



# **AROC Outcome Benchmarks Report Inpatient - Pathway 3**

Anywhere Hospital

January 2016 - December 2016



# Summary of Outcome Benchmarks

Impairment	Completed Episodes	Achieved Top 25th Percentile		Page
		FIM Efficiency	Length of Stay	
Stroke	85	✗	✓	9
Brain Dysfunction	31	✗	✓✓	15
Neurological Conditions	30	✓✓	✓	21
Spinal Cord Dysfunction	104	✗	✓✓	27
Amputation of Limb	12			
Arthritis	5			
Pain Syndromes	46	✓✓	✓	33
Orthopaedic Fractures	195	✓	✗	39
Orthopaedic Replacements	304	✓	✓	45
Other Orthopaedic Surgery	82	✓✓	✗	51
Soft Tissue Injury	12			
Cardiac	33	✗	✓	57
Pulmonary	21	✗	✓	63
Burns	0			
Congenital Deformities	0			
Other Disabling Impairments	13			
Other Major Multiple Trauma	5			
Developmental Disabilities	0			
Reconditioning	289	✓	✓	69

Your facility achieved a top 25th percentile result ( ✓✓ ) for  
**5** out of **22 (22.7%)**  
 eligible performance measures

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



# Table of Contents

Summary of Outcome Benchmarks.....	2
Introduction to the Outcome Benchmarks Report.....	4
Stroke.....	9
Brain Dysfunction.....	15
Neurological Conditions.....	21
Spinal Cord Dysfunction.....	27
Pain Syndromes.....	33
Orthopaedic Fractures.....	39
Orthopaedic Replacements.....	45
Orthopaedic Surgery.....	51
Cardiac.....	57
Pulmonary.....	63
Reconditioning.....	69
Appendix 1: Glossary.....	75
Appendix 2: AROC Impairment Codes.....	78
Appendix 3: AN-SNAP Version 4.....	80
Appendix 4: Casemix Adjustments.....	81
Acknowledgements.....	82



# 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 calendar year 2016 (1 January 2016 to 31 December 2016 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

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

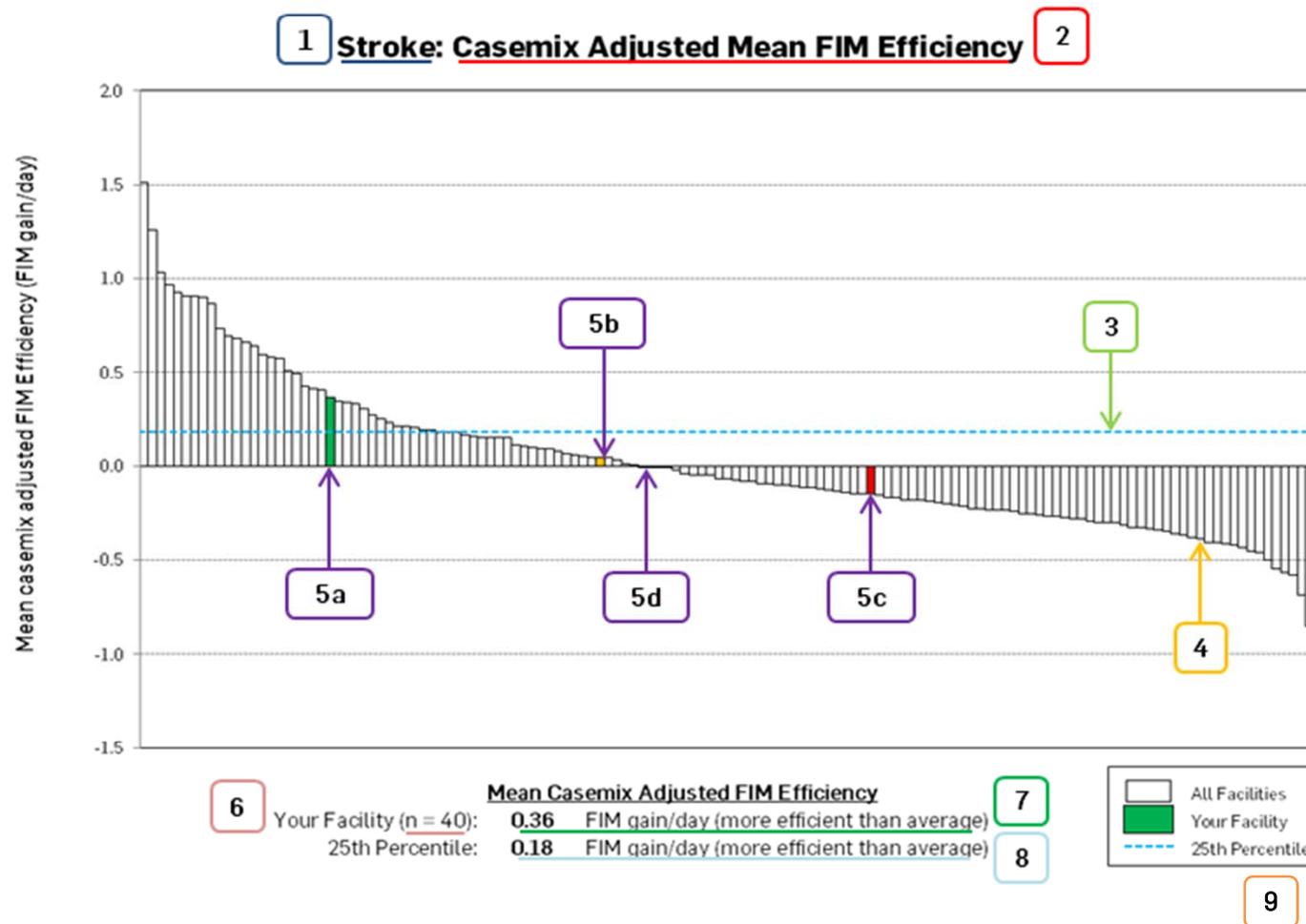
- FIM efficiency is defined as FIM change divided by length of stay, and is calculated at the episode level
- Expected FIM efficiency is the average FIM Efficiency at the AN-SNAP and impairment level for each country
- Casemix Adjusted FIM Efficiency is the difference between the actual FIM efficiency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

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

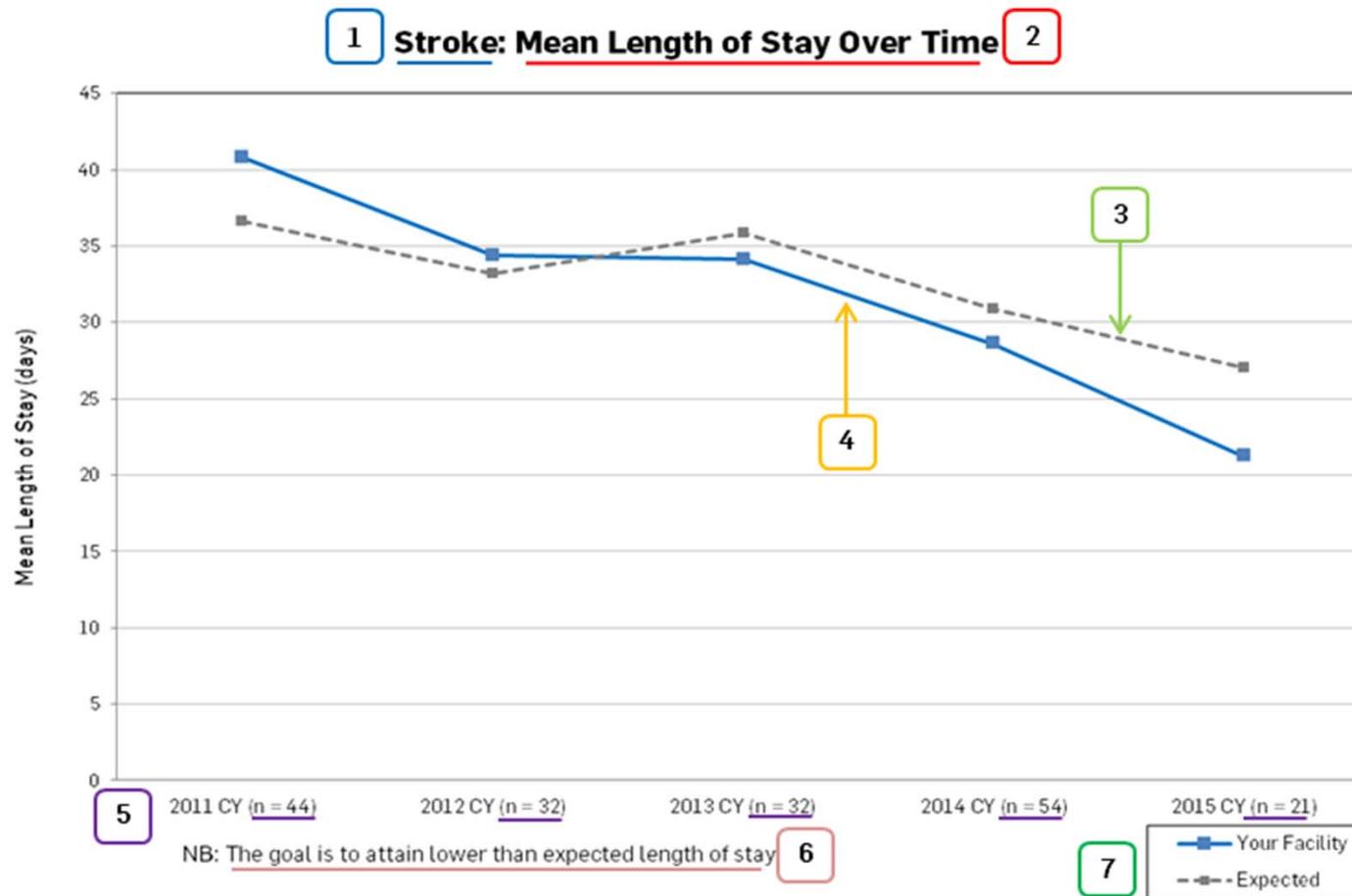
- Length of stay is defined as the difference between episode start and end date excluding leave days, and is calculated at the episode level
- Expected length of stay is the average length of stay at the AN-SNAP and impairment level for each country
- Casemix Adjusted length of stay is the difference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



- 1.** Impairment the graph is about
- 2.** Casemix adjusted outcome measure the graph is about
- 3.** Line indicating 25th percentile
- 4.** One bar per facility
- 5.** Your facility will be highlighted if you had at least 20 complete episodes for this impairment
  - a)** green indicates your facility was in the top 25th percentile
  - b)** orange indicates your facility was in the top 50th percentile
  - c)** red indicates your facility was in the bottom 50th percentile
  - d)** An arrow will appear on the graph to indicate a result of 0
- 6.** Number of valid episodes your facility had for this outcome measure
- 7.** Your facility's performance for this outcome measure
- 8.** The 25th percentile performance benchmark for this outcome measure
- 9.** The graph key

# How to interpret your graphs



- 1.** Impairment being considered
- 2.** Outcome measure being considered
- 3.** Trend line indicating expected outcome based on casemix over time
- 4.** Trend line indicating your facility's actual outcome over time (where there are less than 20 episodes, the results will not appear on the graph)
- 5.** Number of valid episodes your facility had for this outcome for each year
- 6.** A guide to help interpret the graph
- 7.** The graph key



# 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)

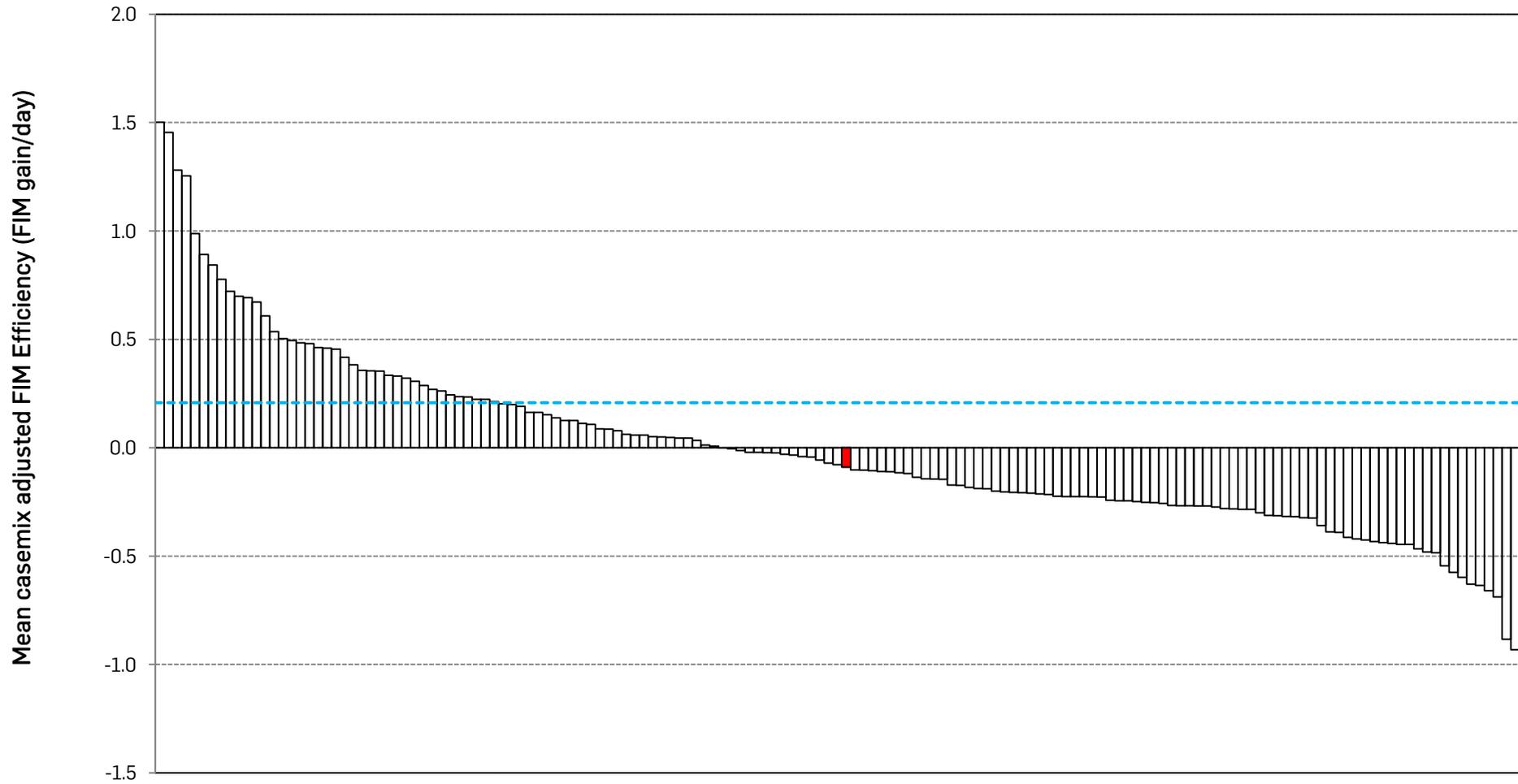
## Stroke - Ischaemic

- 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)

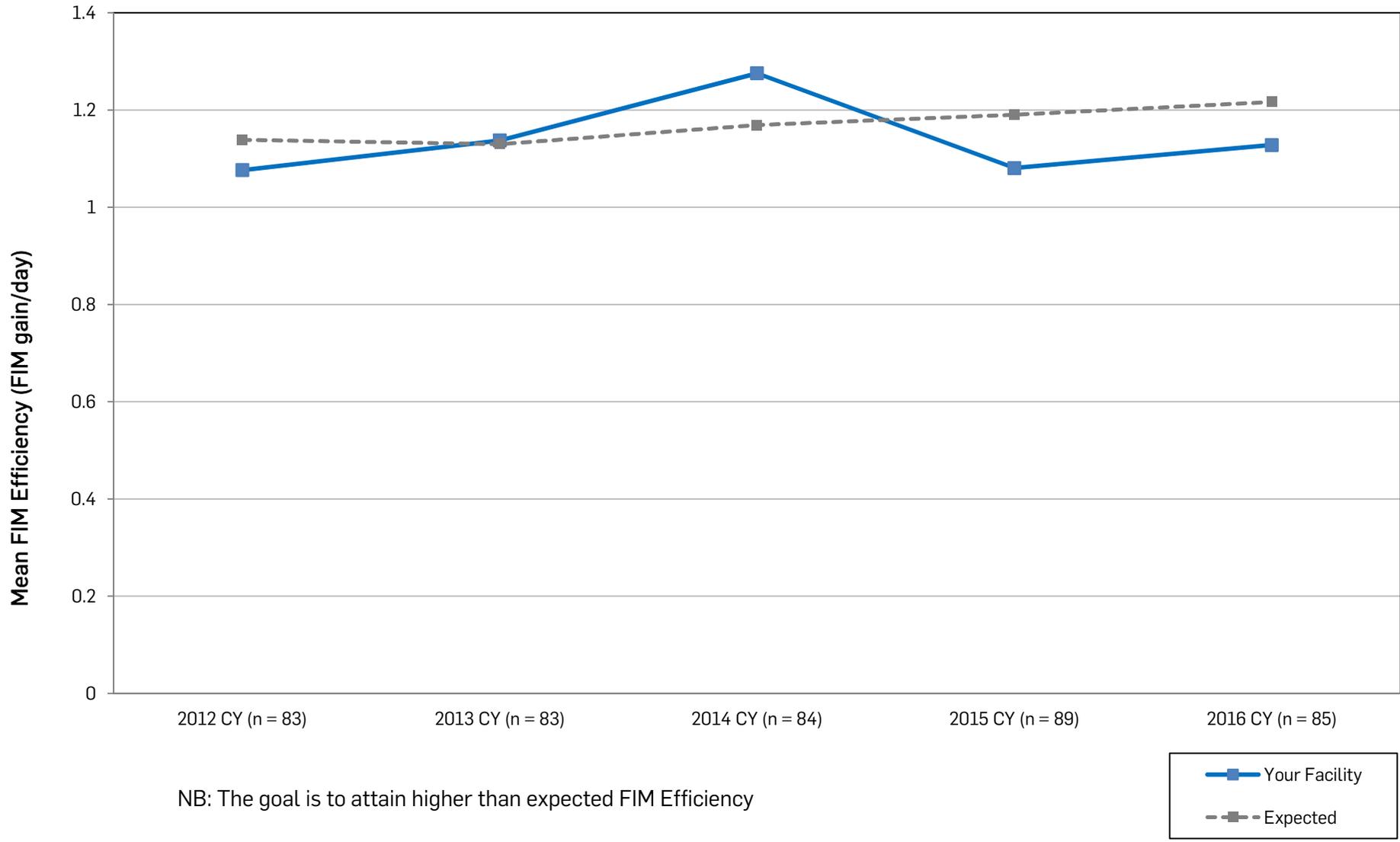
### Stroke: Casemix Adjusted Mean FIM Efficiency



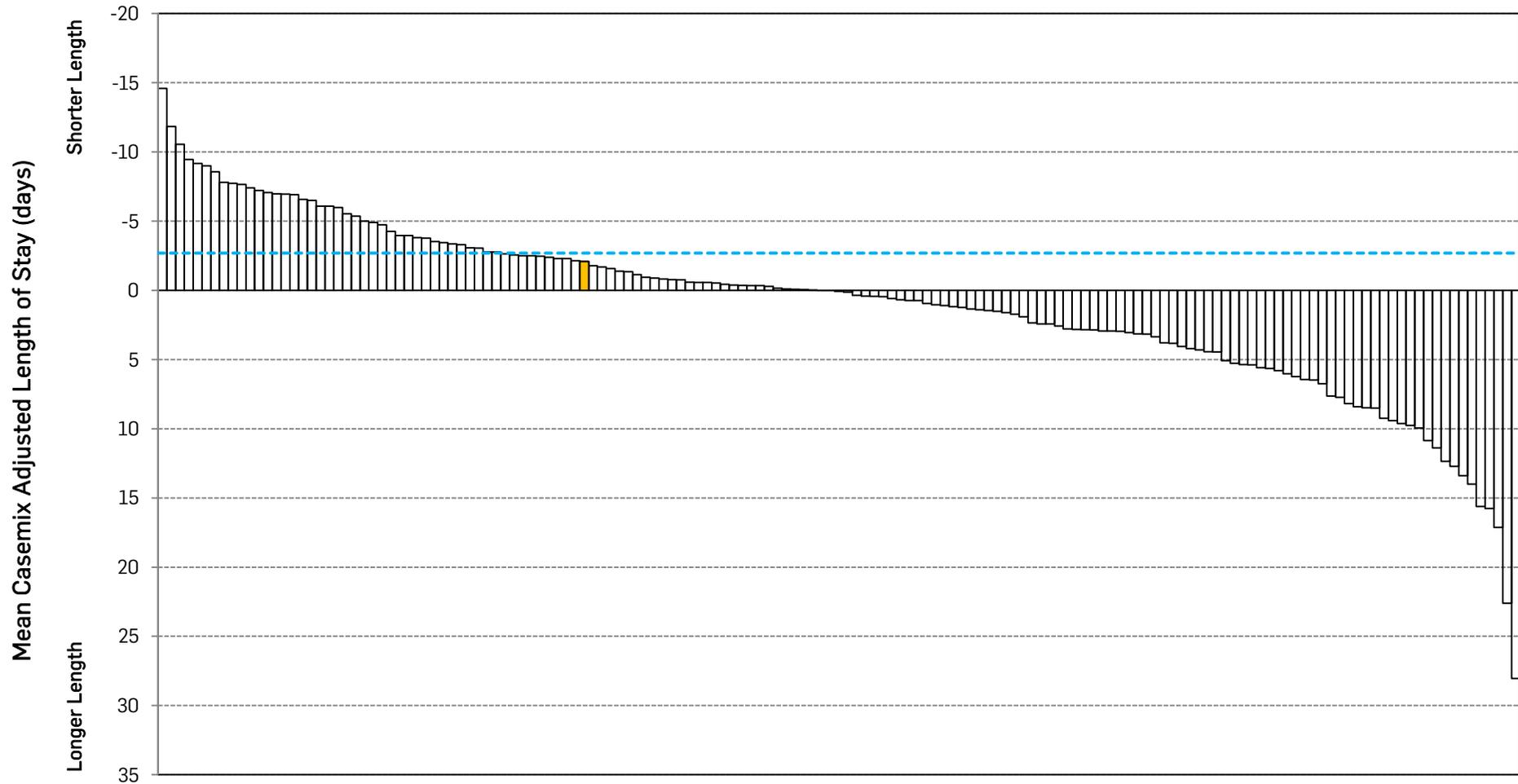
**Mean Casemix Adjusted FIM Efficiency**  
 Your Facility (n = 85): **-0.09** FIM gain/day (less efficient than average)  
 25th Percentile: **0.21** FIM gain/day (more efficient than average)

