



AROC Outcome Benchmarks Report

Inpatient - Pathway 3

Anywhere Hospital

July 2017 - June 2018



**UNIVERSITY OF
WOLLONGONG**



Summary of Outcome Benchmarks

| Impairment | Completed Episodes | Achieved Top 25th Percentile | | Page |
|------------------------------------|--------------------|------------------------------|----------------|------|
| | | FIM Efficiency | Length of Stay | |
| Stroke | 120 | ✗ | ✗ | 9 |
| Traumatic Brain Dysfunction | 16 | ✗ | ✓ | 15 |
| Non Traumatic Brain Dysfunction | 17 | | | |
| Neurological Conditions | 50 | ✗ | ✗ | 21 |
| Trauma Spinal Cord Dysfunction | 4 | ✗ | ✓✓ | 27 |
| Non Trauma Spinal Cord Dysfunction | 8 | ✗ | ✗ | 33 |
| Amputation of Limb | 16 | | | |
| Arthritis | 3 | | | |
| Pain Syndromes | 53 | ✗ | ✗ | 39 |
| Orthopaedic Fractures | 225 | ✗ | ✗ | 45 |
| Orthopaedic Replacements | 275 | ✓ | ✓ | 51 |
| Other Orthopaedic Surgery | 77 | ✗ | ✓ | 57 |
| Soft Tissue Injury | 15 | | | |
| Cardiac | 38 | ✗ | ✓ | 63 |
| Pulmonary | 21 | ✗ | ✓ | 69 |
| Burns | 0 | | | |
| Congenital Deformities | 0 | | | |
| Other Disabling Impairments | 7 | | | |
| Other Major Multiple Trauma | 3 | | | |
| Developmental Disabilities | 0 | | | |
| Reconditioning | 307 | ✗ | ✓ | 75 |

Your facility achieved a top 25th percentile result (✓✓) for
1 out of 24 (4.2%)
 eligible performance measures

| | |
|----|------------------------------|
| ✓✓ | Achieved top 25th percentile |
| ✓ | Achieved better than average |
| ✗ | Achieved lower than average |



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Introduction to the Outcome Benchmarks Report

The Outcome Benchmarks Report is a biannual report that provides facilities with the opportunity to evaluate their performance against all other Australian and New Zealand rehabilitation facilities. This report provides impairment level 25th percentile targets which were set by the AROC Scientific and Clinical Advisory Committee as a stretch goal for continuous improvement.

The performance measures presented in this report include Casemix Adjusted FIM Efficiency and Casemix Adjusted Length of Stay. The selection of these outcome measures is based on the advice provided by the AROC Scientific and Clinical Advisory Committee.

Each facility is provided with a graphical representation of their casemix adjusted performance against all other facilities at the impairment level. A five year trend graph of the outcome measure (not casemix adjusted) is included in this report to demonstrate quality improvement over time.

Data used in this report

- This report uses episode level data that has been concatenated. Refer to Appendix 1 for more details about data concatenation.
- This report includes episodes that ended in Financial Year 2018 (1 July 2017 to 30 June 2018 inclusive)
- Appendix 1 (glossary) contains definitions of concepts referred to in this report. An understanding of these will help with interpretation of the data.
- All data are presented by impairment group (Appendix 2), and facilities must have a minimum of 20 episodes in an impairment with at least 4 other facilities also reporting 20+ episodes for it to be included in this report.
- Outcomes are based on “completed” episodes of care (refer to Appendix 1 for definition)
- Casemix adjustments are made at the AN-SNAP and impairment level for each country. AN-SNAP Version 4 is used in this report (Appendix 3).

Outcome Measures

FIM Efficiency

$$\text{FIM Efficiency} = \frac{\text{End FIM Total} - \text{Start FIM Total}}{\text{Length of Stay}}$$

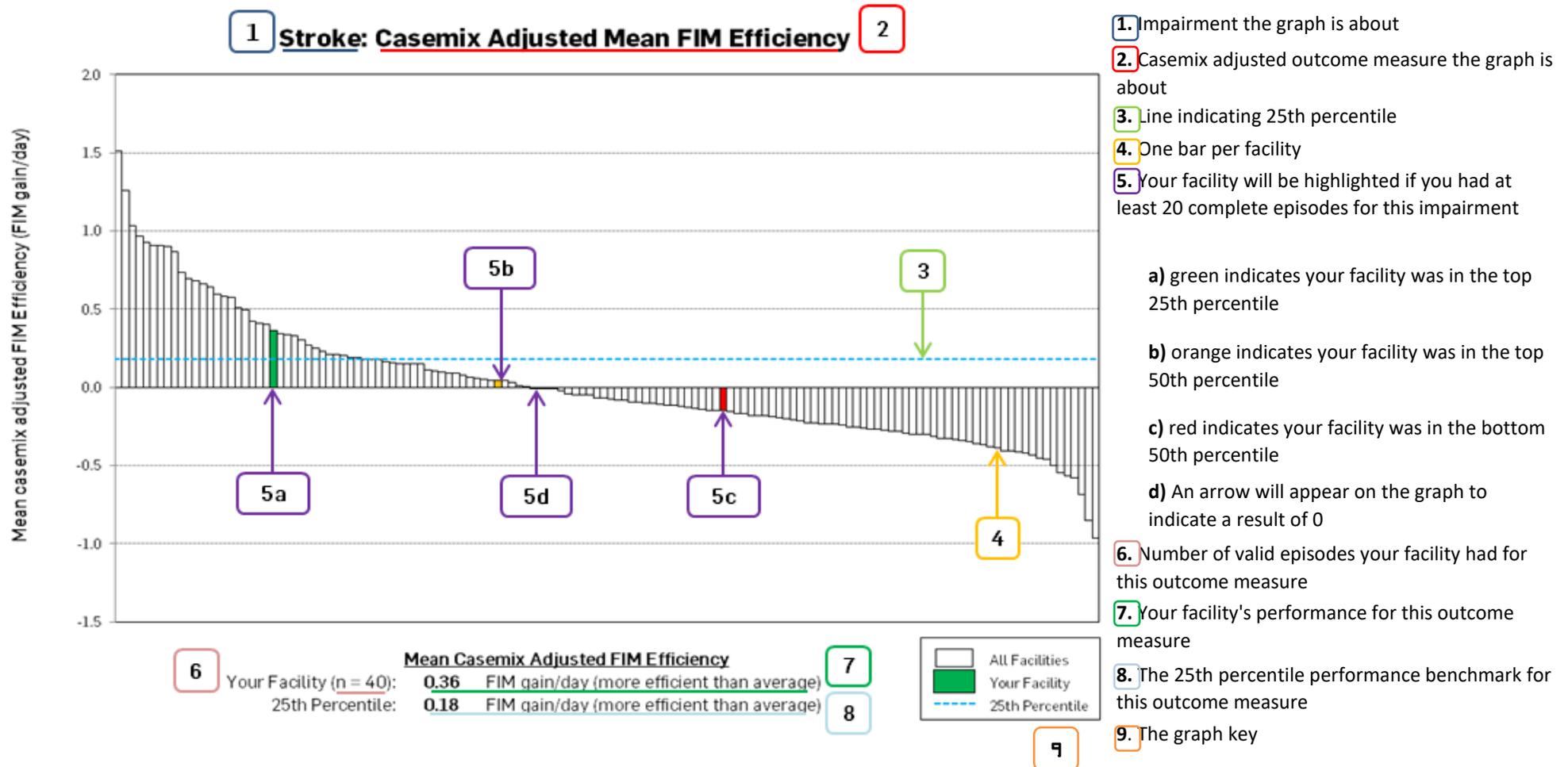
- FIM efficiency is defined as FIM change divided by length of stay, and is calculated at the episode level
- Expected FIM efficiency is the average FIM Efficiency at the AN-SNAP and impairment level for each country
- Casemix Adjusted FIM Efficiency is the difference between the actual FIM efficiency and the expected FIM efficiency, and is calculated at the episode level
- Mean Casemix Adjusted FIM efficiency is the average casemix adjusted FIM efficiency calculated at the facility and impairment level

Length of Stay

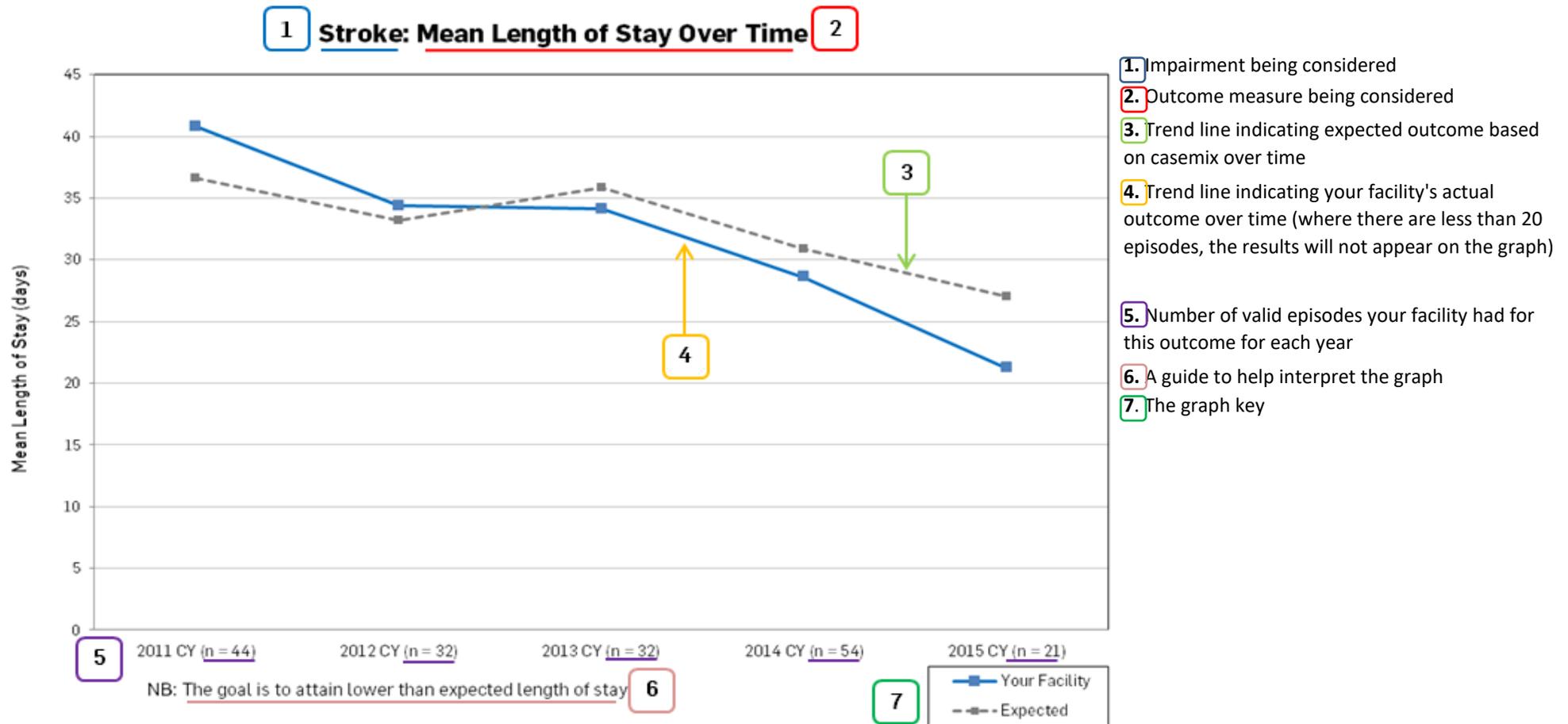
$$\text{Length of Stay} = \text{Episode End Date} - \text{Episode Start Date} - \text{Number of Leave Days}$$

- Length of stay is defined as the difference between episode start and end date excluding leave days, and is calculated at the episode level
- Expected length of stay is the average length of stay at the AN-SNAP and impairment level for each country
- Casemix Adjusted length of stay is the difference between the actual length of stay and the expected length of stay, and is calculated at the episode level
- Mean length of stay is the average casemix adjusted length of stay calculated at the facility and impairment level

How to interpret your graphs



How to interpret your graphs





Stroke

Data inclusion criteria

Data used in this section comprised of all episodes with AROC impairment codes:

Stroke - Haemorrhagic

- 1.11 (left body involvement)
- 1.12 (right body involvement)
- 1.13 (bilateral involvement)
- 1.14 (no paresis)
- 1.19 (other stroke)

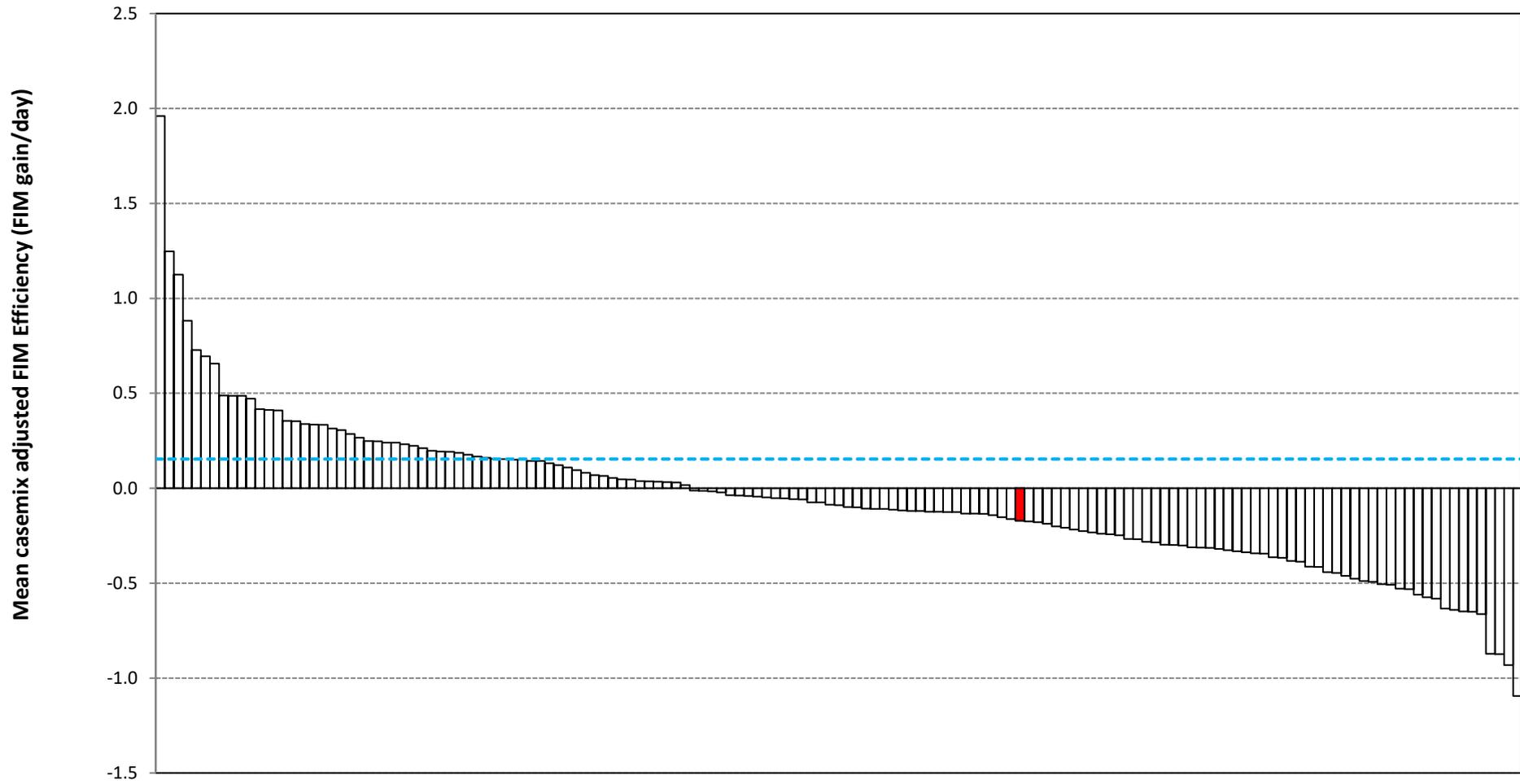
Stroke - Ischaemic

- 1.21 (left body involvement)
- 1.22 (right body involvement)
- 1.23 (bilateral involvement)
- 1.24 (no paresis)
- 1.29 (other stroke)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AA1 (Stroke, weighted FIM motor 51-91, FIM cognition 29-35)
- 4AA2 (Stroke, weighted FIM motor 51-91, FIM cognition 19-28)
- 4AA3 (Stroke, weighted FIM motor 51-91, FIM cognition 5-18)
- 4AA4 (Stroke, weighted FIM motor 36-50, Age \geq 68)
- 4AA5 (Stroke, weighted FIM motor 36-50, Age \leq 67)
- 4AA6 (Stroke, weighted FIM motor 19-35, Age \geq 68)
- 4AA7 (Stroke, weighted FIM motor 19-35, Age \leq 67)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

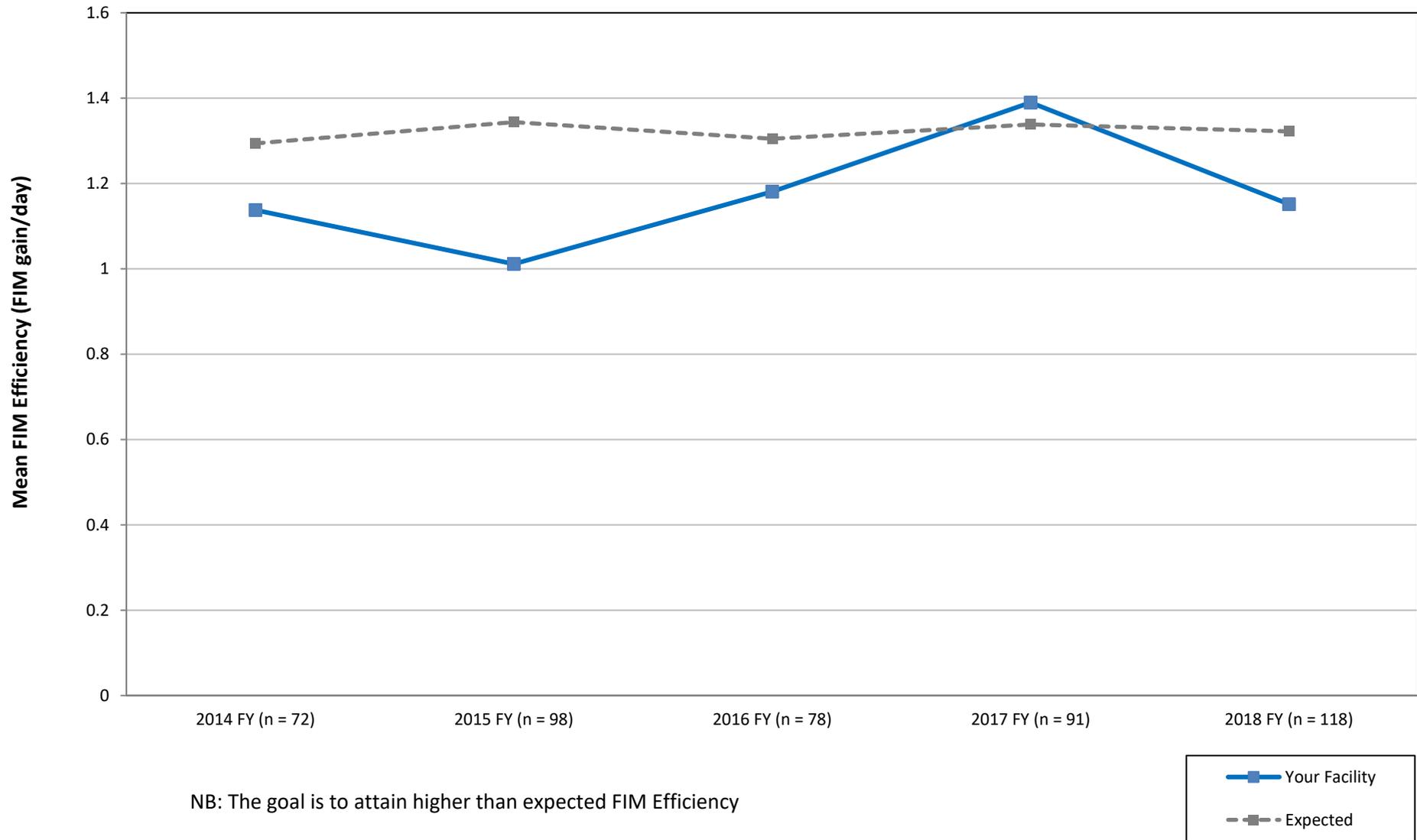
Stroke: Casemix Adjusted Mean FIM Efficiency



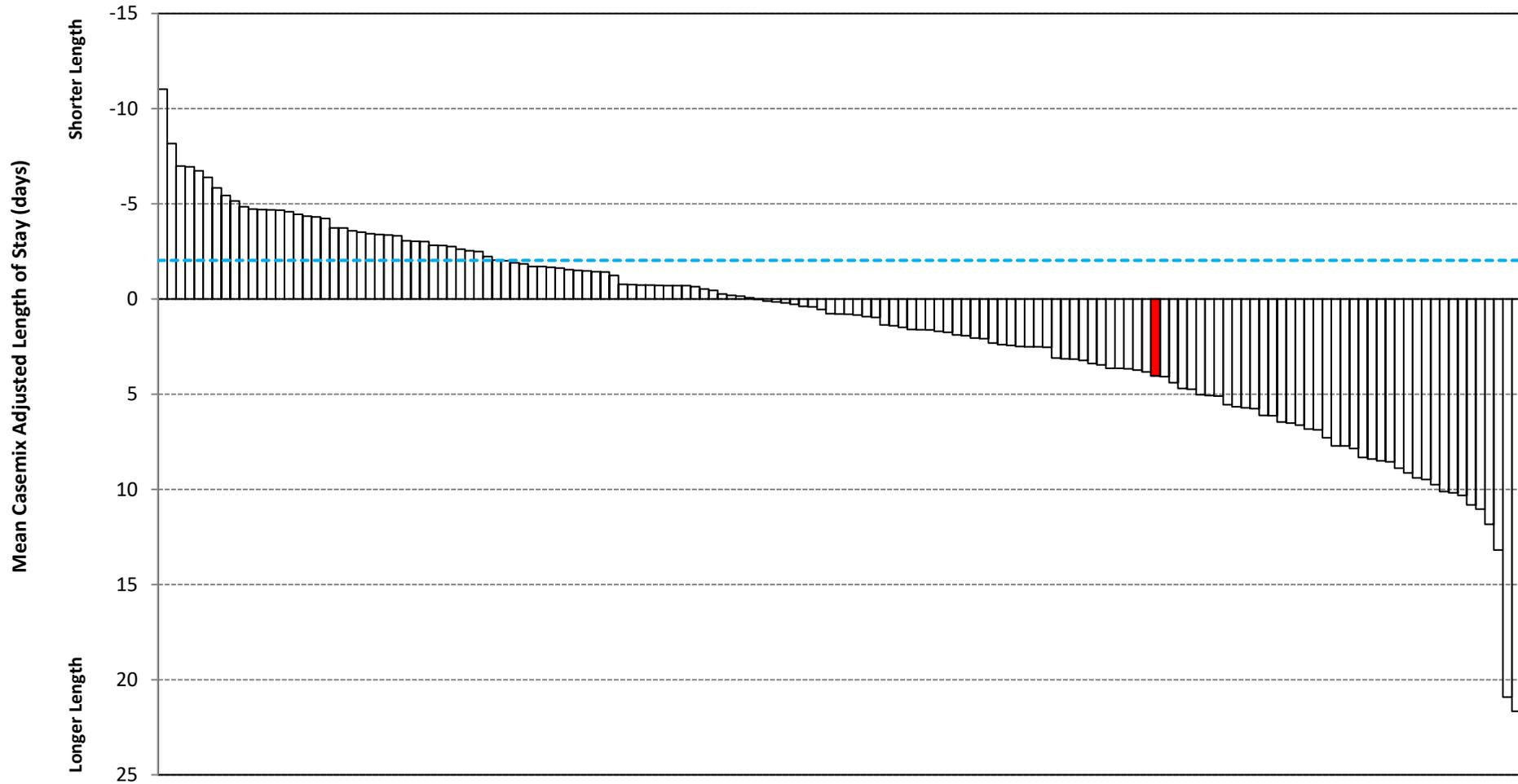
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 118): **-0.17** FIM gain/day (less efficient than average)
 25th Percentile: **0.15** FIM gain/day (more efficient than average)



Stroke: Mean FIM Efficiency Over Time



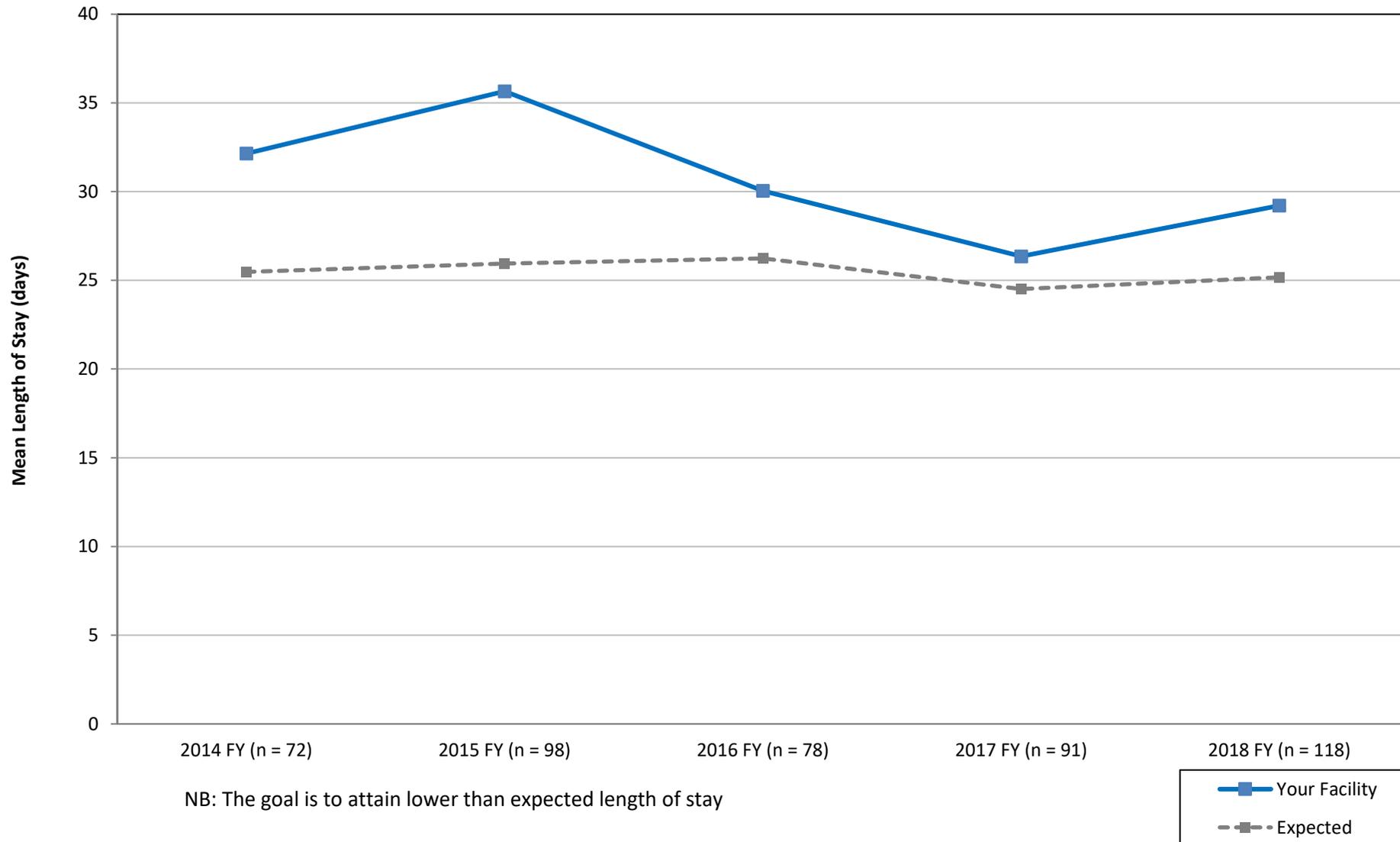
Stroke: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 118): **4.04** days (longer than average)
 25th Percentile: **-2.03** days (shorter than average)

| | |
|---|-----------------|
|  | All Facilities |
|  | Your Facility |
|  | 25th Percentile |

