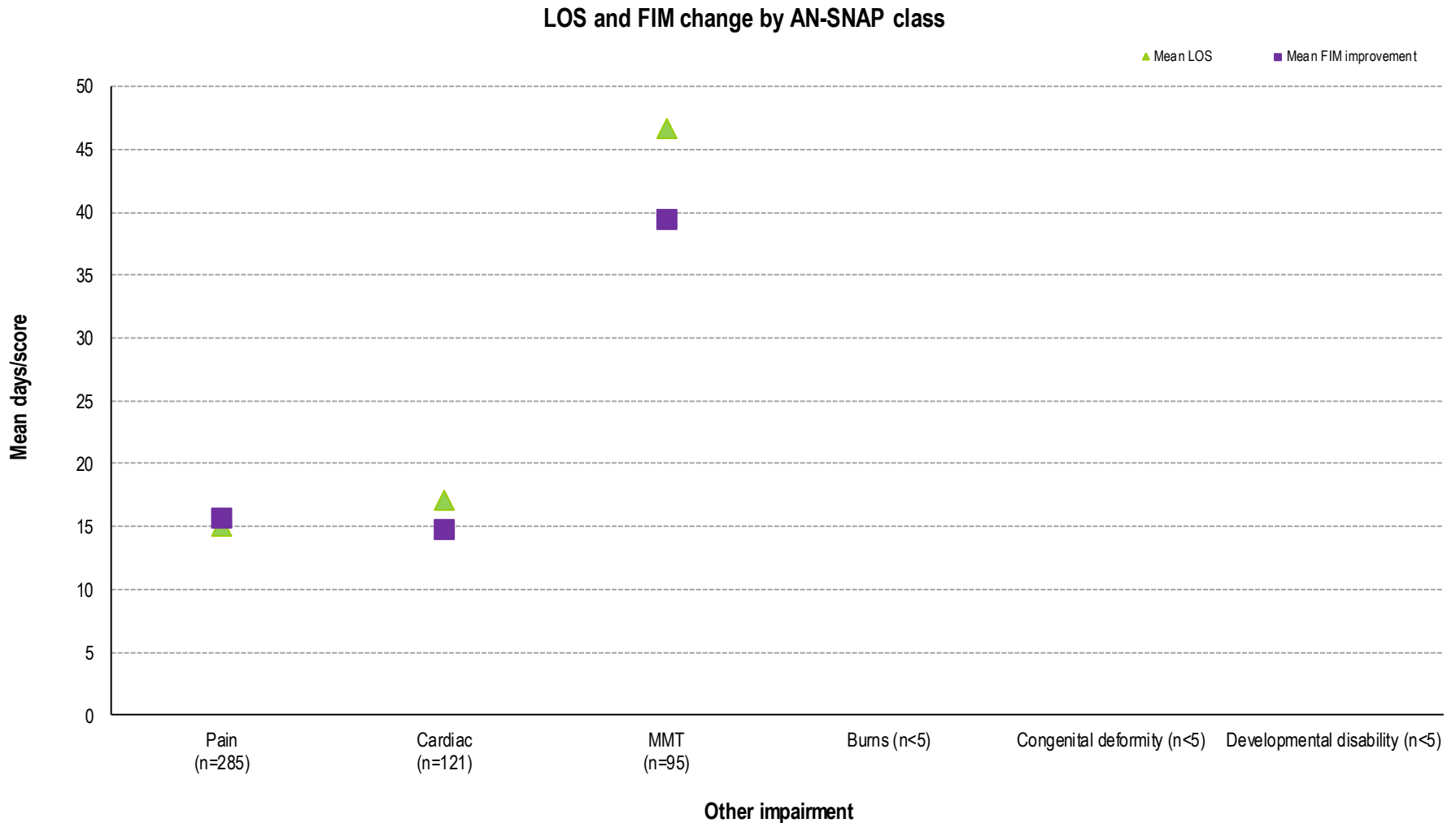
AN-SNAP class:	Pain	Cardiac	MMT	Burns	Congenital deformity	Developmental disability
Number of episodes	285	121	95	1	3	2
Proportion of total episodes in 2016	2.4%	1.0%	0.8%	n < 5	n < 5	n < 5
Gender (%)						
<i>Female</i>	68.4%	47.1%	26.3%	n < 5	n < 5	n < 5
<i>Male</i>	30.9%	52.9%	73.7%	n < 5	n < 5	n < 5
Age group (%)						
<i>Under 65</i>	5.3%	7.4%	76.8%	n < 5	n < 5	n < 5
