

# Spinal Cord Dysfunction LOS and FIM Change Benchmarks in Australia & New Zealand by AN-SNAP V5, Calendar Year 2022



| AN-SNAP class                 | Specialist Spinal Units |                       |                    |                   | Non Specialist Spinal Units |                     |                    |                   | All AROC Facilities |                       |                    |                   |
|-------------------------------|-------------------------|-----------------------|--------------------|-------------------|-----------------------------|---------------------|--------------------|-------------------|---------------------|-----------------------|--------------------|-------------------|
|                               | No.                     | Length of stay        | FIM change         | FIM gain per week | No.                         | Length of stay      | FIM change         | FIM gain per week | No.                 | Length of stay        | FIM change         | FIM gain per week |
|                               |                         | Mean (95%CI)          | Mean (95%CI)       |                   |                             | Mean (95%CI)        | Mean (95%CI)       |                   |                     |                       |                    |                   |
| <b>Traumatic episodes</b>     |                         |                       |                    |                   |                             |                     |                    |                   |                     |                       |                    |                   |
| 5AZ1                          | 46                      | 113.4 (97.7 - 129.2)  | 27.1 (20.3 - 33.8) | 1.7               | 15                          | 65.3 (41.4 - 89.3)  | 30.0 (16.5 - 43.5) | 3.2               | 61                  | 101.6 (87.4 - 115.8)  | 27.8 (21.7 - 33.9) | 1.9               |
| 5AZ2                          | 34                      | 134.4 (116.0 - 152.9) | 24.0 (16.9 - 31.1) | 1.2               | 5                           | 95.6 (60.5 - 130.7) | 38.8 (8.7 - 68.9)  | 2.8               | 39                  | 129.5 (112.4 - 146.5) | 25.9 (18.6 - 33.1) | 1.4               |
| 5AD1                          | 19                      | 34.9 (23.8 - 46.0)    | 17.6 (13.4 - 21.8) | 3.5               | 21                          | 29.3 (13.7 - 45.0)  | 18.9 (15.5 - 22.4) | 4.5               | 40                  | 32.0 (22.2 - 41.7)    | 18.3 (15.6 - 21.0) | 4.0               |
| 5AD2                          | 24                      | 52.1 (41.0 - 63.3)    | 30.4 (26.5 - 34.3) | 4.1               | 20                          | 27.7 (17.8 - 37.6)  | 30.9 (25.4 - 36.4) | 7.8               | 44                  | 41.0 (32.6 - 49.4)    | 30.6 (27.3 - 33.9) | 5.2               |
| 5AD3                          | 70                      | 78.8 (69.5 - 88.0)    | 37.8 (33.7 - 42.0) | 3.4               | 18                          | 80.6 (44.8 - 116.4) | 31.0 (21.2 - 40.8) | 2.7               | 88                  | 79.1 (68.9 - 89.3)    | 36.4 (32.6 - 40.3) | 3.2               |
| 5AP1                          | 5                       | 73.4 (40.4 - 106.4)   | 11.4 (8.0 - 14.8)  | 1.1               | 36                          | 16.6 (13.4 - 19.9)  | 19.1 (15.3 - 23.0) | 8.1               | 41                  | 23.6 (16.2 - 30.9)    | 18.2 (14.7 - 21.7) | 5.4               |
| 5AP2                          | 5                       | 142.2 (72.4 - 212.0)  | 20.6 (5.6 - 35.6)  | 1.0               | 14                          | 37.6 (29.2 - 46.1)  | 51.4 (41.2 - 61.7) | 9.6               | 19                  | 65.2 (37.8 - 92.6)    | 43.3 (33.1 - 53.6) | 4.7               |
| <b>Total episodes</b>         | <b>203</b>              |                       |                    |                   | <b>129</b>                  |                     |                    |                   | <b>332</b>          |                       |                    |                   |
| <b>Non-Traumatic episodes</b> |                         |                       |                    |                   |                             |                     |                    |                   |                     |                       |                    |                   |
| 5AZ1                          | 14                      | 83.6 (65.6 - 101.6)   | 27.8 (15.0 - 40.6) | 2.3               | 9                           | 87.4 (56.3 - 118.5) | 21.7 (6.6 - 36.7)  | 1.7               | 23                  | 85.1 (69.2 - 100.9)   | 25.4 (15.9 - 34.9) | 2.1               |
| 5AZ2                          | 11                      | 128.5 (91.0 - 165.9)  | 23.2 (10.9 - 35.4) | 1.3               | 8                           | 91.3 (49.5 - 133.0) | 25.4 (6.5 - 44.3)  | 1.9               | 19                  | 112.8 (84.8 - 140.8)  | 24.1 (13.9 - 34.3) | 1.5               |
| 5AD1                          | 35                      | 33.6 (23.9 - 43.3)    | 14.5 (11.6 - 17.3) | 3.0               | 100                         | 17.1 (14.2 - 19.9)  | 15.5 (13.9 - 17.1) | 6.4               | 135                 | 21.3 (17.9 - 24.8)    | 15.2 (13.8 - 16.6) | 5.0               |
| 5AD2                          | 33                      | 49.8 (37.4 - 62.2)    | 25.5 (20.2 - 30.8) | 3.6               | 85                          | 32.0 (26.0 - 38.1)  | 27.4 (25.0 - 29.8) | 6.0               | 118                 | 37.0 (31.3 - 42.7)    | 26.9 (24.6 - 29.1) | 5.1               |
| 5AD3                          | 88                      | 85.0 (75.8 - 94.3)    | 35.9 (32.2 - 39.7) | 3.0               | 91                          | 52.0 (43.5 - 60.5)  | 28.0 (23.7 - 32.3) | 3.8               | 179                 | 68.2 (61.5 - 74.9)    | 31.9 (29.0 - 34.8) | 3.3               |
| <b>Total episodes</b>         | <b>181</b>              |                       |                    |                   | <b>293</b>                  |                     |                    |                   | <b>474</b>          |                       |                    |                   |