Stroke: Mean Length of Stay Over Time





Traumatic Brain Dysfunction

Data inclusion criteria

We only include brain specialist units in the traumatic brain dysfunction chapter, regardless of episode volume

Data used in this section comprised of all episodes with AROC impairment codes:

Brain Dysfunction - Traumatic

- 2.21 (left body involvement)
- 2.22 (left body involvement)

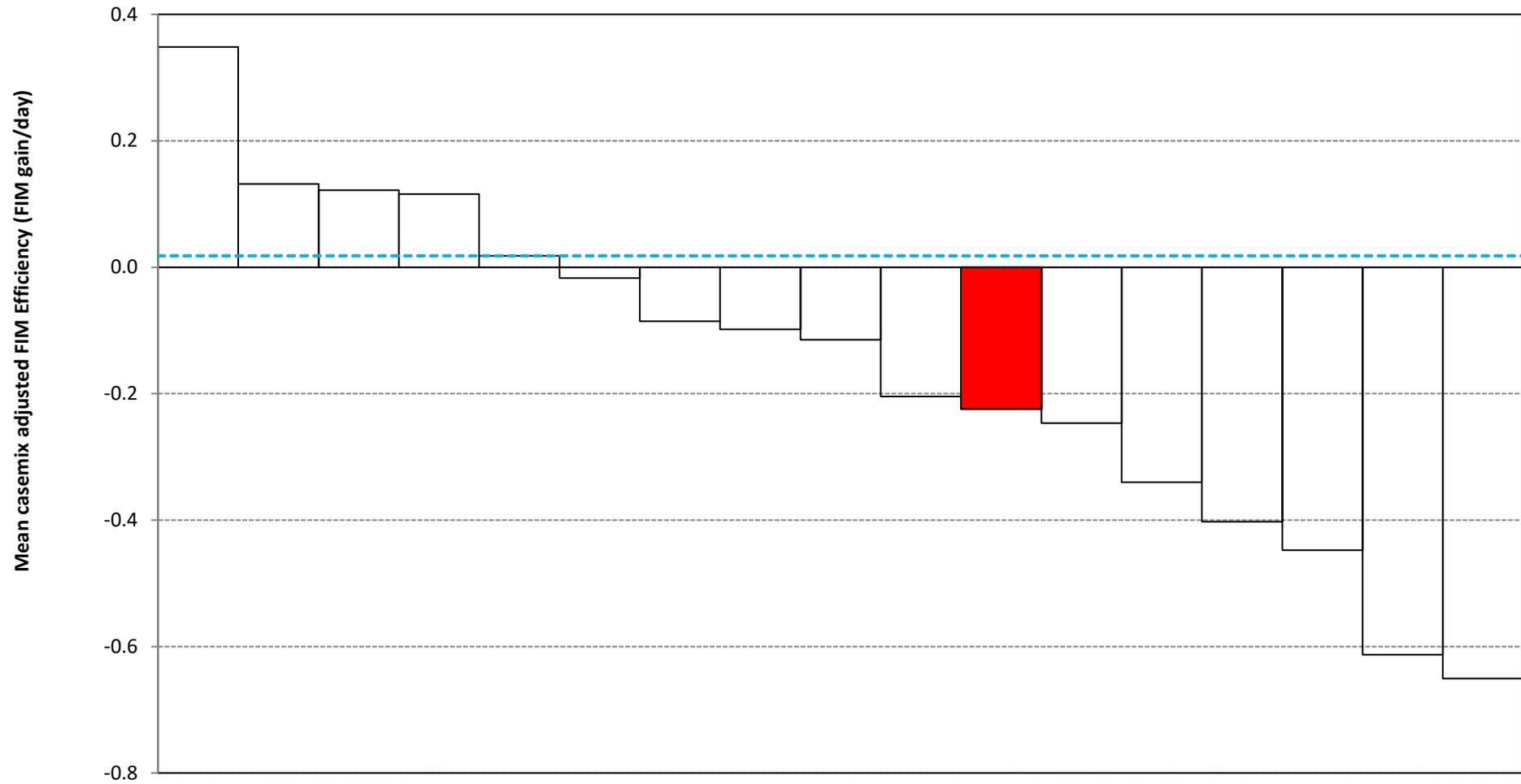
Major Multiple Trauma

- 14.2 (brain + multiple fracture/amputation)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AB1 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AB2 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AB3 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AB4 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AB5 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AB6 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AB7 (Brain Dysfunction, weighted FIM motor 71-91, FIM cognition 26-35)
- 4AP1 (Major Multiple Trauma, weighted FIM motor score 19-91)
- 4AZ1 (Weighted FIM motor score 13-18, Brain, Spine, MMT, Age \geq 49)
- 4AZ2 (Weighted FIM motor score 13-18, Brain, Spine, MMT, Age \leq 49)

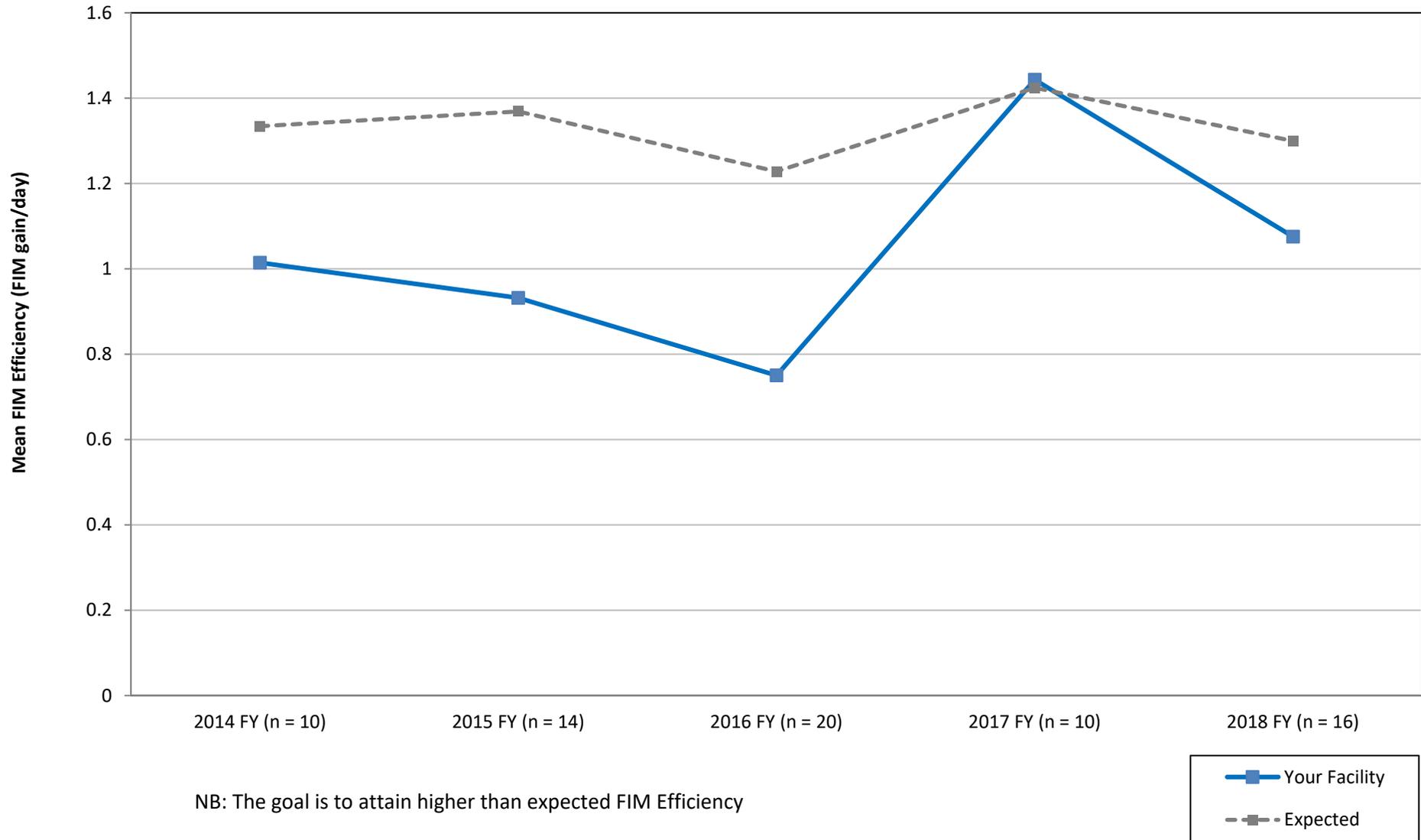
Traumatic Brain Dysfunction: Casemix Adjusted Mean FIM Efficiency



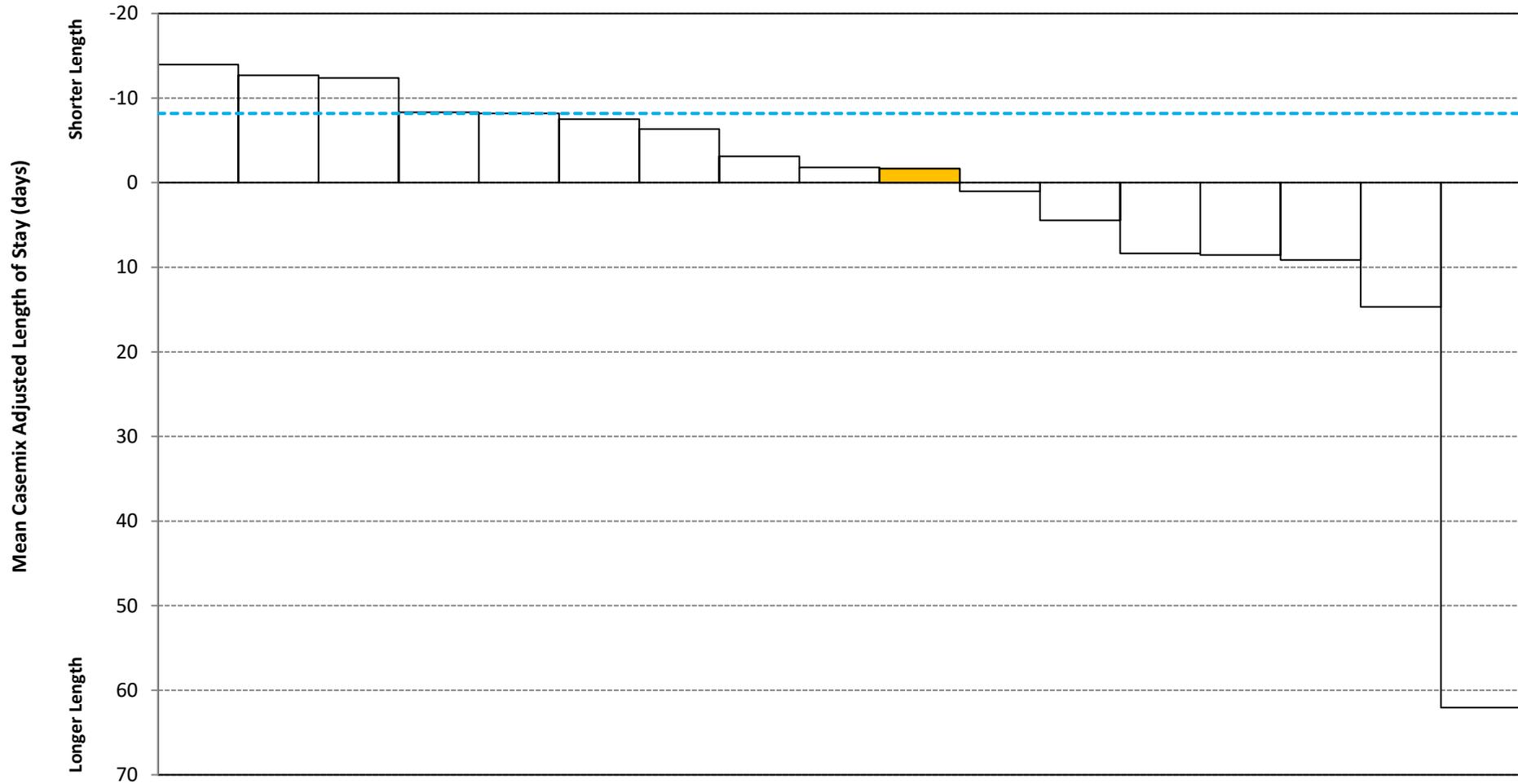
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 16): **-0.22** FIM gain/day (less efficient than average)
 25th Percentile: **0.02** FIM gain/day (same efficiency as average)



Traumatic Brain Dysfunction: Mean FIM Efficiency Over Time



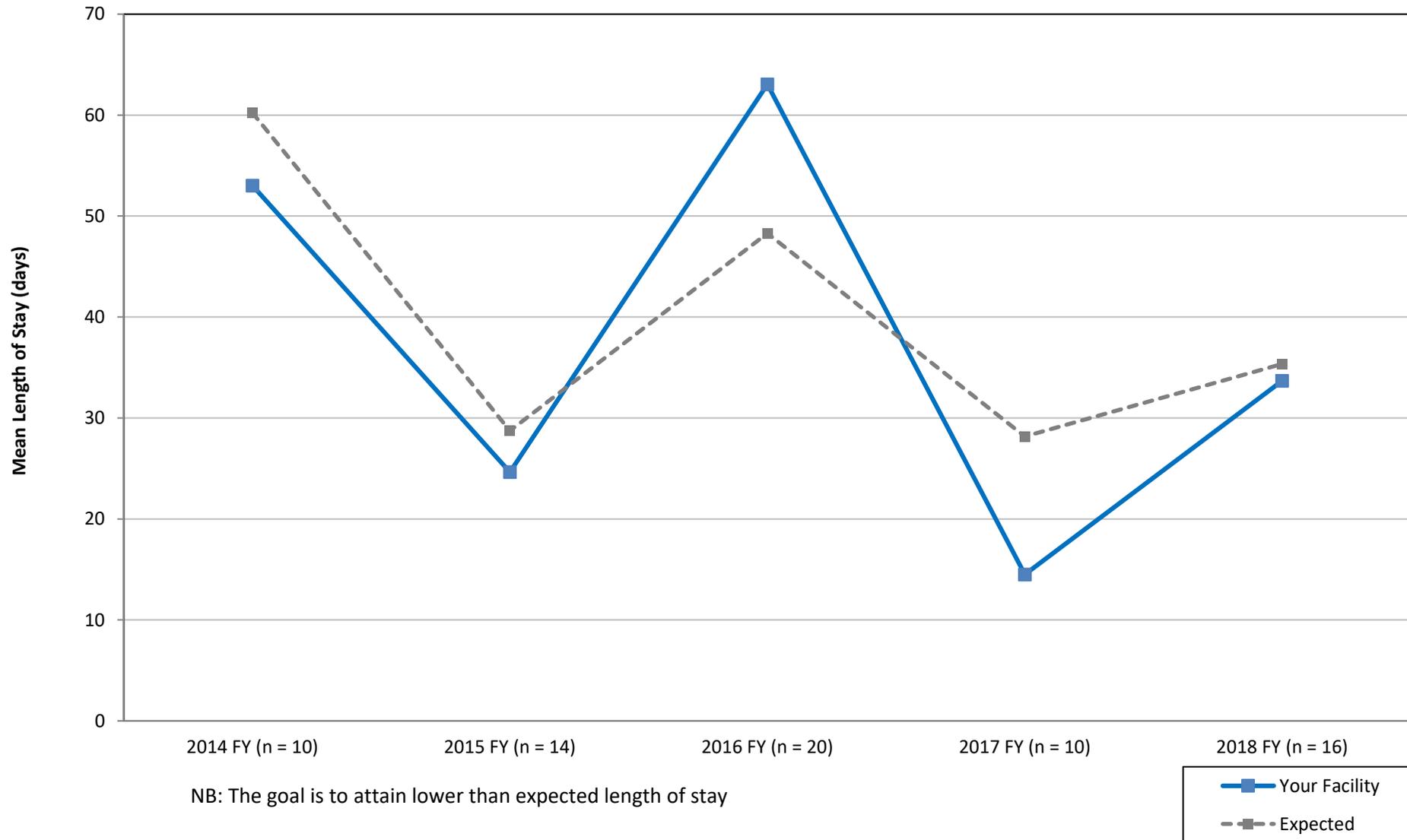
Traumatic Brain Dysfunction: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 16): **-1.66** days (shorter than average)
 25th Percentile: **-8.19** days (shorter than average)



Traumatic Brain Dysfunction: Mean Length of Stay Over Time





Neurological Conditions

Data inclusion criteria

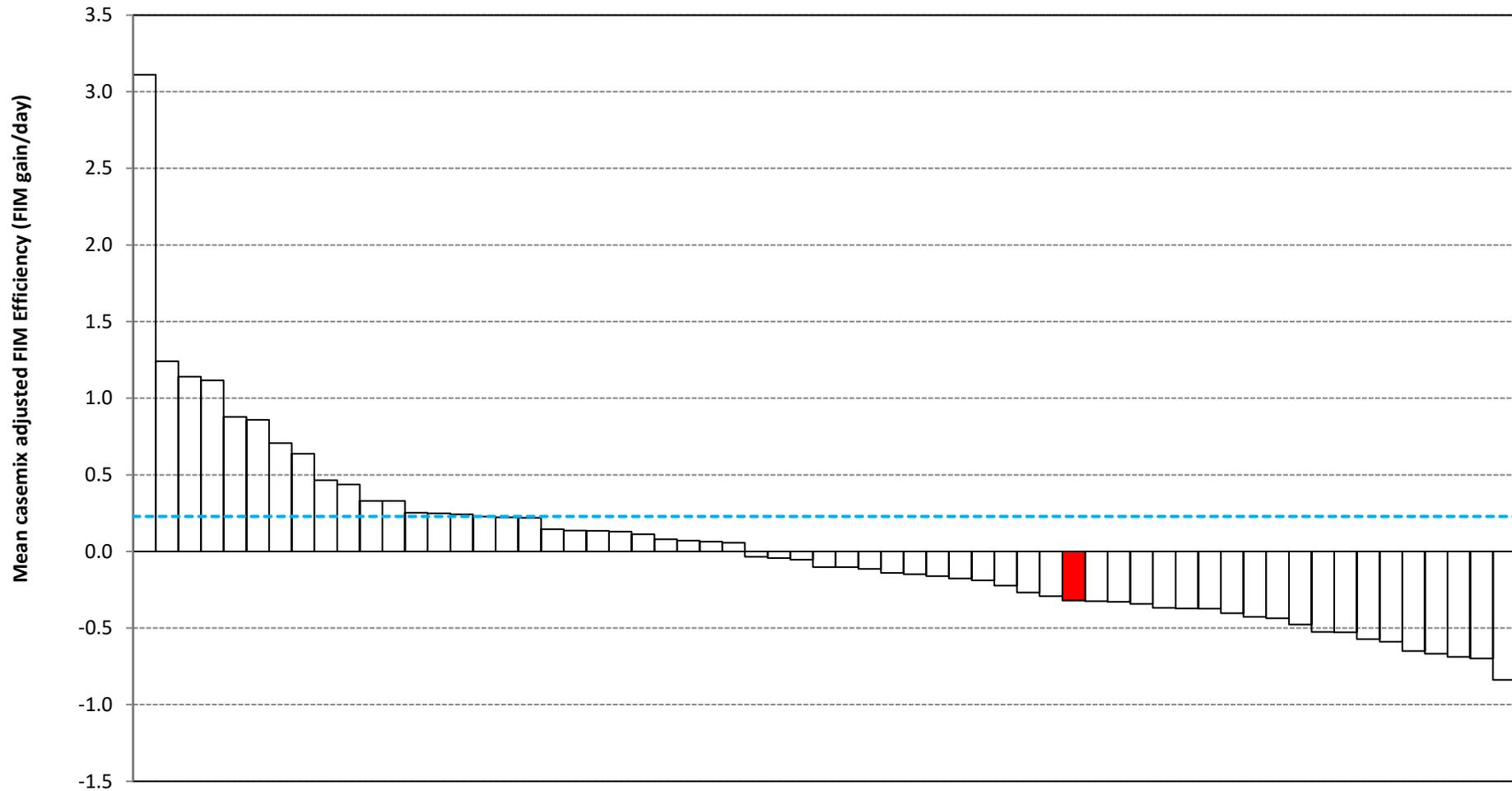
Data used in this section comprised of all episodes with AROC impairment codes:

- 3.1 (Multiple Sclerosis)
- 3.2 (Parkinsonism)
- 3.3 (Polyneuropathy)
- 3.4 (Guillain-Barre)
- 3.5 (Cerebral Palsy)
- 3.8 (Neuromuscular disorders)
- 3.9 (Other neurological conditions)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AC1 (Neurological conditions, weighted FIM motor 62-91)
- 4AC2 (Neurological conditions, weighted FIM motor 43-61)
- 4AC3 (Neurological conditions, weighted FIM motor 19-42)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

Neurological Conditions: Casemix Adjusted Mean FIM Efficiency

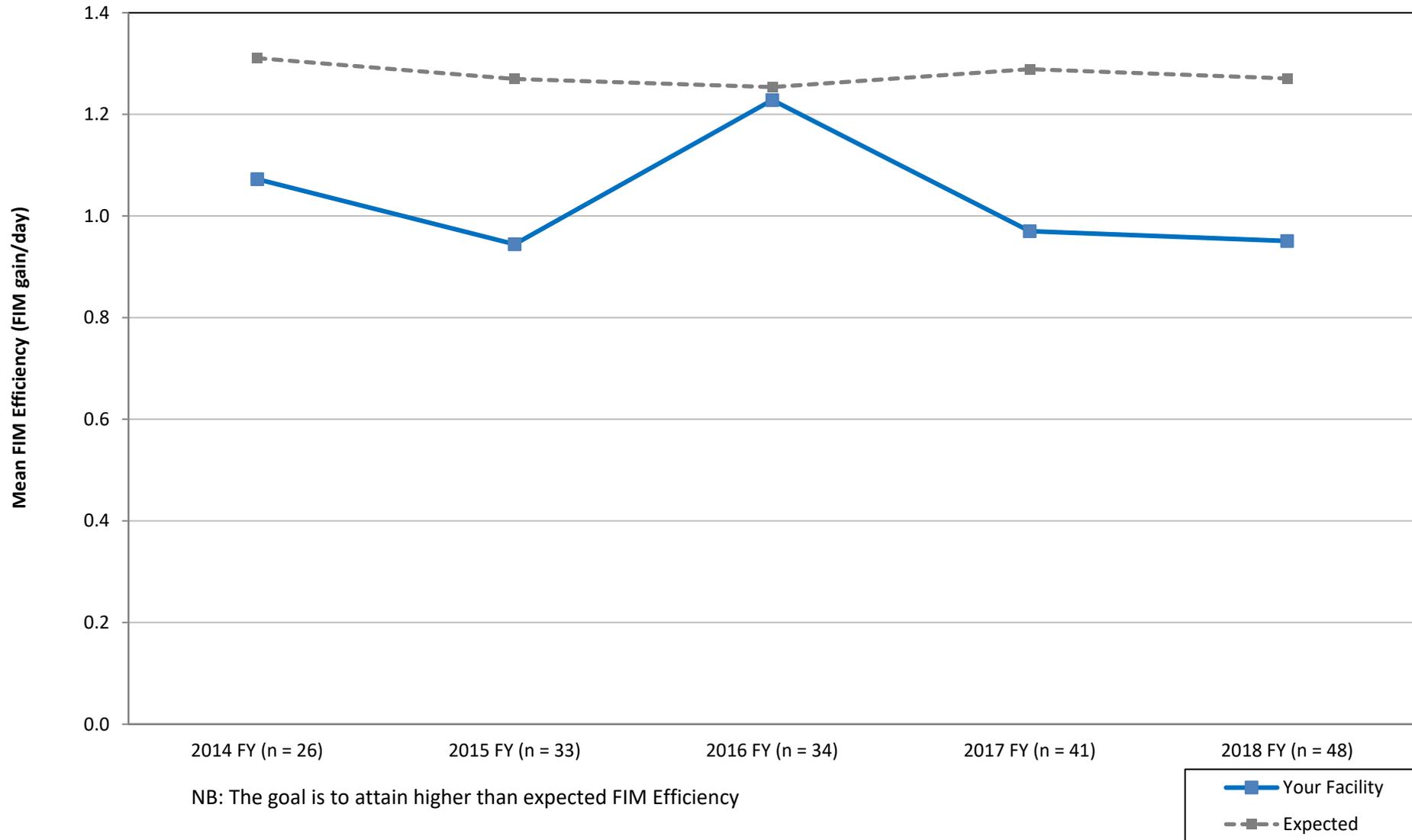


Mean Casemix Adjusted FIM Efficiency

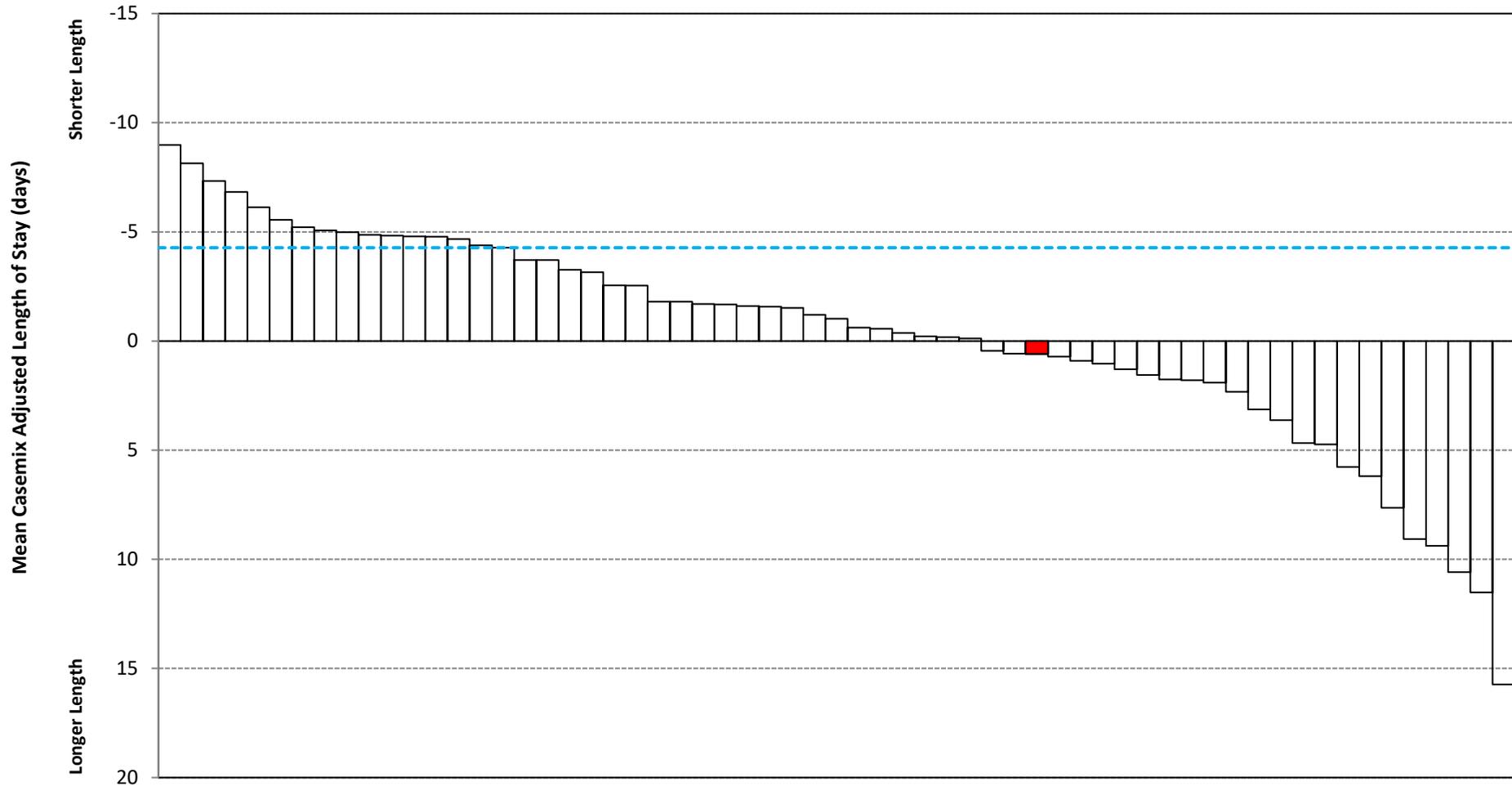
Your Facility (n = 48): **-0.32** FIM gain/day (less efficient than average)
 25th Percentile: **0.23** FIM gain/day (more efficient than average)