<i>Over 65</i>	94.4%	90.9%	23.2%	n < 5	n < 5	n < 5
Age (Mean+95%CI)	81.1 (80.0-82.3)	81.0 (79.2-82.8)	46.7 (42.7-50.7)	n < 5	n < 5	n < 5
Admission FIM (Mean+95%CI)	82.5 (79.9-85.0)	81.4 (77.3-85.4)	65.7 (59.6-71.8)	n < 5	n < 5	n < 5
LOS (Mean+95%CI)	15.0 (13.6-16.5)	17.1 (15.2-19.0)	46.7 (37.9-55.5)	n < 5	n < 5	n < 5
Discharge destination (%)						
<i>Discharged to community</i>	98.2%	91.5%	97.9%	n < 5	n < 5	n < 5
<i>Remaining in hospital system</i>	1.8%	8.5%	2.1%	n < 5	n < 5	n < 5
FIM change (Mean+95%CI)	15.7 (14.2-17.3)	14.7 (12.2-17.3)	39.4 (33.9-45.0)	n < 5	n < 5	n < 5
FIM efficiency (FIM change/LOS)	1.0	0.9	0.8	n < 5	n < 5	n < 5

Other impairment discharge destination by impairment group

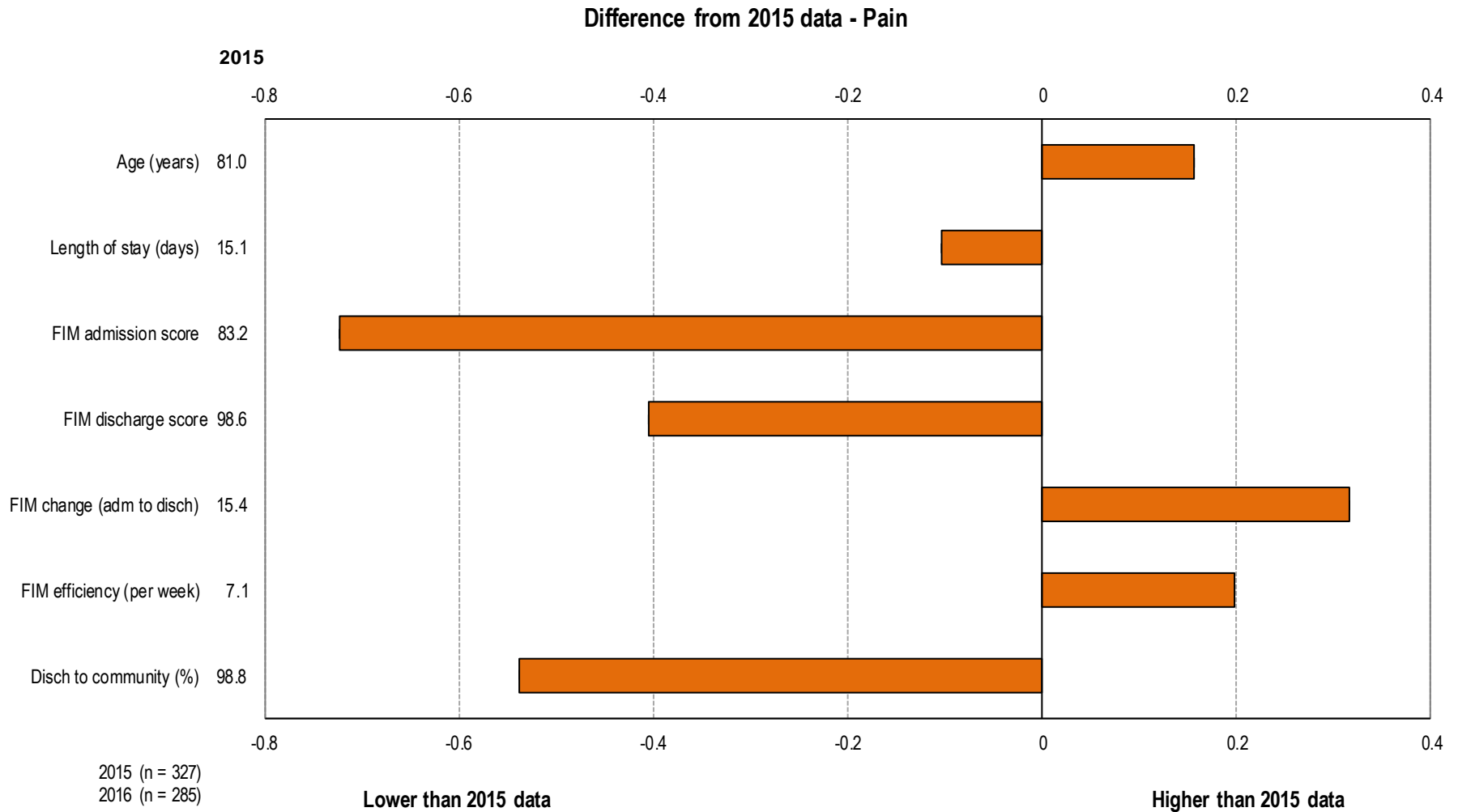
Discharge destination - Other impairments