	All Facilities
	Your Facility
	25th Percentile

### Stroke: Mean FIM Efficiency Over Time



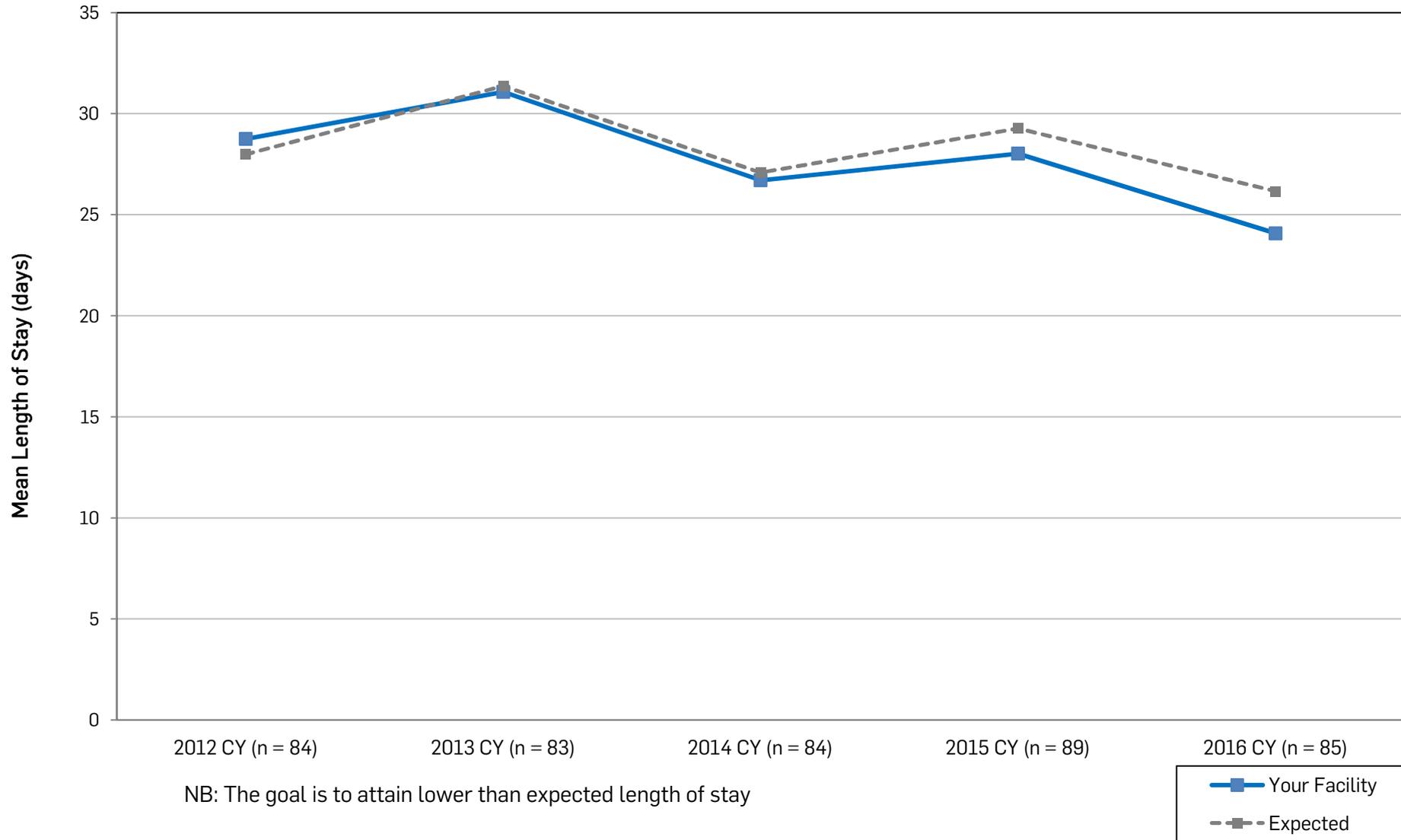
## Stroke: Casemix Adjusted Mean Length of Stay



**Casemix Adjusted Length of Stay**  
 Your Facility (n = 85): **-2.08** days (shorter than average)  
 25th Percentile: **-2.69** days (shorter than average)



### Stroke: Mean Length of Stay Over Time





# Brain Dysfunction

# Data inclusion criteria

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

## Brain Dysfunction - Non-Traumatic

- 2.11 (sub-arachnoid haemorrhage)
- 2.12 (anoxic brain damage)
- 2.13 (other non-traumatic brain dysfunction)

## Brain Dysfunction - Traumatic

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

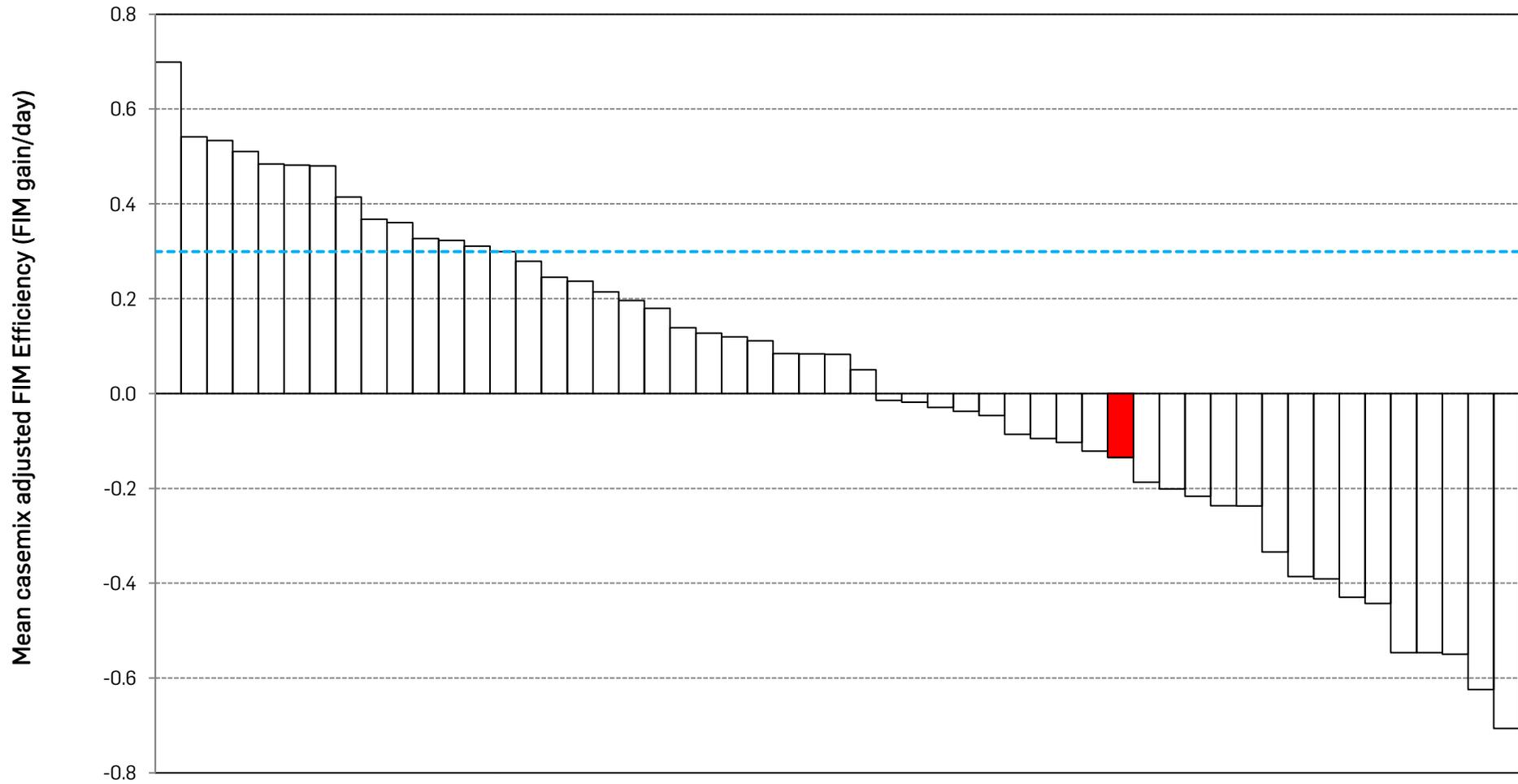
## Major Multiple Trauma

- 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)

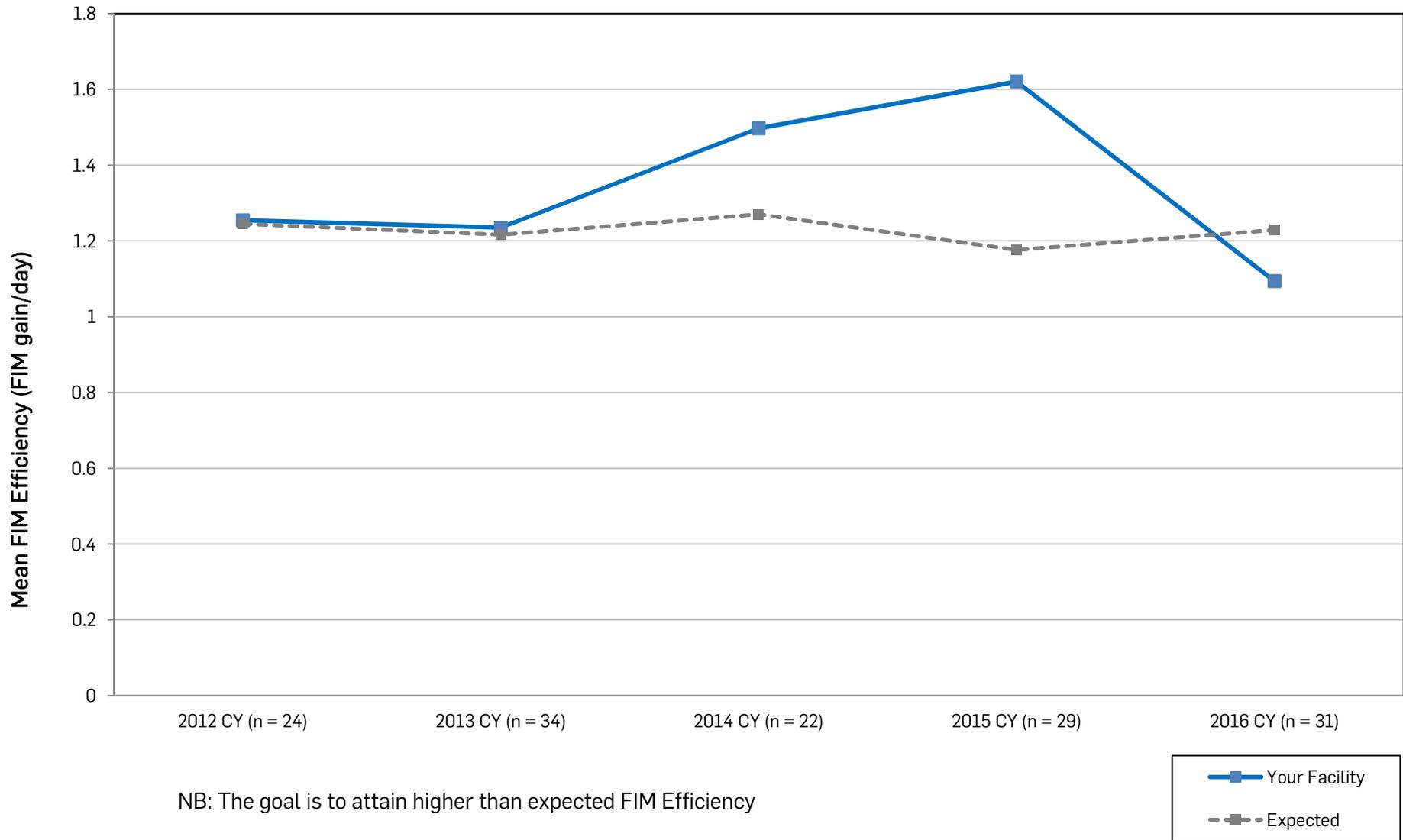
## Brain Dysfunction: Casemix Adjusted Mean FIM Efficiency



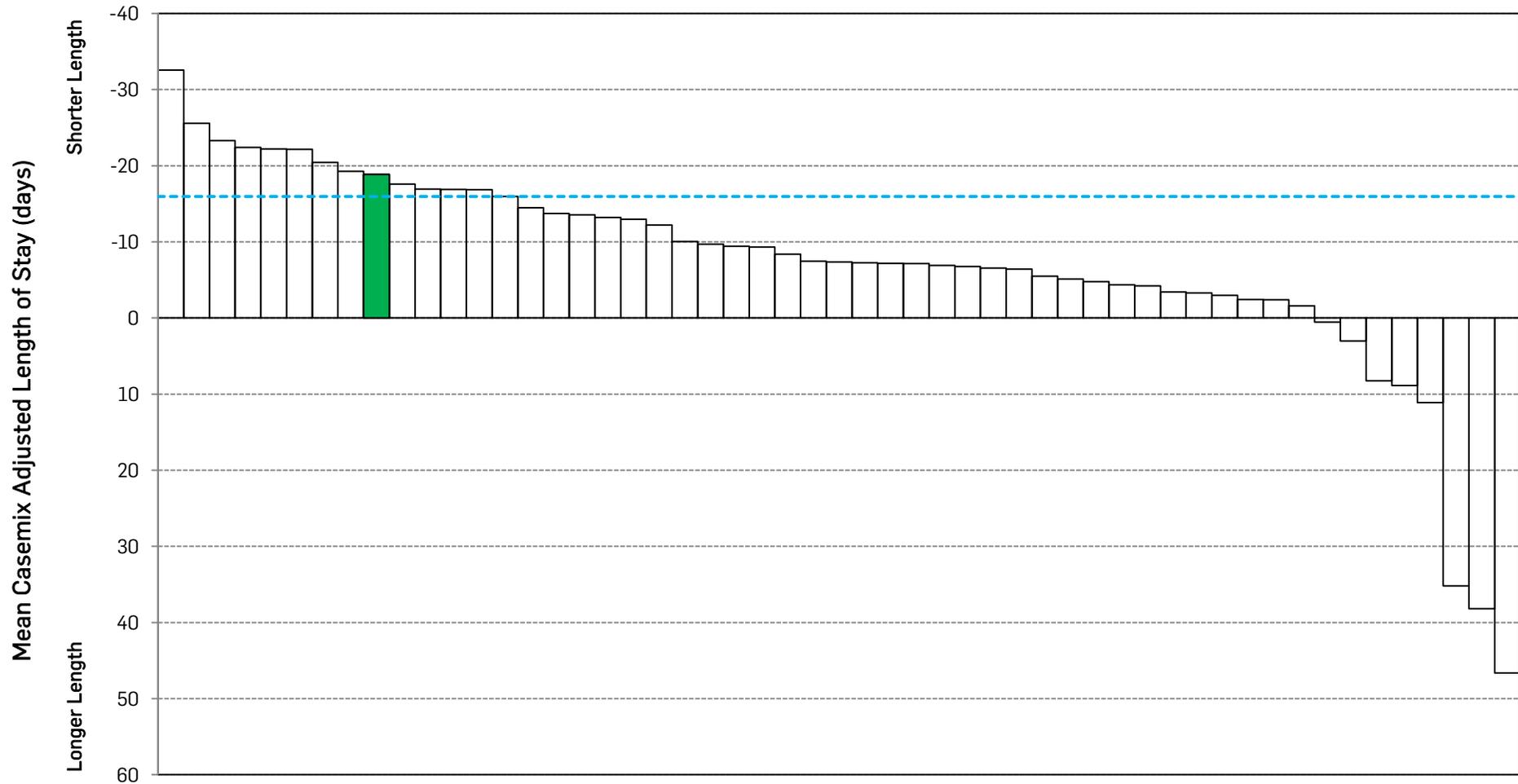
**Mean Casemix Adjusted FIM Efficiency**  
 Your Facility (n = 31): **-0.13** FIM gain/day (less efficient than average)  
 25th Percentile: **0.30** FIM gain/day (more efficient than average)



### Brain Dysfunction: Mean FIM Efficiency Over Time



## Brain Dysfunction: Casemix Adjusted Mean Length of Stay

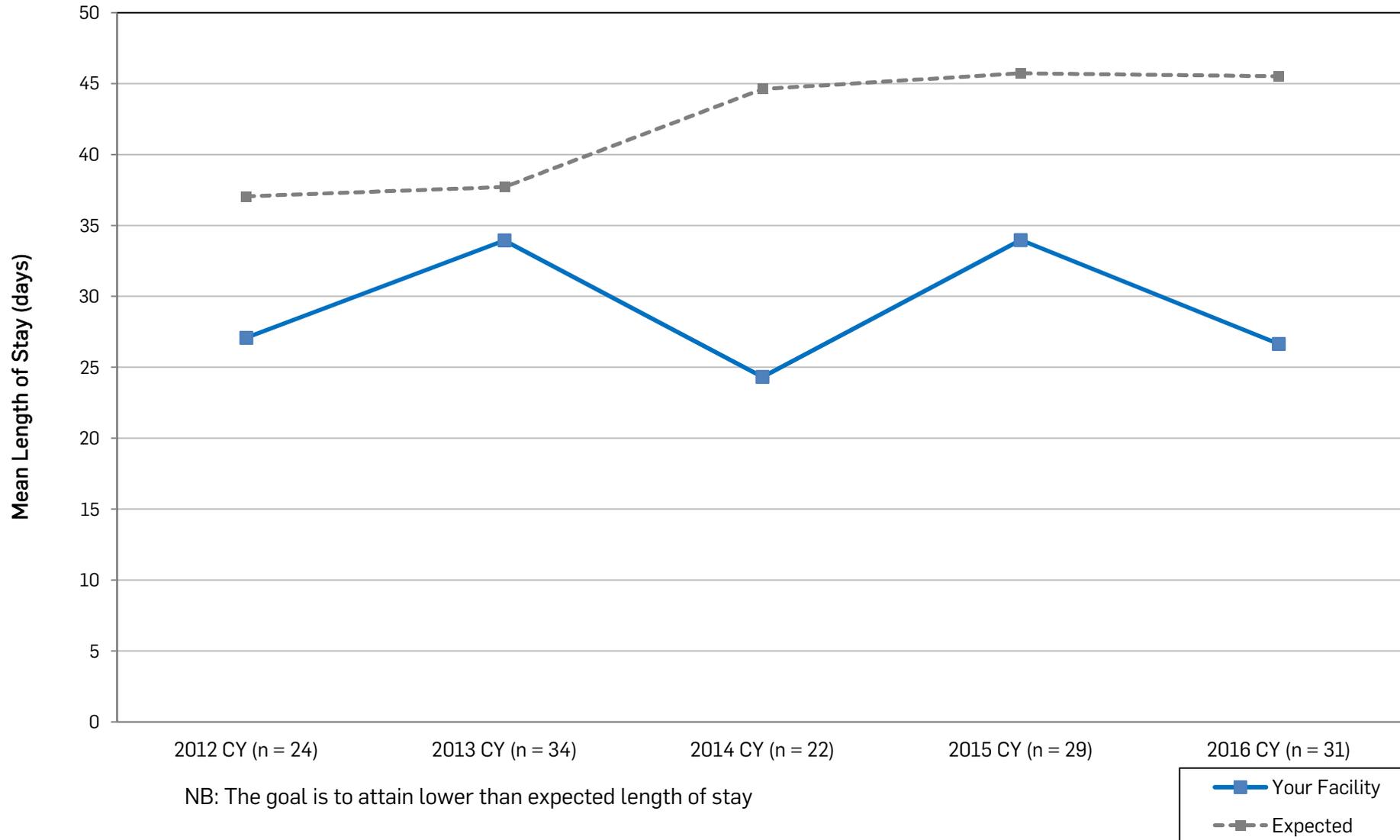


### Casemix Adjusted Length of Stay

Your Facility (n = 31): **-18.87** days (shorter than average)  
 25th Percentile: **-15.94** days (shorter than average)



## Brain Dysfunction: Mean Length of Stay Over Time





# Neurological Conditions

# Data inclusion criteria

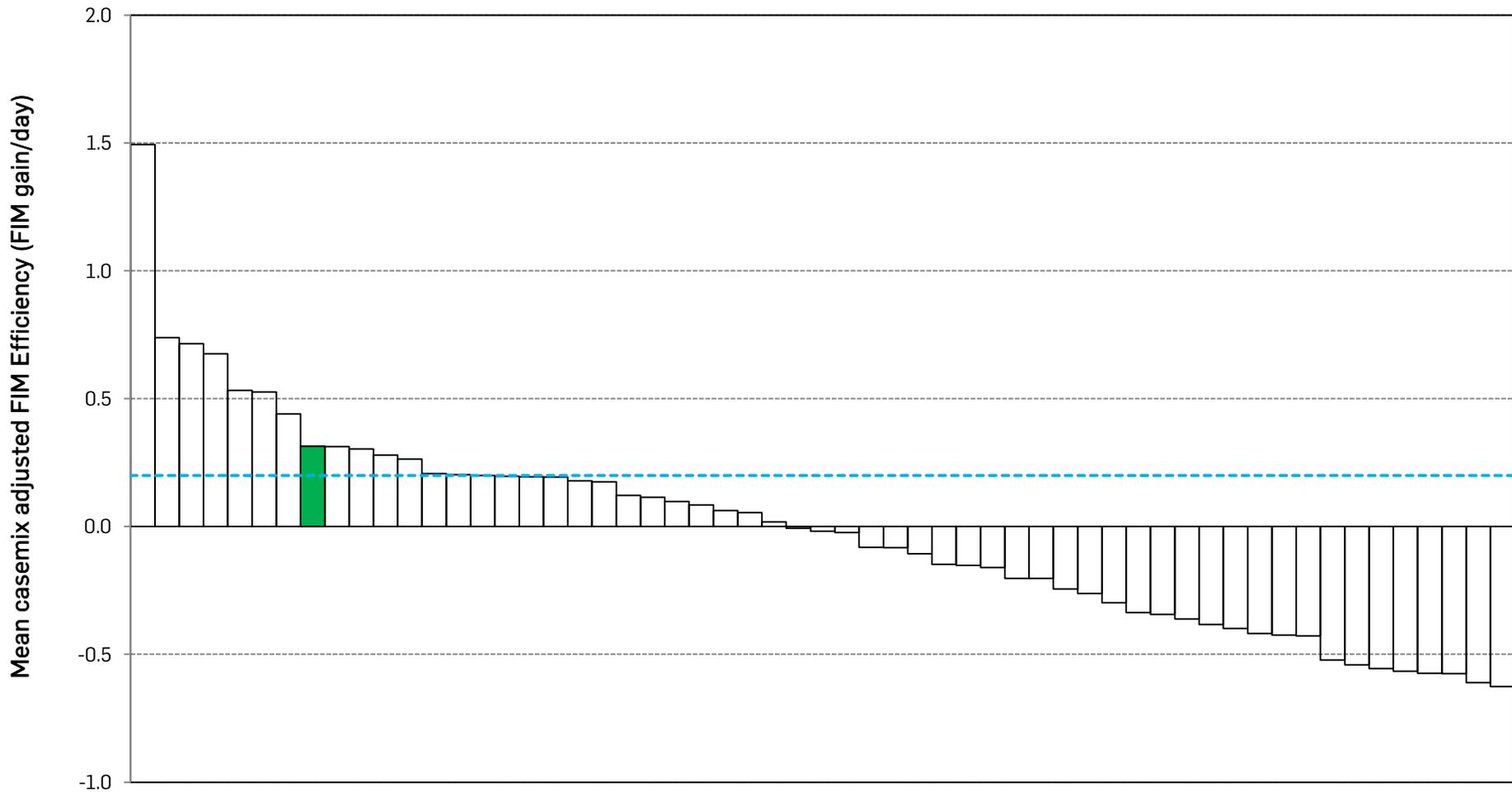
Data used in this section comprised of all episodes with AROC impairment codes:

- 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

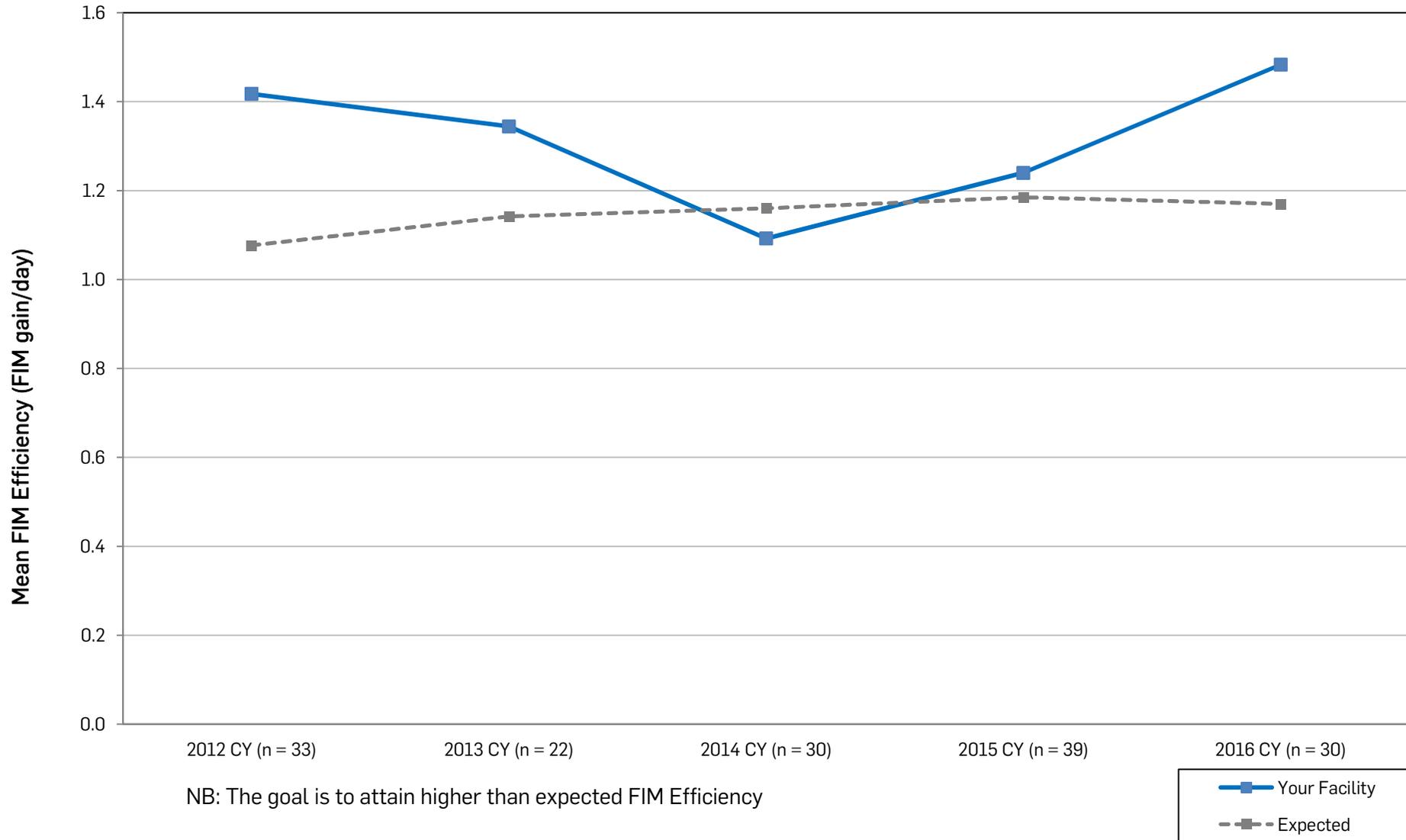


### Mean Casemix Adjusted FIM Efficiency

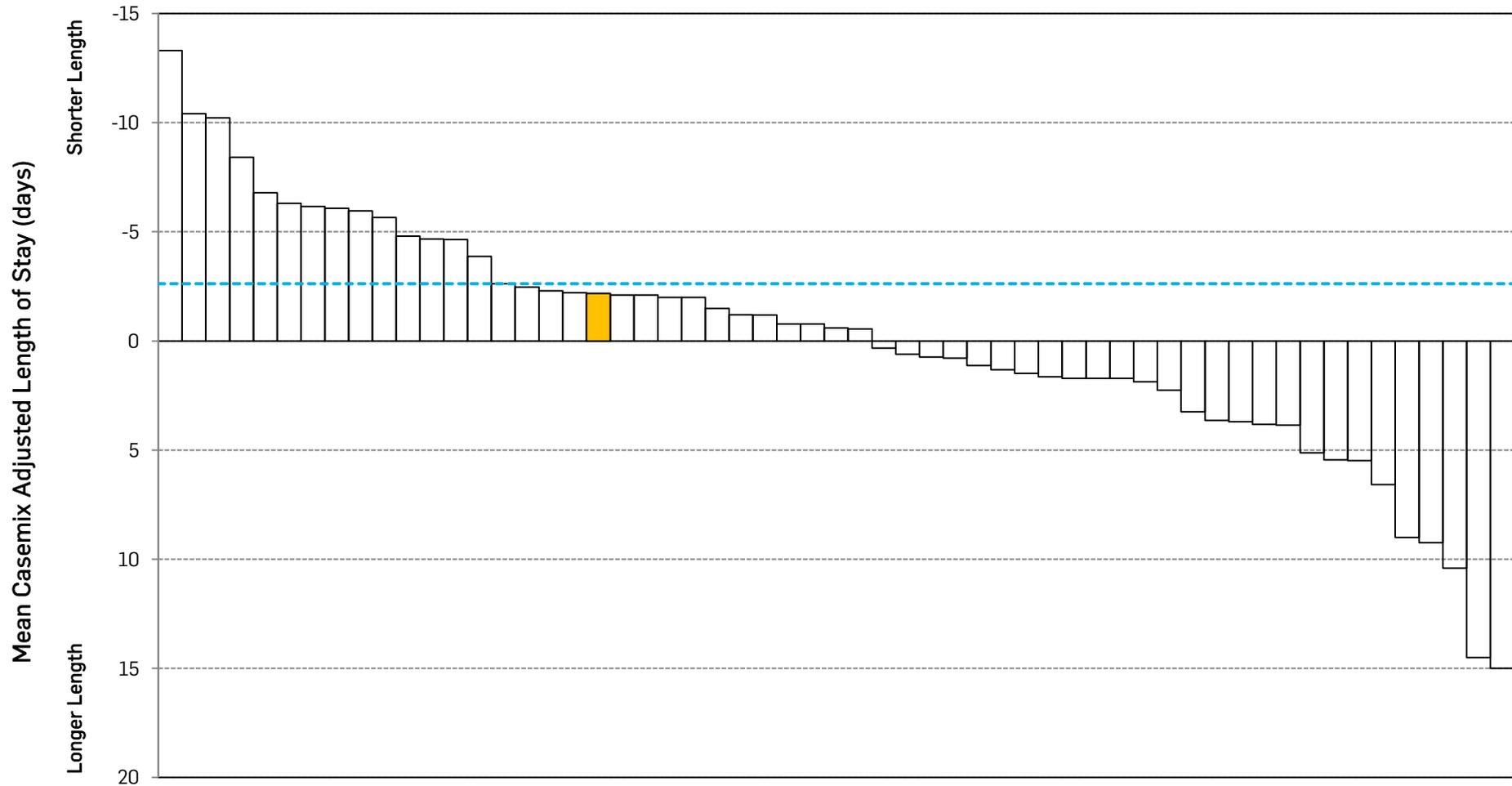
Your Facility (n = 30): **0.31** FIM gain/day (more efficient than average)  
 25th Percentile: **0.20** FIM gain/day (more efficient than average)



## Neurological Conditions: Mean FIM Efficiency Over Time



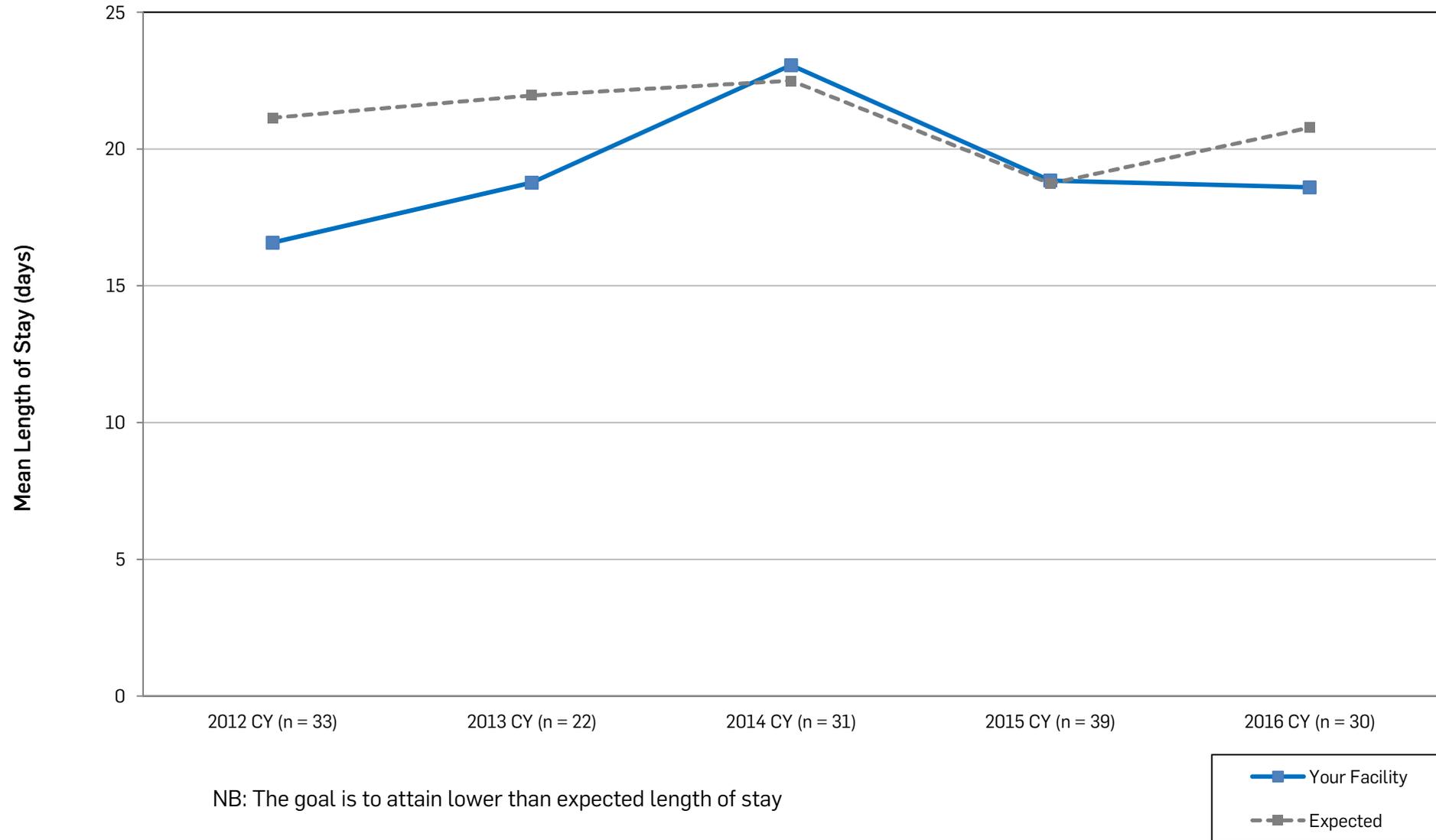
## Neurological Conditions: Casemix Adjusted Mean Length of Stay



**Casemix Adjusted Length of Stay**  
 Your Facility (n = 30): **-2.18** days (shorter than average)  
 25th Percentile: **-2.63** days (shorter than average)



## Neurological Conditions: Mean Length of Stay Over Time





# Spinal Cord Dysfunction

# Data inclusion criteria

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)

## Major Multiple Trauma

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

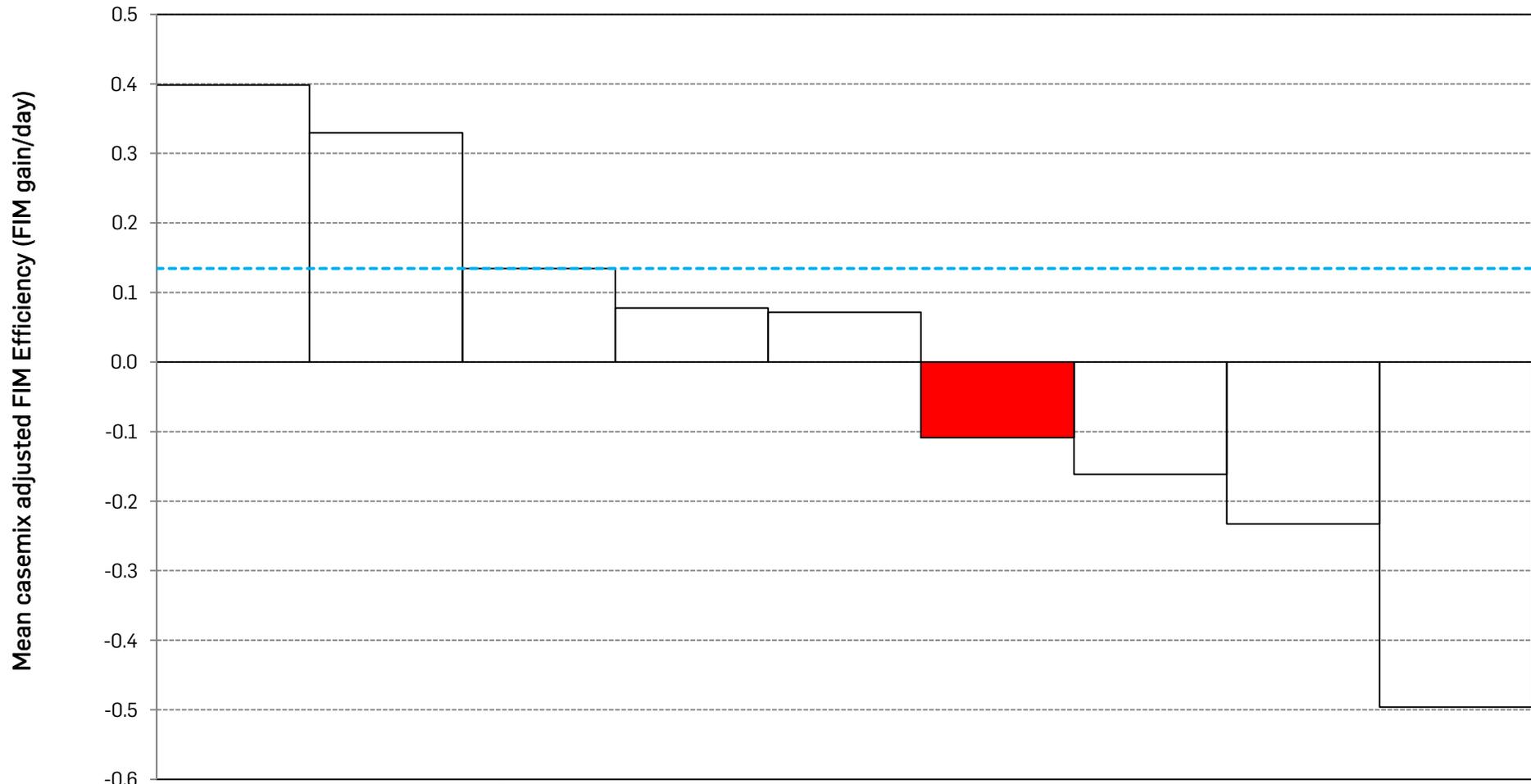
## Spinal Cord Dysfunction - Traumatic

- 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)

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)

## Spinal Cord Dysfunction: Casemix Adjusted Mean FIM Efficiency

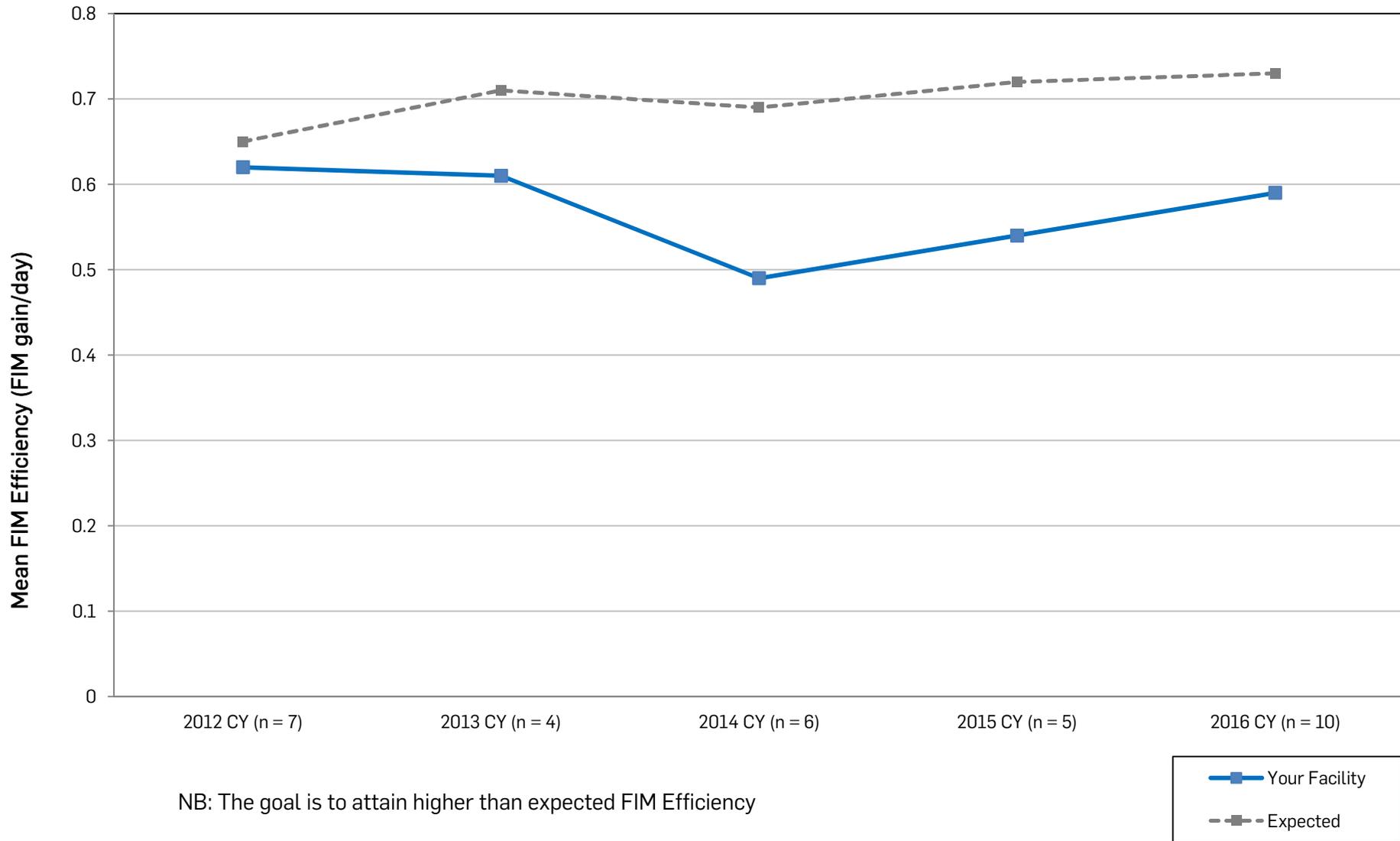


### Mean Casemix Adjusted FIM Efficiency

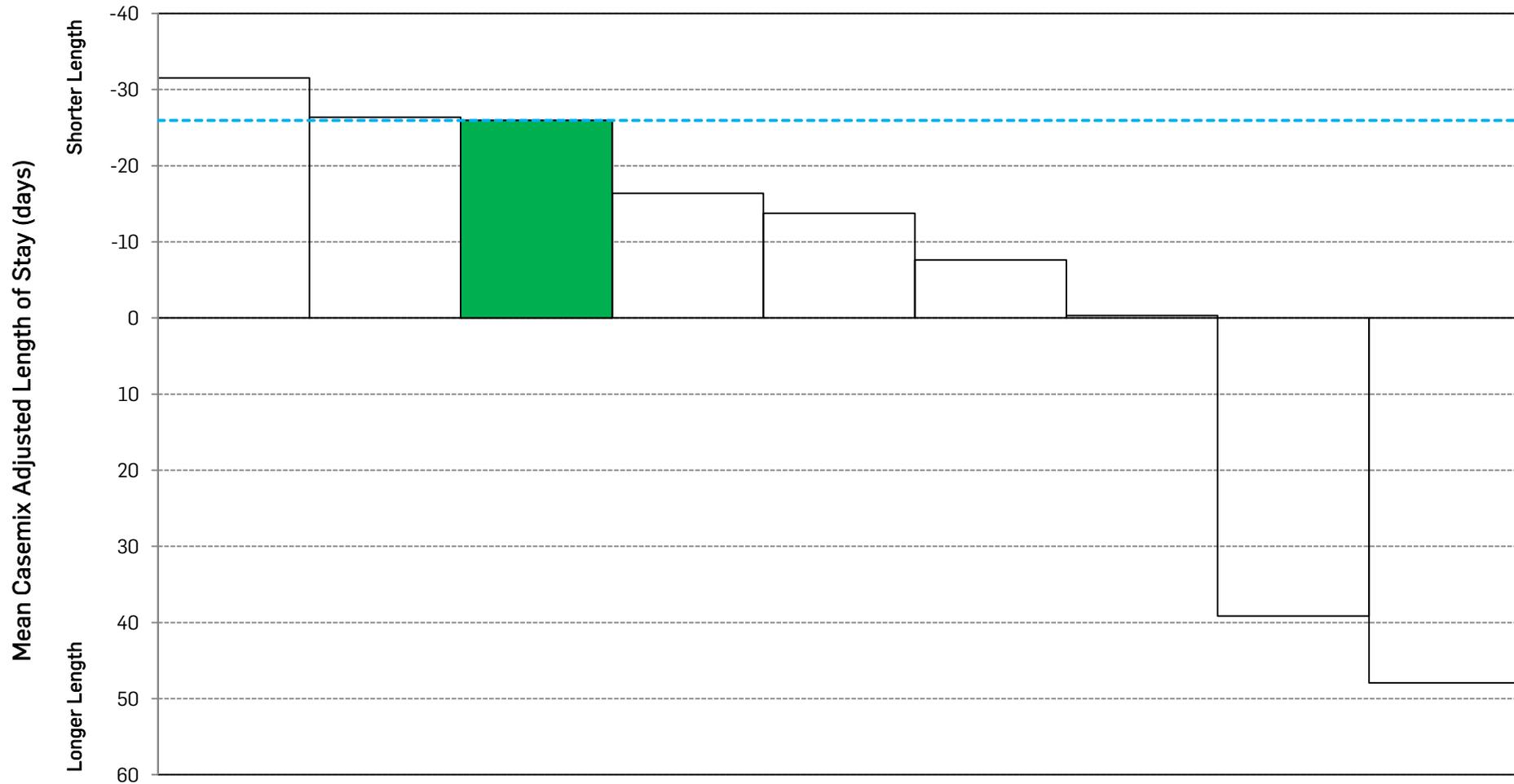
Your Facility (n = 10): **-0.11** FIM gain/day (less efficient than average)  
 25th Percentile: **0.13** FIM gain/day (more efficient than average)



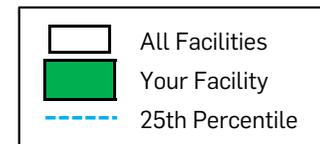
## Spinal Cord Dysfunction: Mean FIM Efficiency Over Time