Neurological Conditions: Mean FIM Efficiency Over Time



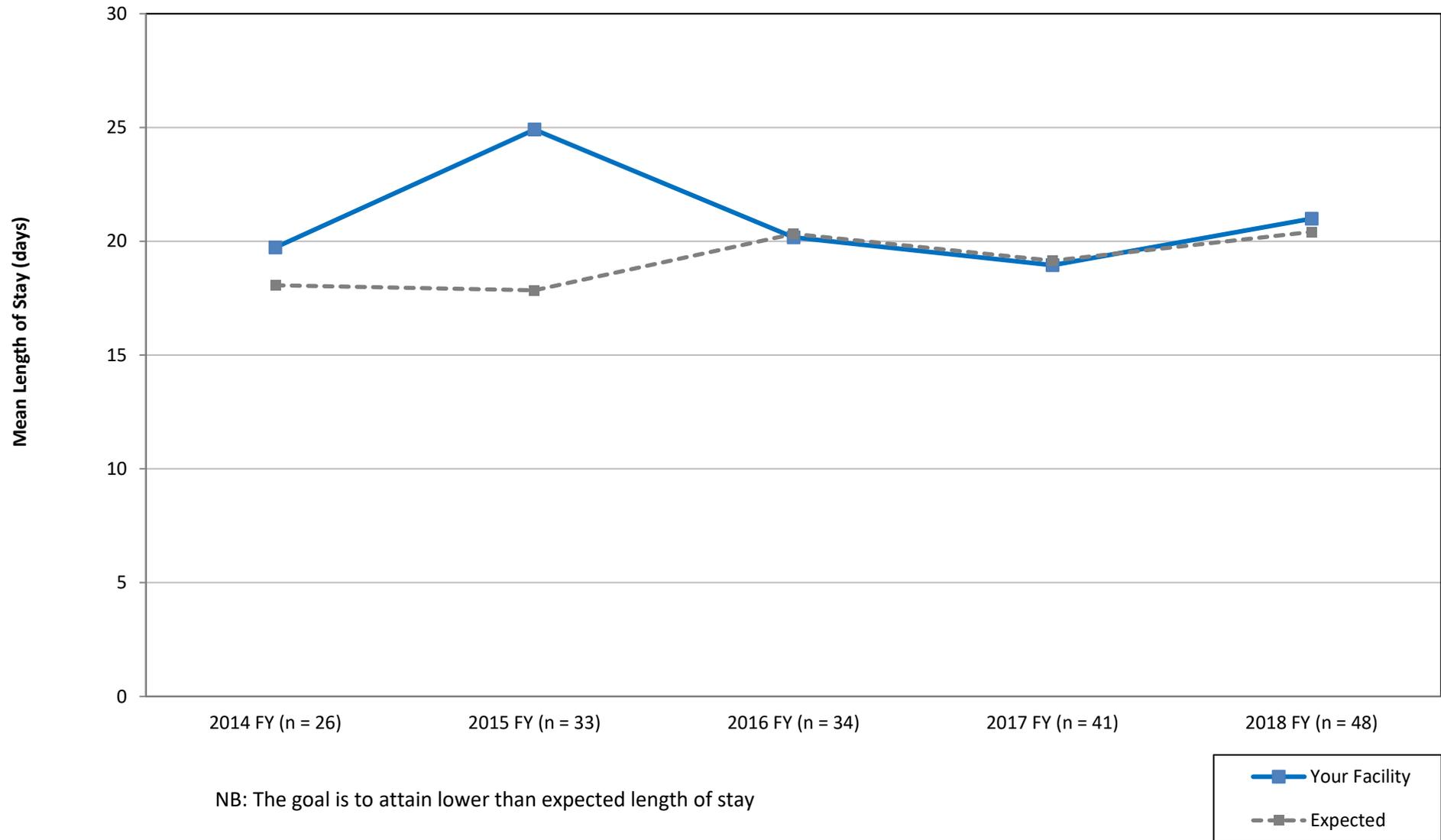
Neurological Conditions: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 48): **0.59** days (longer than average)
 25th Percentile: **-4.27** days (shorter than average)



Neurological Conditions: Mean Length of Stay Over Time





Traumatic Spinal Cord Dysfunction

Data inclusion criteria

We only include spine specialist units in the traumatic spinal cord dysfunction chapter, regardless of episode volume

Data used in this section comprised of all episodes with AROC impairment codes:

Spinal Cord Dysfunction - Traumatic

- 4.211 (paraplegia, incomplete)
- 4.212 (paraplegia, complete)
- 4.2211 (quadriplegia, incomplete C1-4)
- 4.2212 (quadriplegia, incomplete C5-8)
- 4.2221 (quadriplegia, complete C1-4)
- 4.2222 (quadriplegia, complete C5-8)
- 4.23 (other traumatic spinal cord dysfunction)

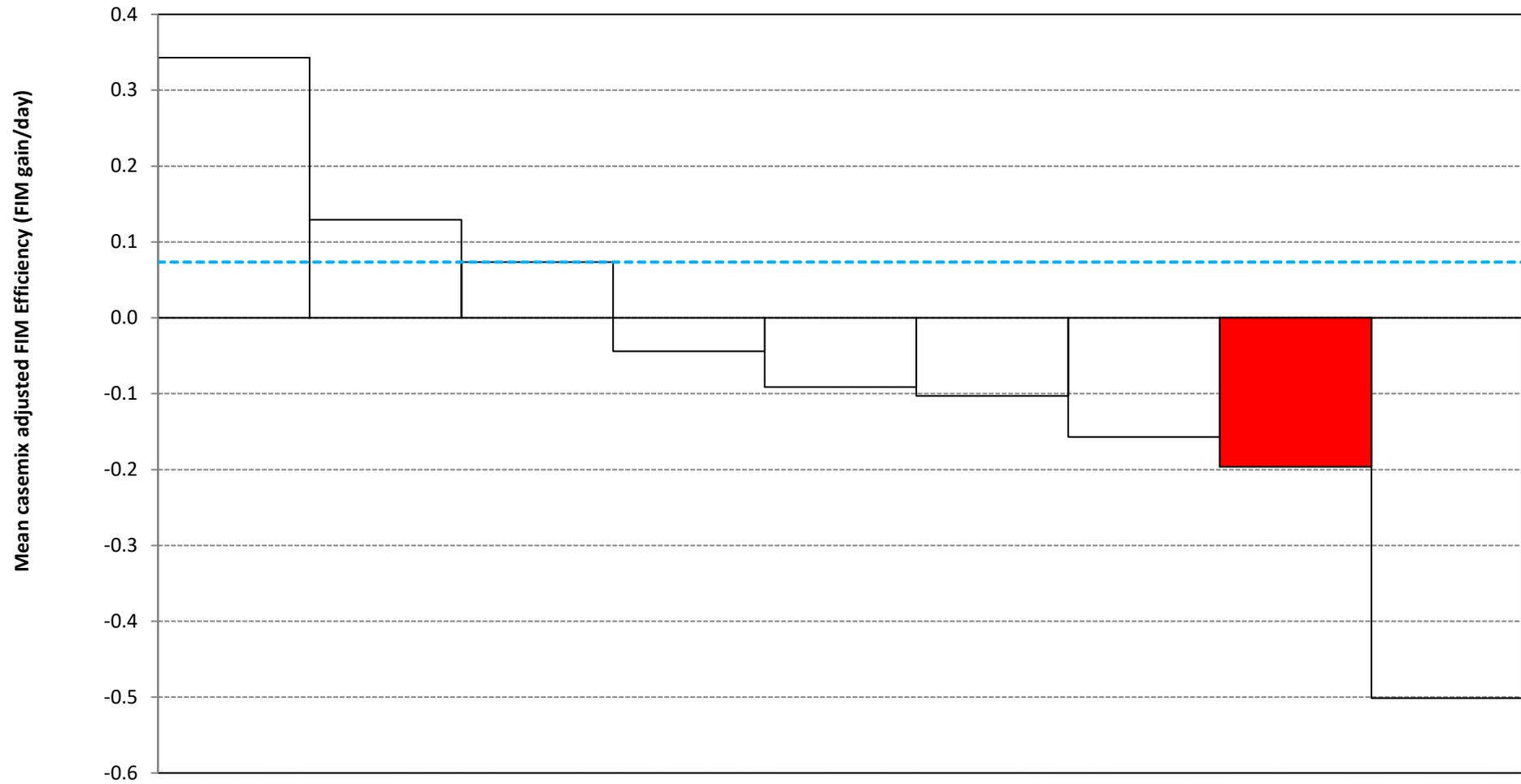
Major Multiple Trauma

- 14.1 (brain + spinal cord injury)
- 14.3 (spinal cord + multi fracture/amputation)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AD1 (Spinal cord dysfunction, Age \geq 50, weighted FIM motor 42-91)
- 4AD2 (Spinal cord dysfunction, Age \geq 50, weighted FIM motor 19-41)
- 4AD3 (Spinal cord dysfunction, Age \leq 49, weighted FIM motor 34-91)
- 4AD4 (Spinal cord dysfunction, Age \leq 49, weighted FIM motor 19-33)
- 4AP1 (Major Multiple Trauma, weighted FIM motor score 19-91)
- 4AZ1 (Weighted FIM motor score 13-18, Brain, Spine, MMT, Age \geq 49)
- 4AZ2 (Weighted FIM motor score 13-18, Brain, Spine, MMT, Age \leq 49)

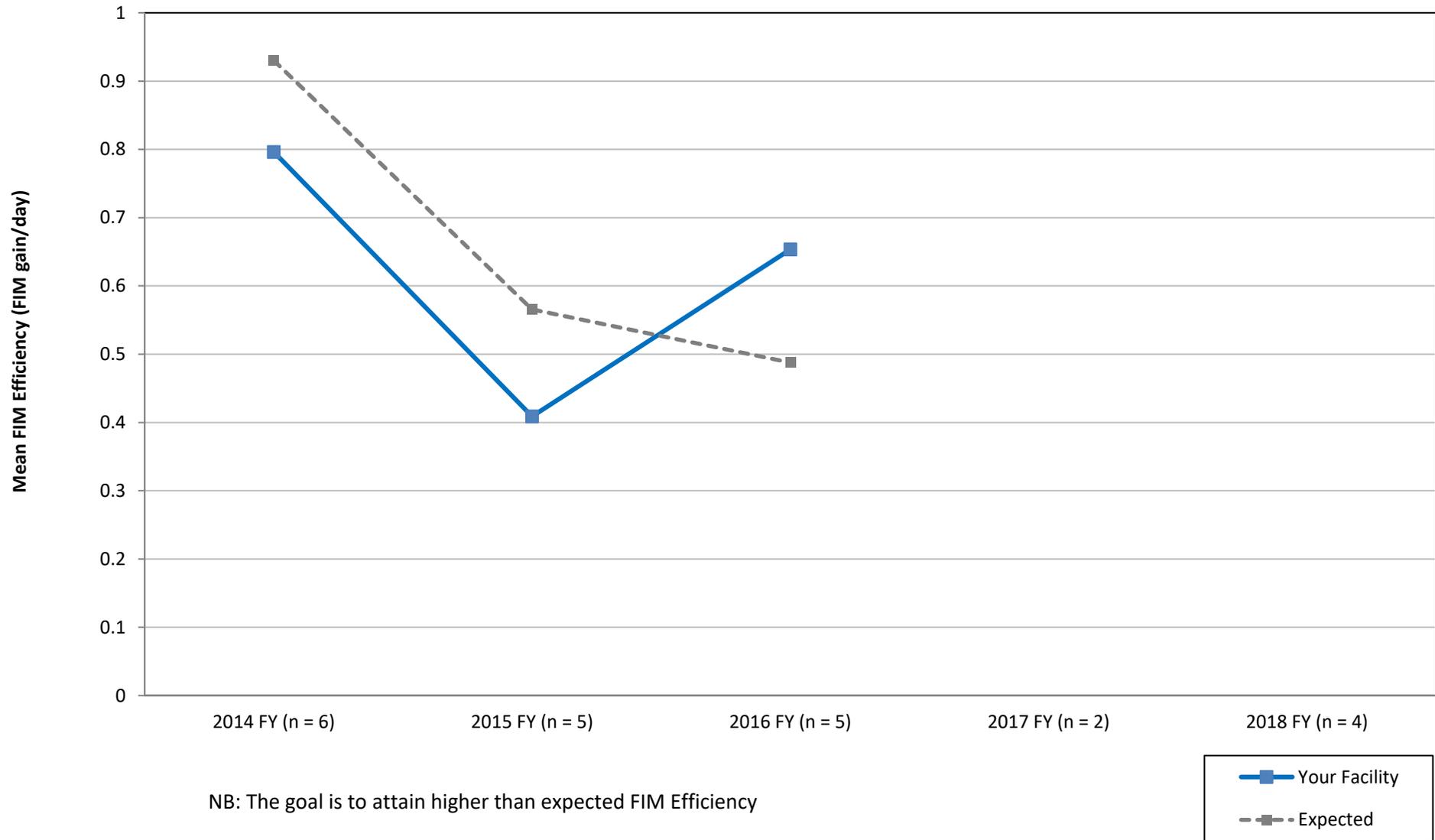
Traumatic Spinal Cord Dysfunction: Casemix Adjusted Mean FIM Efficiency



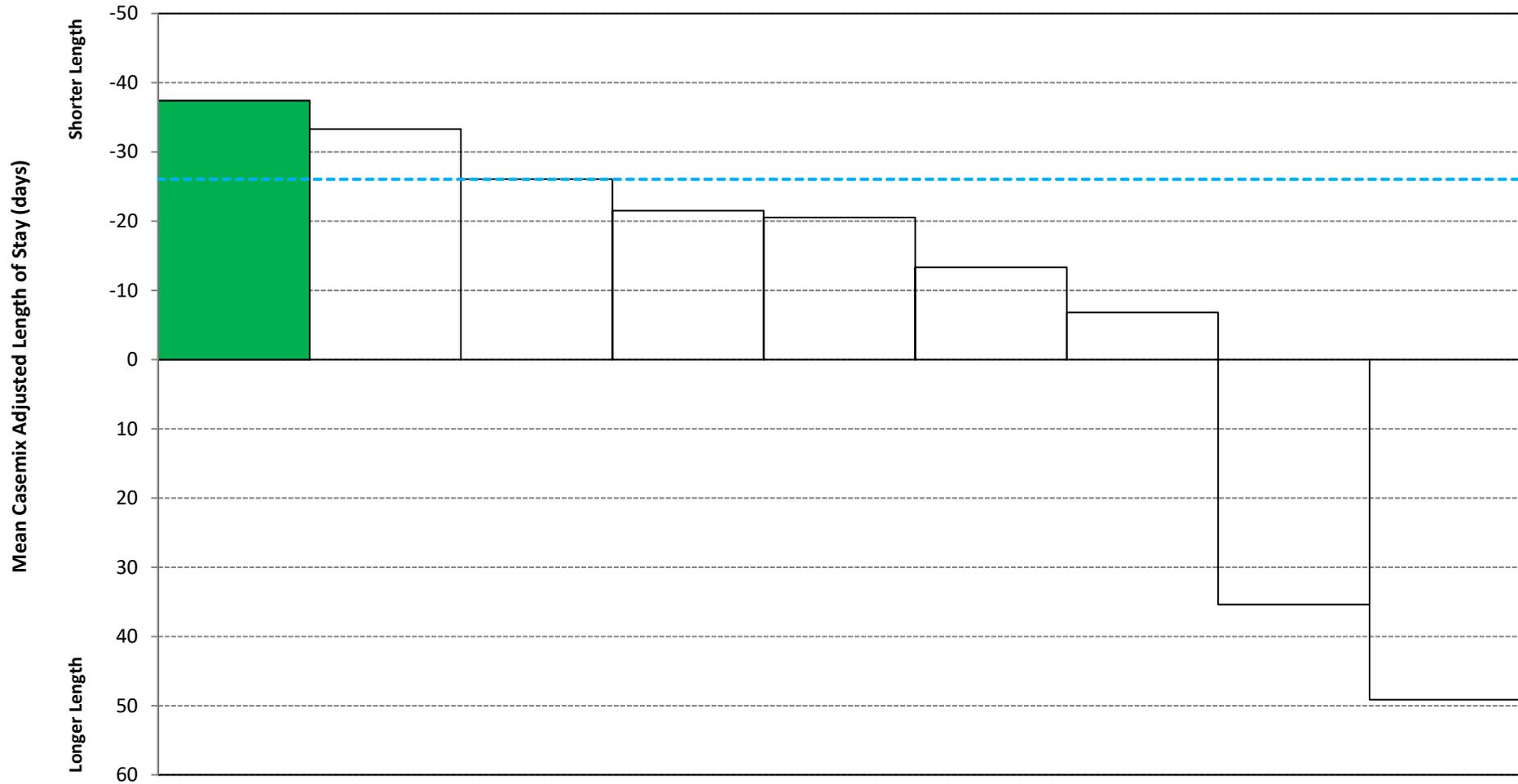
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 4): **-0.20** FIM gain/day (less efficient than average)
 25th Percentile: **0.07** FIM gain/day (more efficient than average)



Traumatic Spinal Cord Dysfunction: Mean FIM Efficiency Over Time



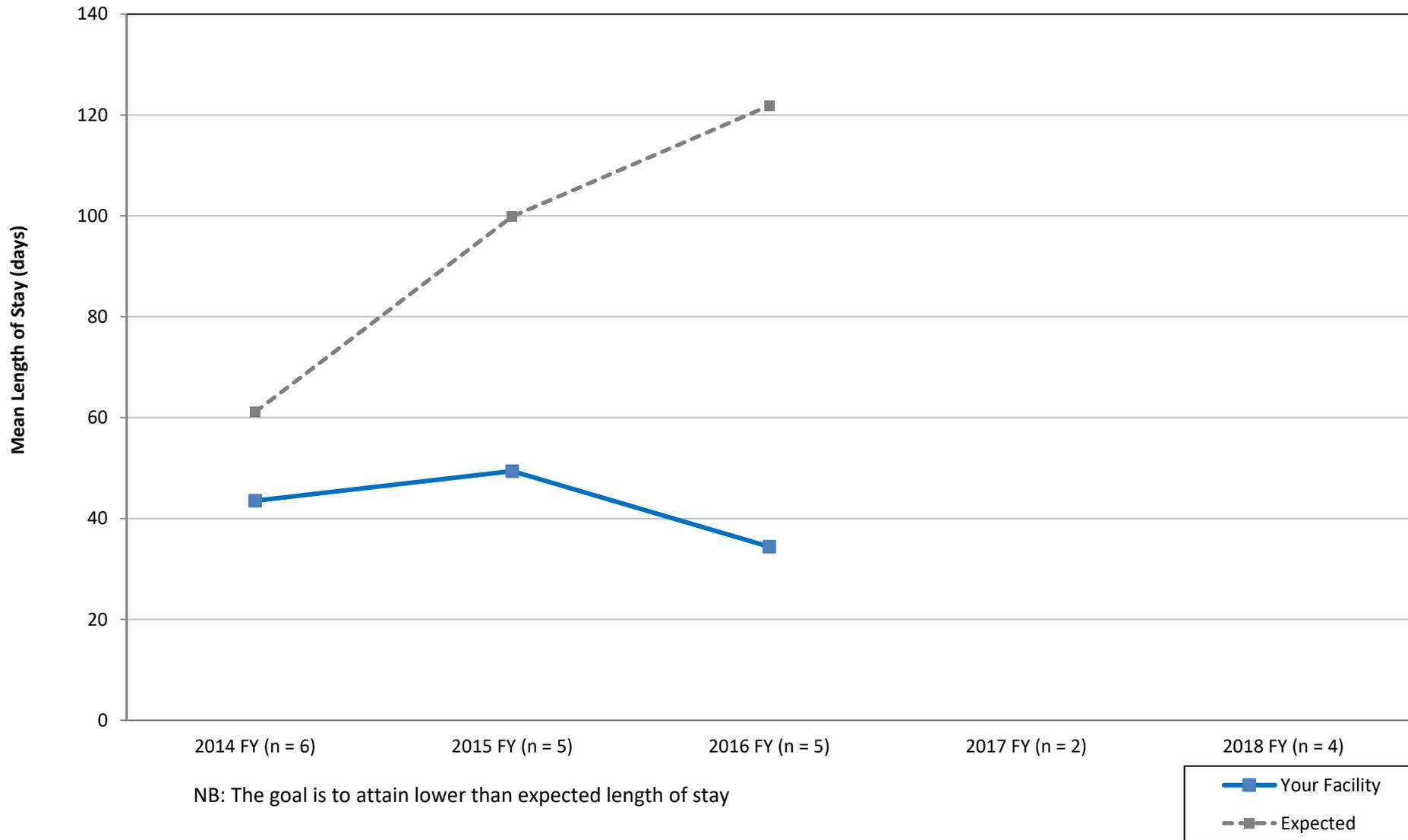
Traumatic Spinal Cord Dysfunction: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 4): **-37.40** days (shorter than average)
 25th Percentile: **-26.05** days (shorter than average)



Traumatic Spinal Cord Dysfunction: Mean Length of Stay Over Time





Non Traumatic Spinal Cord Dysfunction

Data inclusion criteria

We only include spine specialist units in the non traumatic spinal cord dysfunction chapter, regardless of episode volume

Data used in this section comprised of all episodes with AROC impairment codes:

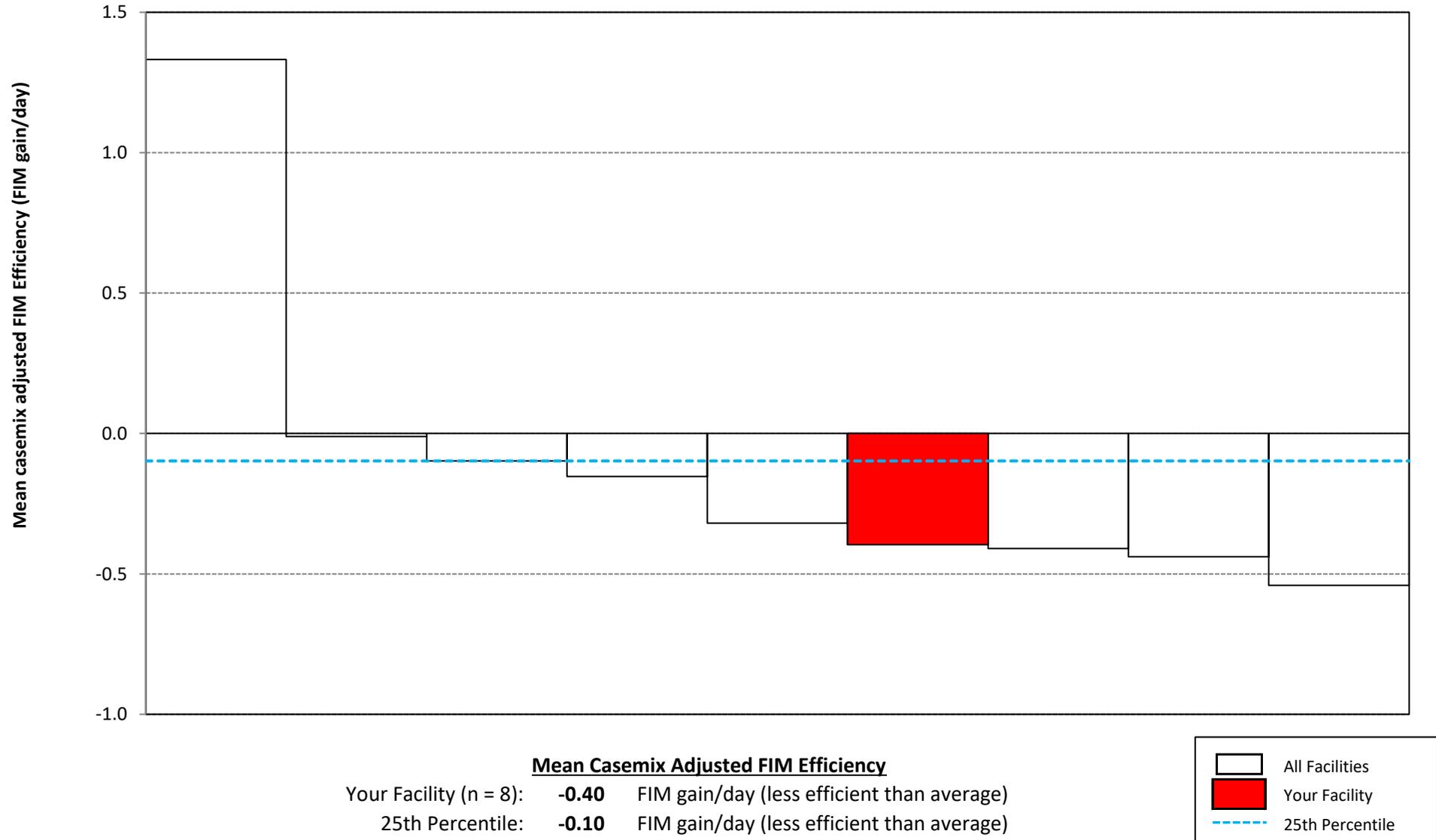
Spinal Cord Dysfunction - Non-Traumatic

- 4.111 (paraplegia, incomplete)
- 4.112 (paraplegia, complete)
- 4.1211 (quadriplegia, incomplete C1-4)
- 4.1212 (quadriplegia, incomplete C5-8)
- 4.1221 (quadriplegia, complete C1-4)
- 4.1222 (quadriplegia, complete C5-8)
- 4.13 (other non-traumatic spinal cord dysfunction)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AD1 (Spinal cord dysfunction, Age \geq 50, weighted FIM motor 42-91)
- 4AD2 (Spinal cord dysfunction, Age \geq 50, weighted FIM motor 19-41)
- 4AD3 (Spinal cord dysfunction, Age \leq 49, weighted FIM motor 34-91)
- 4AD4 (Spinal cord dysfunction, Age \leq 49, weighted FIM motor 19-33)
- 4AZ1 (Weighted FIM motor score 13-18, Brain, Spine, MMT, Age \geq 49)
- 4AZ2 (Weighted FIM motor score 13-18, Brain, Spine, MMT, Age \leq 49)