NOTE 1: Where the number of episodes < 5 details are not given for reasons of privacy and accuracy.

NOTE 2: Analysis includes first admission, complete episodes only

## AN-SNAP V5 classes for Spinal Cord Dysfunction

| Class | Description of AN-SNAP class  |
|-------|---|
| 5AZ1  | Weighted FIM Motor score 13-18, Brain, Spine, MMT, Burns, Age >= 59   |
| 5AZ2  | Weighted FIM Motor score 13-18, Brain, Spine, MMT, Burns, Age 18 - 58 |
| 5AD1  | Spinal cord dysfunction, Weighted FIM Motor 55 - 91                   |
| 5AD2  | Spinal cord dysfunction, Weighted FIM Motor 37 - 54                   |
| 5AD3  | Spinal cord dysfunction, Weighted FIM Motor 19 - 36                   |
| 5AP1  | Major Multiple Trauma, Weighted FIM Motor 51 - 91                     |
| 5AP2  | Major Multiple Trauma, Weighted FIM Motor 19 - 50                     |

## All Spinal Cord Dysfunction impairment codes

| Traumatic spinal cord dysfunction            | Non traumatic spinal cord dysfunction            |
|--|--|
| 4.211 Paraplegia, incomplete                 | 4.111 Paraplegia, incomplete                     |
| 4.212 Paraplegia, complete                   | 4.112 Paraplegia, complete                       |
| 4.2211 Quadriplegia, incomplete C1-4         | 4.1211 Quadriplegia, incomplete C1-4             |
| 4.2212 Quadriplegia, incomplete C5-8         | 4.1212 Quadriplegia, incomplete C5-8             |
| 4.2221 Quadriplegia, complete C1-4           | 4.1221 Quadriplegia, complete C1-4               |
| 4.2222 Quadriplegia, complete C5-8           | 4.1222 Quadriplegia, complete C5-8               |
| 4.23 Other traumatic spinal cord dysfunction | 4.13 Other non-traumatic spinal cord dysfunction |
| <b>Major Multiple Trauma</b>                 |  |
| 14.1 Brain + spinal cord injury              |  |
| 14.3 Spinal cord + multi fracture/amputation |  |