Other impairment LOS and FIM change by impairment group



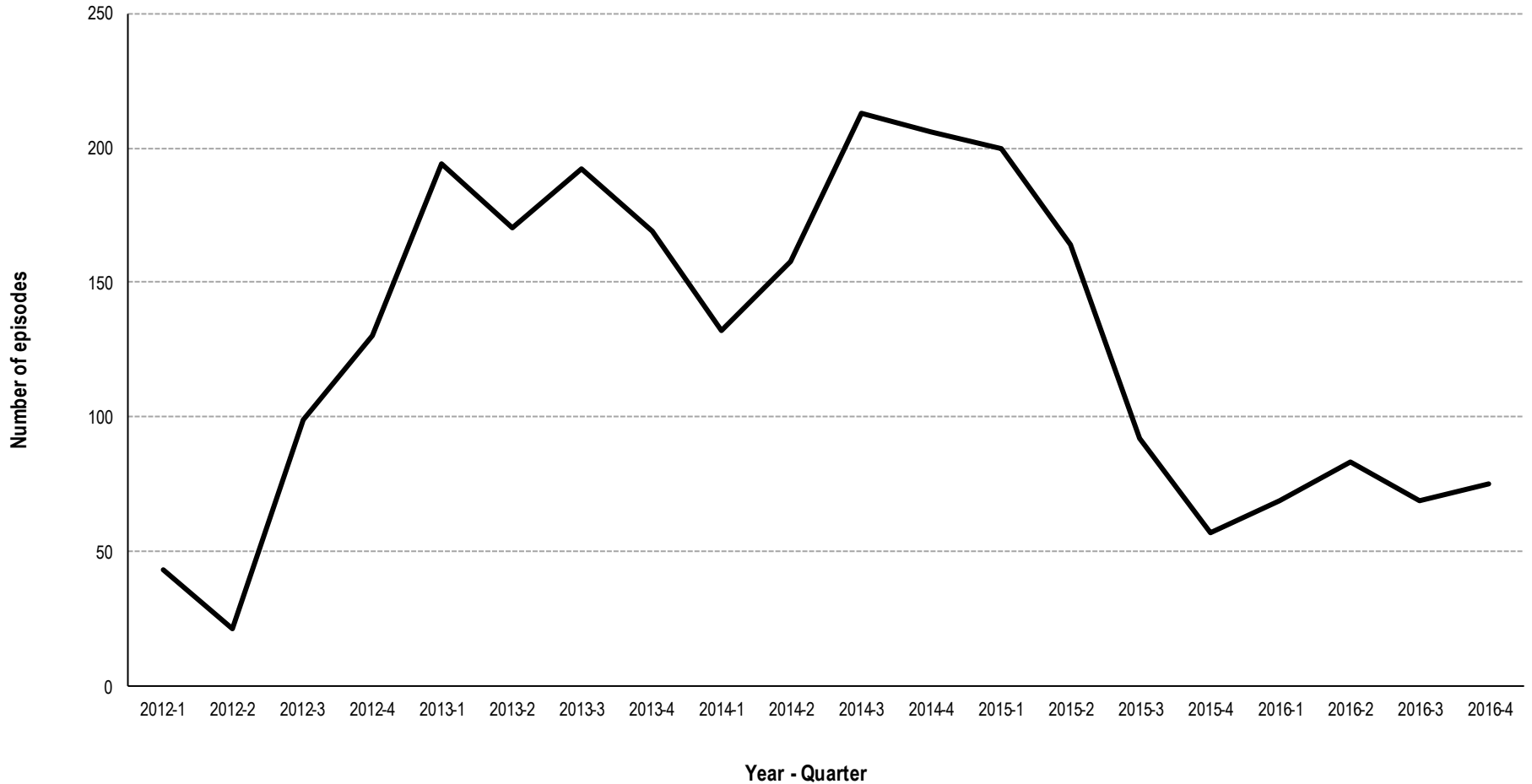
Change in outcome measures in pain, 2015 to 2016



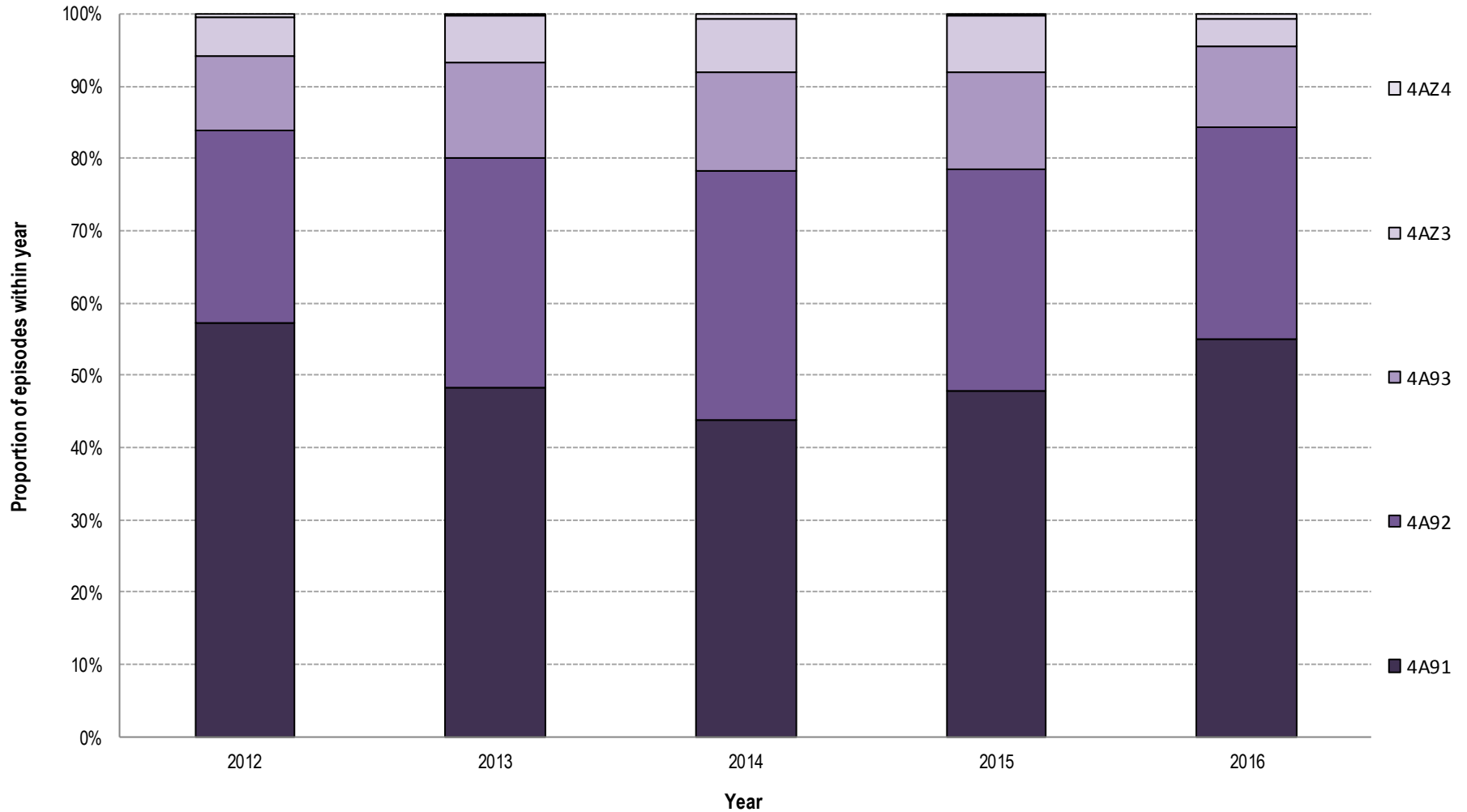
Other disabling impairment episodes over time



Number of episodes by quarter - Other disabling impairments



Other disabling impairments casemix over time



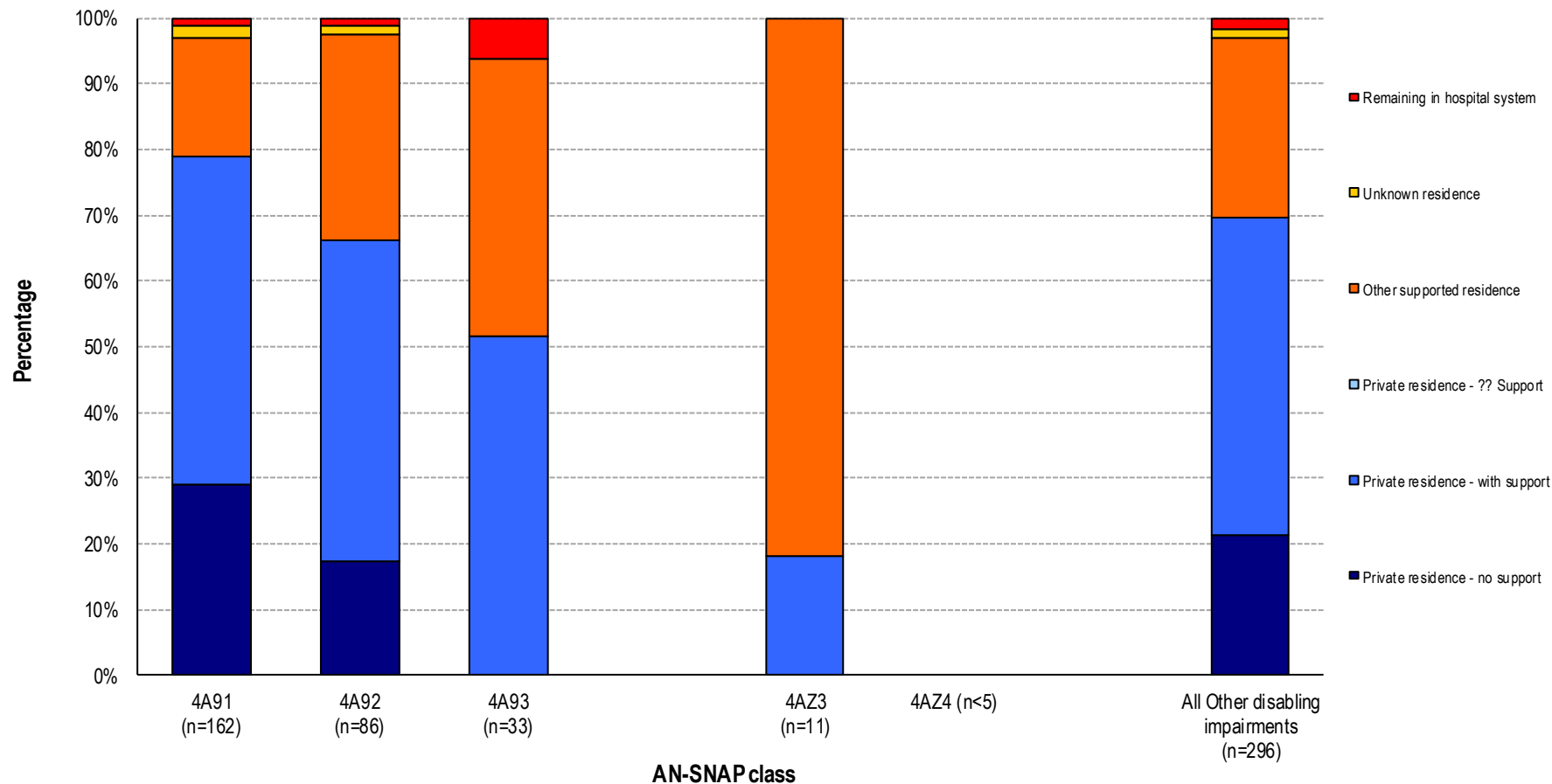
Other disabling impairment episodes in 2016