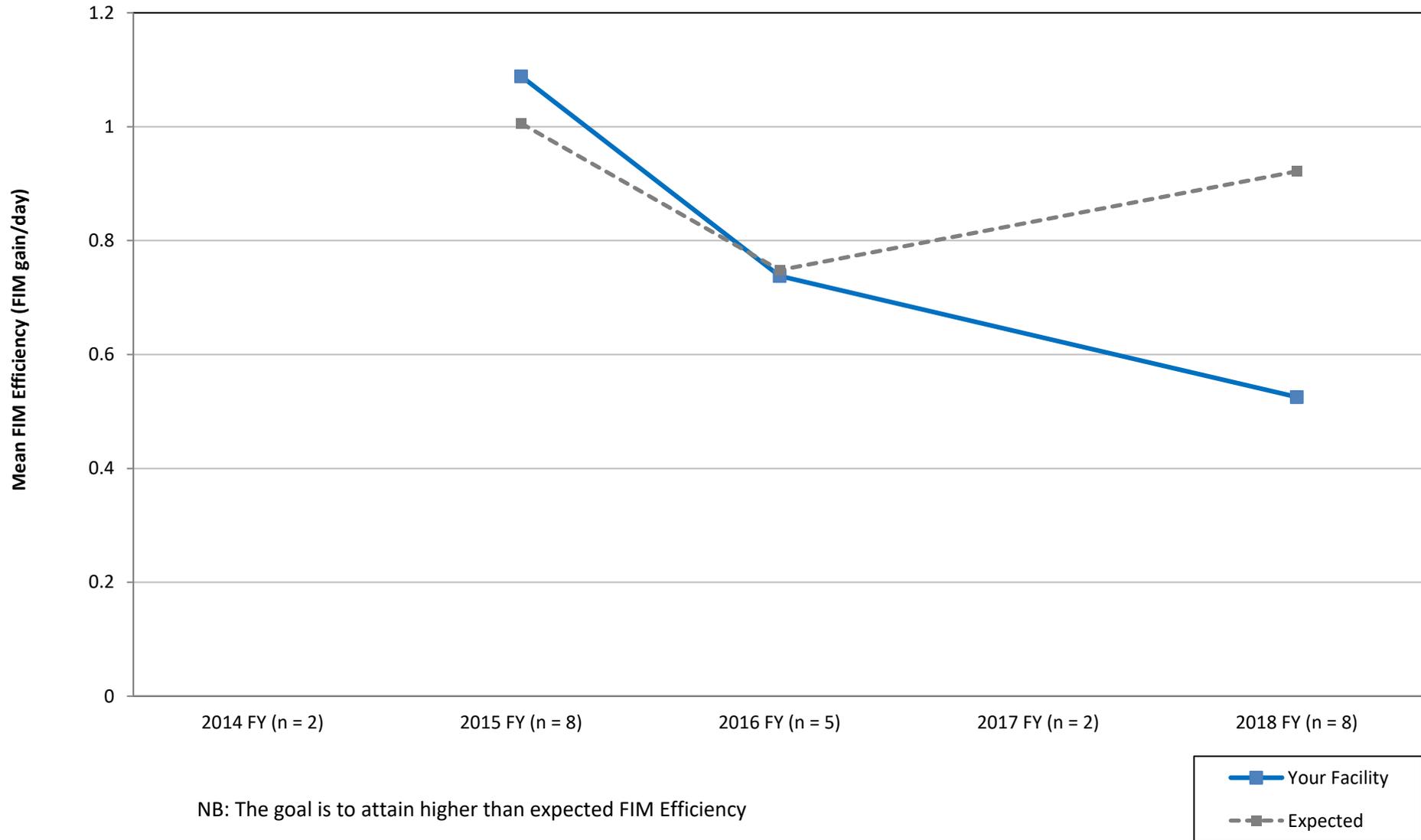
Non Traumatic Spinal Cord Dysfunction: Casemix Adjusted Mean FIM Efficiency



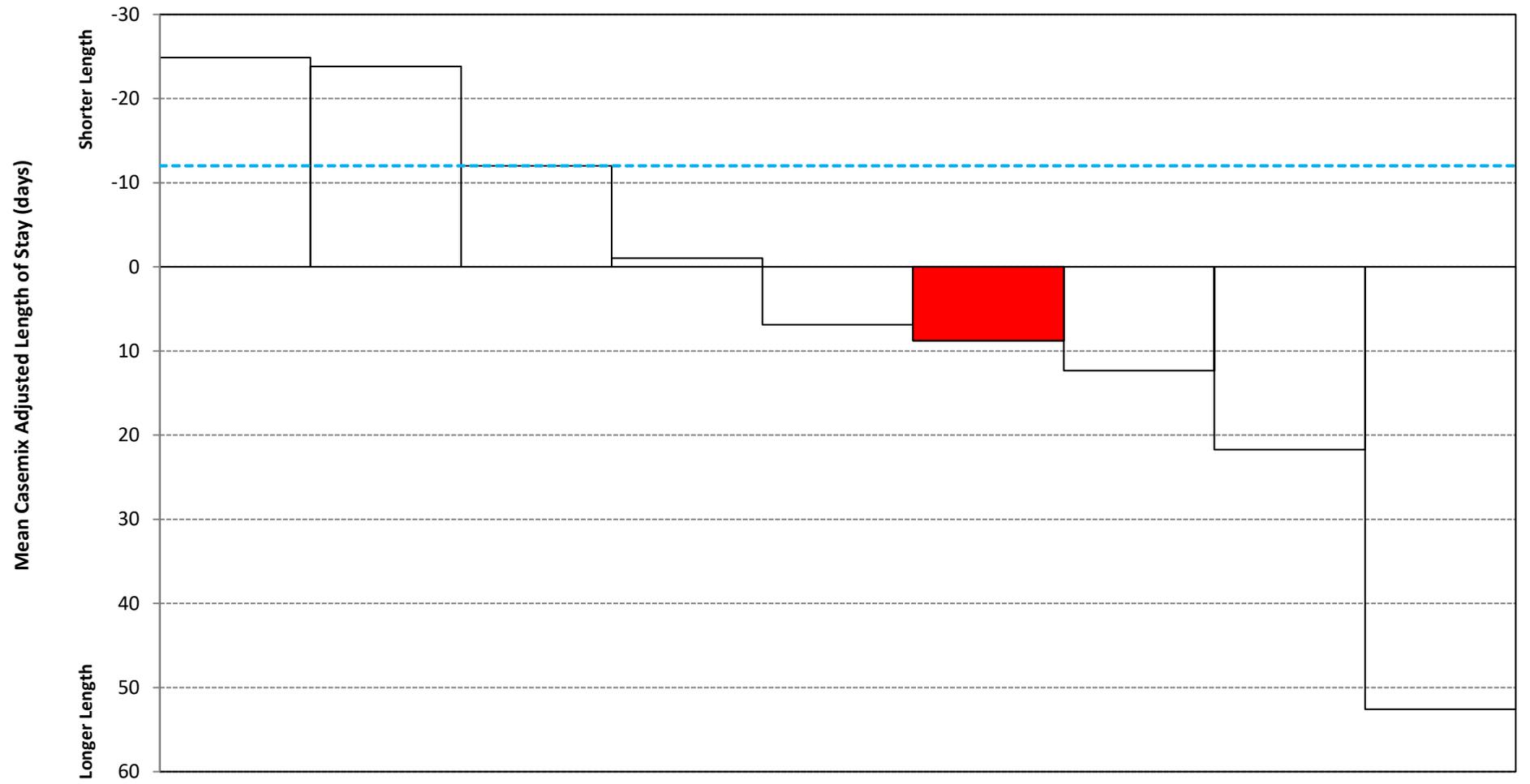
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 8): **-0.40** FIM gain/day (less efficient than average)
 25th Percentile: **-0.10** FIM gain/day (less efficient than average)

| | |
|---|-----------------|
|  | All Facilities |
|  | Your Facility |
|  | 25th Percentile |

Non Traumatic Spinal Cord Dysfunction: Mean FIM Efficiency Over Time



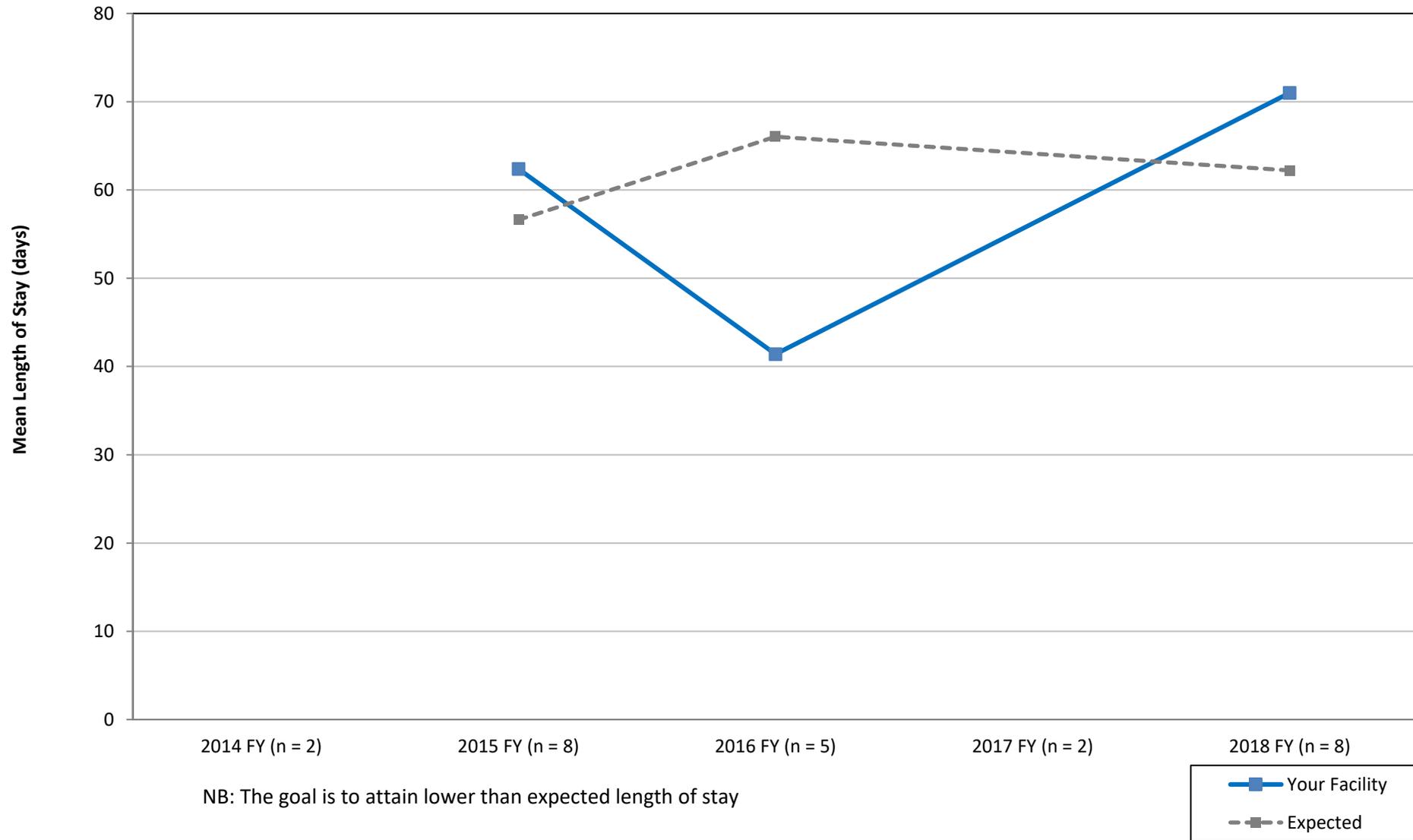
Non Traumatic Spinal Cord Dysfunction: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 8): **8.78** days (longer than average)
 25th Percentile: **-12.02** days (shorter than average)



Non Traumatic Spinal Cord Dysfunction: Mean Length of Stay Over Time





Pain Syndromes

Data inclusion criteria

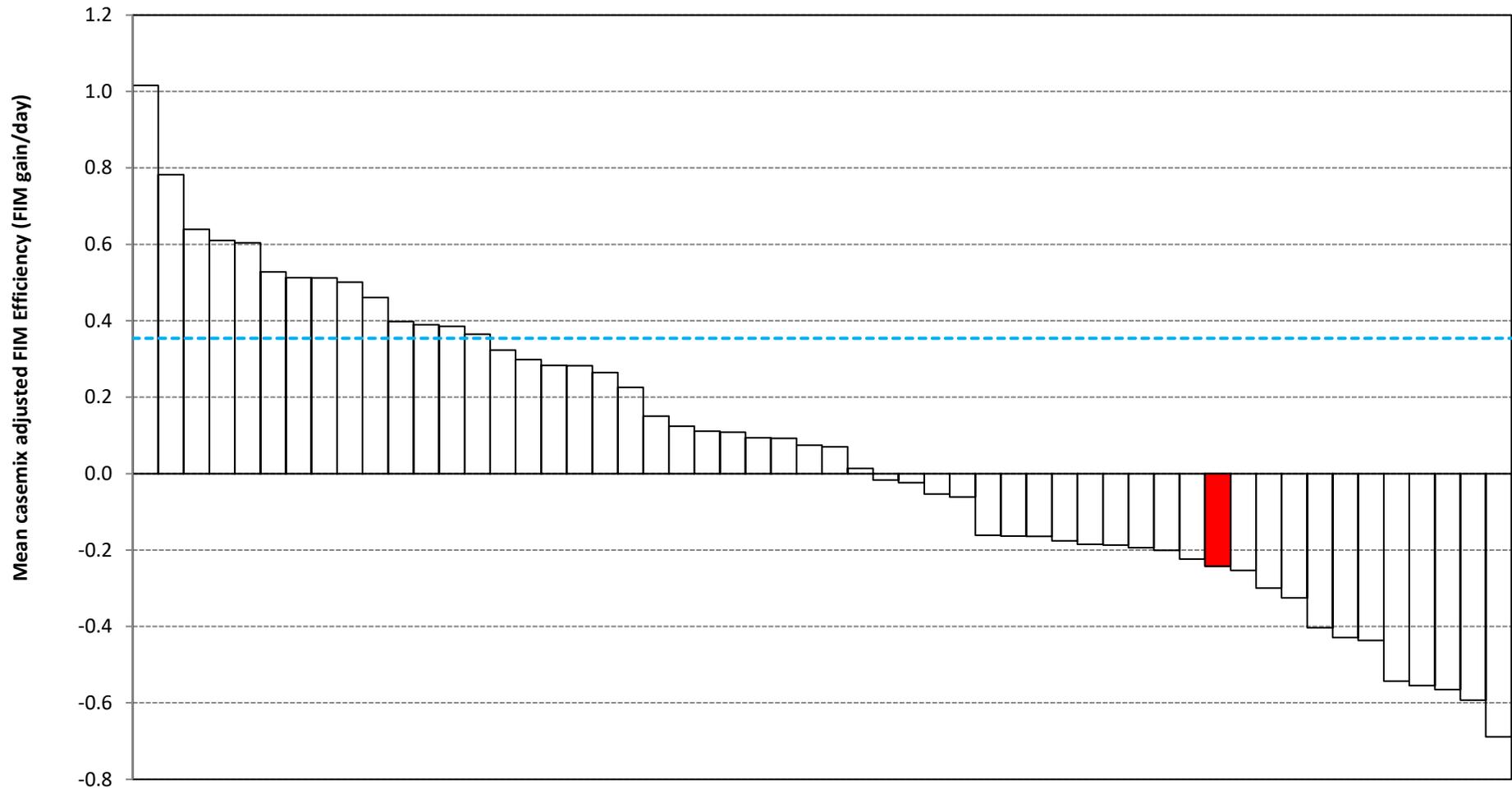
Data used in this section comprised of all episodes with AROC impairment codes:

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

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4A31 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72-91)
- 4A32 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55-71)
- 4A33 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34-54)
- 4A34 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19-33)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

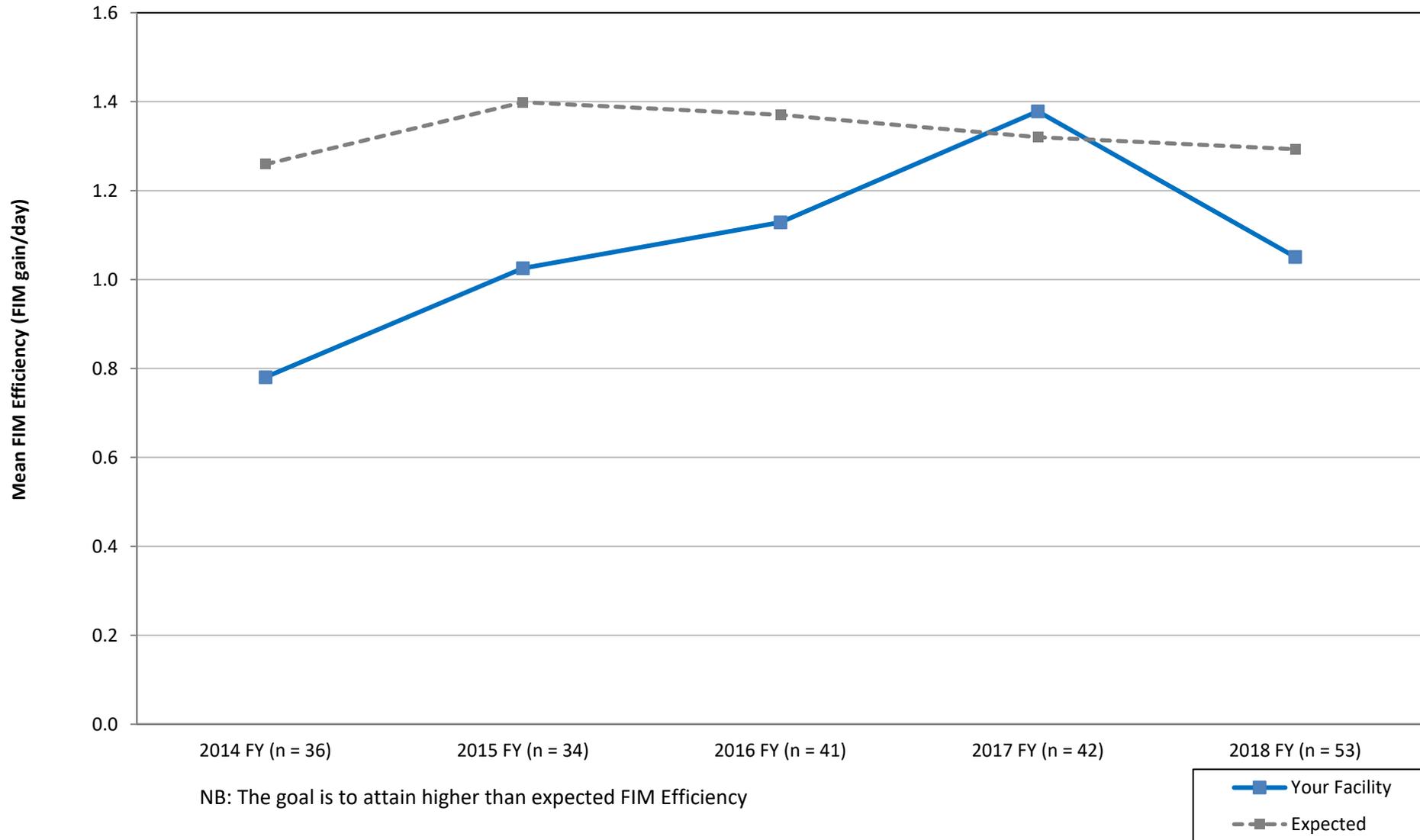
Pain Syndromes: Casemix Adjusted Mean FIM Efficiency



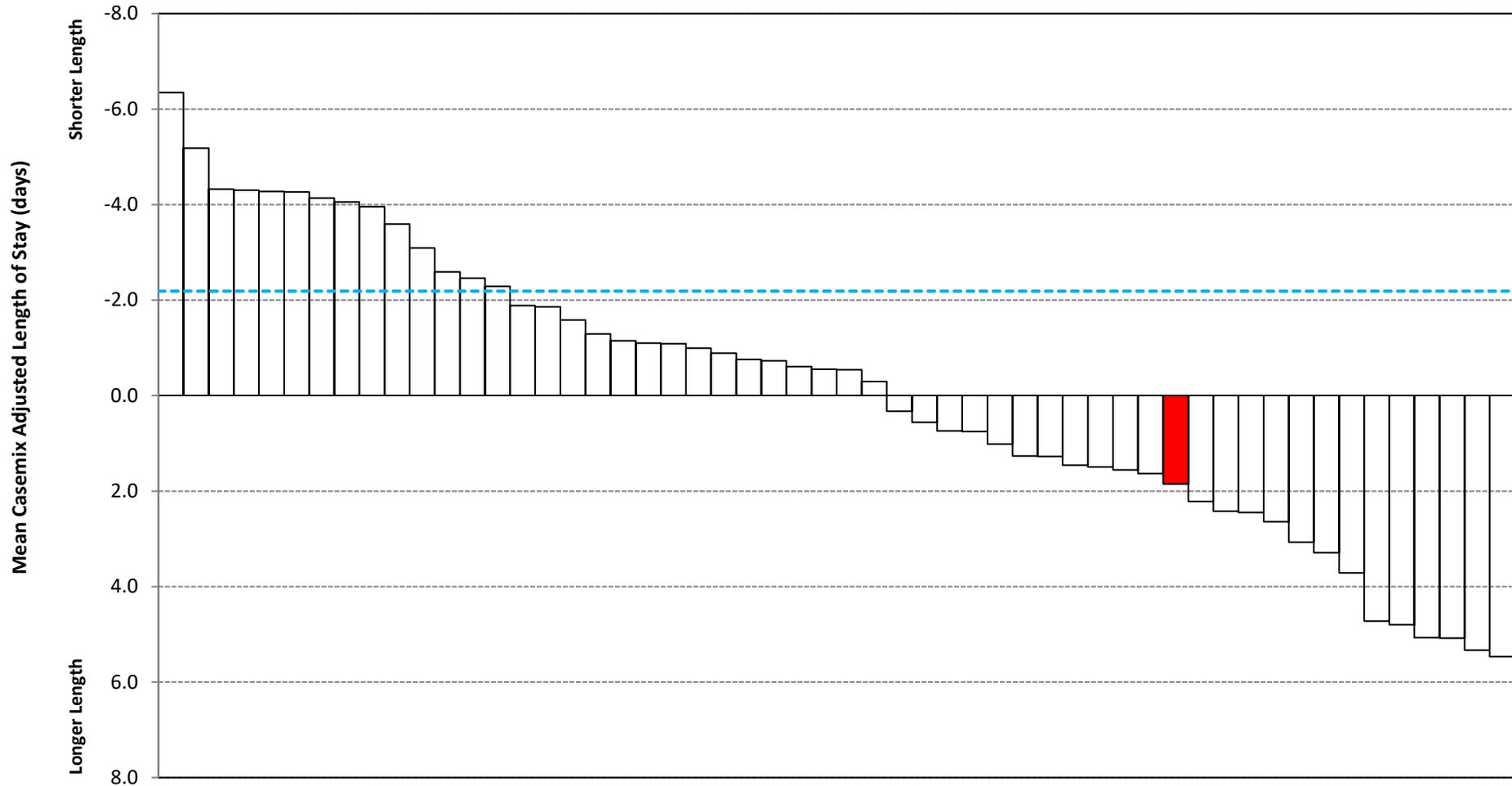
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 53): **-0.24** FIM gain/day (less efficient than average)
 25th Percentile: **0.35** FIM gain/day (more efficient than average)

| | |
|---|-----------------|
|  | All Facilities |
|  | Your Facility |
|  | 25th Percentile |

Pain Syndromes: Mean FIM Efficiency Over Time



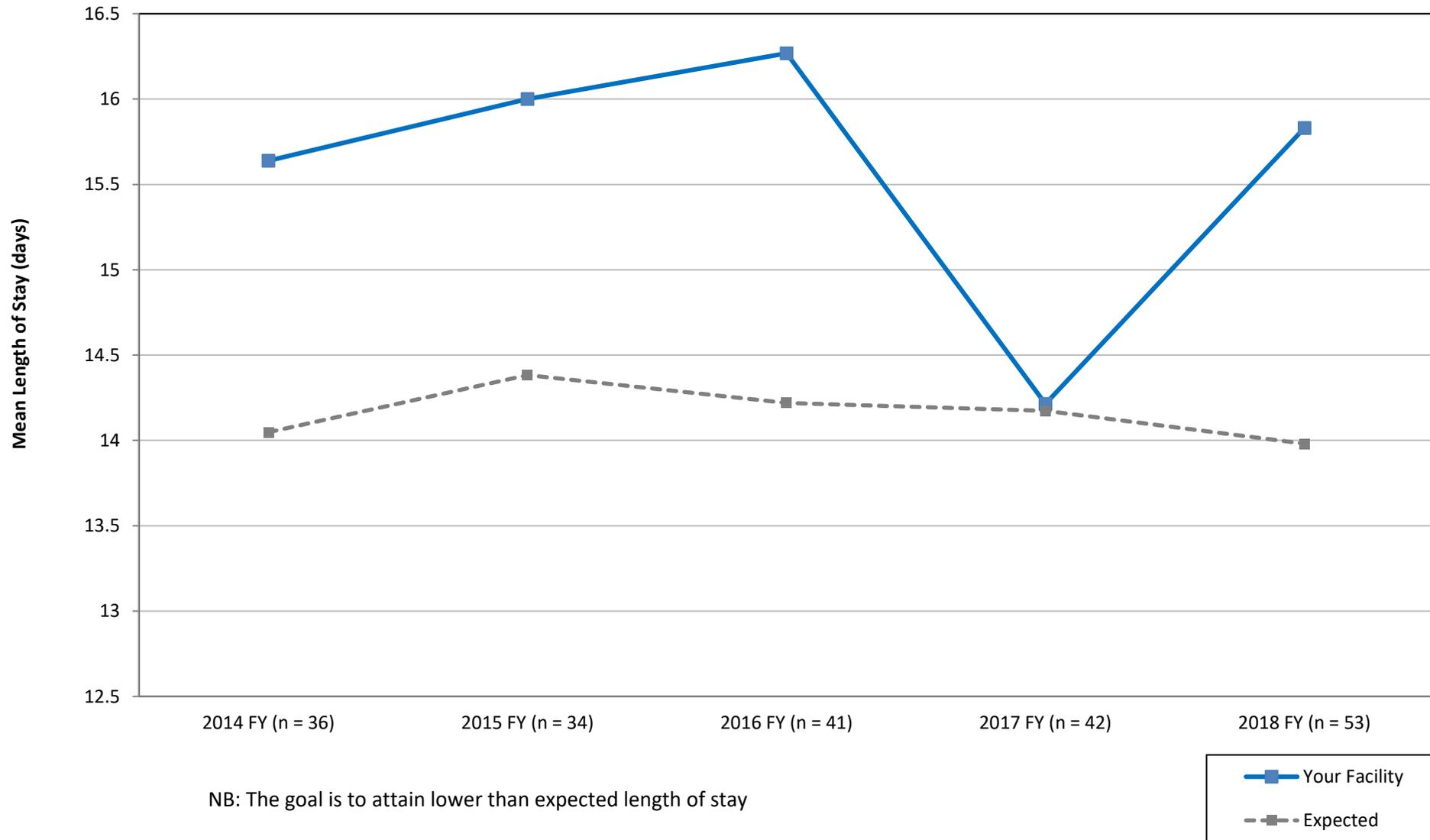
Pain Syndromes: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 53): **1.85** days (longer than average)
 25th Percentile: **-2.19** days (shorter than average)

| | |
|---|-----------------|
|  | All Facilities |
|  | Your Facility |
|  | 25th Percentile |