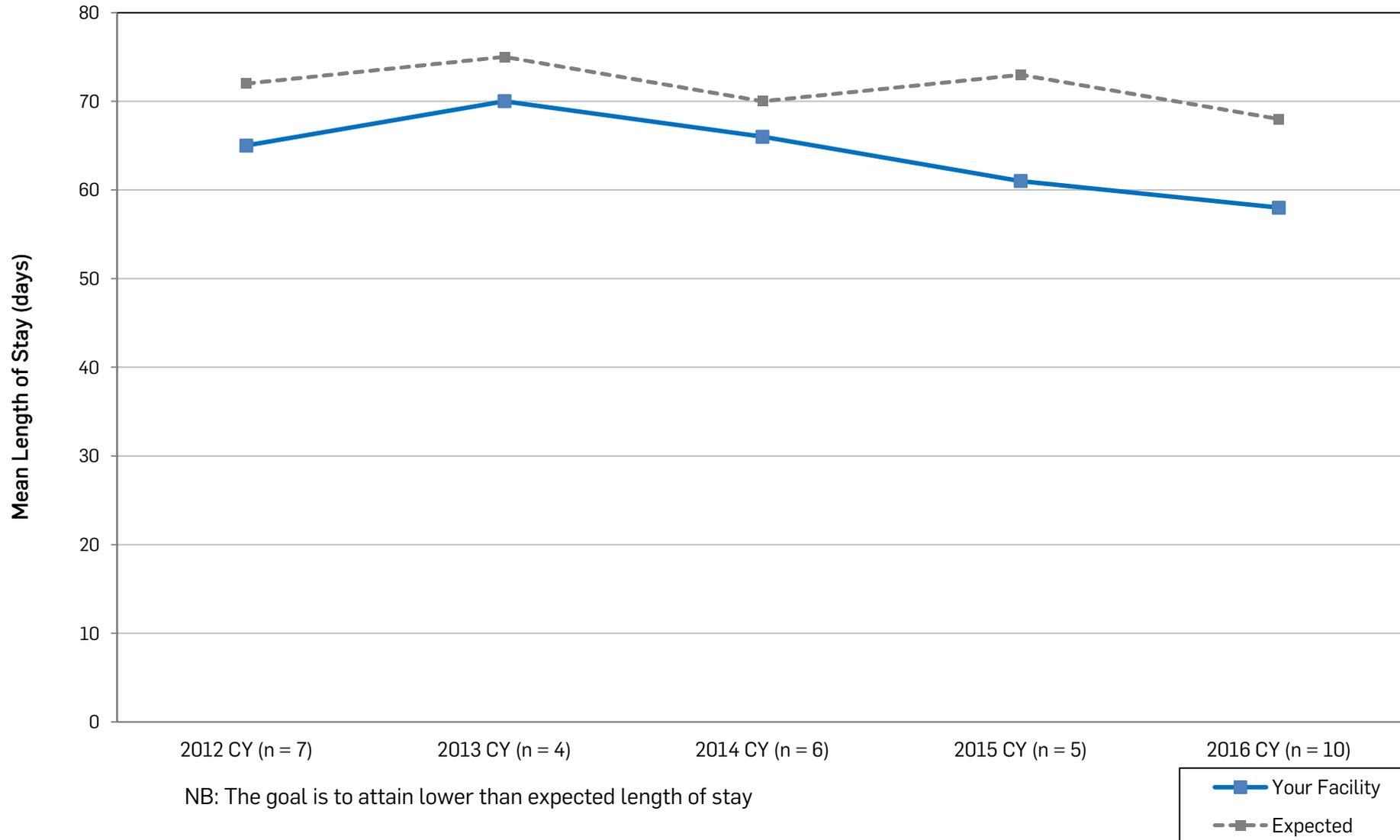
## Spinal Cord Dysfunction: Casemix Adjusted Mean Length of Stay



**Casemix Adjusted Length of Stay**  
 Your Facility (n = 10): **-25.94** days (shorter than average)  
 25th Percentile: **-25.94** days (shorter than average)



## Spinal Cord Dysfunction: Mean Length of Stay Over Time





# Pain Syndromes

# Data inclusion criteria

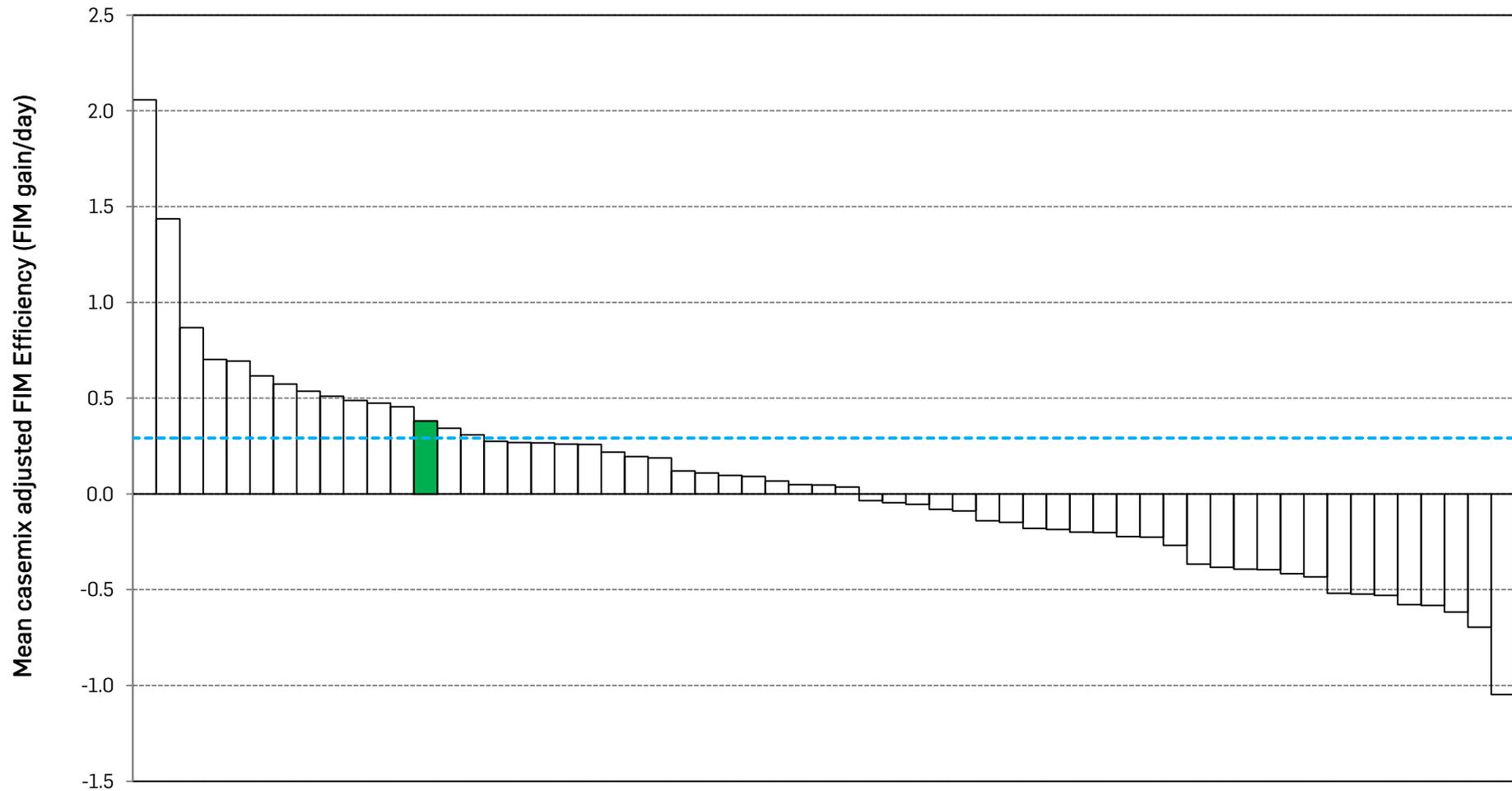
Data used in this section comprised of all episodes with AROC impairment codes:

- 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)

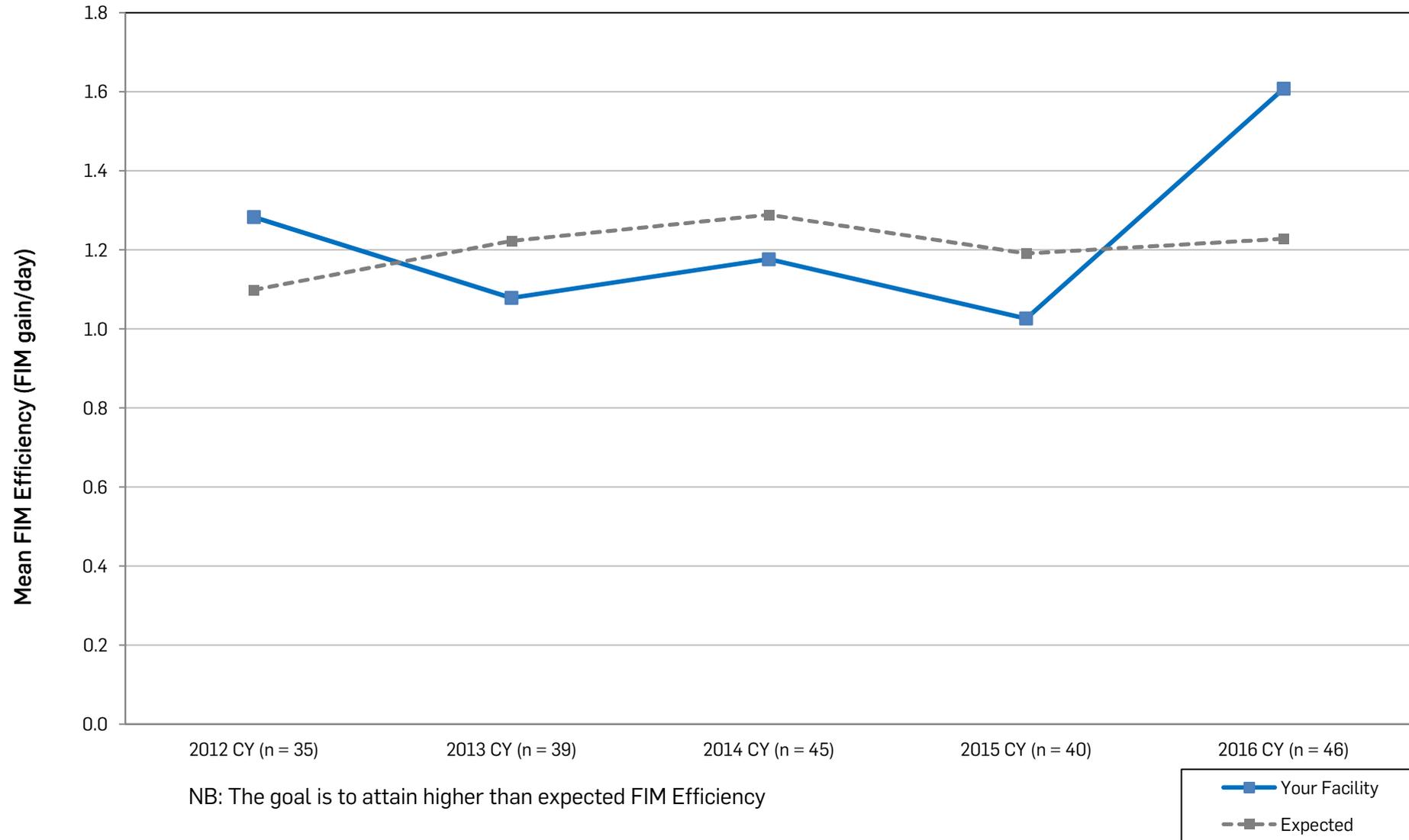
## Pain Syndromes: Casemix Adjusted Mean FIM Efficiency



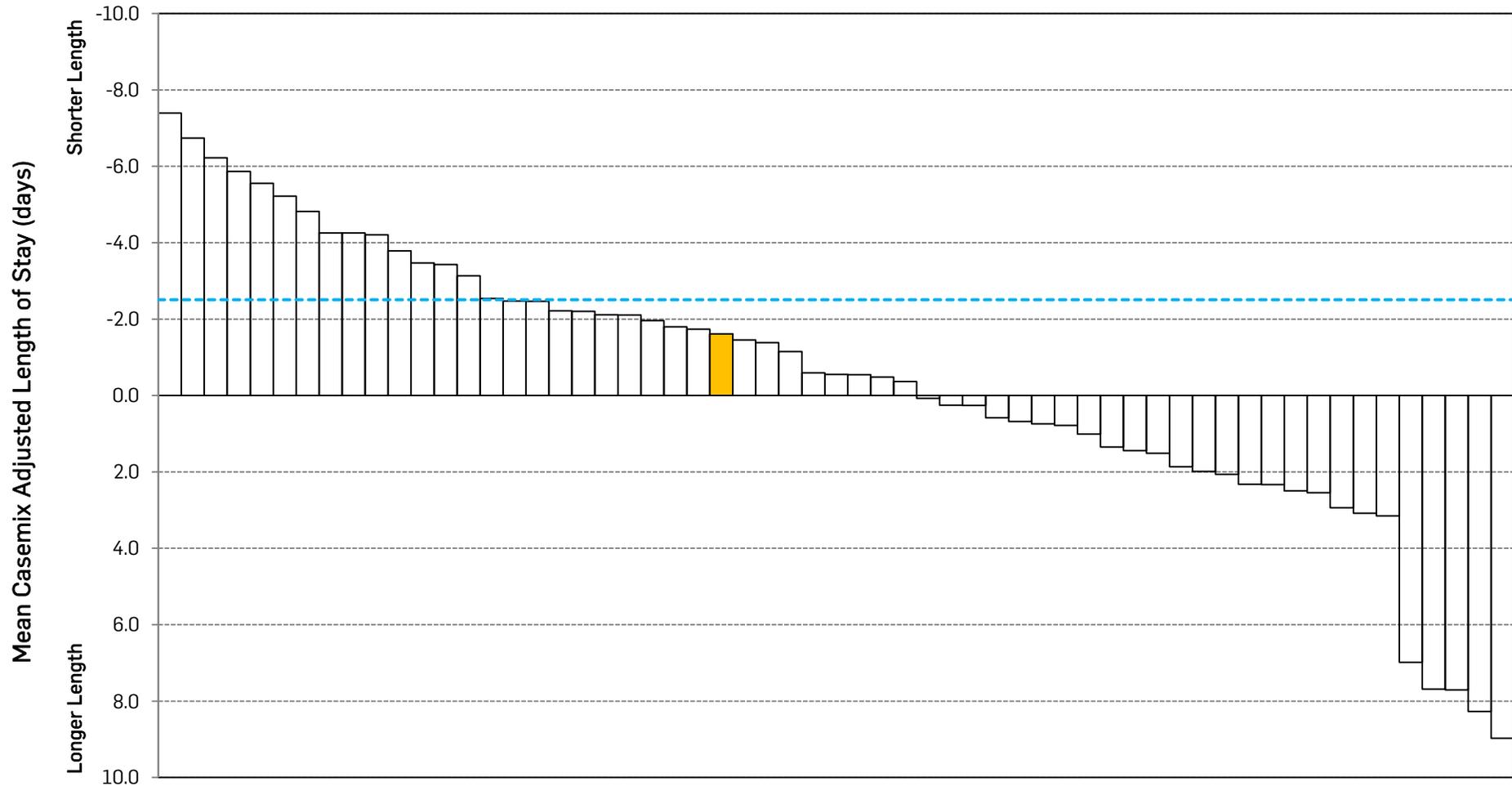
<u>Mean Casemix Adjusted FIM Efficiency</u>	
Your Facility (n = 46):	<b>0.38</b> FIM gain/day (more efficient than average)
25th Percentile:	<b>0.29</b> FIM gain/day (more efficient than average)



## Pain Syndromes: Mean FIM Efficiency Over Time



## Pain Syndromes: Casemix Adjusted Mean Length of Stay

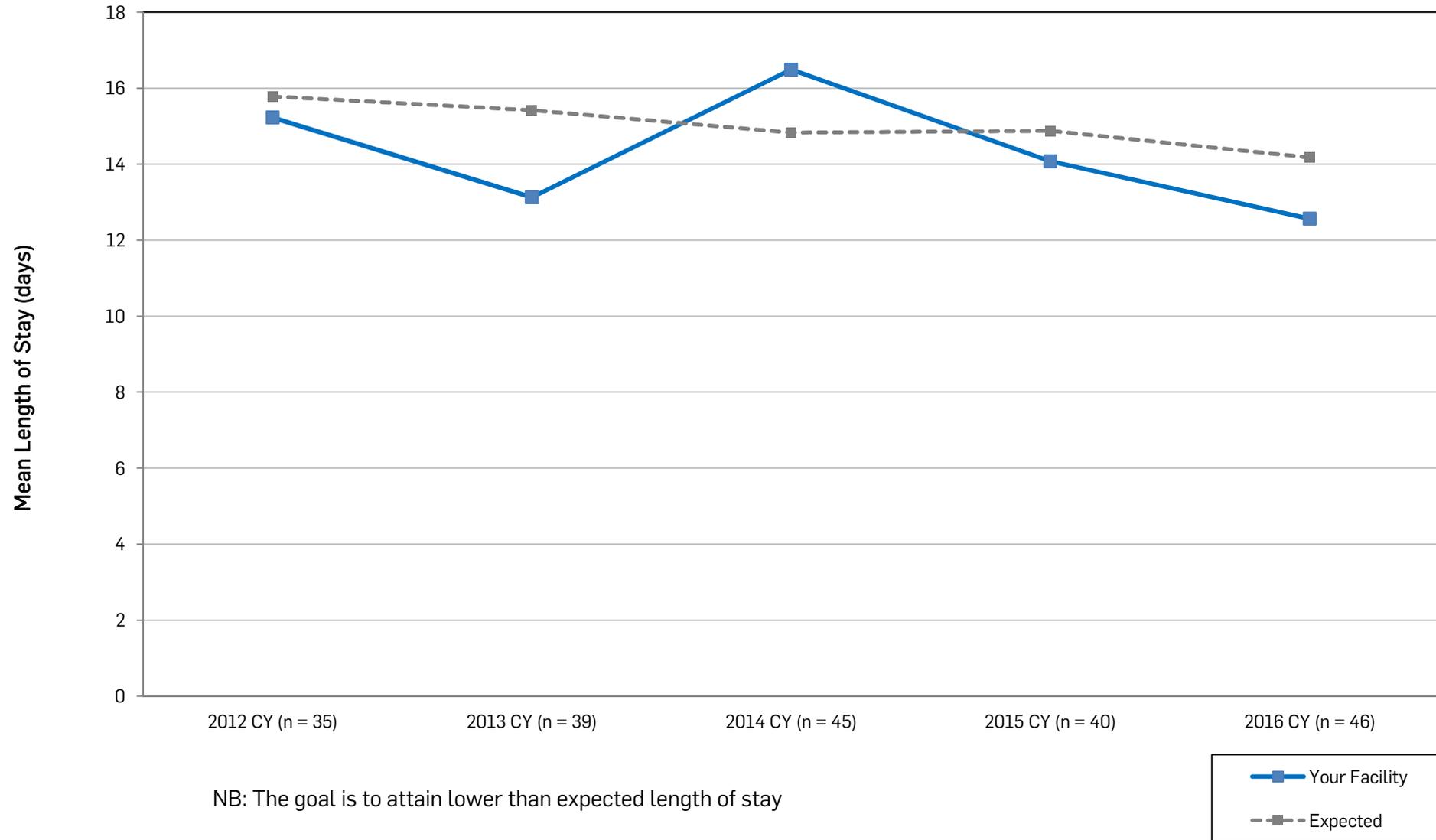


**Casemix Adjusted Length of Stay**

Your Facility (n = 46): **-1.61** days (shorter than average)  
 25th Percentile: **-2.51** days (shorter than average)

	All Facilities
	Your Facility
	25th Percentile

## Pain Syndromes: Mean Length of Stay Over Time





# Orthopaedic Fractures

# Data inclusion criteria

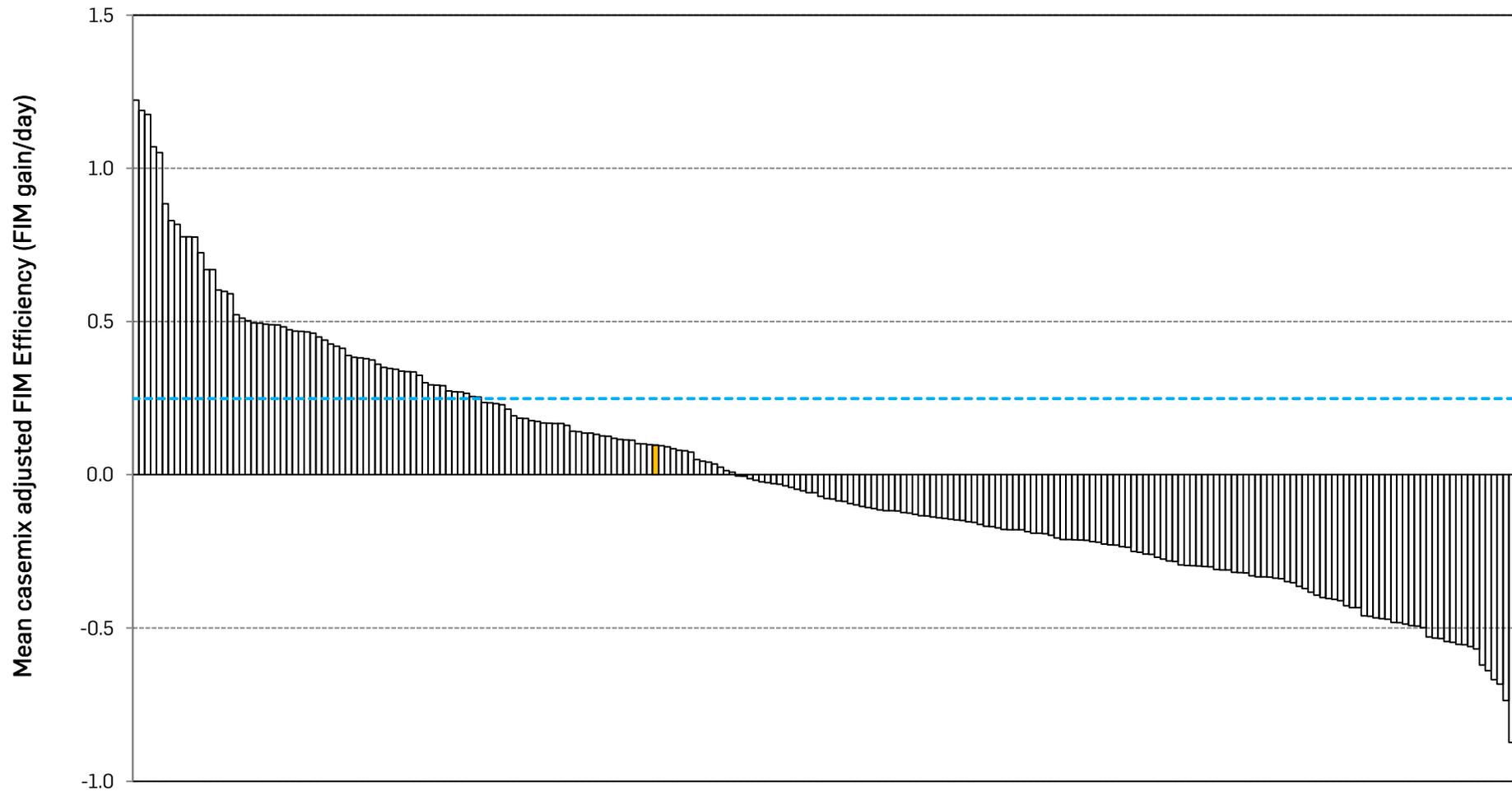
Data used in this section comprised of all episodes with AROC impairment codes:

- 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

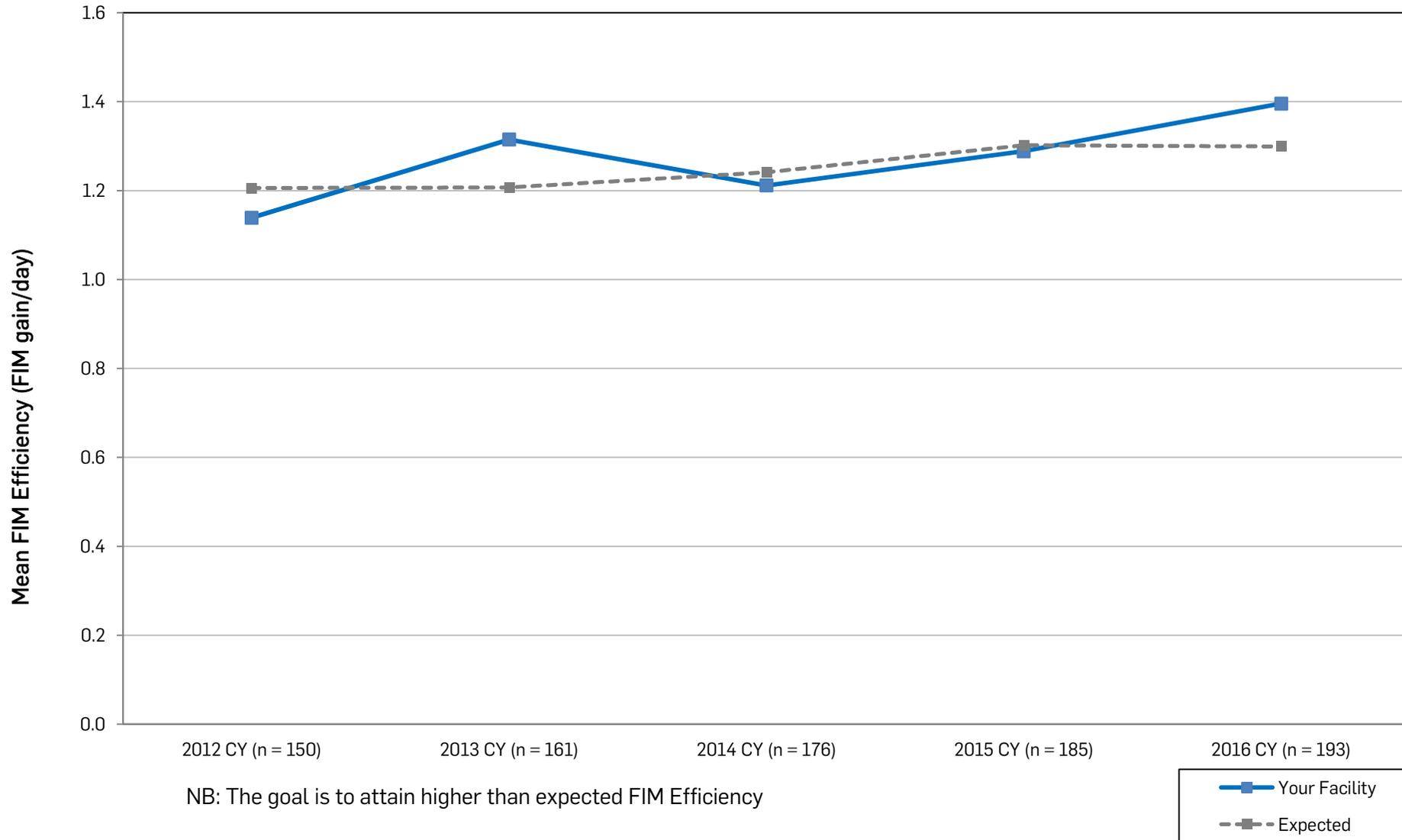


**Mean Casemix Adjusted FIM Efficiency**

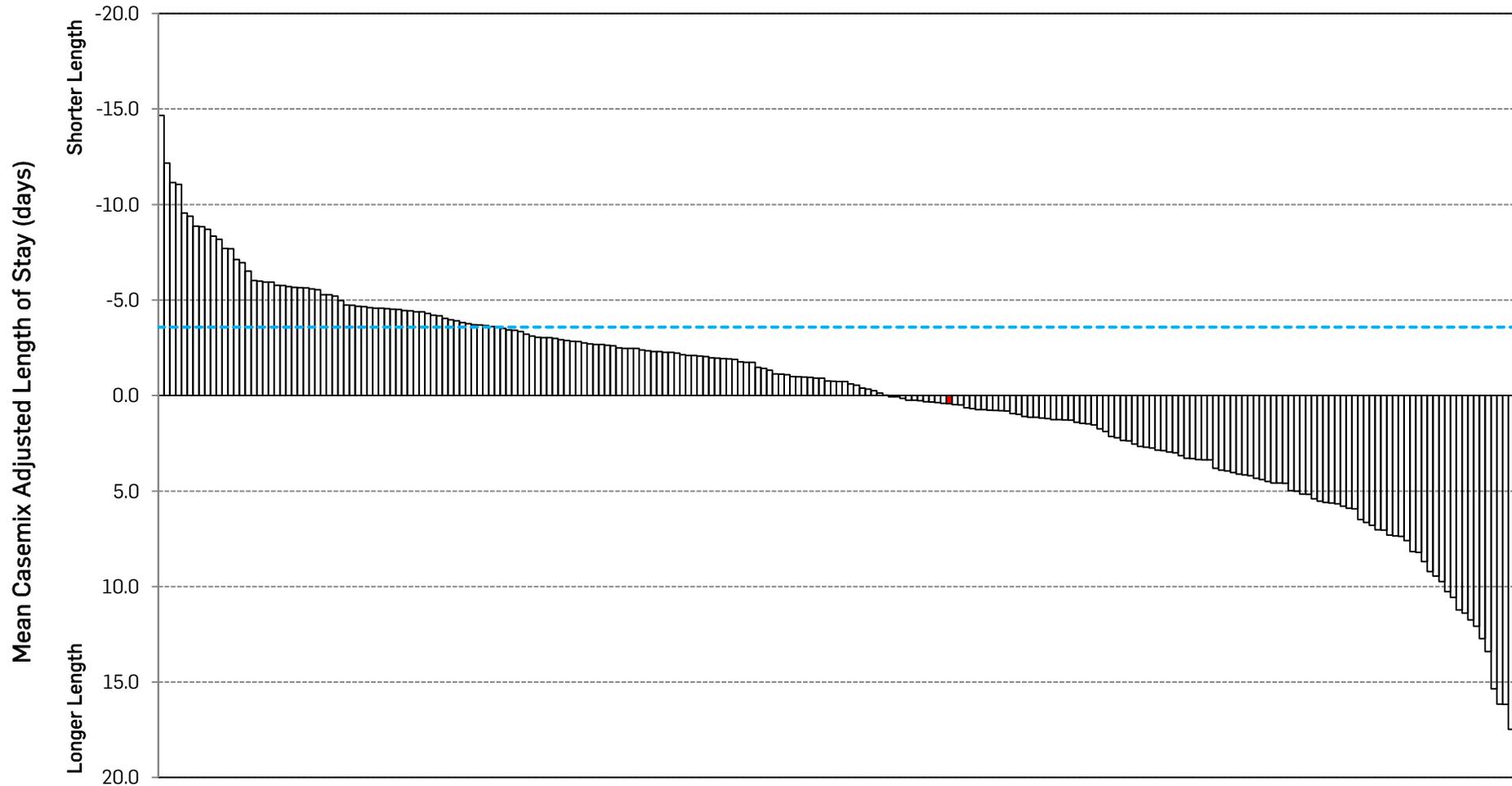
Your Facility (n = 193):	<b>0.10</b>	FIM gain/day (more efficient than average)
25th Percentile:	<b>0.25</b>	FIM gain/day (more efficient than average)



## Orthopaedic Fractures: Mean FIM Efficiency Over Time



## Orthopaedic Fractures: Casemix Adjusted Mean Length of Stay

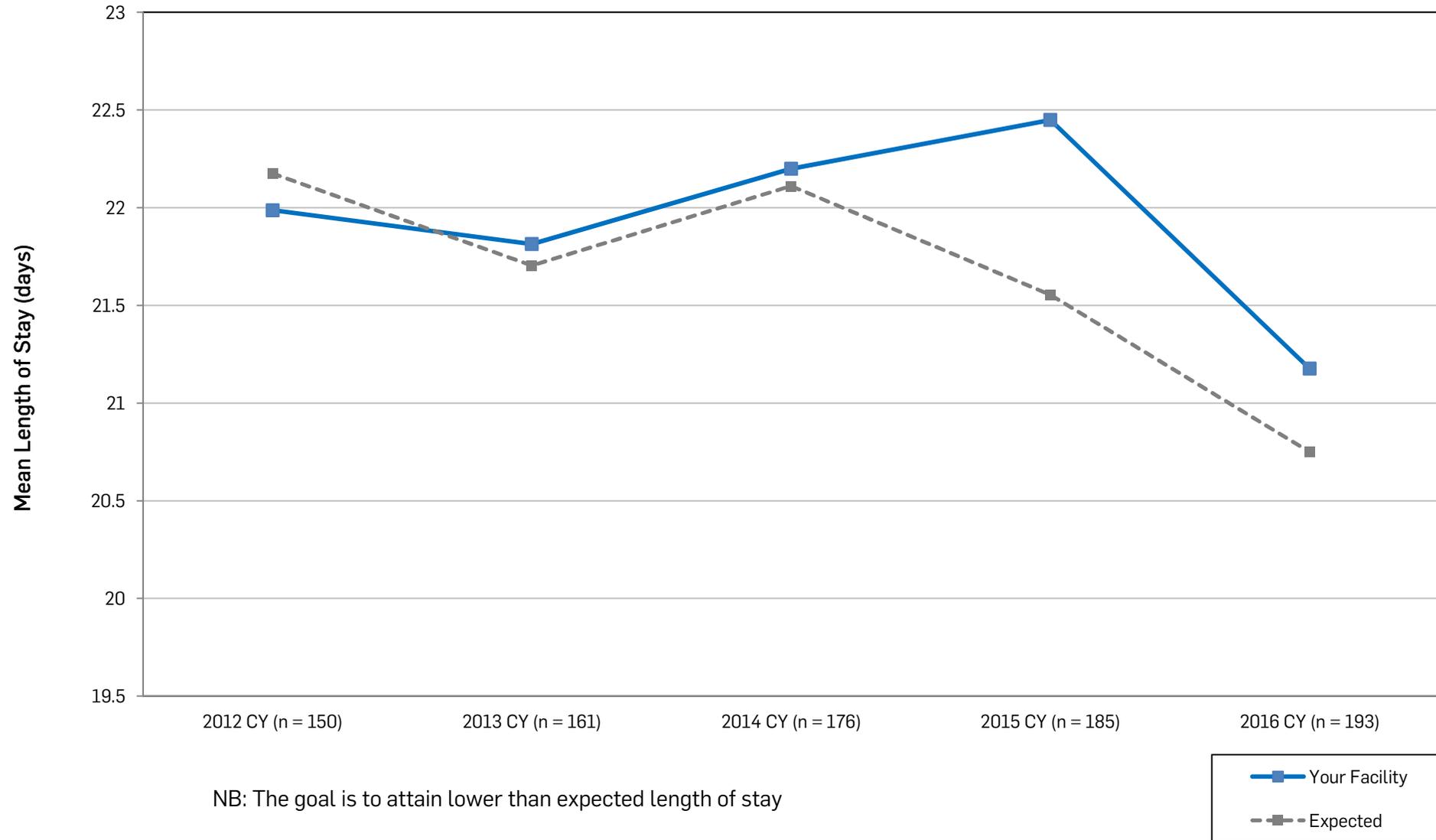


### Casemix Adjusted Length of Stay

Your Facility (n = 193): **0.43** days (longer than average)  
 25th Percentile: **-3.58** days (shorter than average)



## Orthopaedic Fractures: Mean Length of Stay Over Time





# Orthopaedic Replacements

# Data inclusion criteria

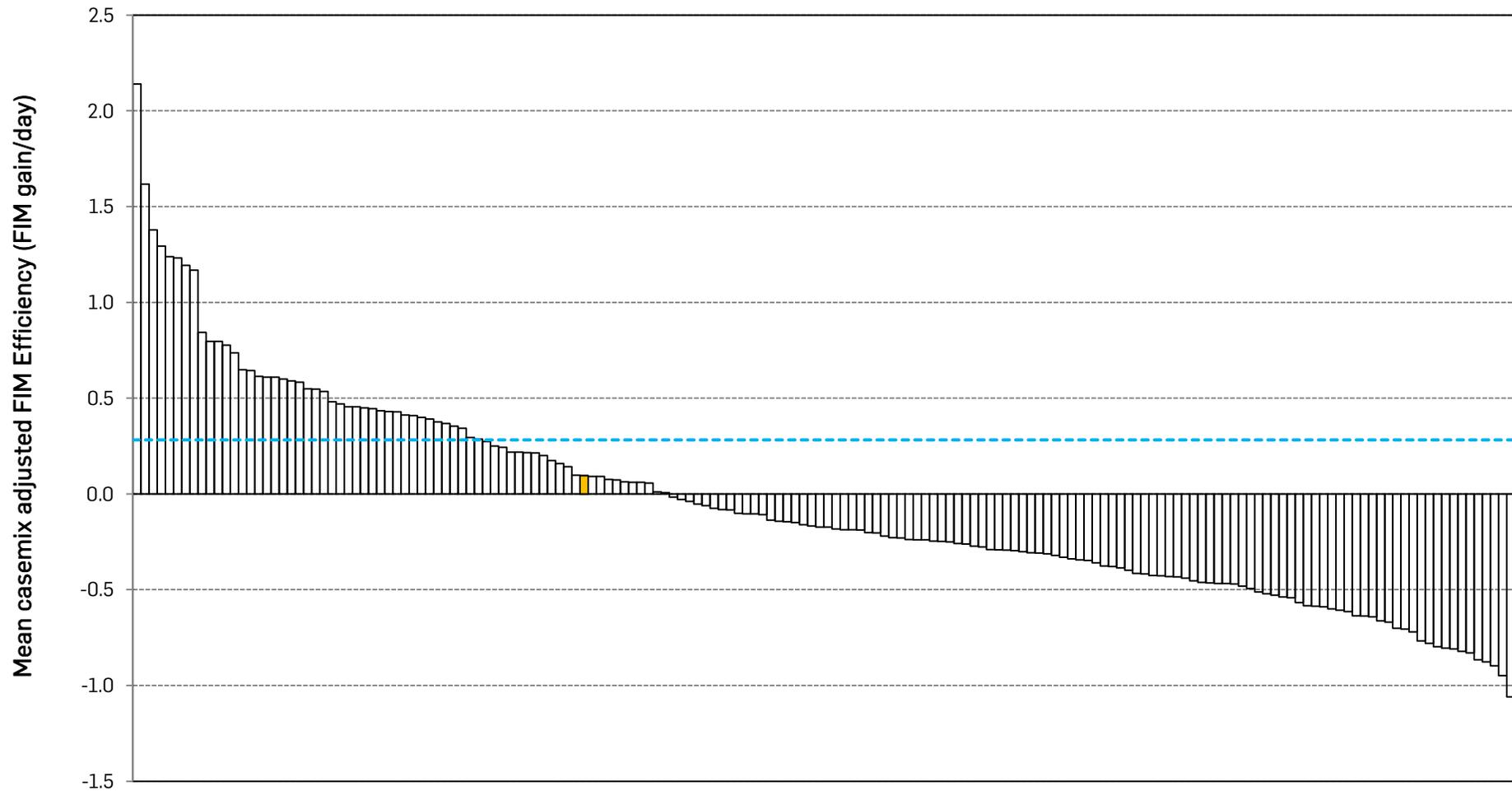
Data used in this section comprised of all episodes with AROC impairment codes:

- 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

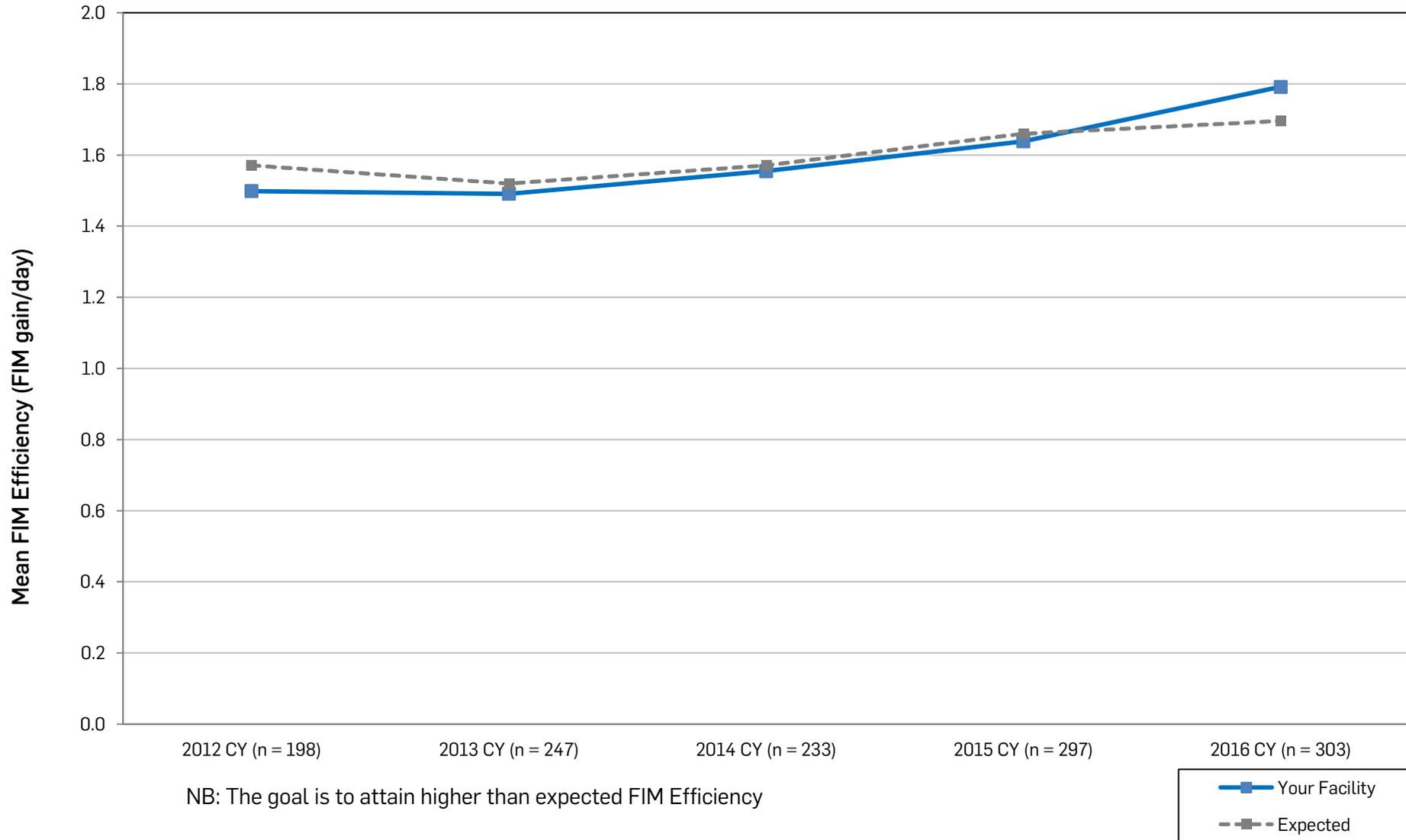


**Mean Casemix Adjusted FIM Efficiency**

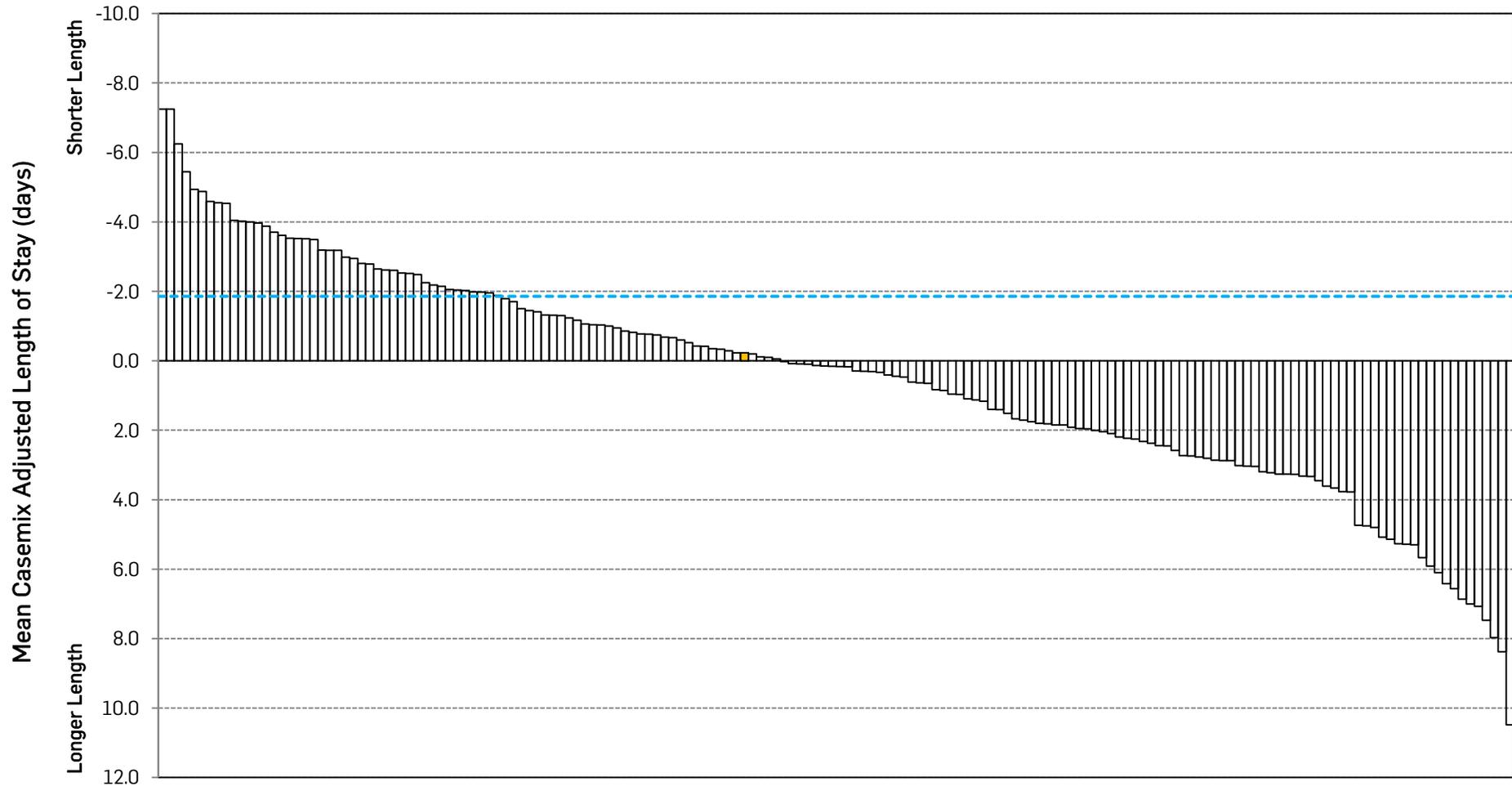
Your Facility (n = 303):	<b>0.10</b>	FIM gain/day (more efficient than average)
25th Percentile:	<b>0.28</b>	FIM gain/day (more efficient than average)