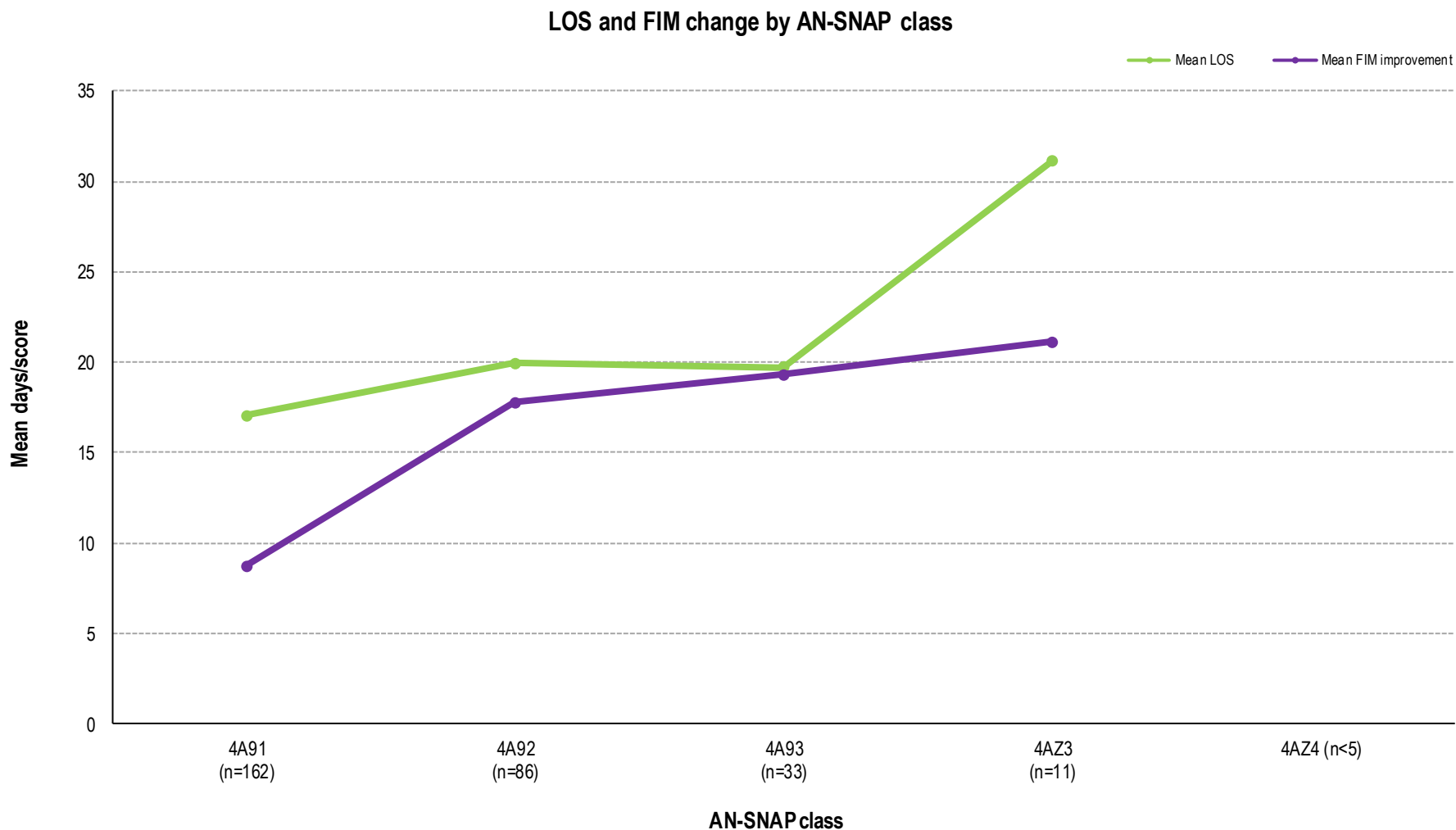
AN-SNAP class:	4A91	4A92	4A93	4AZ3	4AZ4	All Other disabling impairments
Number of episodes	162	86	33	11	2	296
Proportion of episodes	54.7%	29.1%	11.1%	3.7%	n < 5	100.0%
Gender (%)						
<i>Female</i>	64.8%	60.5%	51.5%	54.5%	n < 5	61.5%
<i>Male</i>	35.2%	39.5%	48.5%	45.5%	n < 5	38.5%
Age group (%)						
<i>Under 65</i>	15.4%	4.7%	3.0%	0.0%	n < 5	10.8%