Pain Syndromes: Mean Length of Stay Over Time





Orthopaedic Fractures

Data inclusion criteria

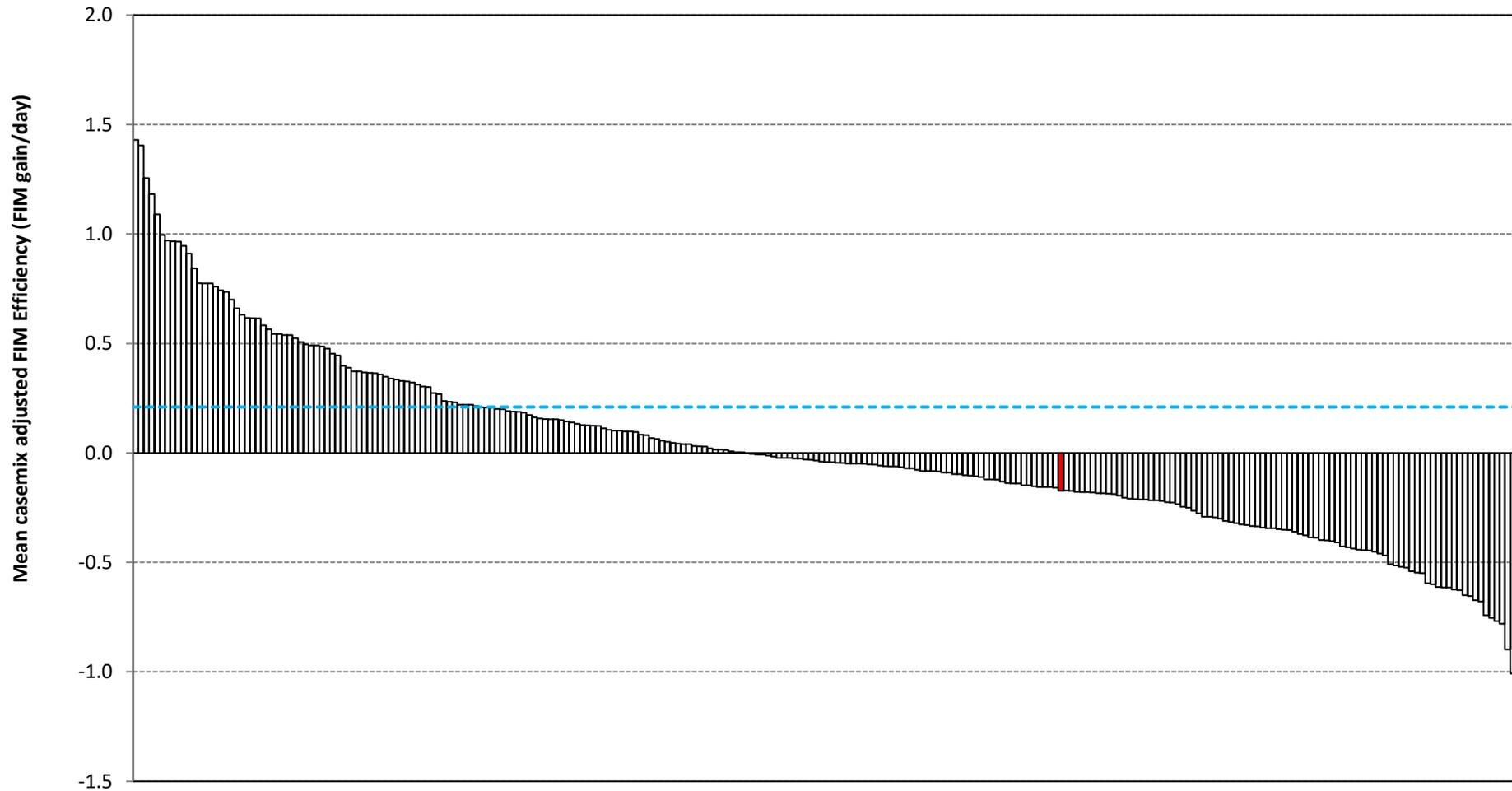
Data used in this section comprised of all episodes with AROC impairment codes:

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

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AH1 (Orthopaedic conditions, fractures, weighted FIM motor 49-91, FIM cognition 33-35)
- 4AH2 (Orthopaedic conditions, fractures, weighted FIM motor 49-91, FIM cognition 5-32)
- 4AH3 (Orthopaedic conditions, fractures, weighted FIM motor 38-48)
- 4AH4 (Orthopaedic conditions, fractures, weighted FIM motor 19-37)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

Orthopaedic Fractures: Casemix Adjusted Mean FIM Efficiency

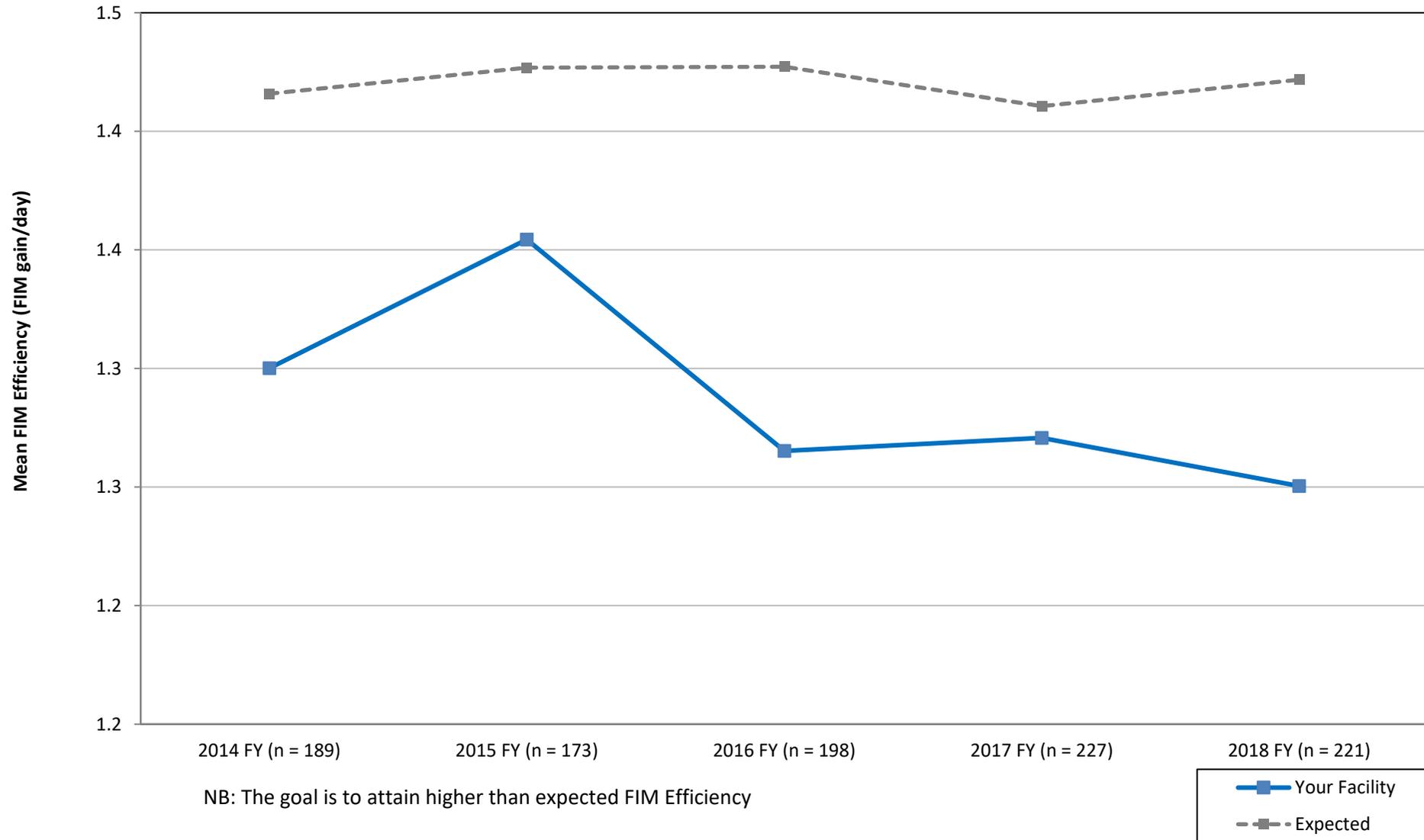


Mean Casemix Adjusted FIM Efficiency

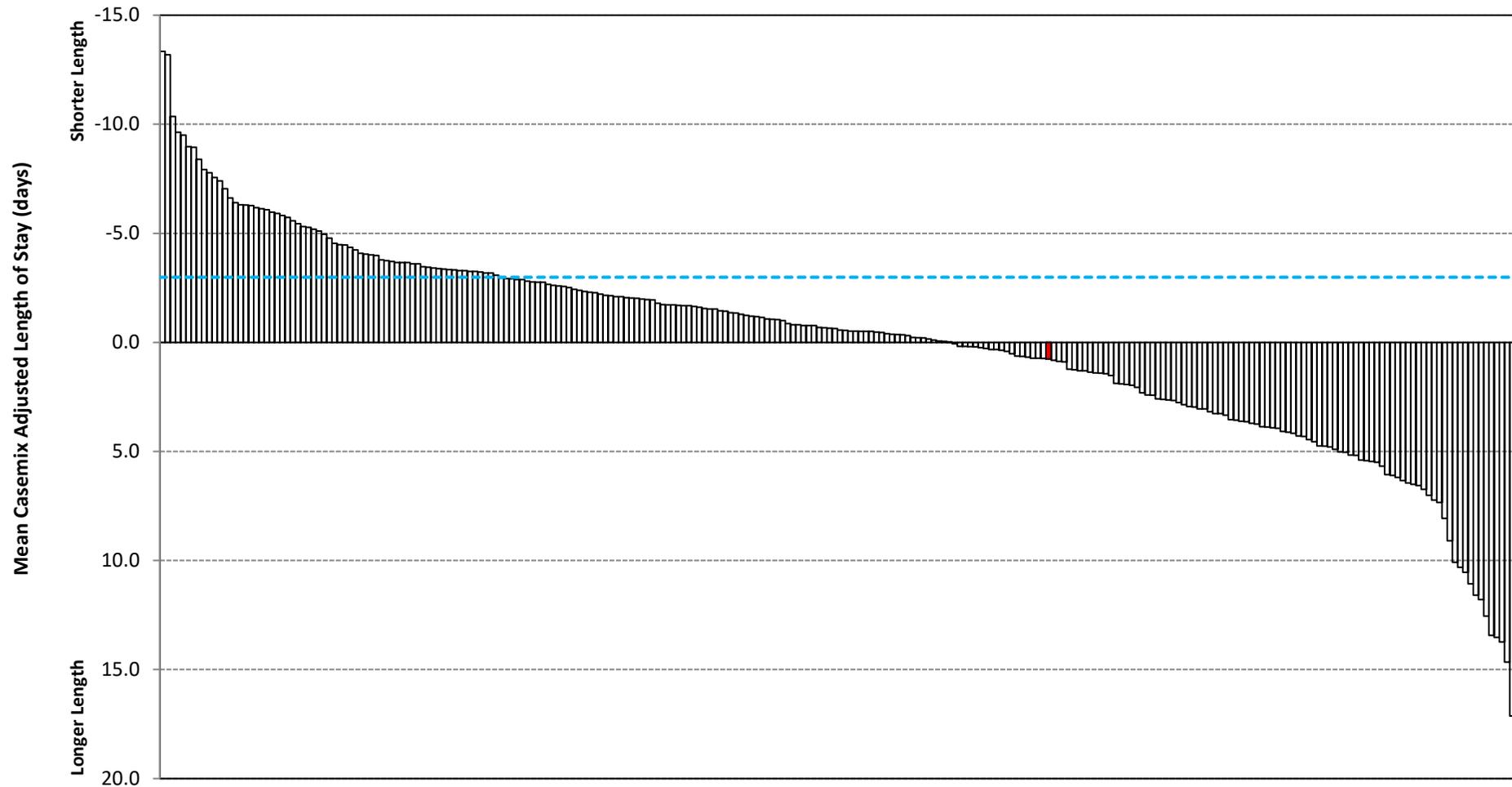
Your Facility (n = 221): **-0.17** FIM gain/day (less efficient than average)
 25th Percentile: **0.21** FIM gain/day (more efficient than average)



Orthopaedic Fractures: Mean FIM Efficiency Over Time



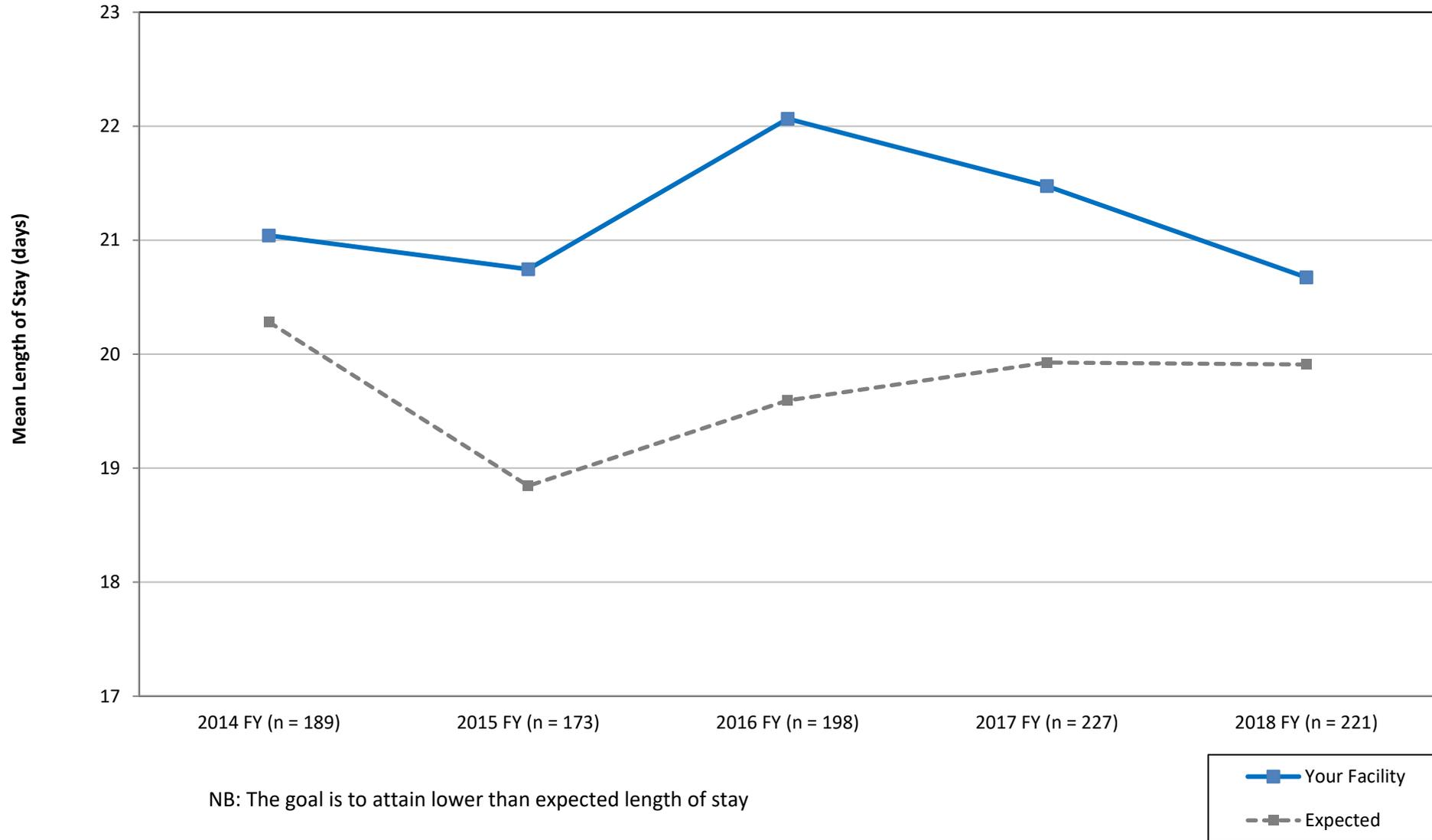
Orthopaedic Fractures: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 221): **0.76** days (longer than average)
 25th Percentile: **-2.98** days (shorter than average)



Orthopaedic Fractures: Mean Length of Stay Over Time





Orthopaedic Replacements

Data inclusion criteria

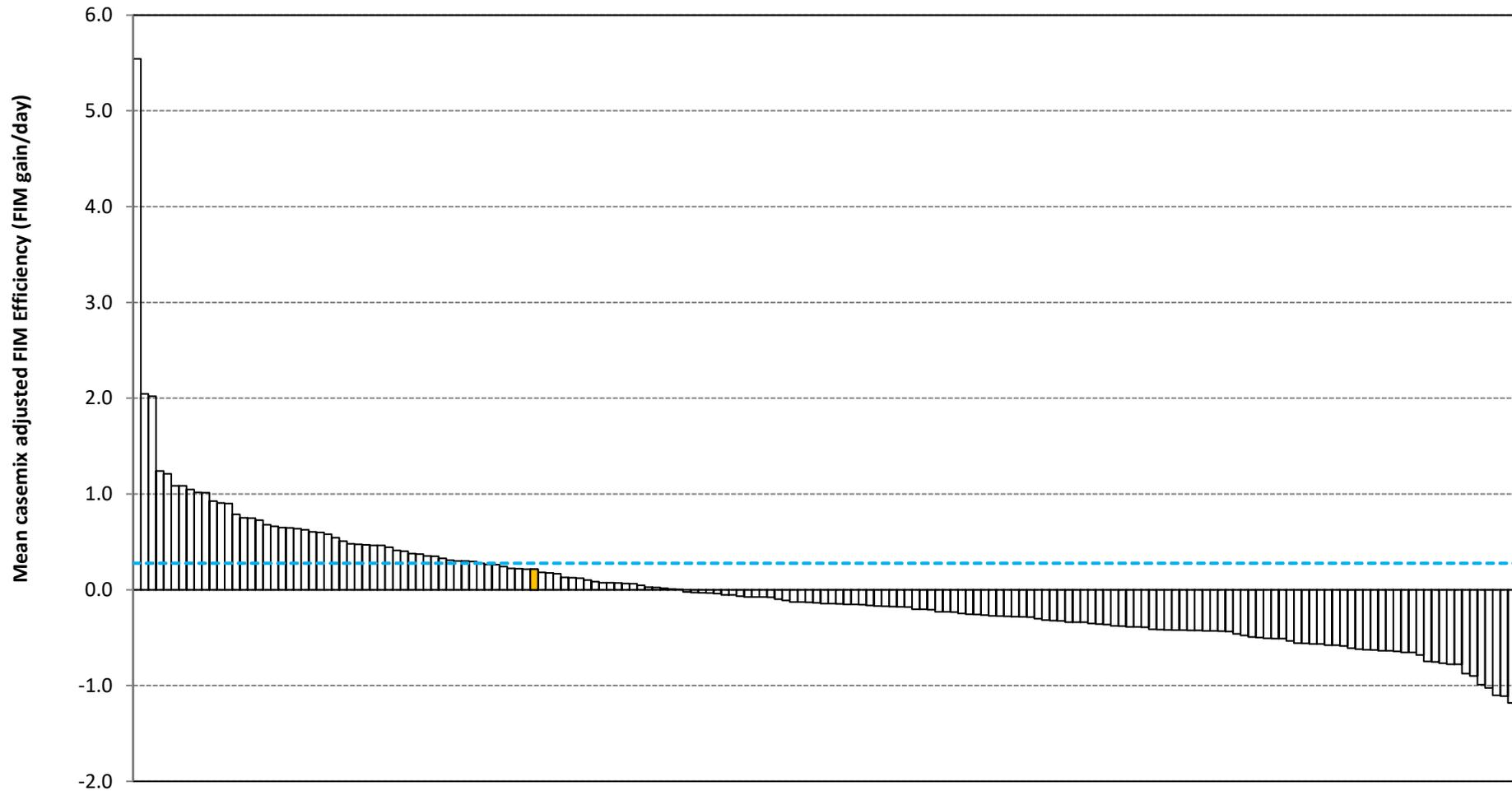
Data used in this section comprised of all episodes with AROC impairment codes:

- 8.211 (Unilateral hip replacement)
- 8.212 (Bilateral hip replacement)
- 8.221 (Unilateral knee replacement)
- 8.222 (Bilateral knee replacement)
- 8.231 (Knee and hip replacement, same side)
- 8.232 (Knee and hip replacement, different sides)
- 8.24 (Shoulder replacement)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4A21 (Orthopaedic conditions, all other (including replacements), weighted FIM motor 68-91)
- 4A22 (Orthopaedic conditions, all other (including replacements), weighted FIM motor 50-67)
- 4A23 (Orthopaedic conditions, all other (including replacements), weighted FIM motor 19-49)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

Orthopaedic Replacements: Casemix Adjusted Mean FIM Efficiency

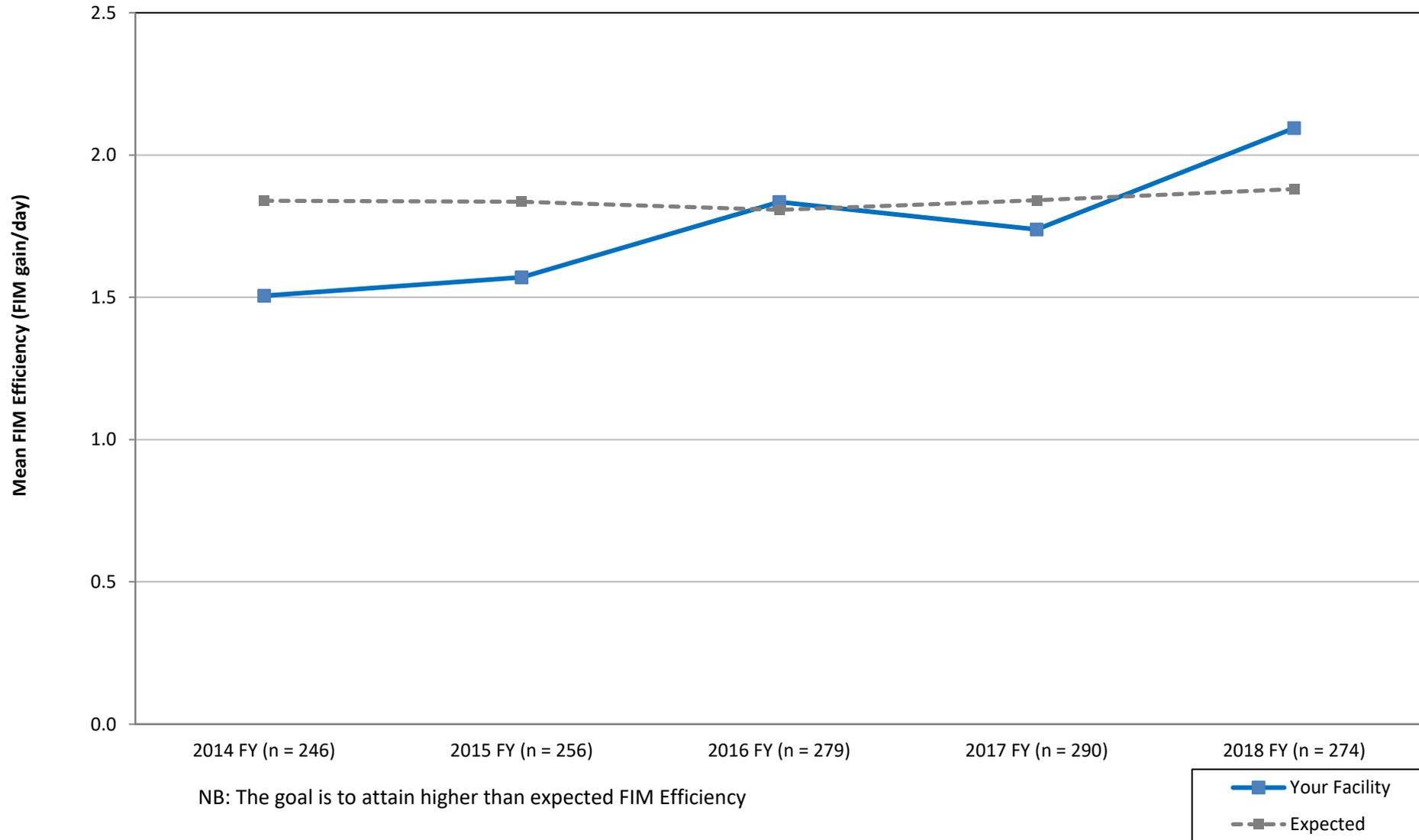


Mean Casemix Adjusted FIM Efficiency

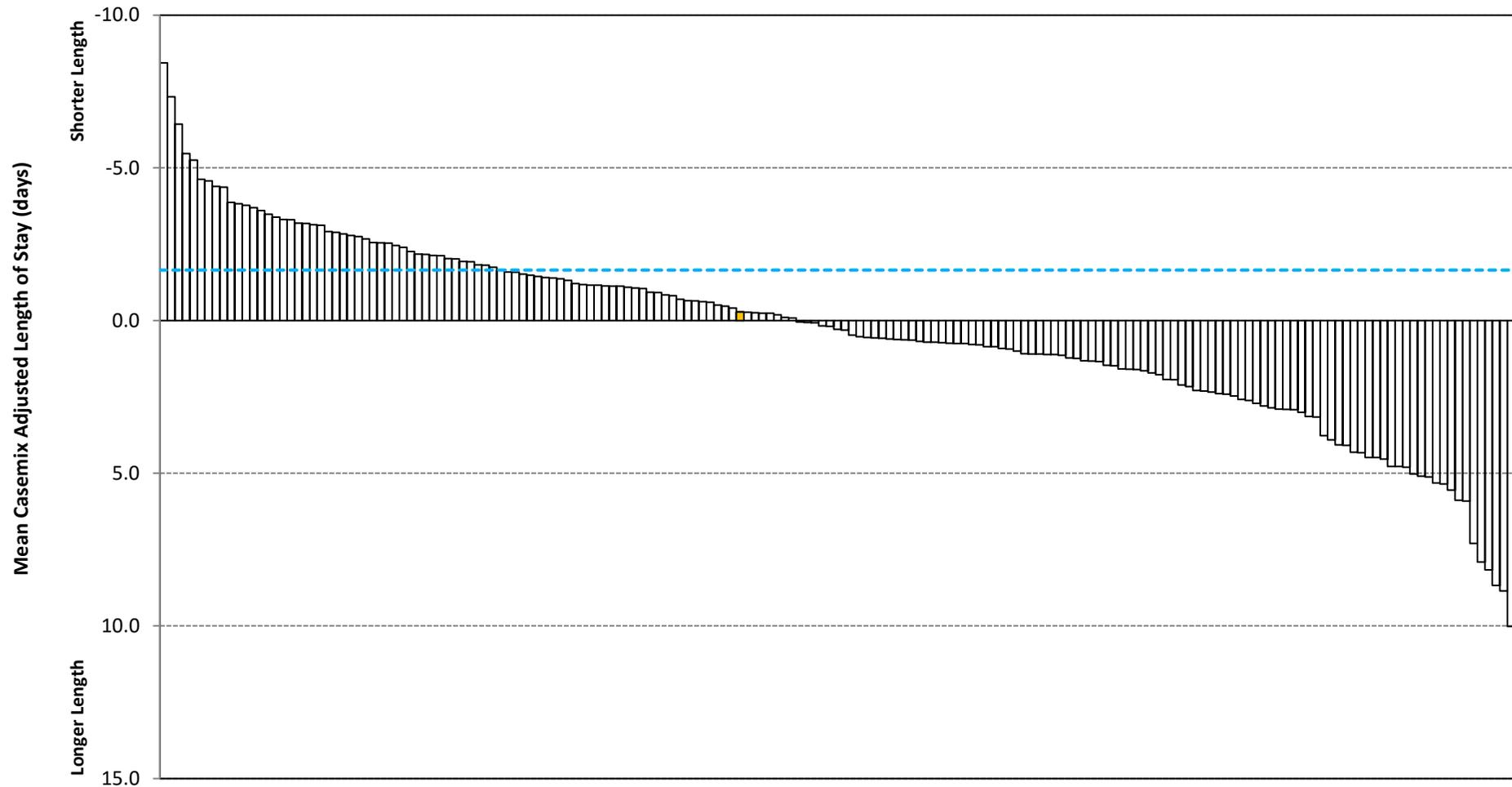
Your Facility (n = 274): **0.21** FIM gain/day (more efficient than average)
 25th Percentile: **0.28** FIM gain/day (more efficient than average)