## Orthopaedic Replacements: Mean FIM Efficiency Over Time



## Orthopaedic Replacements: Casemix Adjusted Mean Length of Stay

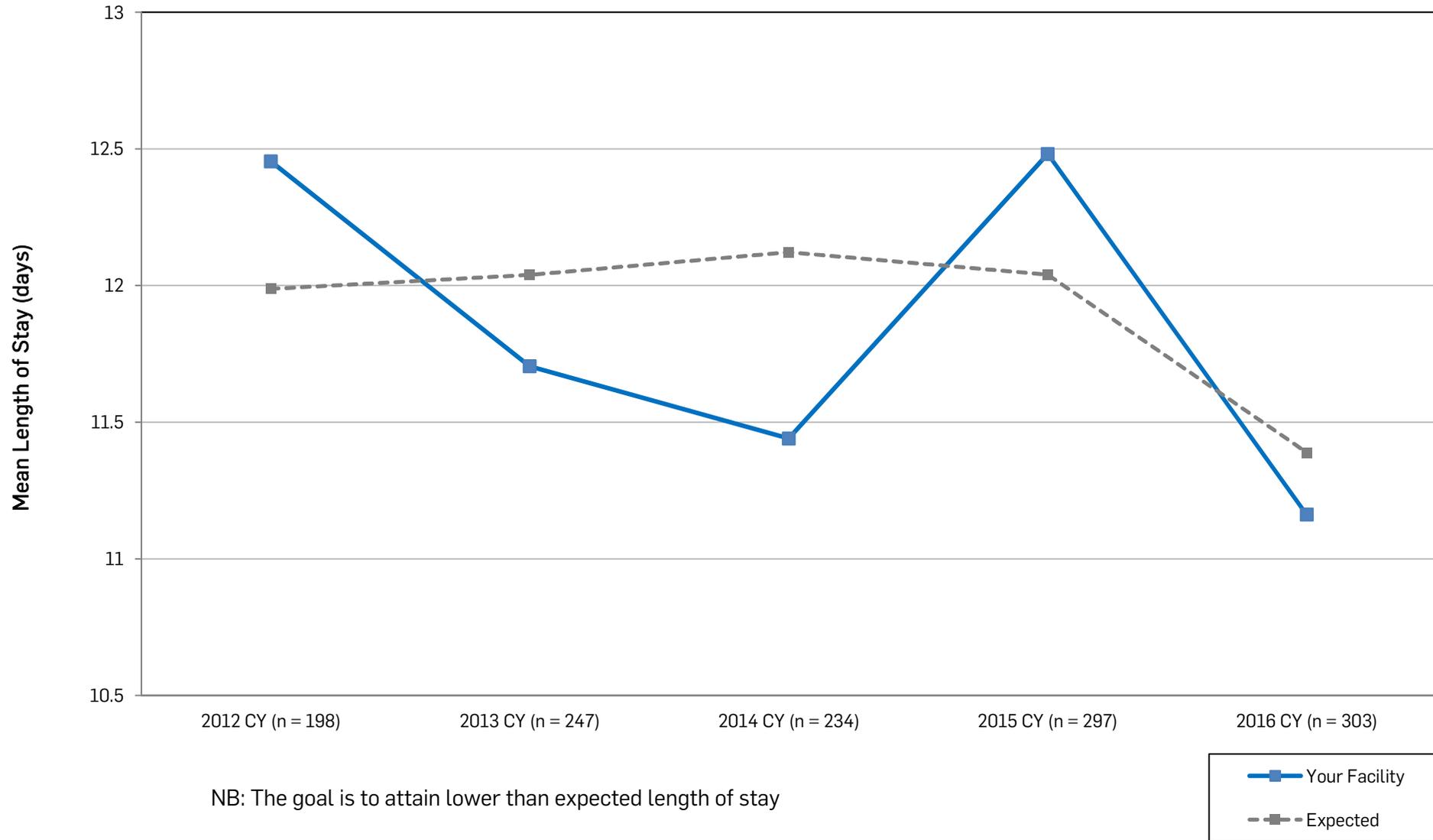


### Casemix Adjusted Length of Stay

Your Facility (n = 303): **-0.23** days (shorter than average)  
 25th Percentile: **-1.85** days (shorter than average)



## Orthopaedic Replacements: Mean Length of Stay Over Time





# Orthopaedic Surgery

# Data inclusion criteria

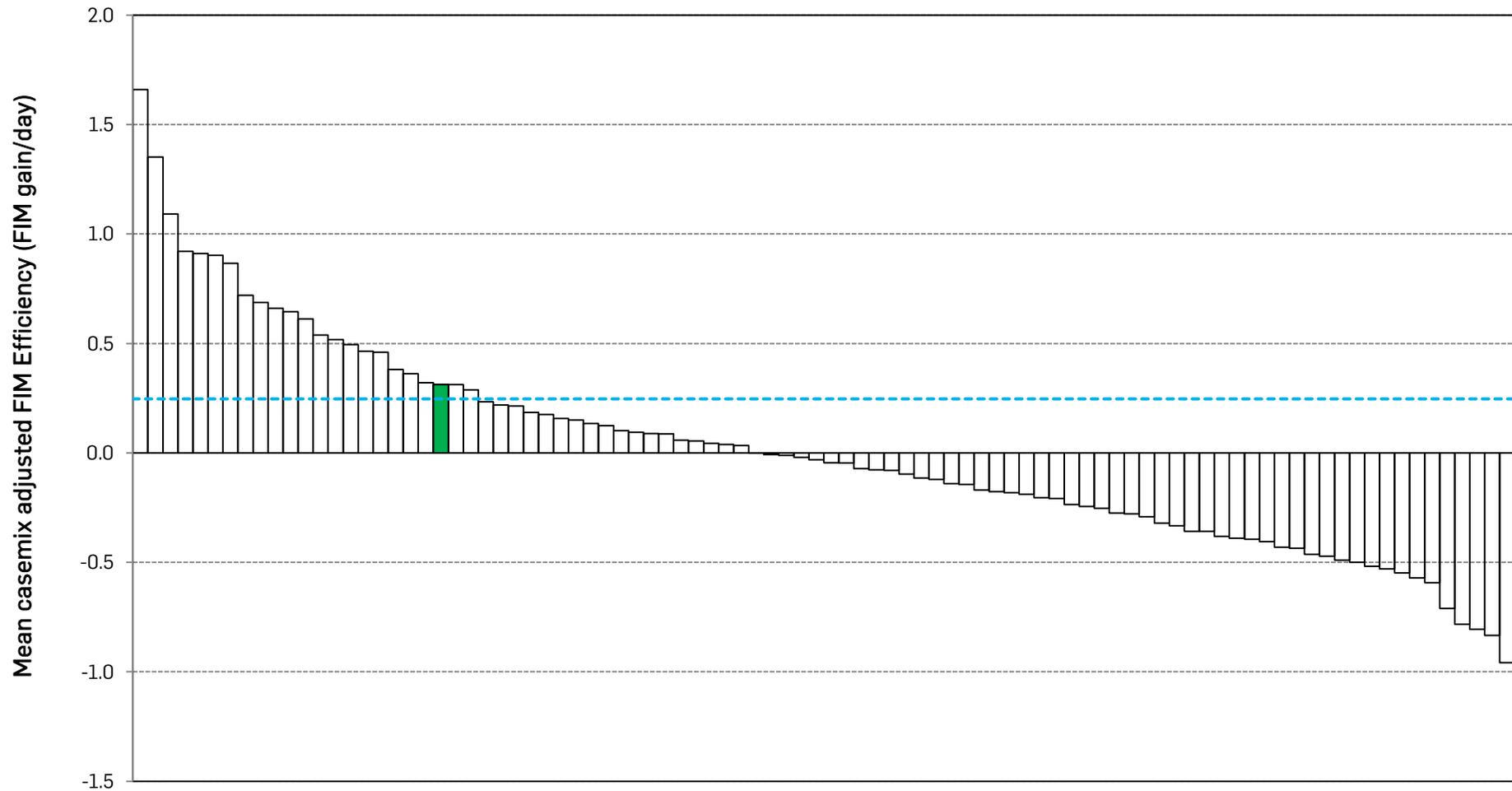
Data used in this section comprised of all episodes with AROC impairment codes:

- 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)

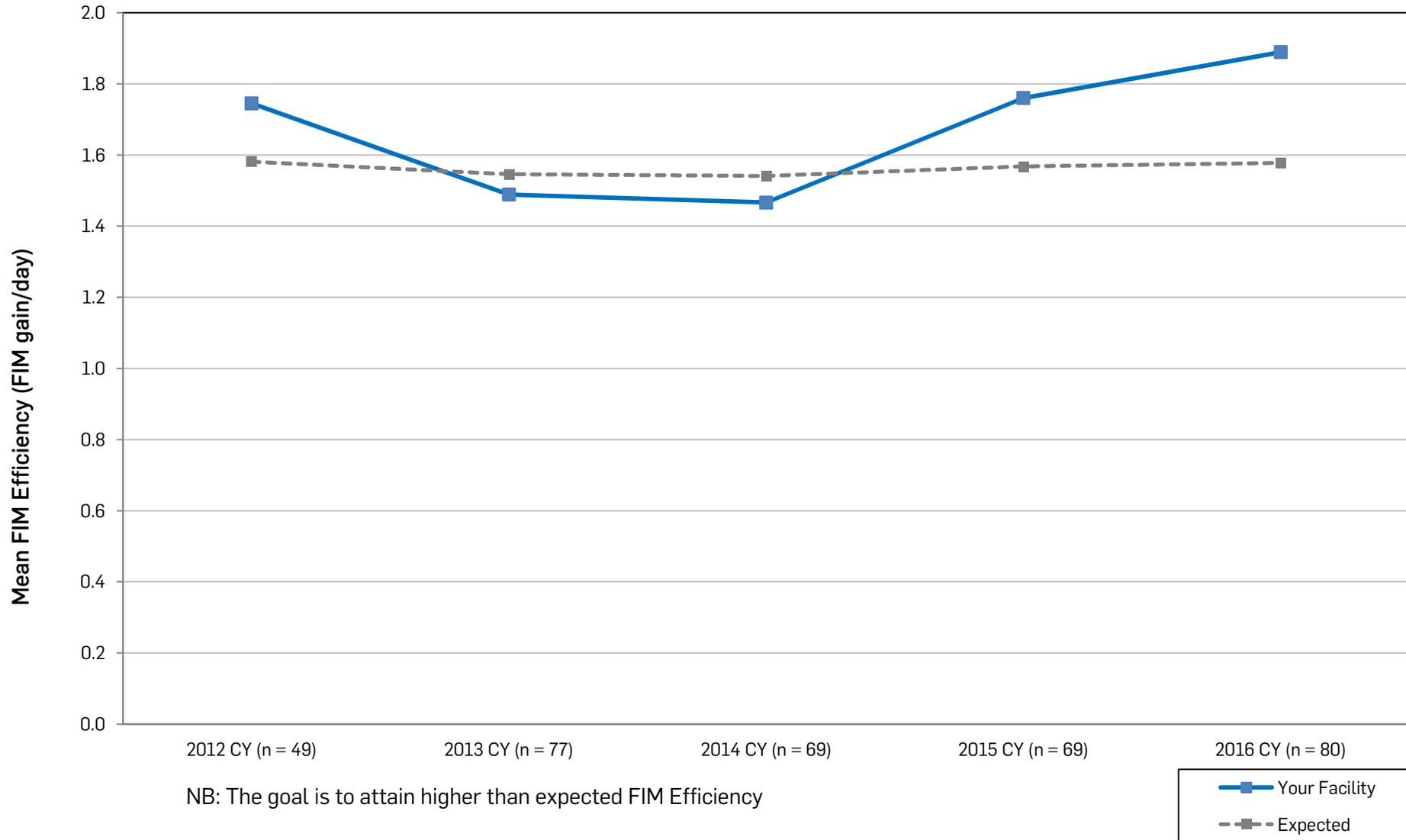
## Orthopaedic Surgery: Casemix Adjusted Mean FIM Efficiency



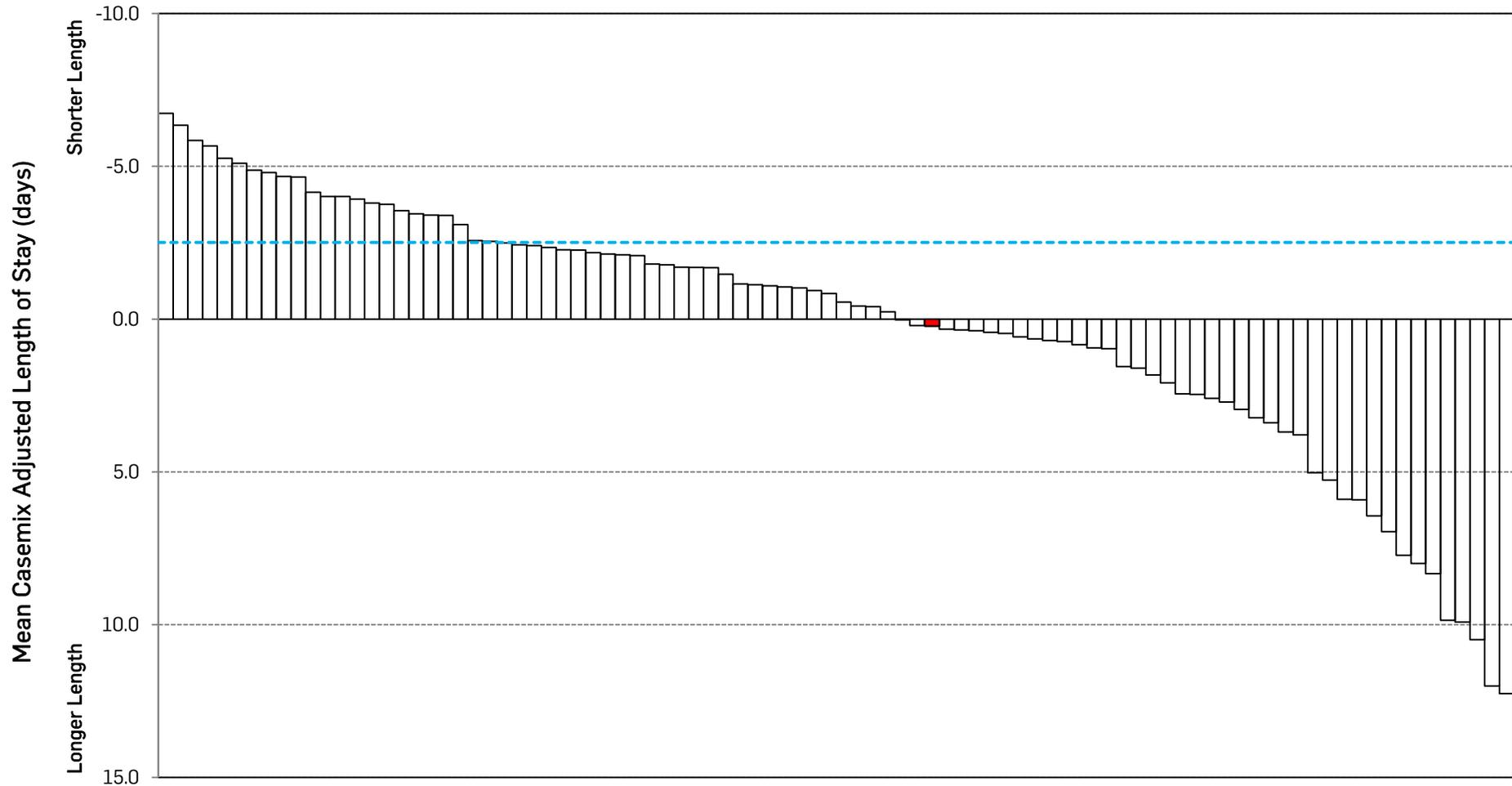
**Mean Casemix Adjusted FIM Efficiency**  
 Your Facility (n = 80): **0.31** FIM gain/day (more efficient than average)  
 25th Percentile: **0.25** FIM gain/day (more efficient than average)



## Orthopaedic Surgery: Mean FIM Efficiency Over Time



## Orthopaedic Surgery: Casemix Adjusted Mean Length of Stay

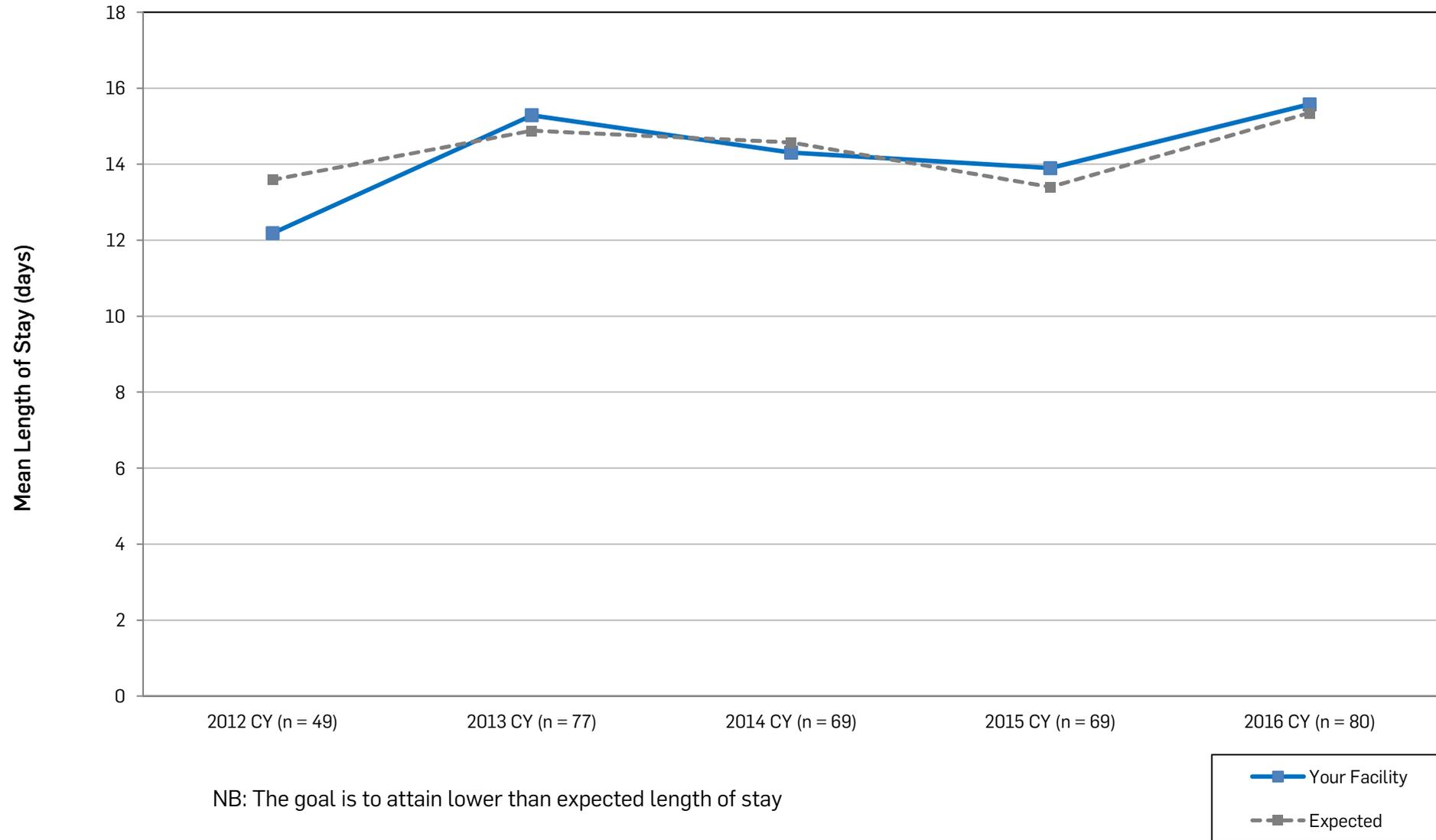


### Casemix Adjusted Length of Stay

Your Facility (n = 80): **0.23** days (longer than average)  
 25th Percentile: **-2.51** days (shorter than average)



## Orthopaedic Surgery: Mean Length of Stay Over Time





# Cardiac

# Data inclusion criteria

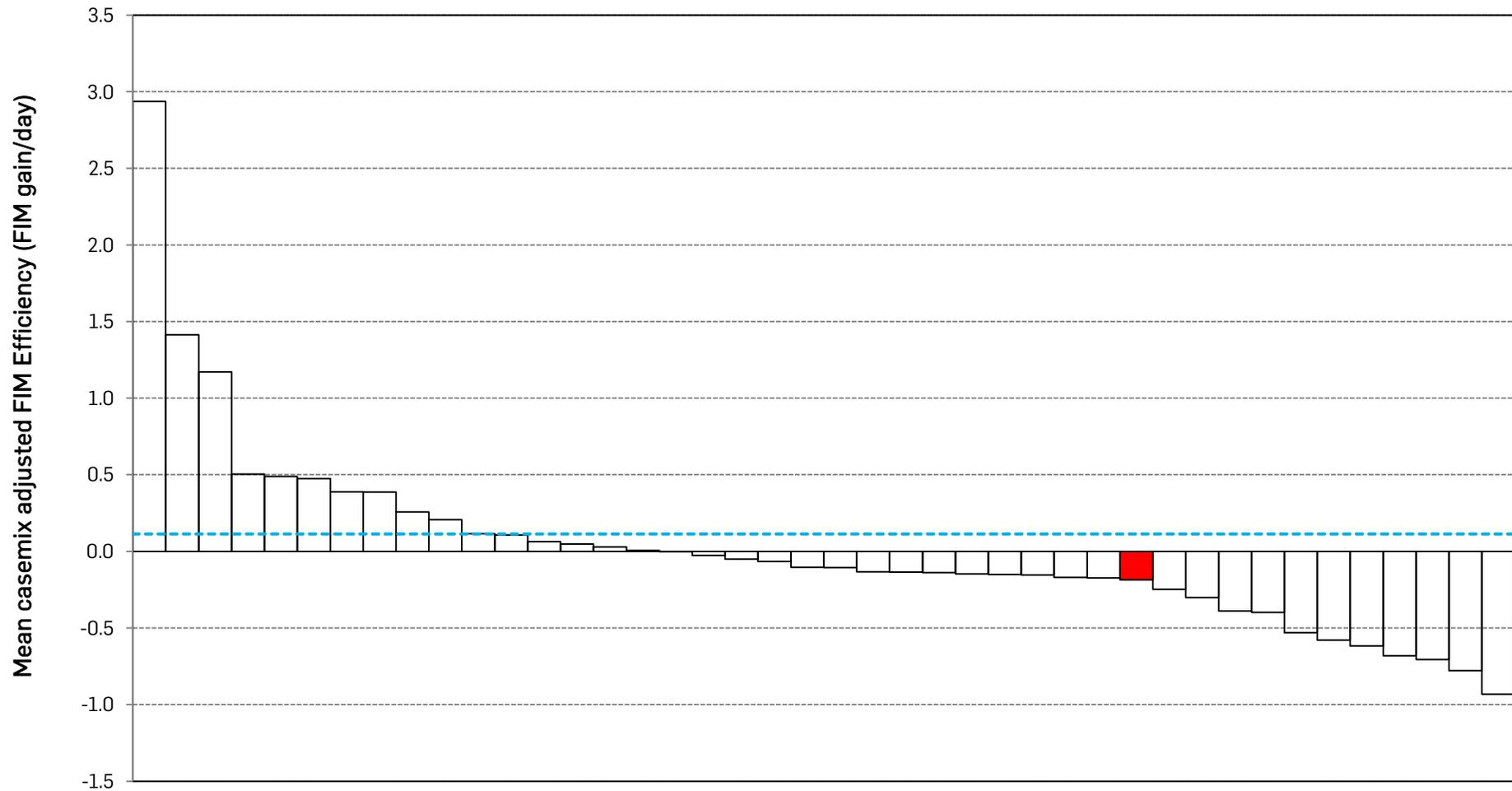
Data used in this section comprised of all episodes with AROC impairment codes:

- 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)