<i>Over 65</i>	84.0%	95.3%	97.0%	100.0%	n < 5	88.5%
Age (Mean+95%CI)	75.3 (72.7-78.0)	81.1 (78.8-83.4)	82.8 (79.7-85.8)	83.5 (79.7-87.2)	n < 5	78.0 (76.3-79.7)
Admission FIM (Mean+95%CI)	96.3 (94.3-98.3)	70.5 (68.3-72.6)	49.3 (45.5-53.1)	25.9 (19.6-32.2)	n < 5	80.6 (77.9-83.2)
LOS (Mean+95%CI)	17.0 (12.3-21.8)	19.9 (16.9-22.9)	19.7 (14.9-24.5)	31.1 (20.9-41.3)	n < 5	18.8 (15.9-21.7)
Discharge destination (%)						
<i>Discharged to community</i>	98.8%	98.8%	93.9%	100.0%	n < 5	98.3%
<i>Remaining in hospital system</i>	1.2%	1.2%	6.1%	0.0%	n < 5	1.7%
FIM change (Mean+95%CI)	8.7 (7.5-10.0)	17.8 (14.9-20.6)	19.3 (13.1-25.5)	21.1 (4.9-37.3)	n < 5	13.4 (11.8-15.0)
FIM efficiency (FIM change/LOS)	0.5	0.9	1.0	0.7	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



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