Orthopaedic Replacements: Mean FIM Efficiency Over Time



Orthopaedic Replacements: Casemix Adjusted Mean Length of Stay

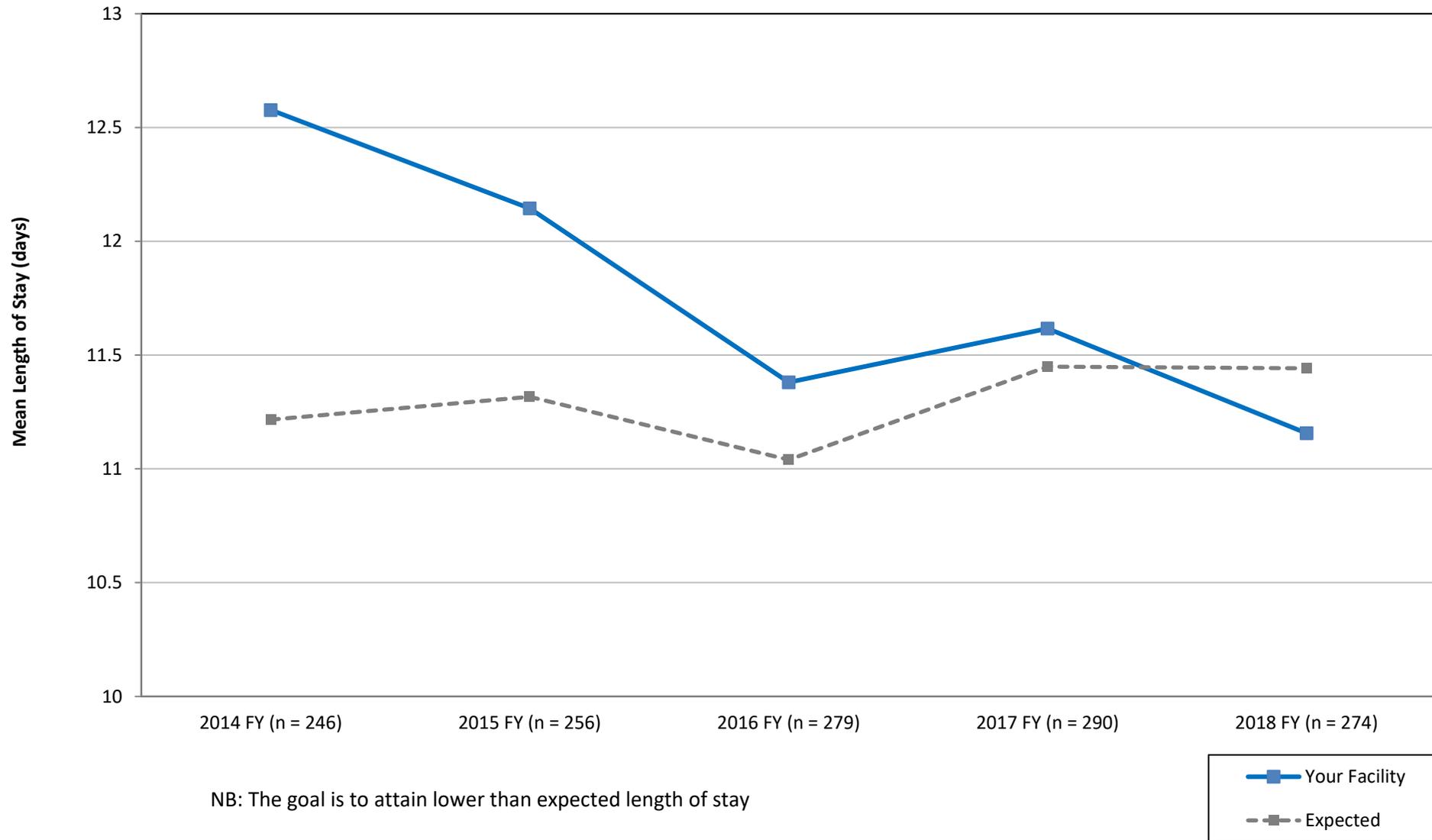


Casemix Adjusted Length of Stay

Your Facility (n = 274): **-0.29** days (shorter than average)
 25th Percentile: **-1.65** days (shorter than average)



Orthopaedic Replacements: Mean Length of Stay Over Time





Orthopaedic Surgery

Data inclusion criteria

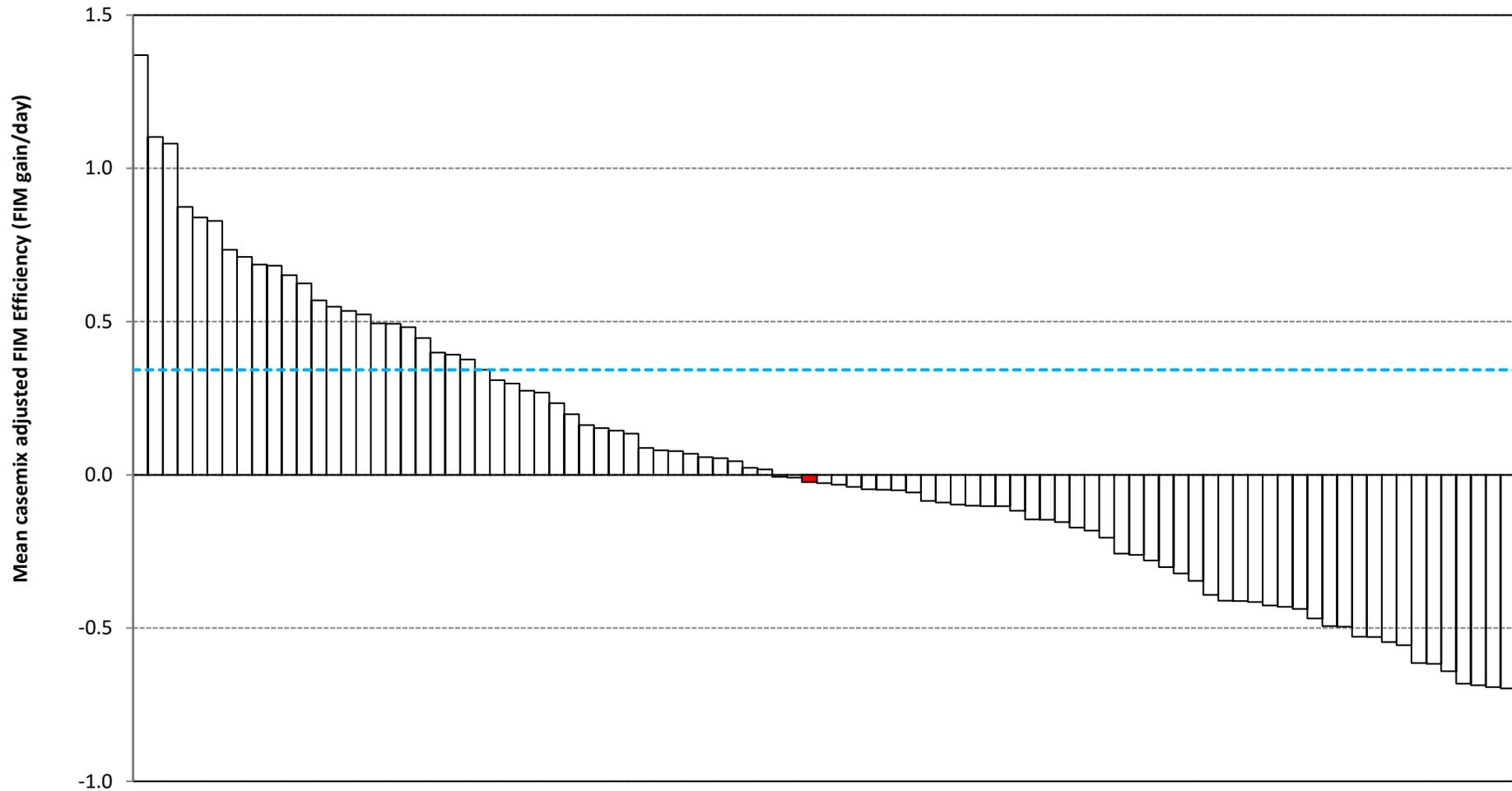
Data used in this section comprised of all episodes with AROC impairment codes:

- 8.25 (Post spinal surgery)
- 8.26 (Other orthopaedic surgery)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4A21 (Orthopaedic conditions, all other (including replacements), weighted FIM motor 68-91)
- 4A22 (Orthopaedic conditions, all other (including replacements), weighted FIM motor 50-67)
- 4A23 (Orthopaedic conditions, all other (including replacements), weighted FIM motor 19-49)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

Orthopaedic Surgery: Casemix Adjusted Mean FIM Efficiency

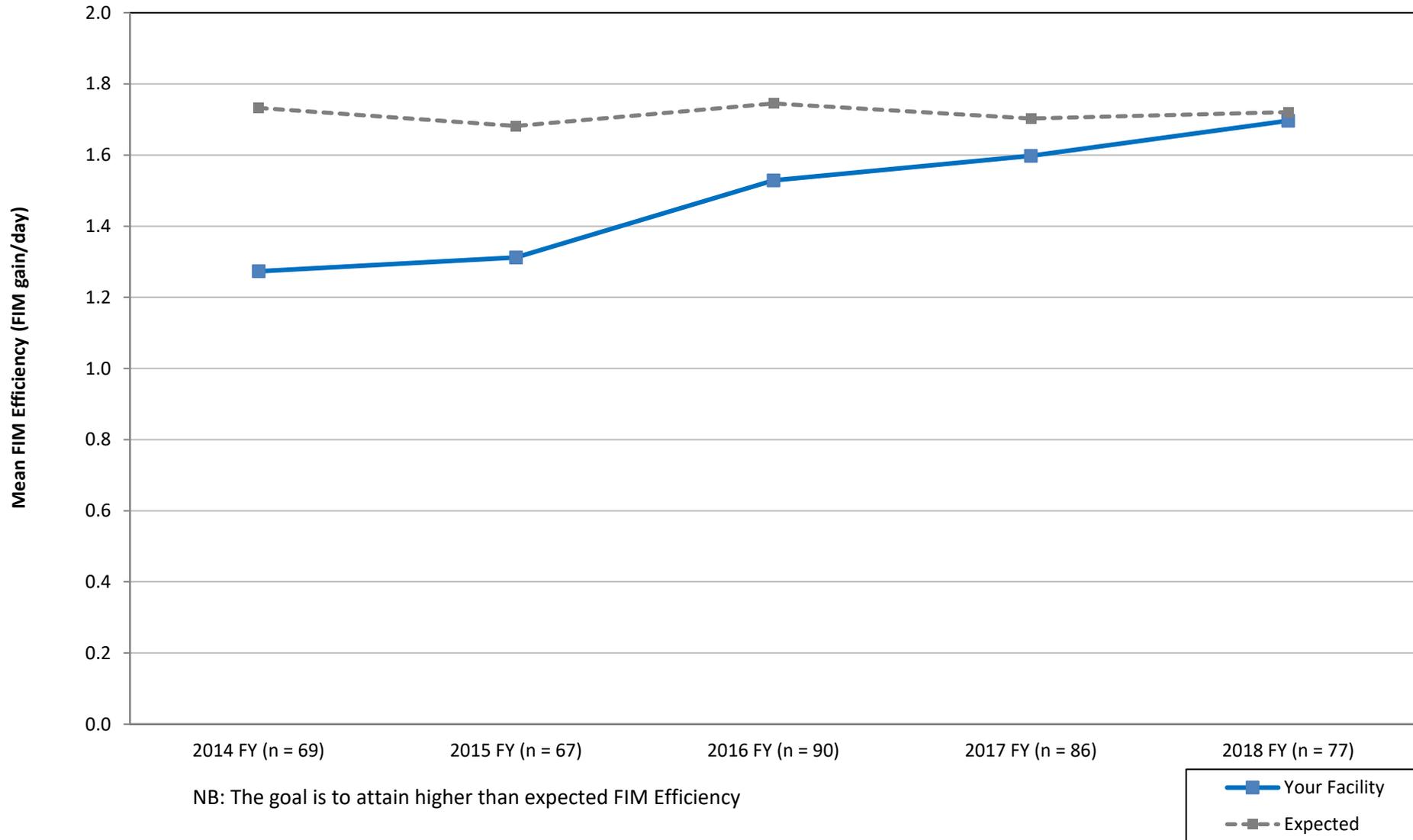


Mean Casemix Adjusted FIM Efficiency

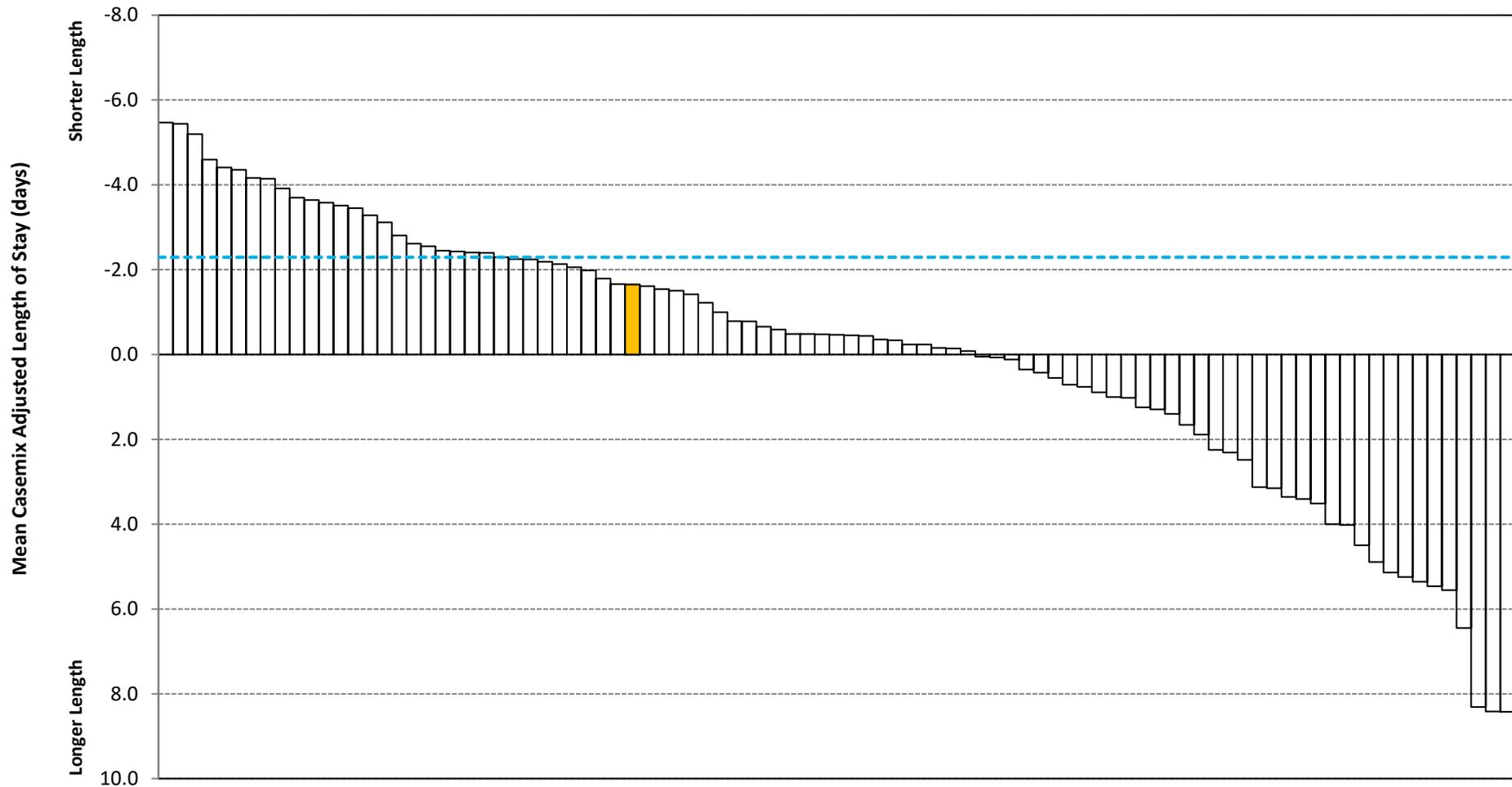
Your Facility (n = 77): **-0.02** FIM gain/day (same efficiency as average)
 25th Percentile: **0.34** FIM gain/day (more efficient than average)



Orthopaedic Surgery: Mean FIM Efficiency Over Time



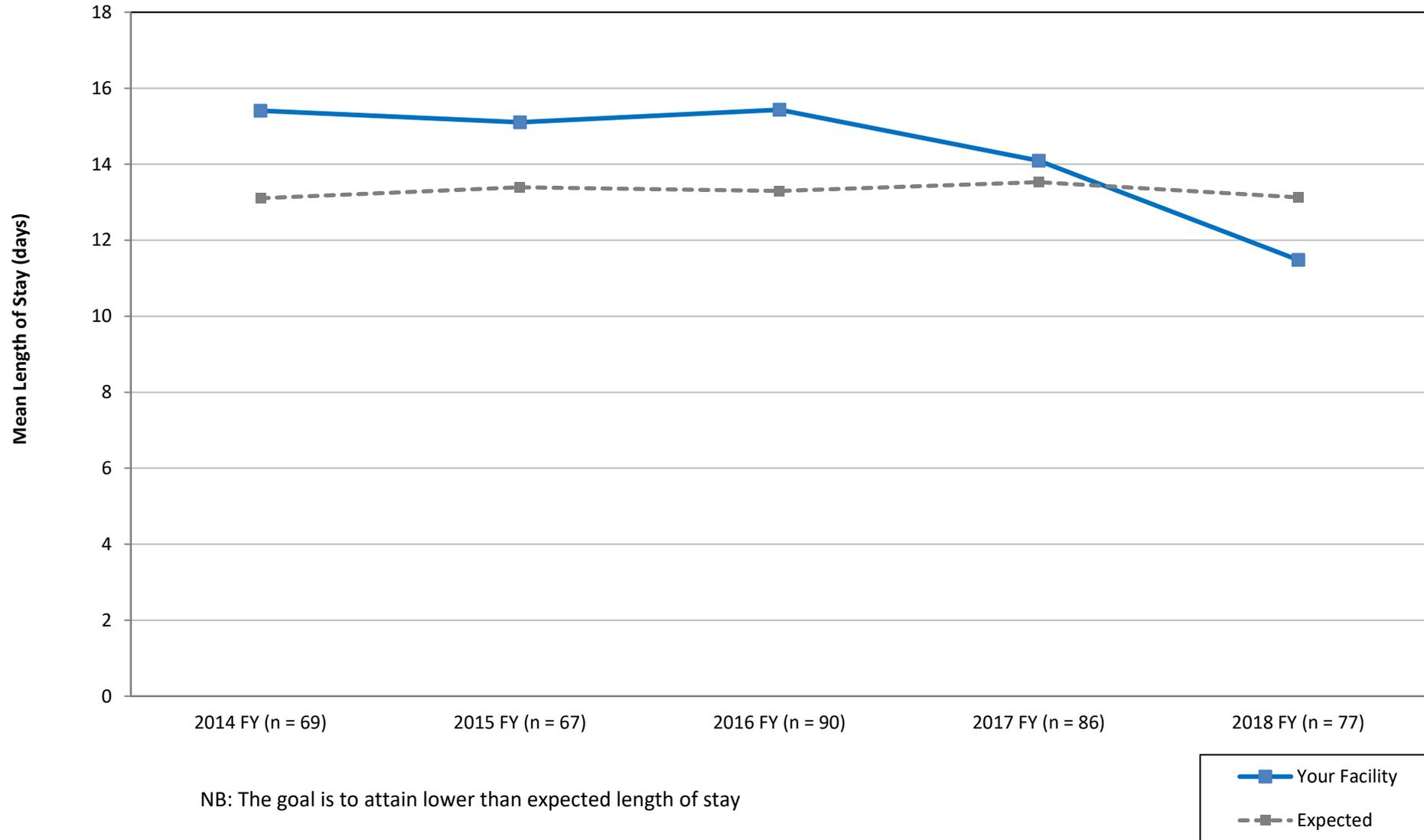
Orthopaedic Surgery: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 77): **-1.65** days (shorter than average)
 25th Percentile: **-2.29** days (shorter than average)

| | |
|---|-----------------|
|  | All Facilities |
|  | Your Facility |
|  | 25th Percentile |

Orthopaedic Surgery: Mean Length of Stay Over Time





Cardiac

Data inclusion criteria

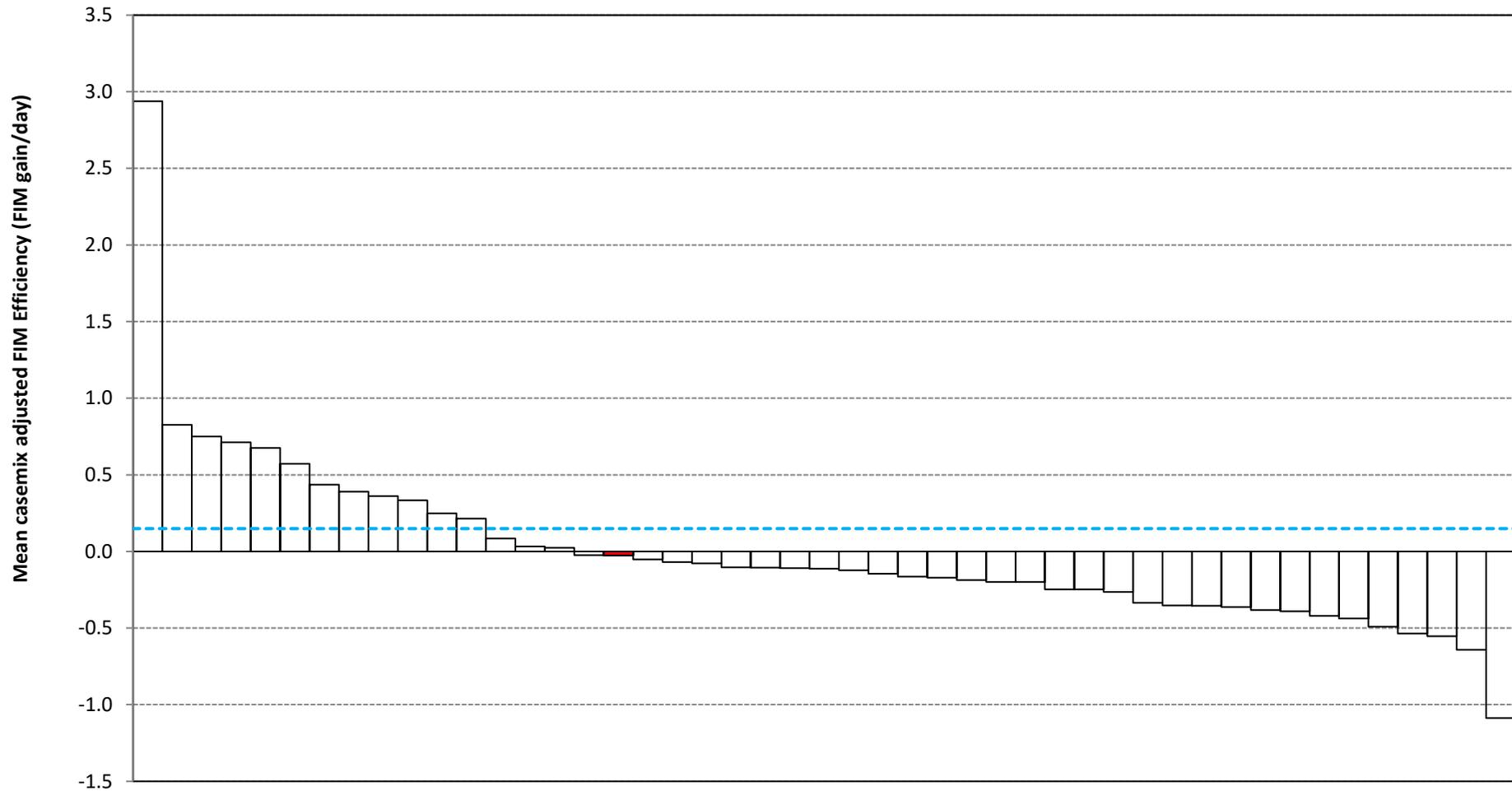
Data used in this section comprised of all episodes with AROC impairment codes:

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

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4A31 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72-91)
- 4A32 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55-71)
- 4A33 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34-54)
- 4A34 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19-33)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