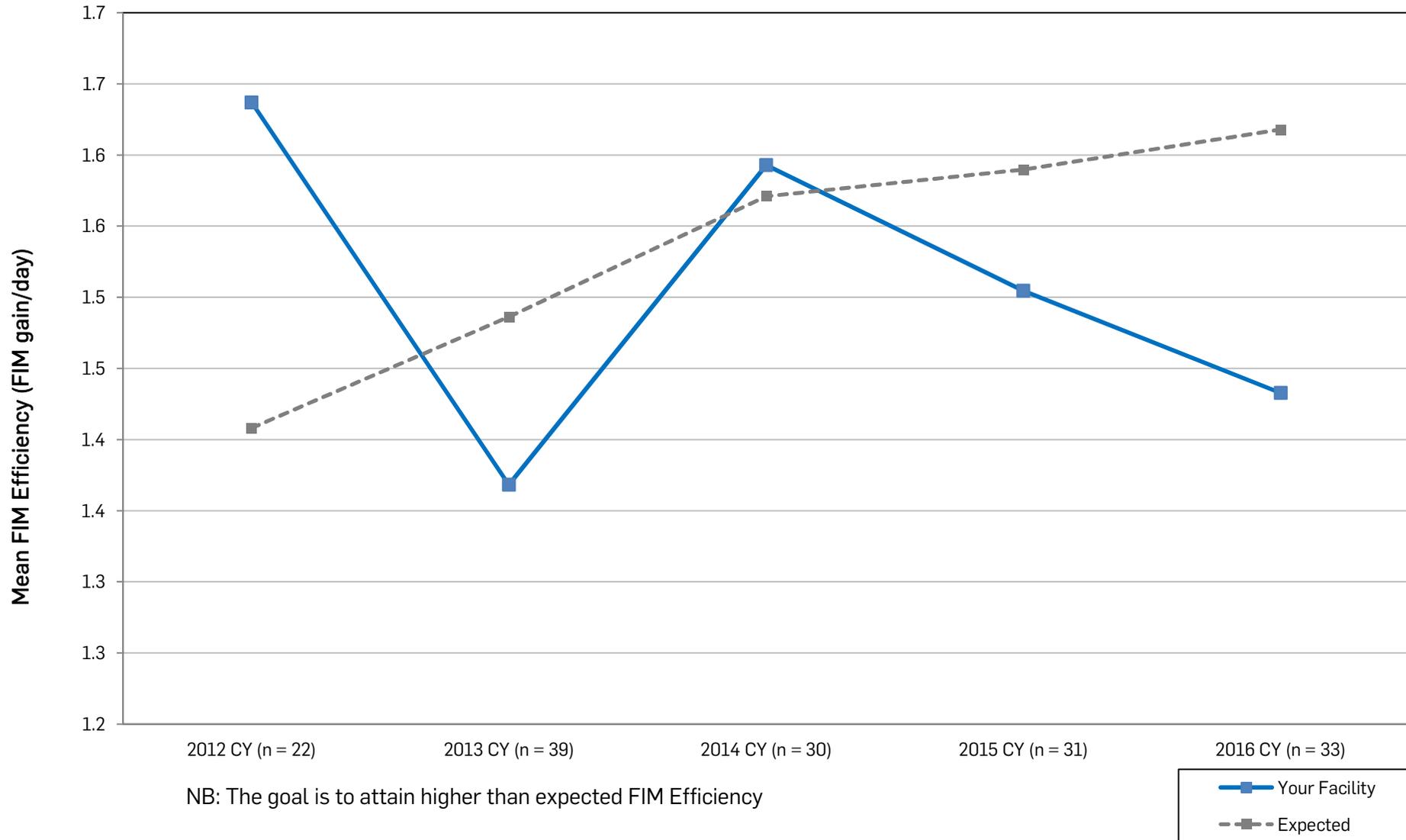
### Cardiac: Casemix Adjusted Mean FIM Efficiency



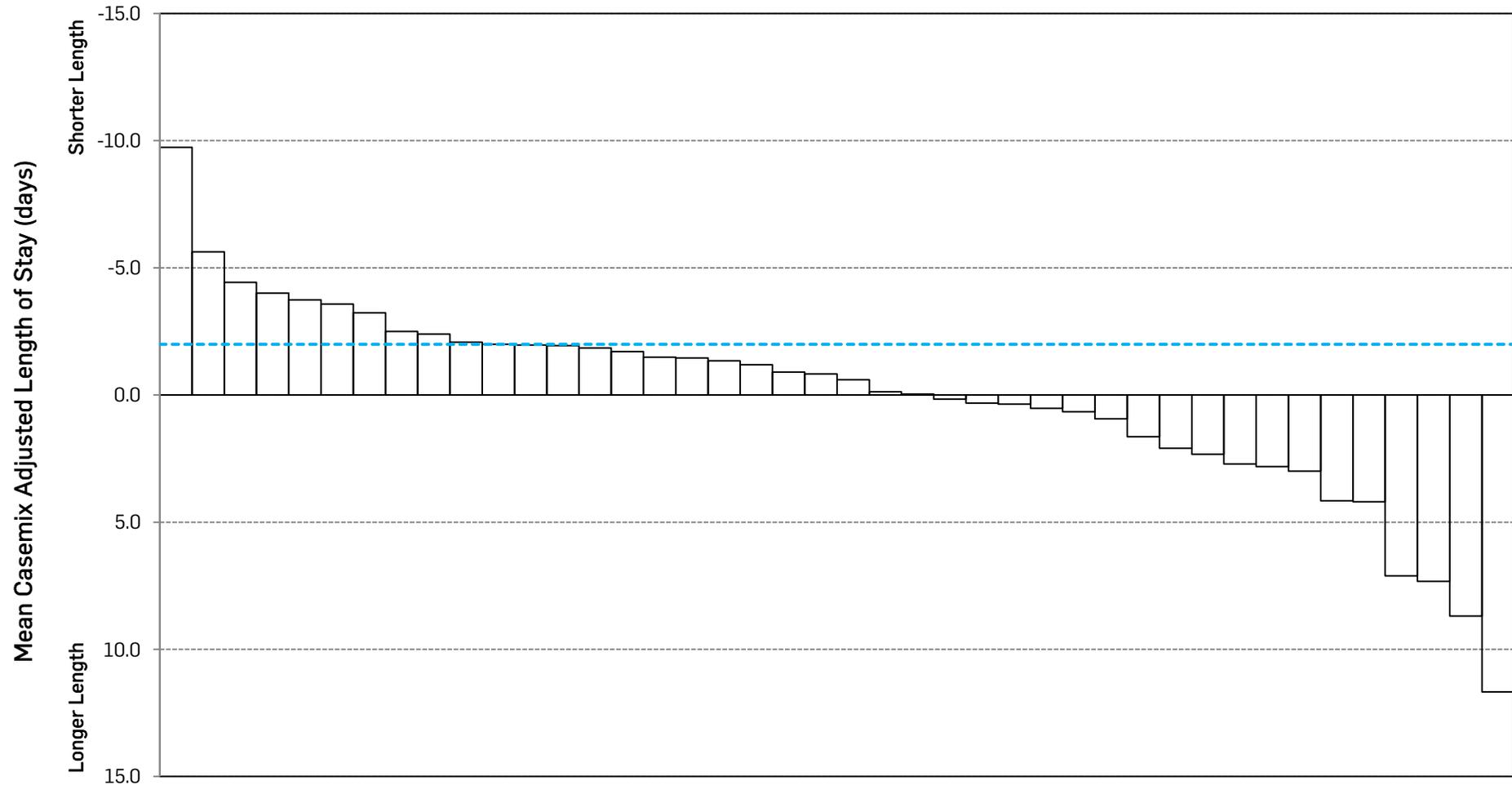
**Mean Casemix Adjusted FIM Efficiency**  
 Your Facility (n = 33): **-0.19** FIM gain/day (less efficient than average)  
 25th Percentile: **0.11** FIM gain/day (more efficient than average)

	All Facilities
	Your Facility
	25th Percentile

### Cardiac: Mean FIM Efficiency Over Time



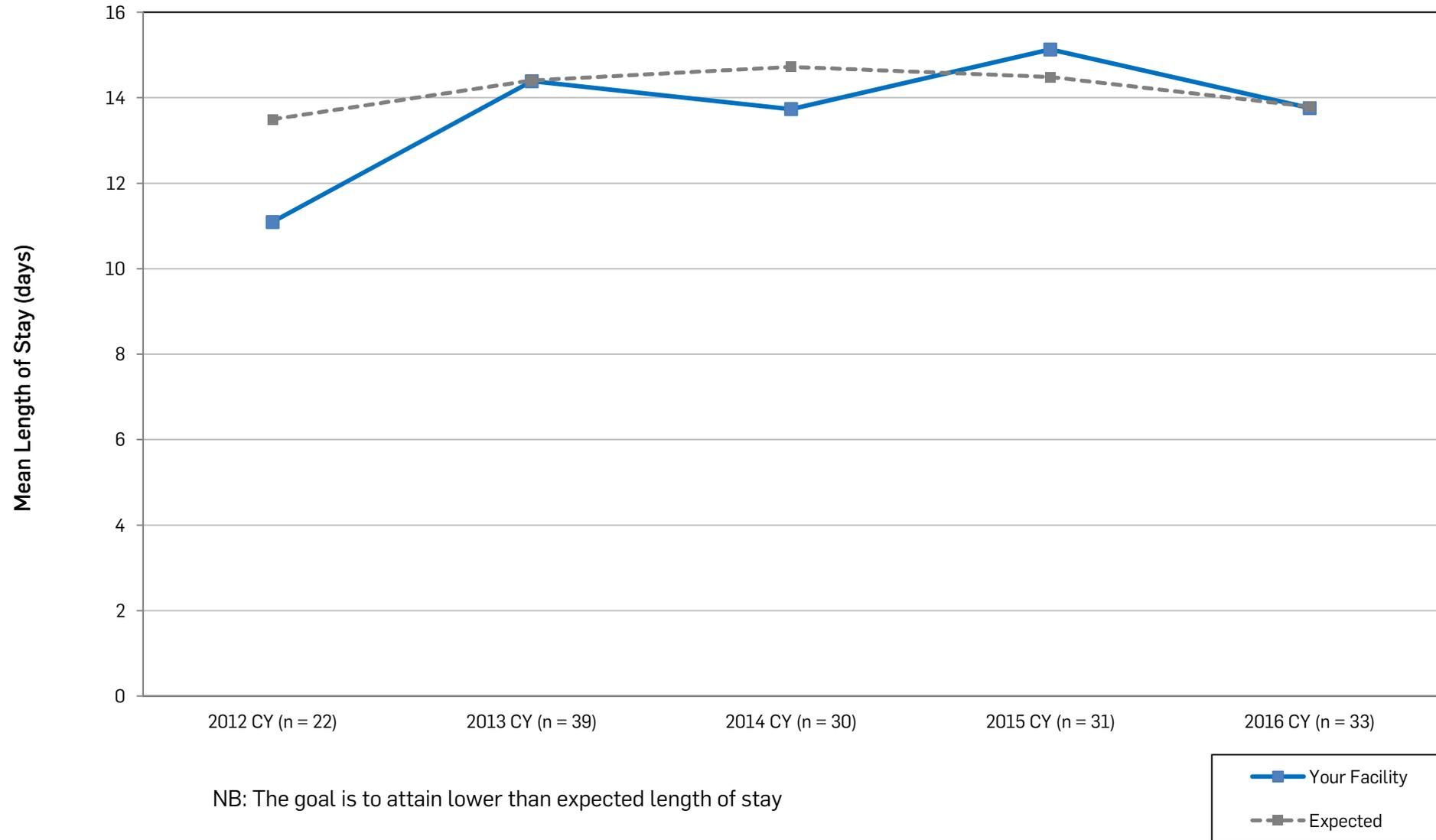
## Cardiac: Casemix Adjusted Mean Length of Stay



**Casemix Adjusted Length of Stay**  
 Your Facility (n = 33): **-0.03** days (same as average)  
 25th Percentile: **-1.99** days (shorter than average)



### Cardiac: Mean Length of Stay Over Time





# Pulmonary

# Data inclusion criteria

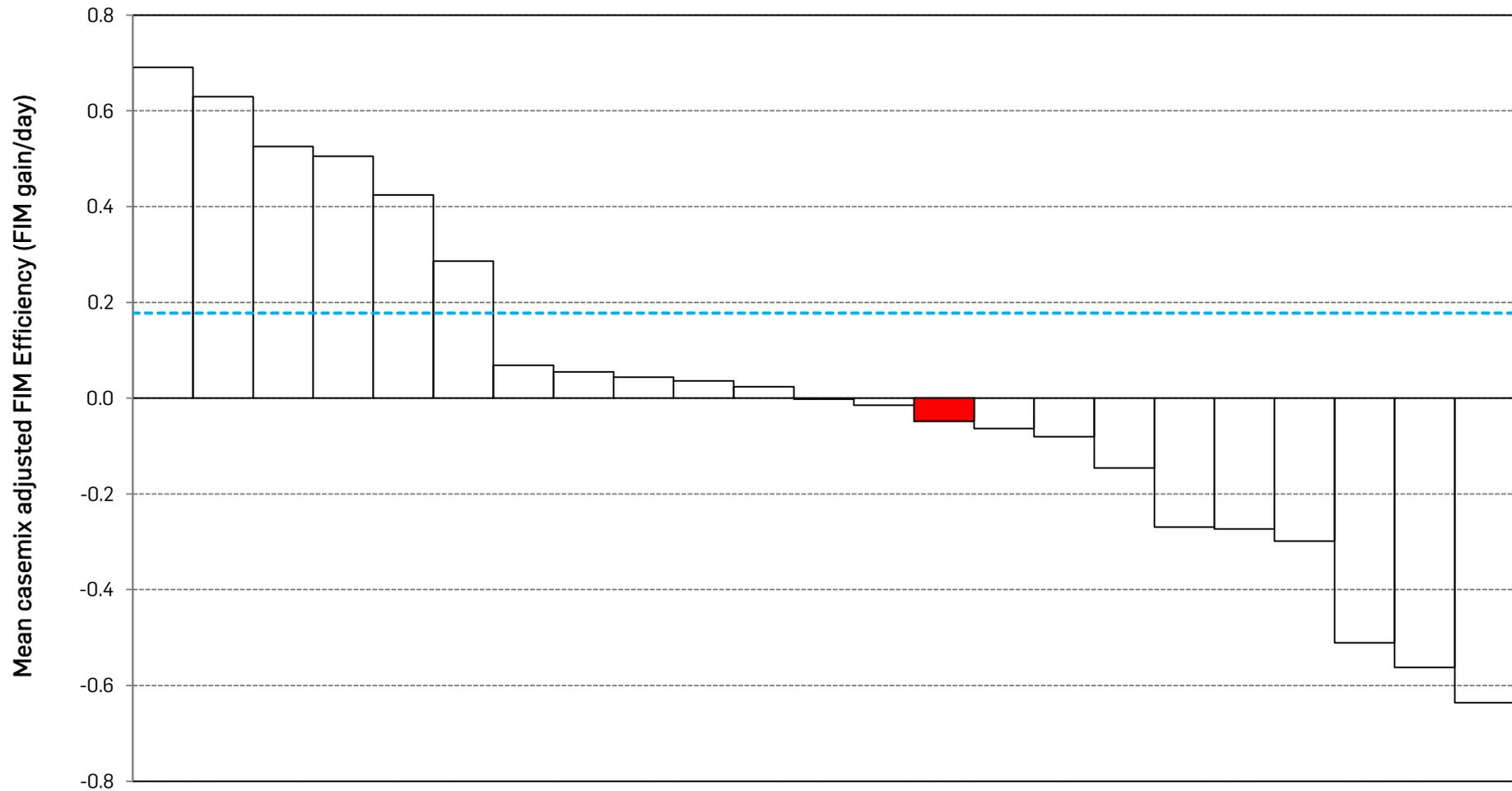
Data used in this section comprised of all episodes with AROC impairment codes:

- 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)

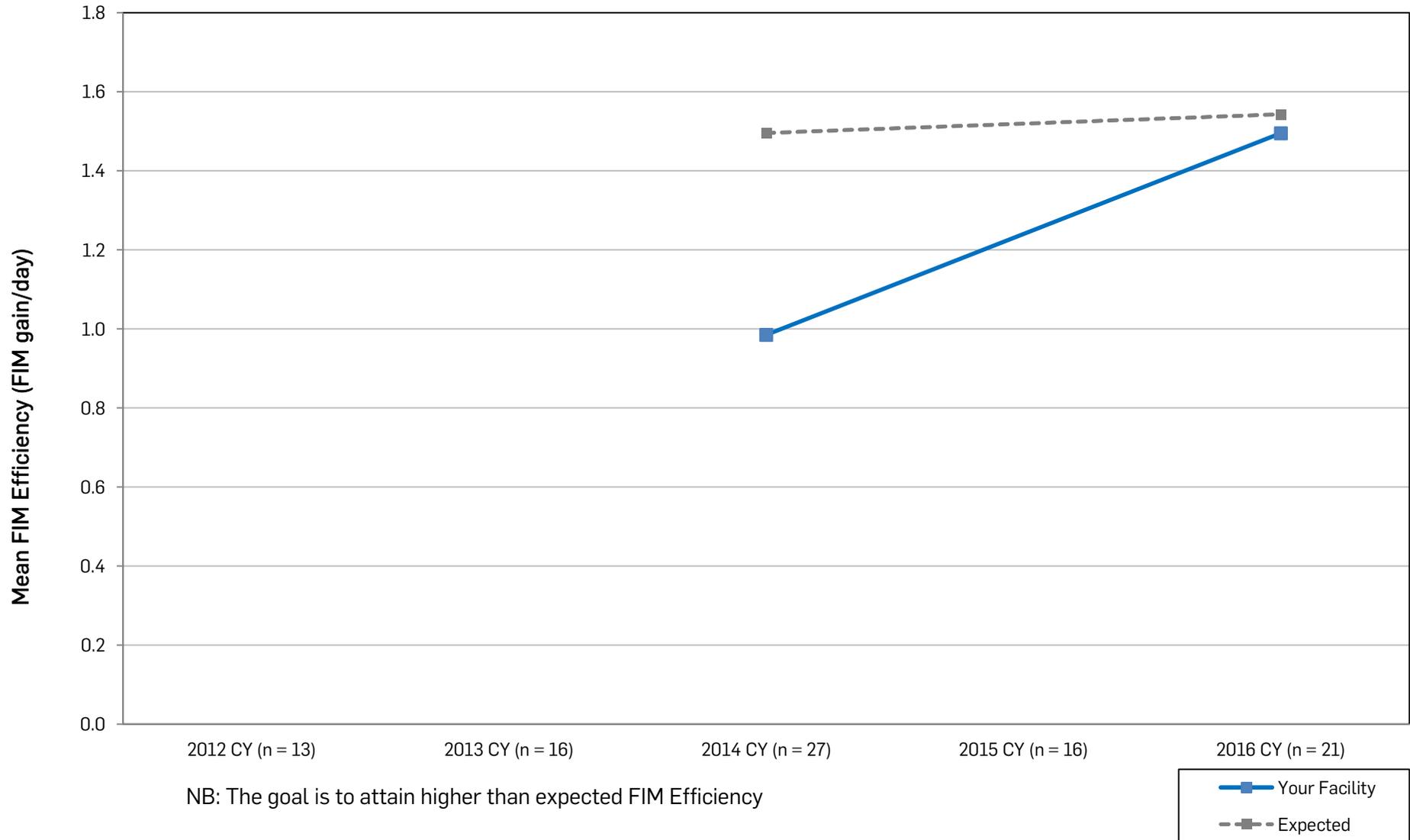
## Pulmonary: Casemix Adjusted Mean FIM Efficiency



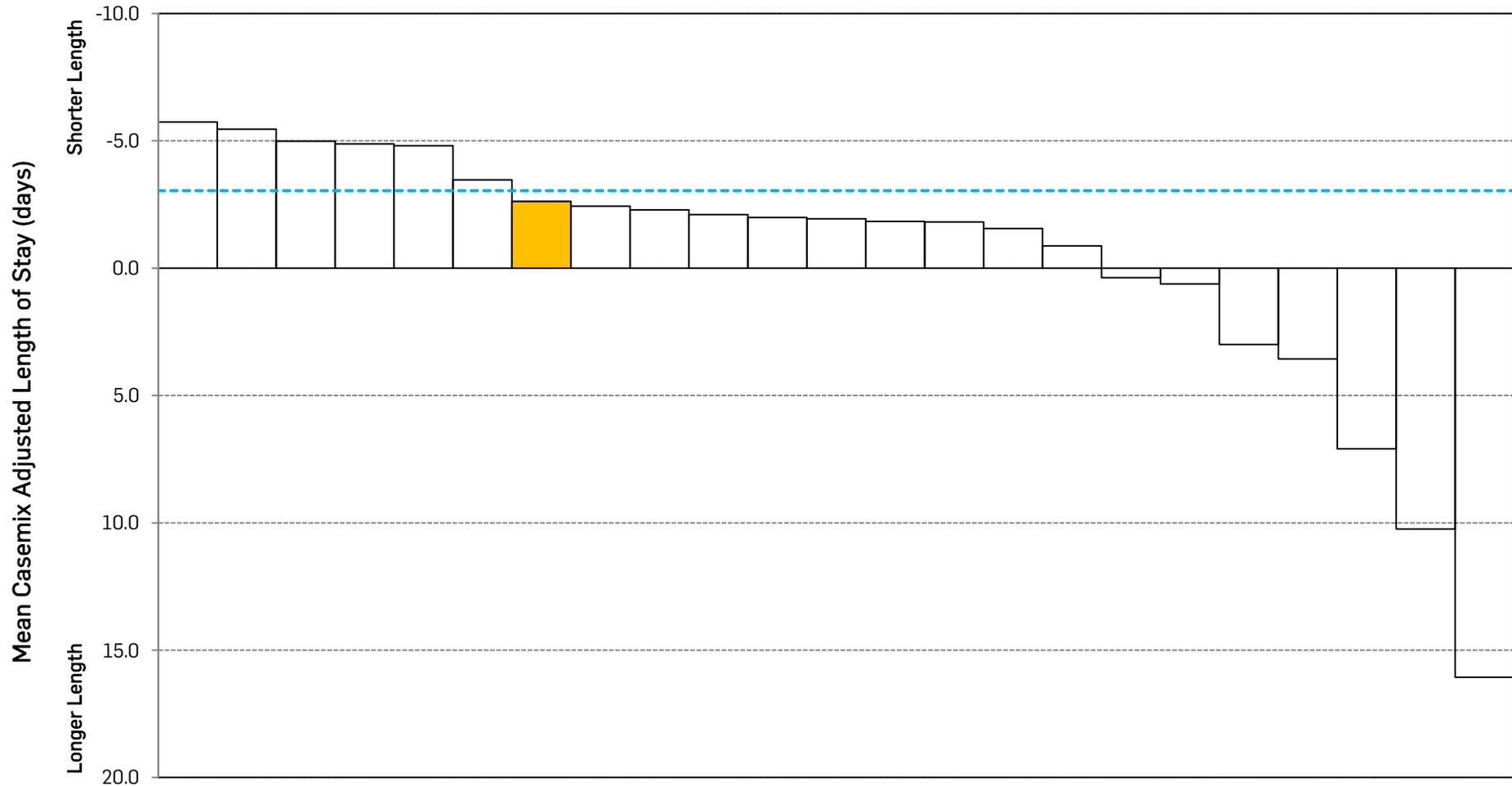
**Mean Casemix Adjusted FIM Efficiency**  
 Your Facility (n = 21): **-0.05** FIM gain/day (less efficient than average)  
 25th Percentile: **0.18** FIM gain/day (more efficient than average)