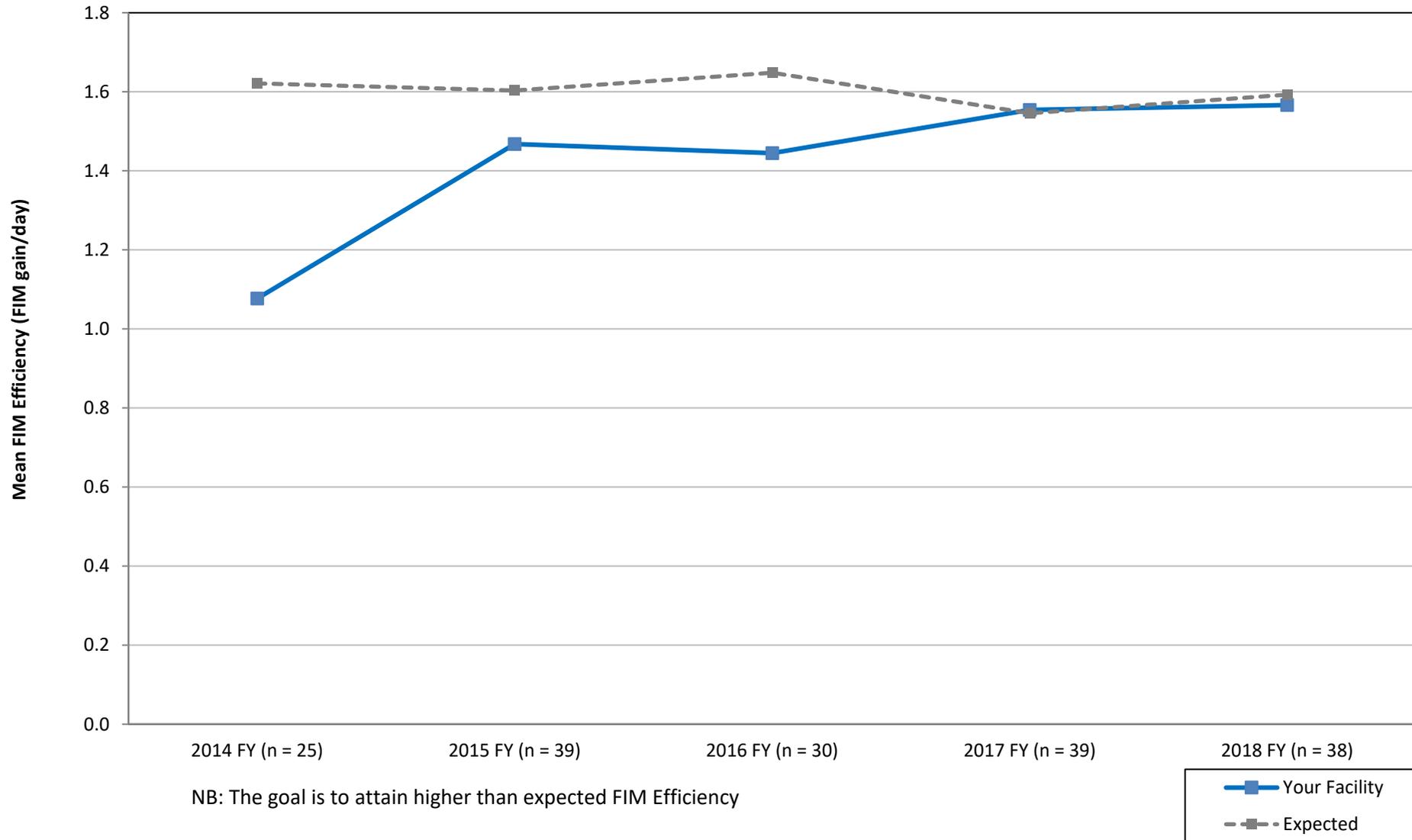
Cardiac: Casemix Adjusted Mean FIM Efficiency



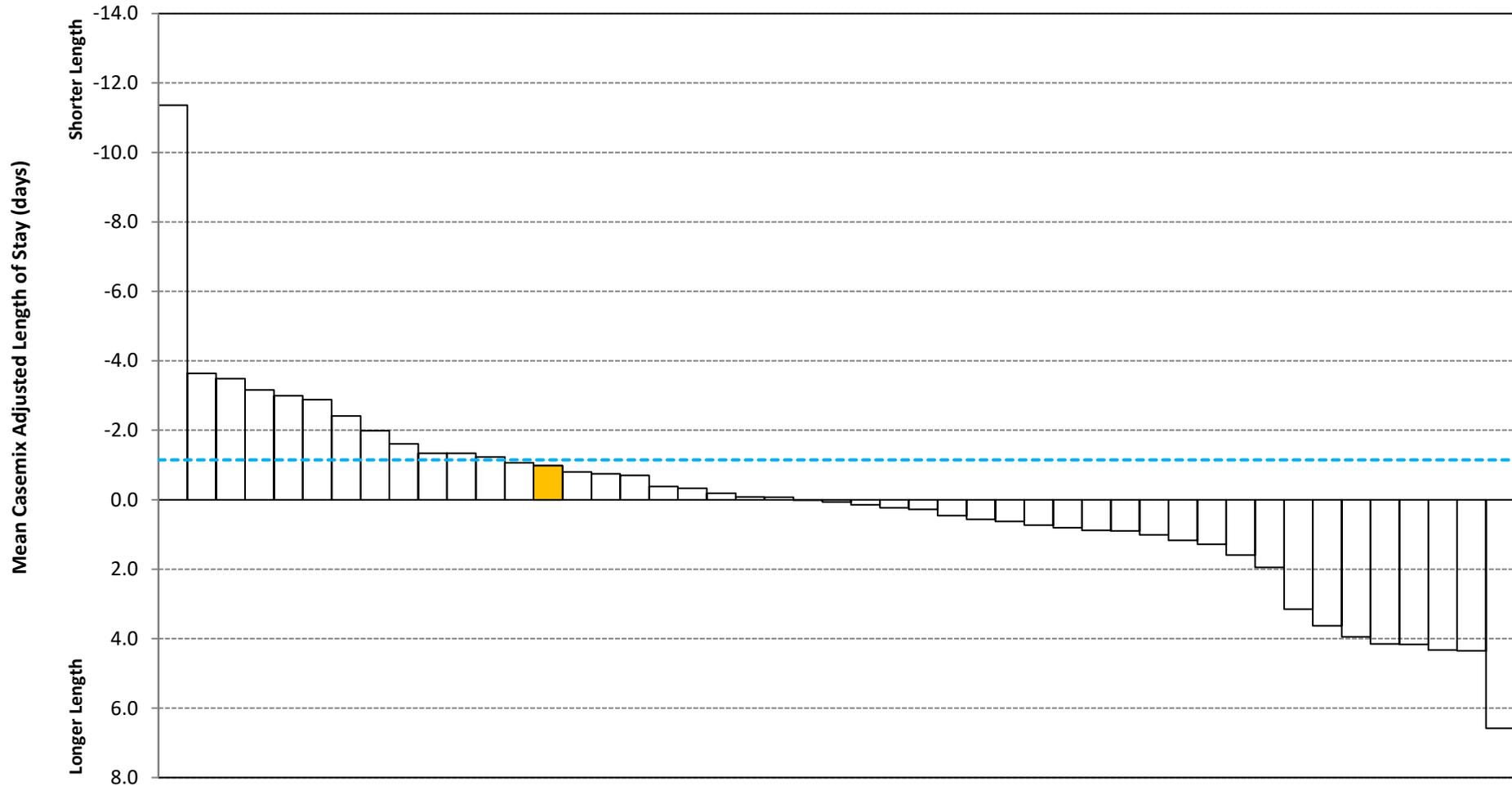
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 38): **-0.03** FIM gain/day (same efficiency as average)
 25th Percentile: **0.15** FIM gain/day (more efficient than average)



Cardiac: Mean FIM Efficiency Over Time



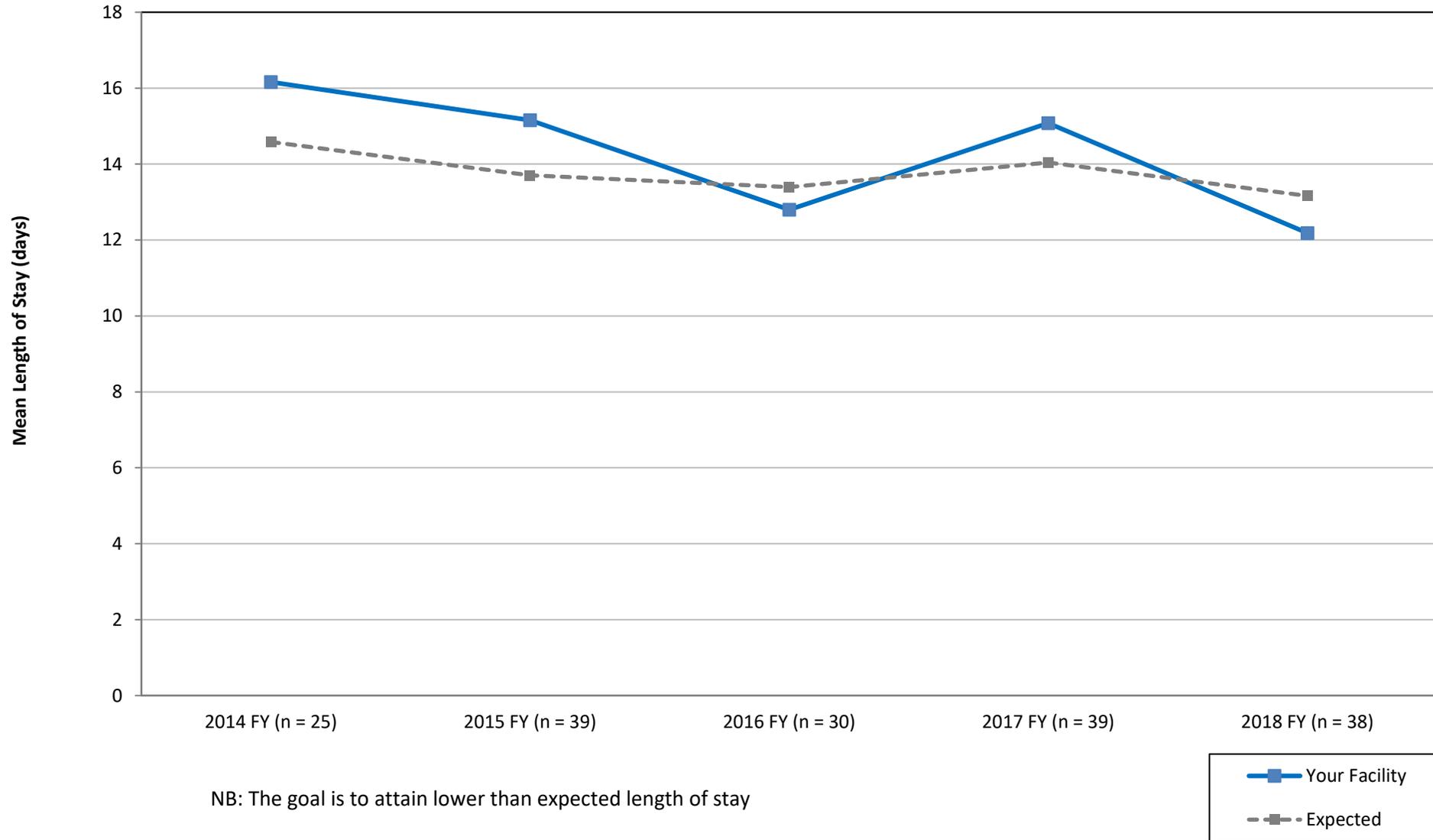
Cardiac: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 38): **-0.98** days (shorter than average)
 25th Percentile: **-1.15** days (shorter than average)



Cardiac: Mean Length of Stay Over Time





Pulmonary

Data inclusion criteria

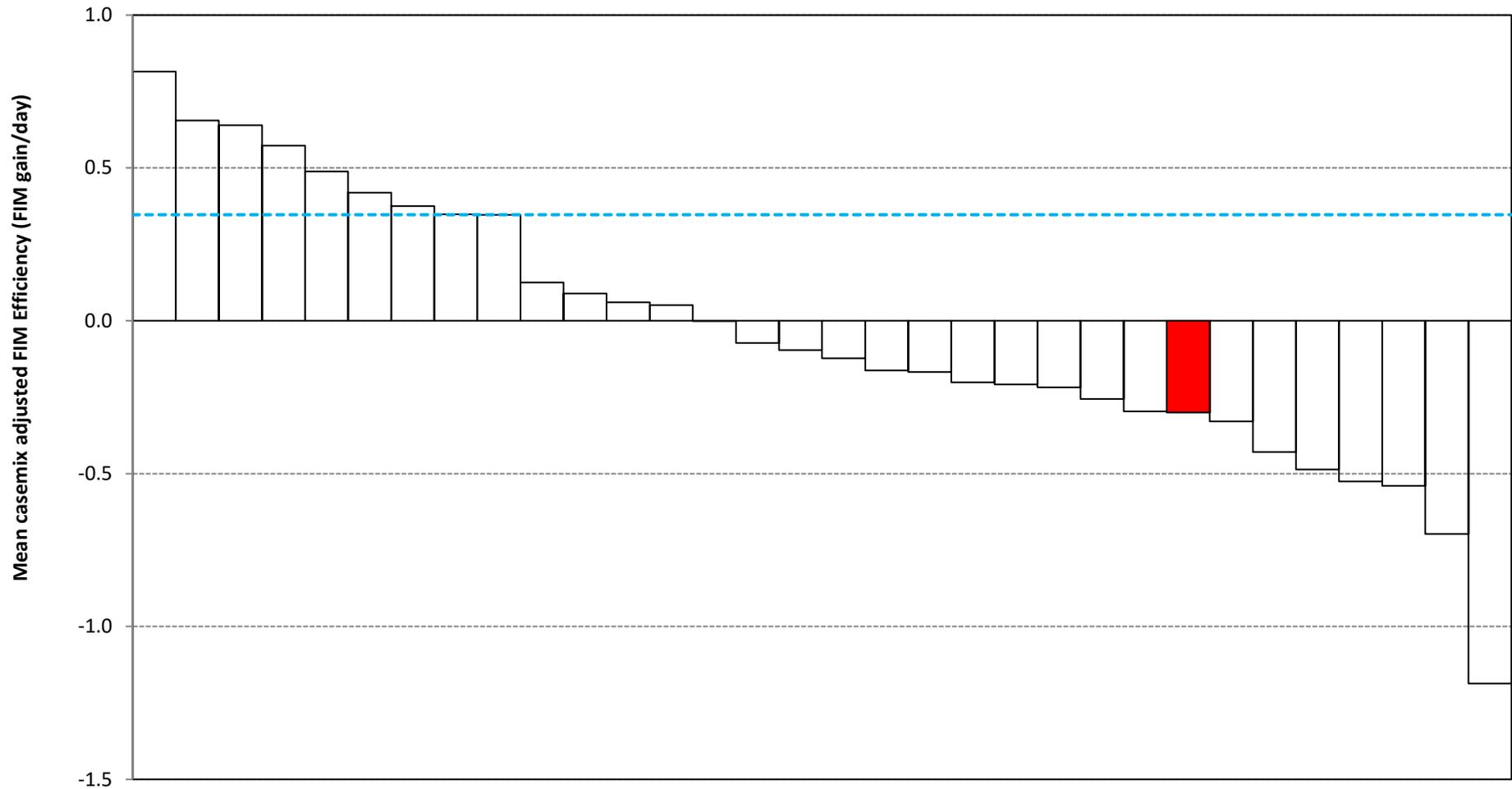
Data used in this section comprised of all episodes with AROC impairment codes:

- 10.1 (Chronic obstructive pulmonary)
- 10.2 (Lung transplant)
- 10.9 (Other pulmonary)

Levels of functioning are categorised by V4 AN-SNAP classes:

- 4A31 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72-91)
- 4A32 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55-71)
- 4A33 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34-54)
- 4A34 (Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19-33)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

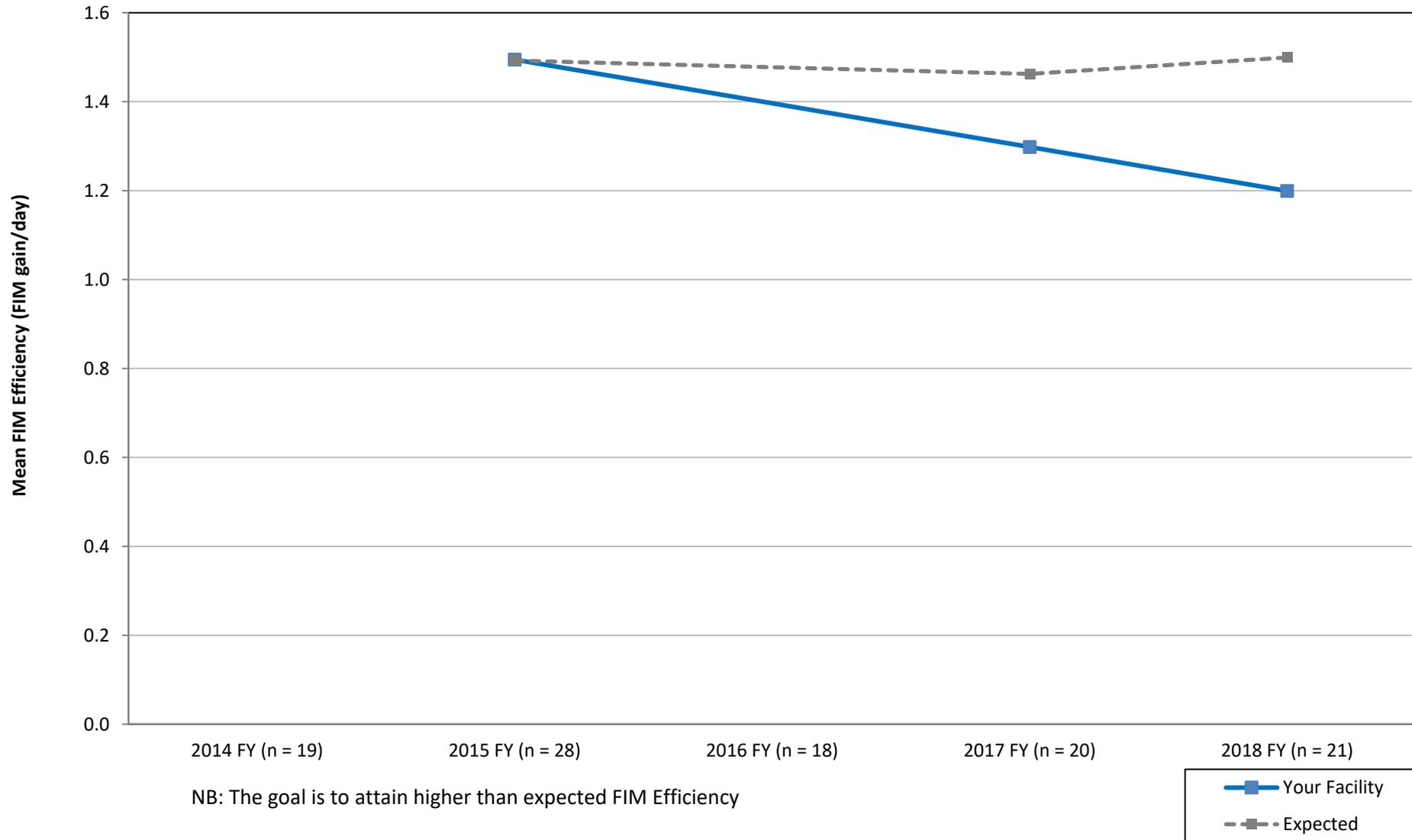
Pulmonary: Casemix Adjusted Mean FIM Efficiency



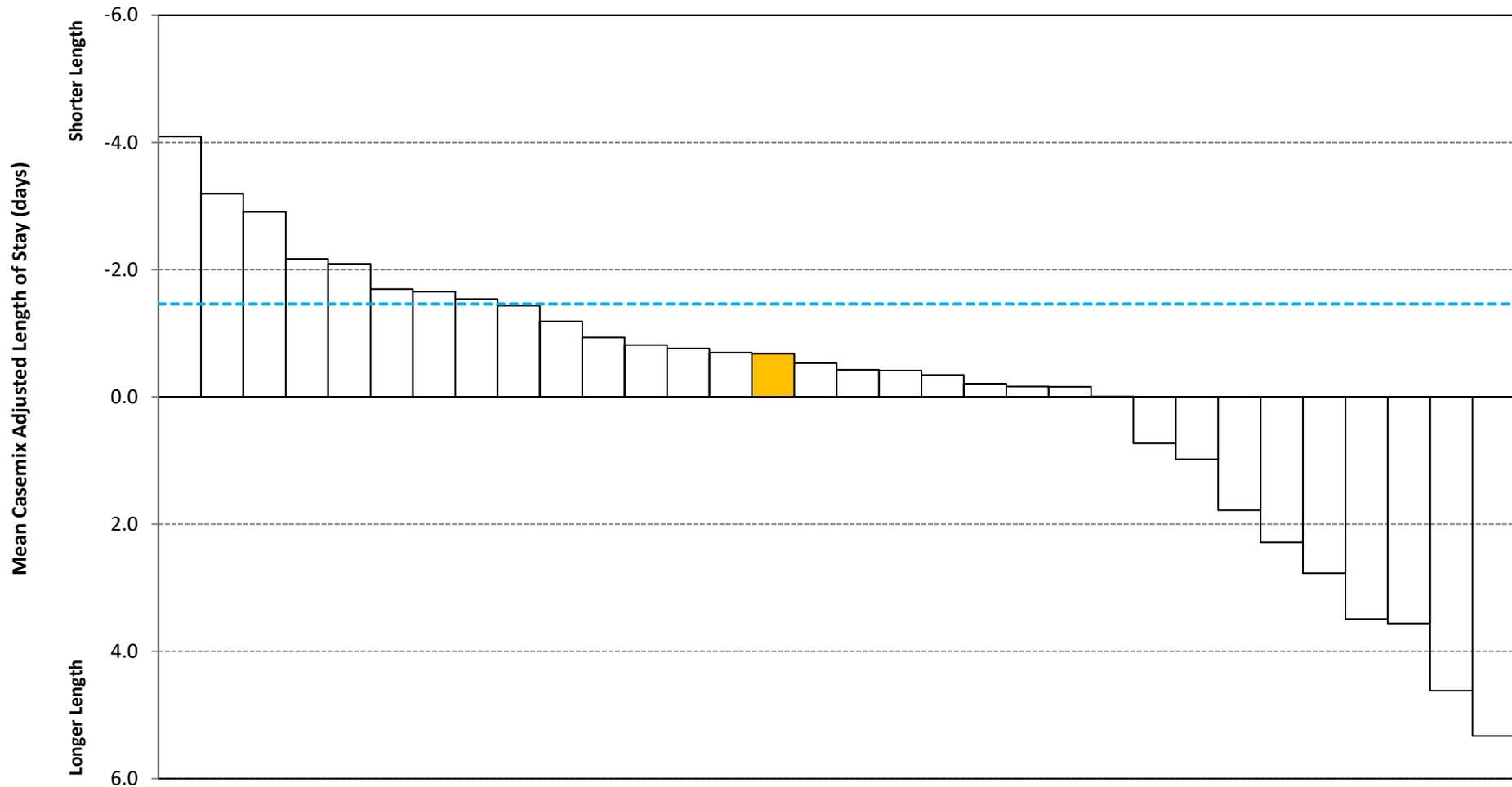
Mean Casemix Adjusted FIM Efficiency
 Your Facility (n = 21): **-0.30** FIM gain/day (less efficient than average)
 25th Percentile: **0.35** FIM gain/day (more efficient than average)

| | |
|---|-----------------|
|  | All Facilities |
|  | Your Facility |
|  | 25th Percentile |

Pulmonary: Mean FIM Efficiency Over Time



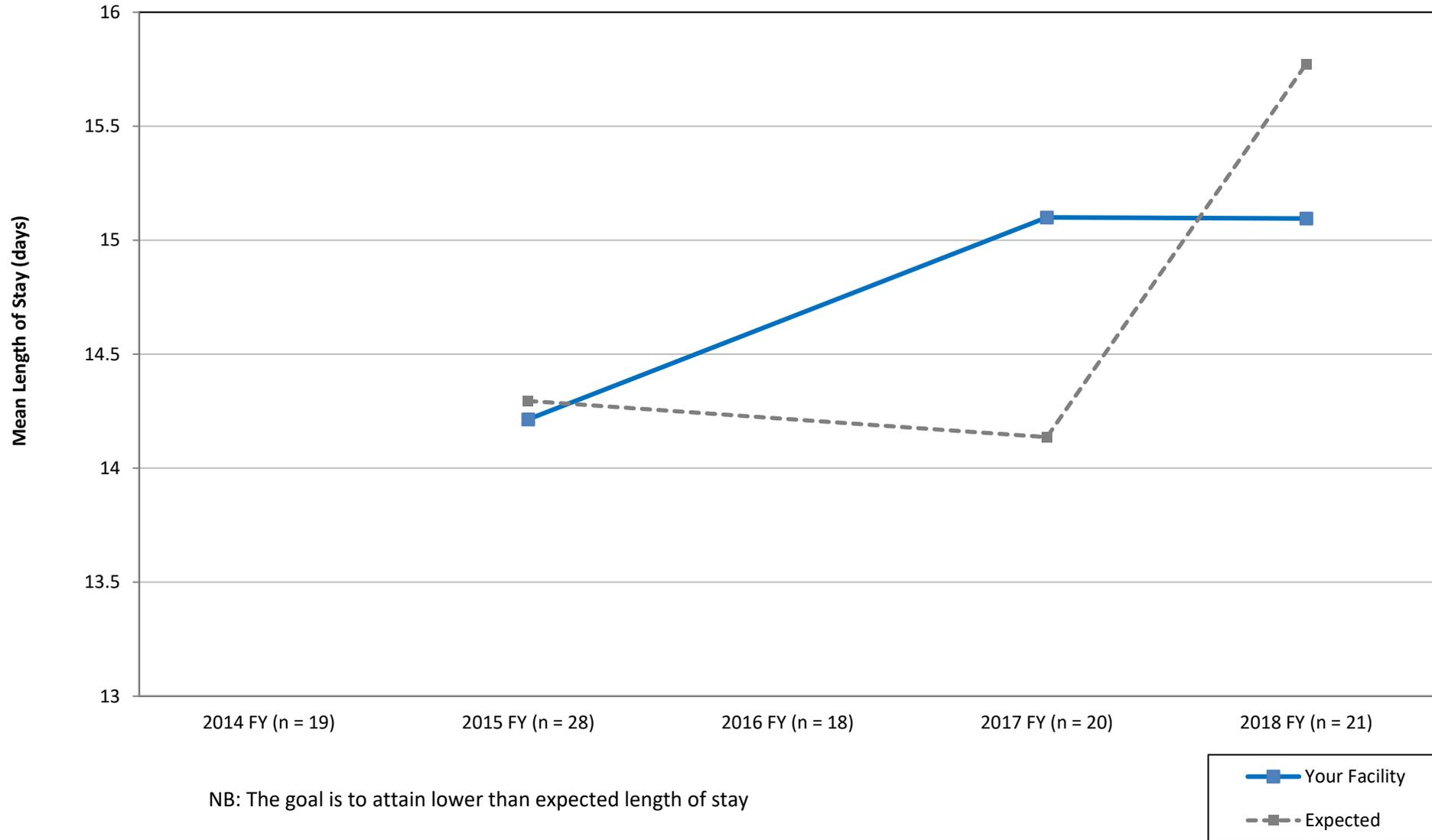
Pulmonary: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 21): **-0.68** days (shorter than average)
 25th Percentile: **-1.46** days (shorter than average)