### Pulmonary: Mean FIM Efficiency Over Time



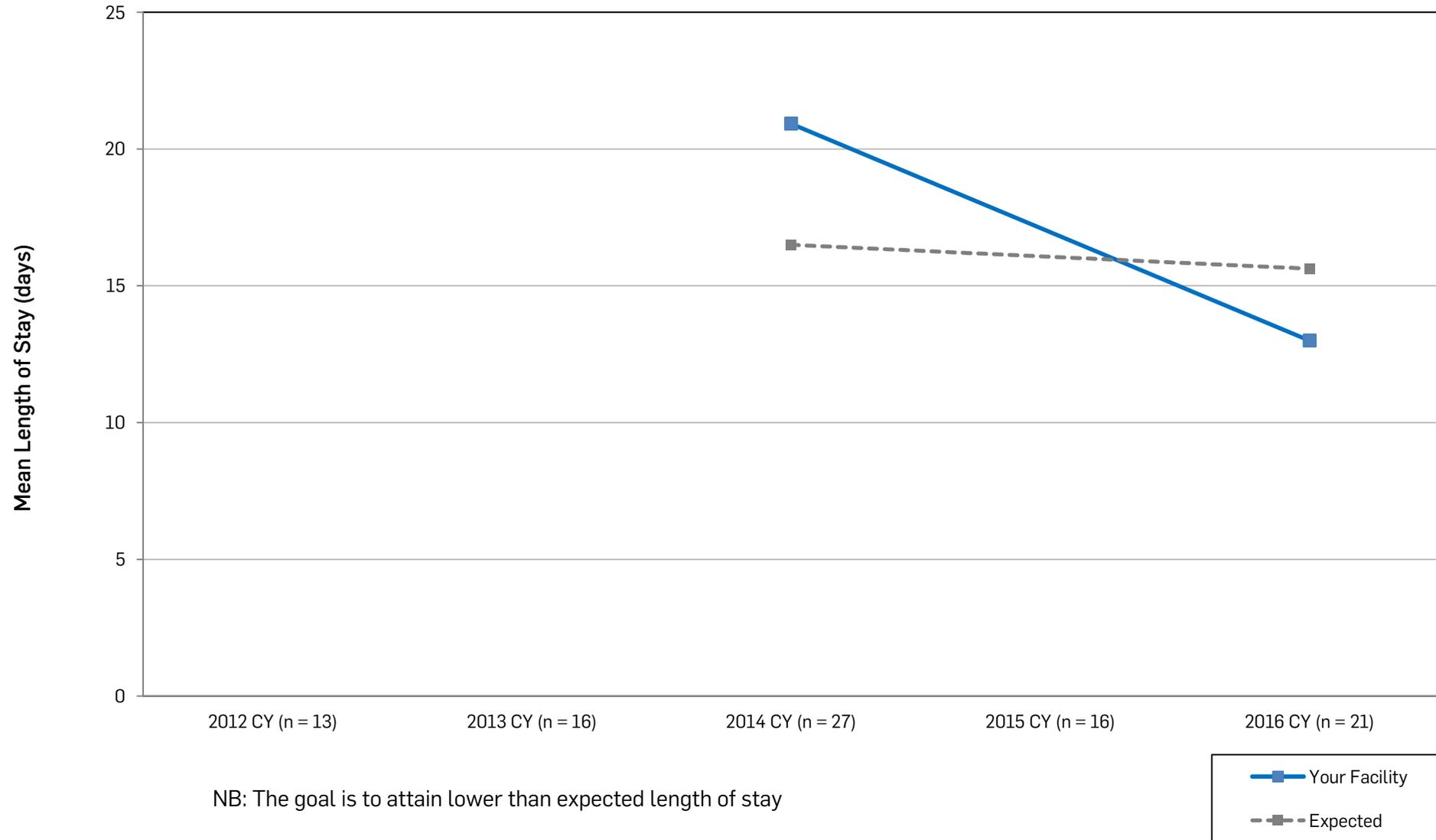
## Pulmonary: Casemix Adjusted Mean Length of Stay



**Casemix Adjusted Length of Stay**  
 Your Facility (n = 21): **-2.62** days (shorter than average)  
 25th Percentile: **-3.05** days (shorter than average)

	All Facilities
	Your Facility
	25th Percentile

## Pulmonary: Mean Length of Stay Over Time





# Reconditioning

# Data inclusion criteria

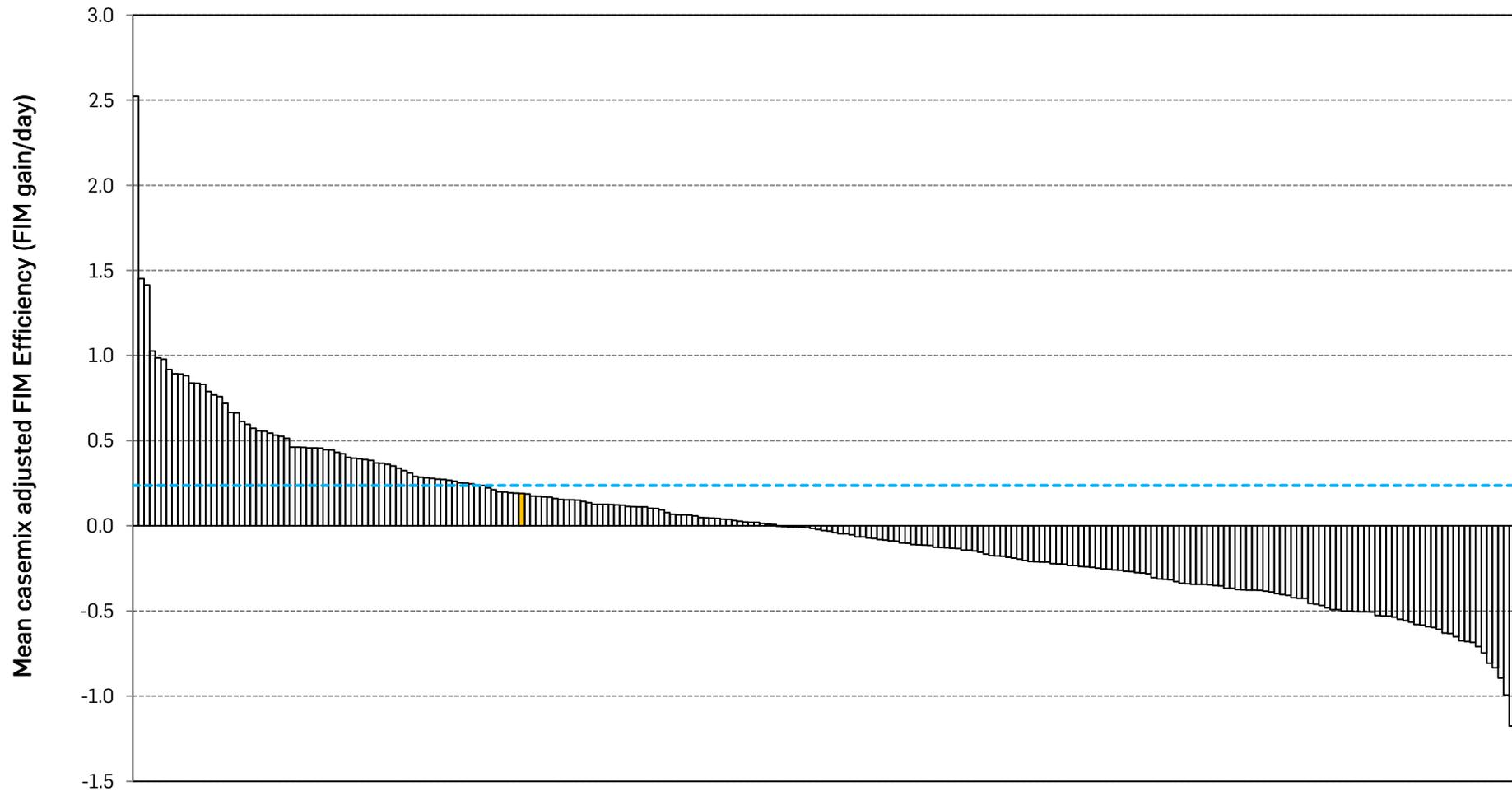
Data used in this section comprised of all episodes with AROC impairment codes:

- 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

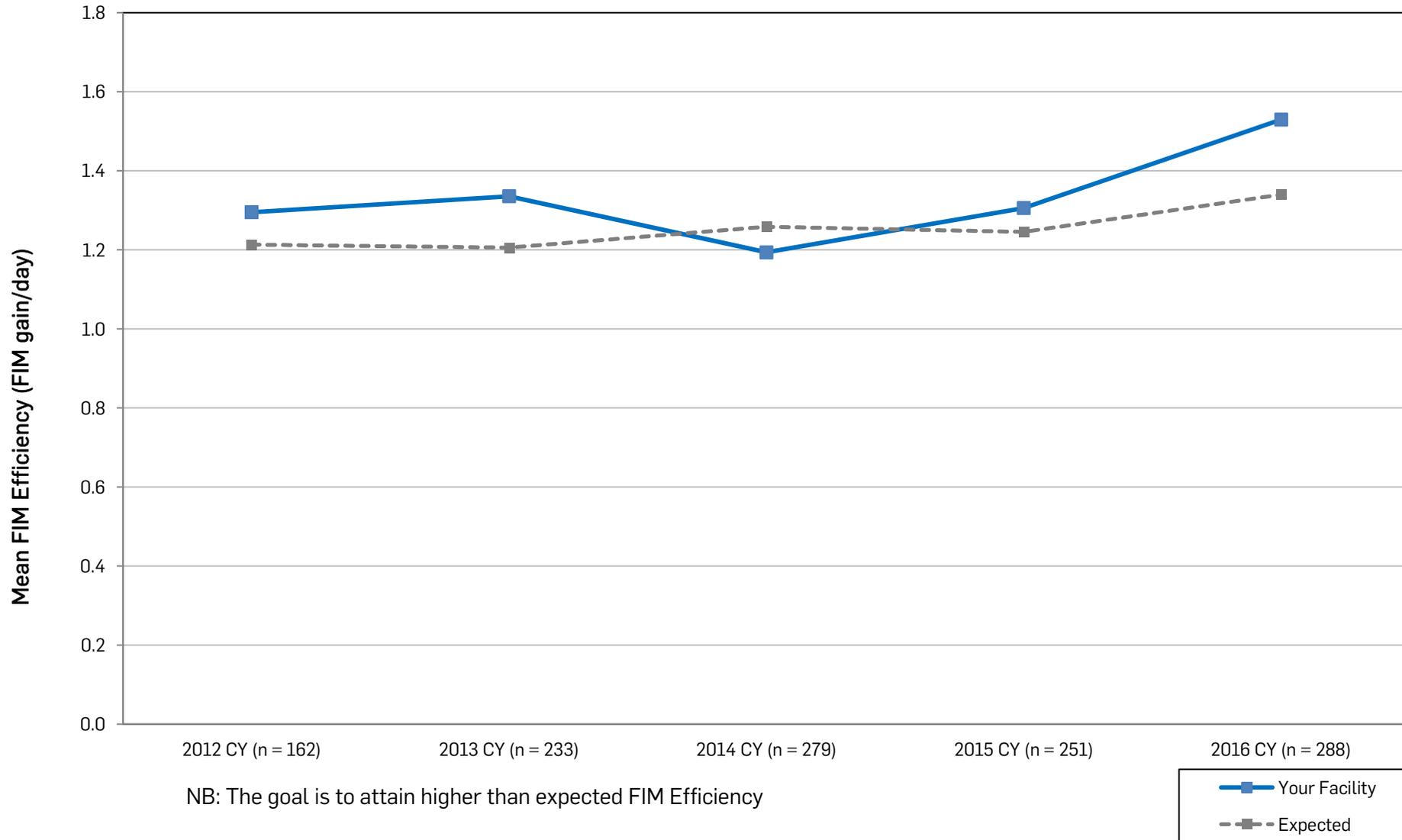


**Mean Casemix Adjusted FIM Efficiency**

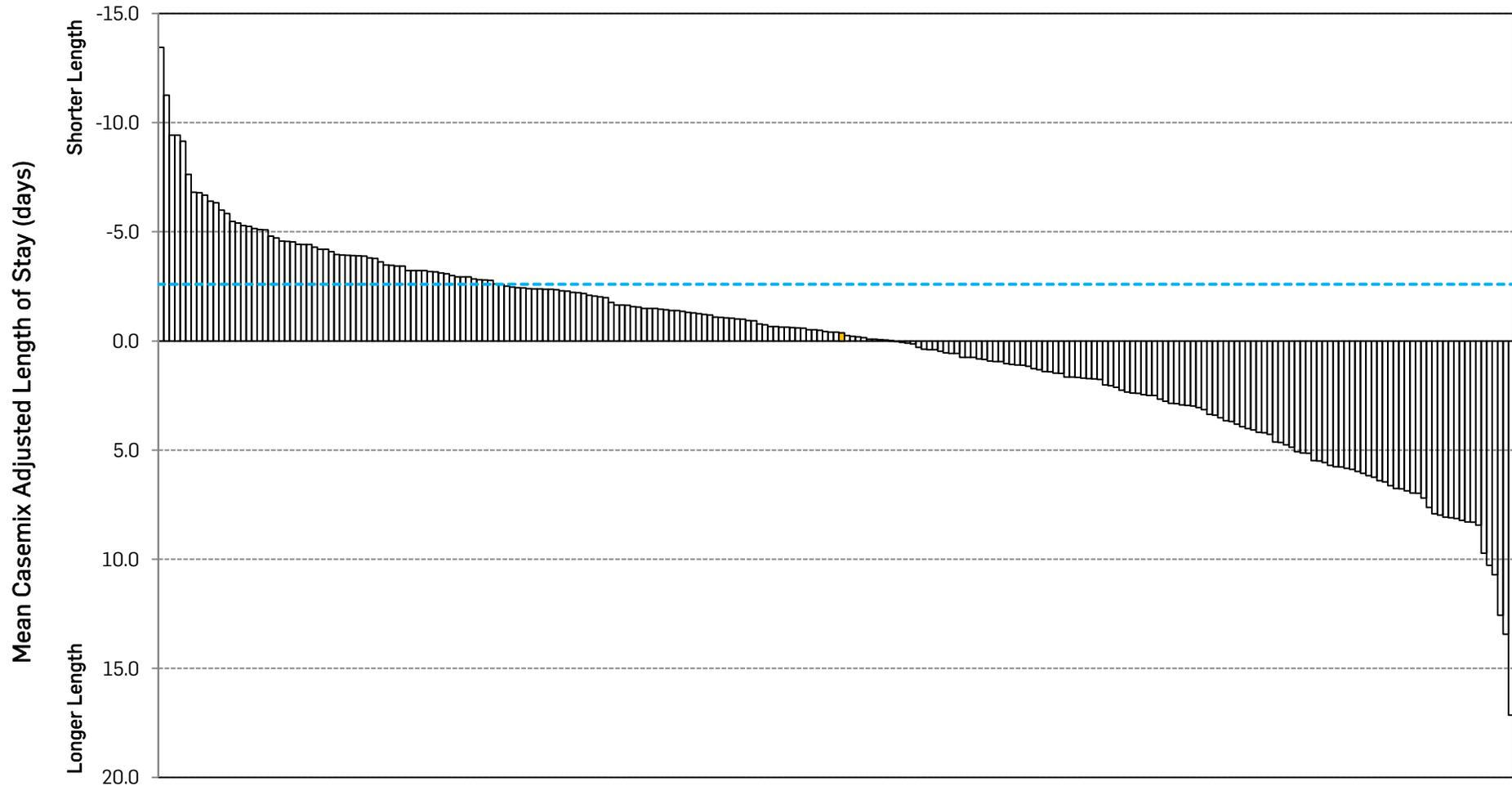
Your Facility (n = 288):	<b>0.19</b>	FIM gain/day (more efficient than average)
25th Percentile:	<b>0.24</b>	FIM gain/day (more efficient than average)



## Reconditioning: Mean FIM Efficiency Over Time



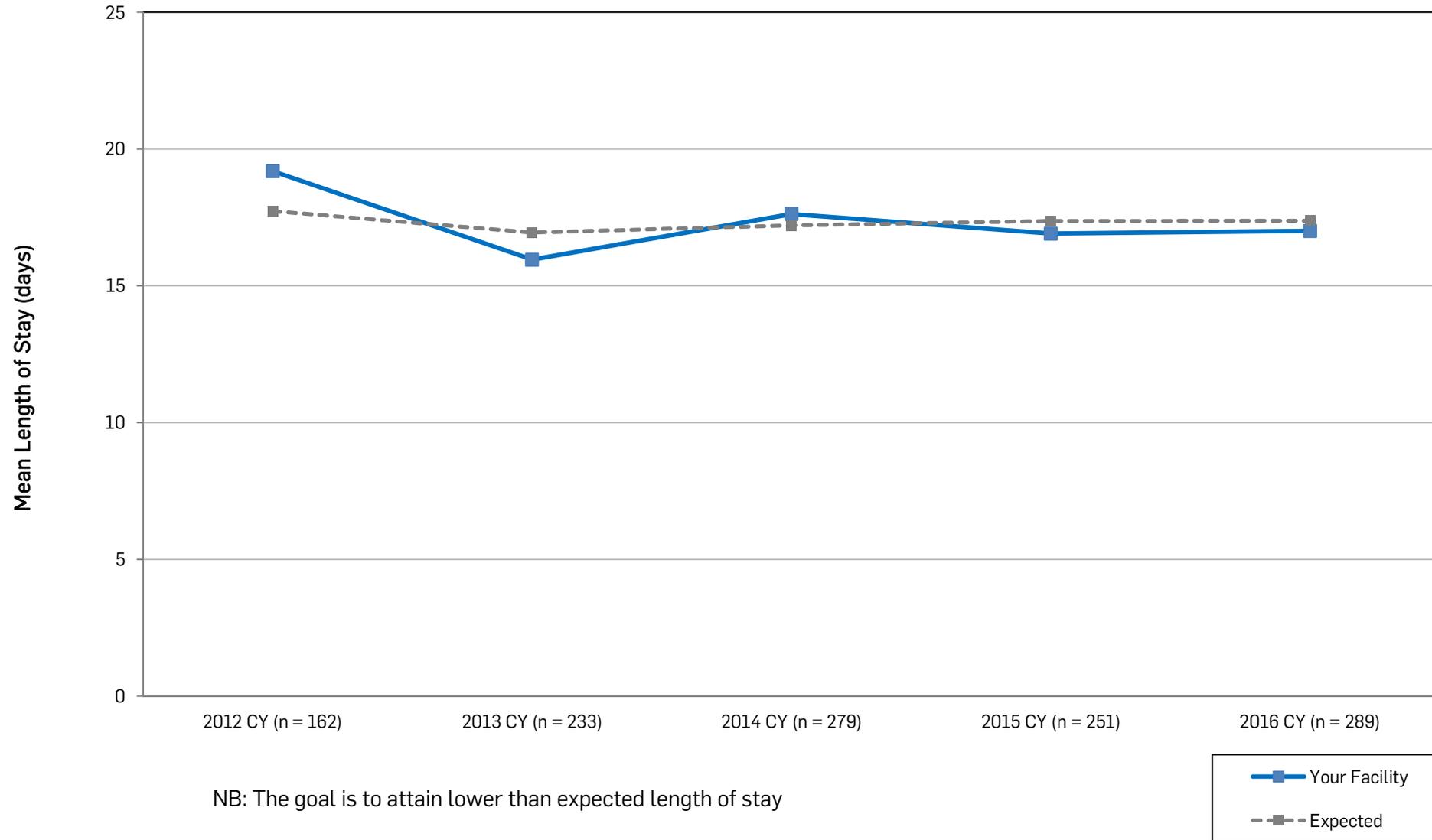
## Reconditioning: Casemix Adjusted Mean Length of Stay



**Casemix Adjusted Length of Stay**  
 Your Facility (n = 289): **-0.37** days (shorter than average)  
 25th Percentile: **-2.60** 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

- 5.2 Single upper above elbow
- 5.2 Single upper below elbow
- 5.2 Single upper above knee  
(includes through knee)
- 5.2 Single lower below knee
- 5.3 Double lower above knee  
(includes through knee)
- 5.3 Double lower above/below knee
- 5.3 Double lower below knee
- 5.3 Partial foot (single or double)
- 5.3 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	Class	Description
4AZ1	Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≥ 49	4AE2	Amputation of limb, Age ≥ 54, weighted FIM motor 31-67
4AZ2	Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≤ 48	4AE3	Amputation of limb, Age ≥ 54, weighted FIM motor 19-30
4AZ3	Weighted FIM motor score 13-18, All other impairments, Age ≥ 65	4AE4	Amputation of limb, Age ≤ 53, weighted FIM motor 19-91
4AZ4	Weighted FIM motor score 13-18, All other impairments, Age ≤ 64	4AH1	Orthopaedic fractures, weighted FIM motor 49-91, FIM cog 33-35
4AA1	Stroke, weighted FIM motor 51-91, FIM cog 29-35	4AH2	Orthopaedic fractures, weighted FIM motor 49-91, FIM cog 5-32
4AA2	Stroke, weighted FIM motor 51-91, FIM cog 19-28	4AH3	Orthopaedic fractures, weighted FIM motor 38-48
4AA3	Stroke, weighted FIM motor 51-91, FIM cog 5-18	4AH4	Orthopaedic fractures, weighted FIM motor 19-37
4AA4	Stroke, weighted FIM motor 36-50, Age ≥ 68	4A21	Orthopaedic all other (including replacements), weighted FIM motor 68-91
4AA5	Stroke, weighted FIM motor 36-50, Age ≤ 67	4A22	Orthopaedic all other (including replacements), weighted FIM motor 50-67
4AA6	Stroke, weighted FIM motor 19-35, Age ≥ 68	4A23	Orthopaedic all other (including replacements), weighted FIM motor 19-49
4AA7	Stroke, weighted FIM motor 19-35, Age ≤ 67	4A31	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72-91
4AB1	Brain dysfunction, weighted FIM motor 71-91, FIM cog 26-35	4A32	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55-71
4AB2	Brain dysfunction, weighted FIM motor 71-91, FIM cog 5-25	4A33	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34-54
4AB3	Brain dysfunction, weighted FIM motor 41-70, FIM cog 26-35	4A34	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19-33
4AB4	Brain dysfunction, weighted FIM motor 41-70, FIM cog 17-25	4AP1	Major Multiple Trauma, weighted FIM motor 19-91
4AB5	Brain dysfunction, weighted FIM motor 41-70, FIM cog 17-25	4AR1	Reconditioning, weighted FIM motor 67-91
4AB6	Brain dysfunction, weighted FIM motor 29-40	4AR2	Reconditioning, weighted FIM motor 50-66, FIM cog 26-35
4AB7	Brain dysfunction, weighted FIM motor 19-28	4AR3	Reconditioning, weighted FIM motor 50-66, FIM cog 5-25
4AC1	Neurological conditions, weighted FIM motor 62-91	4AR4	Reconditioning, weighted FIM motor 34-49, FIM cog 31-35
4AC2	Neurological conditions, weighted FIM motor 43-61	4AR5	Reconditioning, weighted FIM motor 34-49, FIM cog 5-30
4AC3	Neurological conditions, weighted FIM motor 19-42	4AR6	Reconditioning, weighted FIM motor 19-33
4AD1	Spinal cord dysfunction, Age ≥ 50, weighted FIM motor 42-91	4A91	All other impairments, weighted FIM motor 55-91
4AD2	Spinal cord dysfunction, Age ≥ 50, weighted FIM motor 19-41	4A92	All other impairments, weighted FIM motor 33-54
4AD3	Spinal cord dysfunction, Age ≤ 49, weighted FIM motor 34-91	4A93	All other impairments, weighted FIM motor 19-32
4AD4	Spinal cord dysfunction, Age ≤ 49, weighted FIM motor 19-33	4J01	Adult Same-Day Rehabilitation
4AE1	Amputation of limb, Age ≥ 54, weighted FIM motor 68-91	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

\* 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



# Acknowledgements

## AROC

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- The many staff from the rehabilitation facilities who have spent a great deal of time and care to collect, collate and correct the data, without which

## 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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## Suggested acknowledgement

"AROC Outcome Benchmarks Report (Inpatient - Pathway 3) - Anywhere Hospital from Jan 2016 to Dec 2016"



# AROC Contact Details

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