Pulmonary: Mean Length of Stay Over Time





Reconditioning

Data inclusion criteria

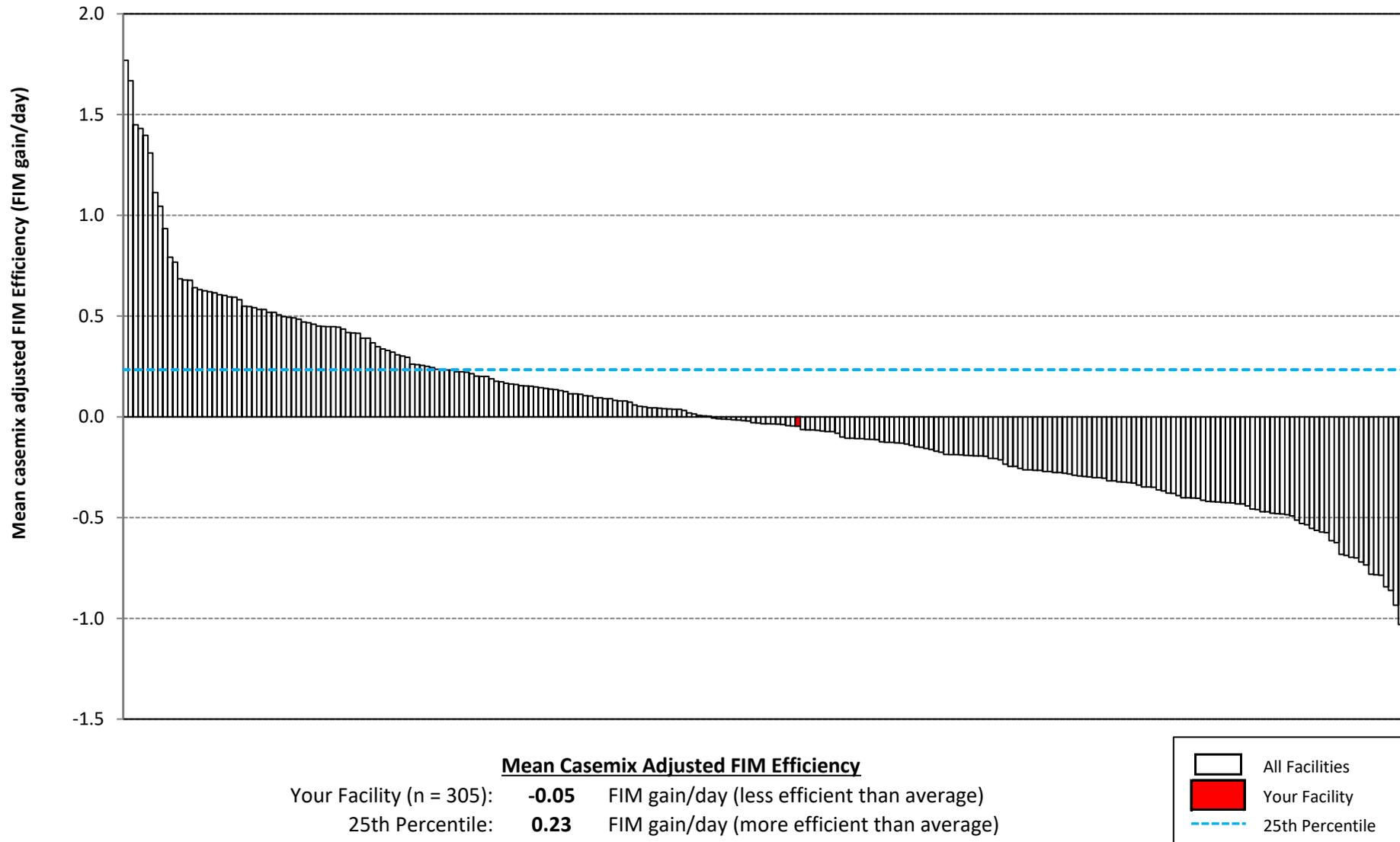
Data used in this section comprised of all episodes with AROC impairment codes:

- 16.1 (Reconditioning following surgery)
- 16.2 (Reconditioning following medical illness)
- 16.3 (Cancer rehabilitation)

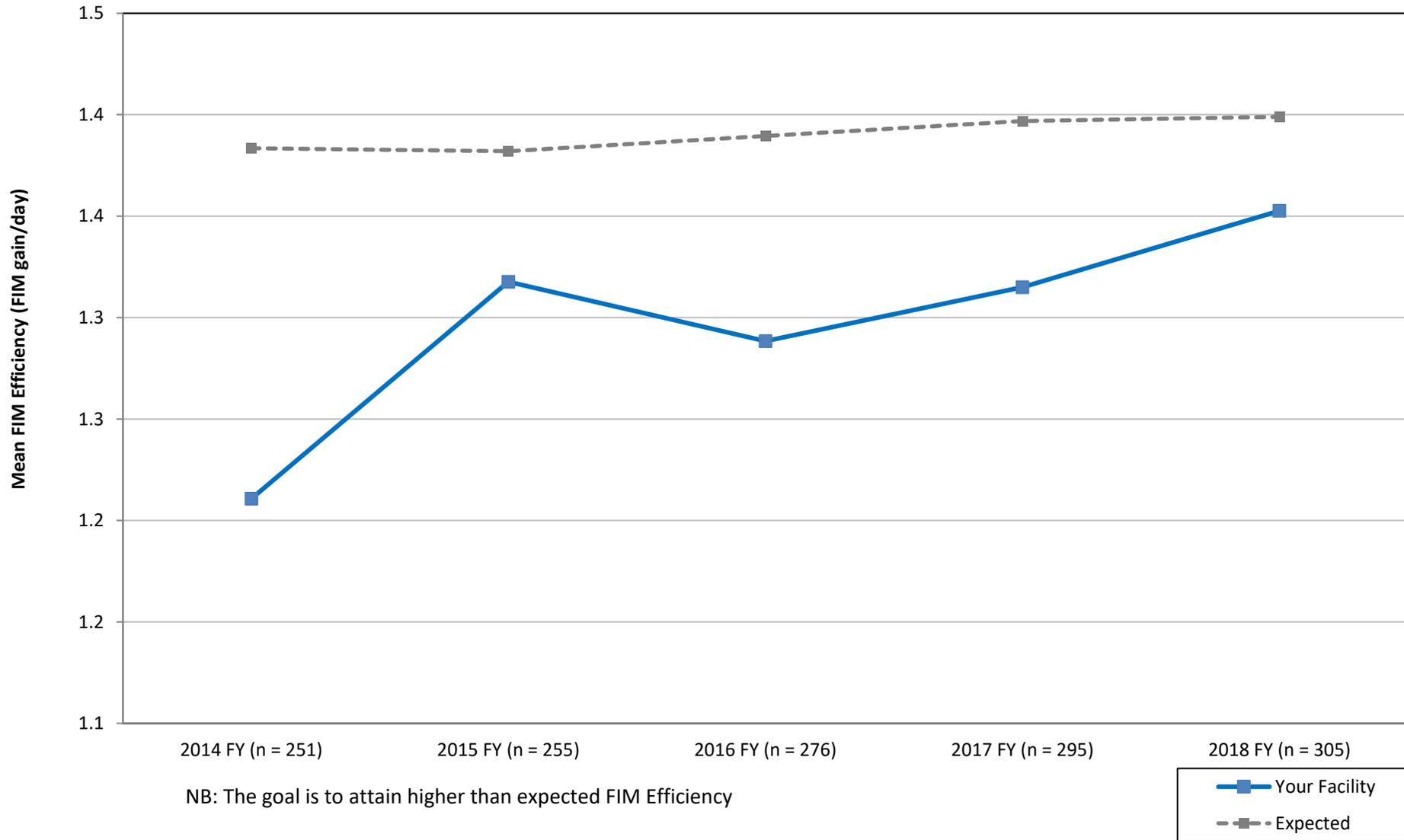
Levels of functioning are categorised by V4 AN-SNAP classes:

- 4AR1 (Reconditioning, weighted FIM motor 67-91)
- 4AR2 (Reconditioning, weighted FIM motor 50-66, FIM cognition 26-35)
- 4AR3 (Reconditioning, weighted FIM motor 50-66, FIM cognition 5-25)
- 4AR4 (Reconditioning, weighted FIM motor 34-49, FIM cognition 31-35)
- 4AR5 (Reconditioning, weighted FIM motor 34-49, FIM cognition 5-30)
- 4AR6 (Reconditioning, weighted FIM motor 19-33)
- 4AZ3 (Weighted FIM motor score 13-18, All other impairments, Age \geq 65)
- 4AZ4 (Weighted FIM motor score 13-18, All other impairments, Age \leq 64)

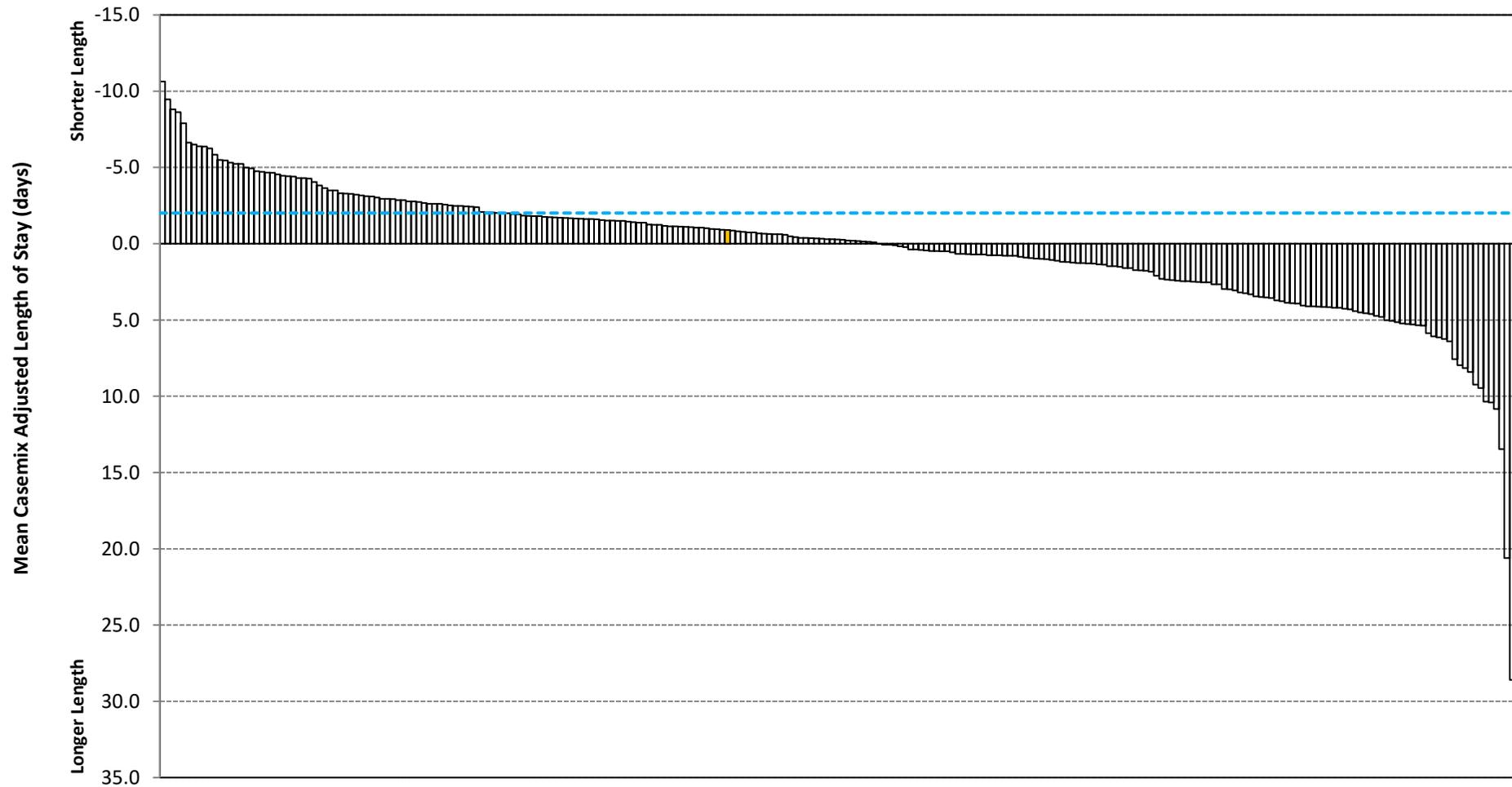
Reconditioning: Casemix Adjusted Mean FIM Efficiency



Reconditioning: Mean FIM Efficiency Over Time



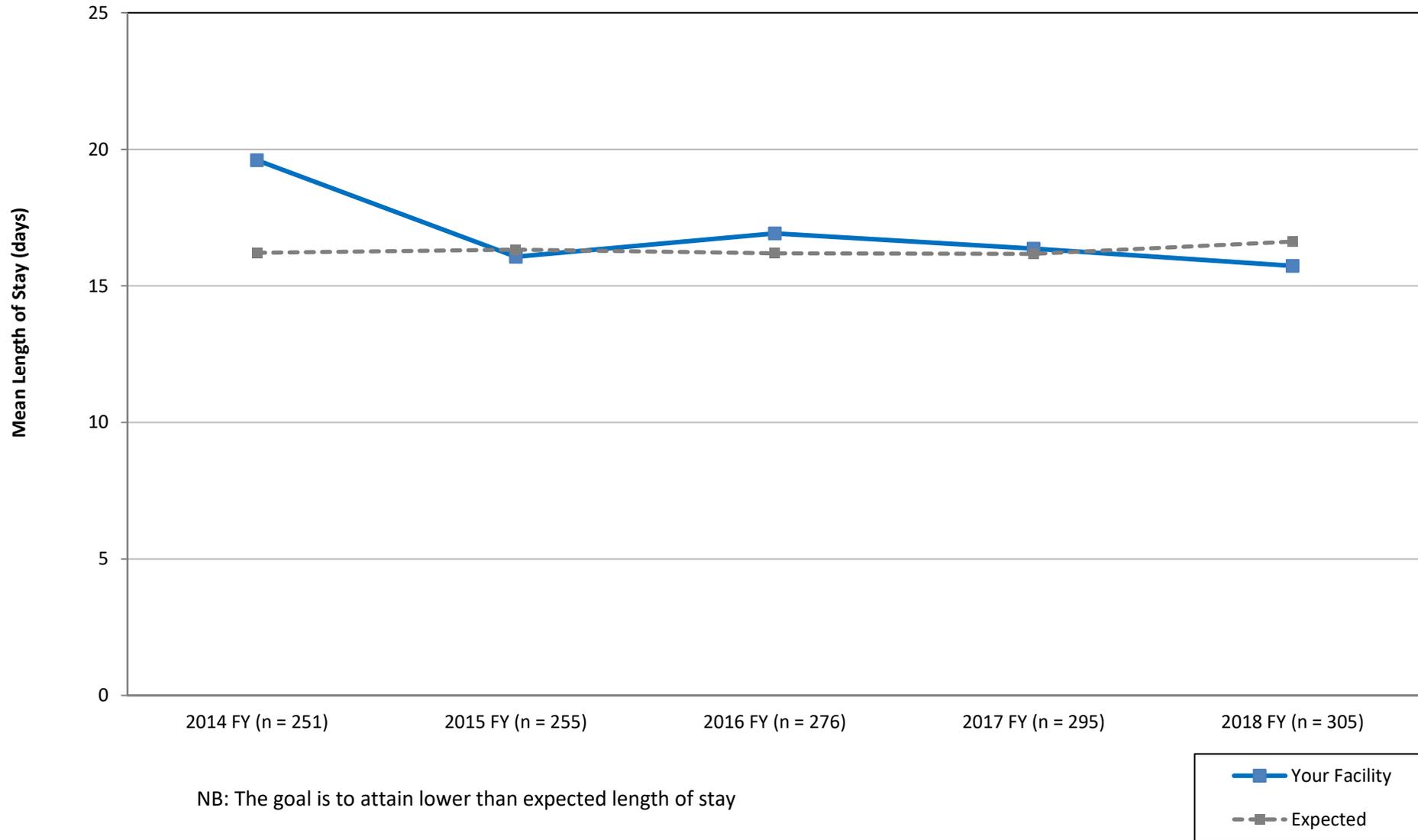
Reconditioning: Casemix Adjusted Mean Length of Stay



Casemix Adjusted Length of Stay
 Your Facility (n = 305): **-0.89** days (shorter than average)
 25th Percentile: **-2.01** days (shorter than average)



Reconditioning: Mean Length of Stay Over Time



Appendix 1: Glossary

AN-SNAP

The Australian National Sub-Acute and Non-Acute Patient Classification (AN-SNAP) is a casemix classification for sub-acute and non-acute care provided in a variety of treatment settings. Version 4, was released in July 2016, is used in these reports; refer to Appendix 3 for the full list of classes.

Change in FIM score

The change in functional status from the beginning to the end of the episode is measured by the change in FIM score. This is calculated as the FIM score at the end of the episode minus the FIM score at the start of the episode. In some instances the change in total FIM score (the sum of items 1 to 18) is calculated. In other cases either the change in FIM motor score (the sum of items 1 to 13) or the change in FIM cognition score (the sum of items 14 to 18) is calculated. A higher FIM score corresponds to higher level of function while a lower FIM score represents less functional independence. This means that a positive value for the change in FIM score indicates functional improvement of the client during the episode. A negative value for the change in FIM score indicates a decline in functional independence during the episode.

Complete/incomplete episode

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

Glossary ... continued

Data Concatenation

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

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

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

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

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

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



Glossary ... continued

FIM

The Functional Independence Measure (FIM) is used as a tool to assess the functional independence of patients at episode start and end. Details of the specific FIM instrument used in these reports can be found in “UDSmr Adult FIM Workshop – Participant Manual, Version 5.1 (Australia). Buffalo, NY 14214: State University of New York at Buffalo; 2008.”

Length of Stay

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

Version 4 data set

Version 4 (V4) of the AROC dataset was introduced on 1 July 2012. V4 is designed as a bank of data items, combinations of which are used to describe 6 possible pathways of care (see the AROC website for more information about the different pathways).

This report utilises only Pathway 3 data (inpatient direct care).

Appendix 2: AROC impairment codes

STROKE

Haemorrhagic

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

Ischaemic

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

BRAIN DYSFUNCTION

Non-traumatic

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

Traumatic

- 2.21 Open injury
- 2.22 Closed injury

NEUROLOGICAL CONDITIONS

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

SPINAL CORD DYSFUNCTION

Non-traumatic spinal cord dysfunction

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

Traumatic spinal cord dysfunction

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

AMPUTATION OF LIMB

Not resulting from trauma

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

Resulting from trauma

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

AROC impairment codes ... continued

ARTHRITIS

- 6.1 Rheumatoid arthritis
- 6.2 Osteoarthritis
- 6.9 Other arthritis

PAIN SYNDROMES

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

ORTHOPAEDIC CONDITIONS

Fractures (includes dislocations)

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

Post Orthopaedic Surgery

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

Soft Tissue Injury

- 8.3 Soft tissue injury

CARDIAC

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

PULMONARY

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

BURNS

- 11 Burns

CONGENITAL DEFORMITIES

- 12.1 Spina bifida
- 12.9 Other congenital deformity

OTHER DISABLING IMPAIRMENTS

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

MAJOR MULTIPLE TRAUMA

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

DEVELOPMENTAL DISABILITIES

- 15.1 Developmental disabilities (excludes cerebral palsy)

RE-CONDITIONING

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

Appendix 3: AN-SNAP Version 4

Episode Type: Admitted Adult Rehabilitation

| Class | Description |
|-------|---|
| 4AZ1 | Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≥ 49 |
| 4AZ2 | Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≤ 48 |
| 4AZ3 | Weighted FIM motor score 13-18, All other impairments, Age ≥ 65 |
| 4AZ4 | Weighted FIM motor score 13-18, All other impairments, Age ≤ 64 |
| 4AA1 | Stroke, weighted FIM motor 51-91, FIM cog 29-35 |
| 4AA2 | Stroke, weighted FIM motor 51-91, FIM cog 19-28 |
| 4AA3 | Stroke, weighted FIM motor 51-91, FIM cog 5-18 |
| 4AA4 | Stroke, weighted FIM motor 36-50, Age ≥ 68 |
| 4AA5 | Stroke, weighted FIM motor 36-50, Age ≤ 67 |
| 4AA6 | Stroke, weighted FIM motor 19-35, Age ≥ 68 |
| 4AA7 | Stroke, weighted FIM motor 19-35, Age ≤ 67 |
| 4AB1 | Brain dysfunction, weighted FIM motor 71-91, FIM cog 26-35 |
| 4AB2 | Brain dysfunction, weighted FIM motor 71-91, FIM cog 5-25 |
| 4AB3 | Brain dysfunction, weighted FIM motor 41-70, FIM cog 26-35 |
| 4AB4 | Brain dysfunction, weighted FIM motor 41-70, FIM cog 17-25 |
| 4AB5 | Brain dysfunction, weighted FIM motor 41-70, FIM cog 17-25 |
| 4AB6 | Brain dysfunction, weighted FIM motor 29-40 |
| 4AB7 | Brain dysfunction, weighted FIM motor 19-28 |
| 4AC1 | Neurological conditions, weighted FIM motor 62-91 |
| 4AC2 | Neurological conditions, weighted FIM motor 43-61 |
| 4AC3 | Neurological conditions, weighted FIM motor 19-42 |
| 4AD1 | Spinal cord dysfunction, Age ≥ 50, weighted FIM motor 42-91 |
| 4AD2 | Spinal cord dysfunction, Age ≥ 50, weighted FIM motor 19-41 |
| 4AD3 | Spinal cord dysfunction, Age ≤ 49, weighted FIM motor 34-91 |
| 4AD4 | Spinal cord dysfunction, Age ≤ 49, weighted FIM motor 19-33 |
| 4AE1 | Amputation of limb, Age ≥ 54, weighted FIM motor 68-91 |

| Class | Description |
|-------|--|
| 4AE2 | Amputation of limb, Age ≥ 54, weighted FIM motor 31-67 |
| 4AE3 | Amputation of limb, Age ≥ 54, weighted FIM motor 19-30 |
| 4AE4 | Amputation of limb, Age ≤ 53, weighted FIM motor 19-91 |
| 4AH1 | Orthopaedic fractures, weighted FIM motor 49-91, FIM cog 33-35 |
| 4AH2 | Orthopaedic fractures, weighted FIM motor 49-91, FIM cog 5-32 |
| 4AH3 | Orthopaedic fractures, weighted FIM motor 38-48 |
| 4AH4 | Orthopaedic fractures, weighted FIM motor 19-37 |
| 4A21 | Orthopaedic all other (including replacements), weighted FIM motor 68-91 |
| 4A22 | Orthopaedic all other (including replacements), weighted FIM motor 50-67 |
| 4A23 | Orthopaedic all other (including replacements), weighted FIM motor 19-49 |
| 4A31 | Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72-91 |
| 4A32 | Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55-71 |
| 4A33 | Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34-54 |
| 4A34 | Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19-33 |
| 4AP1 | Major Multiple Trauma, weighted FIM motor 19-91 |
| 4AR1 | Reconditioning, weighted FIM motor 67-91 |
| 4AR2 | Reconditioning, weighted FIM motor 50-66, FIM cog 26-35 |
| 4AR3 | Reconditioning, weighted FIM motor 50-66, FIM cog 5-25 |
| 4AR4 | Reconditioning, weighted FIM motor 34-49, FIM cog 31-35 |
| 4AR5 | Reconditioning, weighted FIM motor 34-49, FIM cog 5-30 |
| 4AR6 | Reconditioning, weighted FIM motor 19-33 |
| 4A91 | All other impairments, weighted FIM motor 55-91 |
| 4A92 | All other impairments, weighted FIM motor 33-54 |
| 4A93 | All other impairments, weighted FIM motor 19-32 |
| 4J01 | Adult Same-Day Rehabilitation |
| 499A | Adult Overnight Rehabilitation - Ungroupable |

Appendix 4: Casemix Adjustments

| Class | Casemix Split | Class | Casemix Split |
|-------|--|-------|---|
| 4AZ1 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4AE2 | AN-SNAP V4 class, Country |
| 4AZ2 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4AE3 | AN-SNAP V4 class, Country |
| 4AZ3 | AN-SNAP V4 class, Country | 4AE4 | AN-SNAP V4 class, Country |
| 4AZ4 | AN-SNAP V4 class, Country | 4AH1 | AN-SNAP V4 class, Country |
| 4AA1 | AN-SNAP V4 class, Country | 4AH2 | AN-SNAP V4 class, Country |
| 4AA2 | AN-SNAP V4 class, Country | 4AH3 | AN-SNAP V4 class, Country |
| 4AA3 | AN-SNAP V4 class, Country | 4AH4 | AN-SNAP V4 class, Country |
| 4AA4 | AN-SNAP V4 class, Country | 4A21 | AN-SNAP V4 class, Country, impairment group (repl, STI, other)# |
| 4AA5 | AN-SNAP V4 class, Country | 4A22 | AN-SNAP V4 class, Country, impairment group (repl, STI, other)# |
| 4AA6 | AN-SNAP V4 class, Country | 4A23 | AN-SNAP V4 class, Country, impairment group (repl, STI, other)# |
| 4AA7 | AN-SNAP V4 class, Country | 4A31 | AN-SNAP V4 class, Country, impairment group (pain, cardiac, pulmonary)# |
| 4AB1 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4A32 | AN-SNAP V4 class, Country, impairment group (pain, cardiac, pulmonary)# |
| 4AB2 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4A33 | AN-SNAP V4 class, Country, impairment group (pain, cardiac, pulmonary)# |
| 4AB3 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4A34 | AN-SNAP V4 class, Country, impairment group (pain, cardiac, pulmonary)# |
| 4AB4 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4AP1 | AN-SNAP V4 class (restricted to specialist unit first admissions)** |
| 4AB5 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4AR1 | AN-SNAP V4 class, Country |
| 4AB6 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4AR2 | AN-SNAP V4 class, Country |
| 4AB7 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4AR3 | AN-SNAP V4 class, Country |
| 4AC1 | AN-SNAP V4 class, Country | 4AR4 | AN-SNAP V4 class, Country |
| 4AC2 | AN-SNAP V4 class, Country | 4AR5 | AN-SNAP V4 class, Country |
| 4AC3 | AN-SNAP V4 class, Country | 4AR6 | AN-SNAP V4 class, Country |
| 4AD1 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4A91 | AN-SNAP V4 class, Country |
| 4AD2 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4A92 | AN-SNAP V4 class, Country |
| 4AD3 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4A93 | AN-SNAP V4 class, Country |
| 4AD4 | AN-SNAP V4 class (restricted to specialist unit first admissions)* | 4J01 | Not calculated |
| 4AE1 | AN-SNAP V4 class, Country | 499A | Not calculated |

* As of FY2017 all brain and spine benchmarks are also being split by traumatic/non traumatic

** MMT 14.1 (brain and spine) benchmarked against spine, MMT 14.9 benchmarked against AN-SNAP V4 class and country

Impairment group split is only for Australian facilities due to small N in NZ



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Disclaimer

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

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