# Spinal Cord Dysfunction LOS and FIM Change Benchmarks in Australia & New Zealand by AN-SNAP V4, Calendar Year 2022



| AN-SNAP class                 | Specialist Spinal Units |                       |                    |                   | Non Specialist Spinal Units |                     |                    |                   | All AROC Facilities |                       |                    |                   |
|-------------------------------|-------------------------|-----------------------|--------------------|-------------------|-----------------------------|---------------------|--------------------|-------------------|---------------------|-----------------------|--------------------|-------------------|
|                               | No.                     | Length of stay        | FIM change         | FIM gain per week | No.                         | Length of stay      | FIM change         | FIM gain per week | No.                 | Length of stay        | FIM change         | FIM gain per week |
|                               |                         | Mean (95%CI)          | Mean (95%CI)       |                   |                             | Mean (95%CI)        | Mean (95%CI)       |                   |                     | Mean (95%CI)          | Mean (95%CI)       |                   |
| <b>Traumatic episodes</b>     |                         |                       |                    |                   |                             |                     |                    |                   |                     |                       |                    |                   |
| 4AZ1                          | 54                      | 118.9 (104.1 - 133.7) | 26.1 (19.8 - 32.5) | 1.5               | 16                          | 66.3 (43.7 - 89.0)  | 29.4 (16.6 - 42.2) | 3.1               | 70                  | 106.9 (93.5 - 120.3)  | 26.9 (21.3 - 32.5) | 1.8               |
| 4AZ2                          | 28                      | 124.5 (103.6 - 145.5) | 27.1 (19.4 - 34.8) | 1.5               | 4                           | n.a                 | n.a                | n.a               | 32                  | 121.4 (102.3 - 140.4) | 29.2 (21.1 - 37.2) | 1.7               |
| 4AD1                          | 20                      | 41.2 (28.9 - 53.5)    | 21.9 (17.1 - 26.6) | 3.7               | 18                          | 21.7 (12.2 - 31.1)  | 21.7 (17.7 - 25.6) | 7.0               | 38                  | 31.9 (23.6 - 40.3)    | 21.8 (18.7 - 24.8) | 4.8               |
| 4AD2                          | 36                      | 64.7 (52.9 - 76.5)    | 36.7 (30.0 - 43.3) | 4.0               | 22                          | 66.9 (37.0 - 96.7)  | 30.4 (22.6 - 38.1) | 3.2               | 58                  | 65.5 (52.2 - 78.9)    | 34.3 (29.2 - 39.4) | 3.7               |
| 4AD3                          | 21                      | 59.5 (42.4 - 76.5)    | 28.2 (24.0 - 32.5) | 3.3               | 17                          | 32.9 (13.5 - 52.3)  | 24.2 (17.4 - 30.9) | 5.1               | 38                  | 47.6 (34.3 - 60.8)    | 26.4 (22.6 - 30.2) | 3.9               |
| 4AD4                          | 35                      | 84.9 (71.8 - 97.9)    | 37.1 (31.9 - 42.3) | 3.1               | 2                           | n.a                 | n.a                | n.a               | 37                  | 85.7 (73.2 - 98.2)    | 37.9 (32.9 - 42.9) | 3.1               |
| 4API                          | 9                       | 112.6 (66.5 - 158.6)  | 12.4 (8.7 - 16.2)  | 0.8               | 50                          | 22.5 (18.4 - 26.7)  | 28.2 (22.6 - 33.8) | 8.8               | 59                  | 36.3 (25.0 - 47.5)    | 25.8 (20.8 - 30.8) | 5.0               |
| <b>Total episodes</b>         | <b>203</b>              |                       |                    |                   | <b>129</b>                  |                     |                    |                   | <b>332</b>          |                       |                    |                   |
| <b>Non-Traumatic episodes</b> |                         |                       |                    |                   |                             |                     |                    |                   |                     |                       |                    |                   |
| 4AZ1                          | 23                      | 96.6 (76.4 - 116.8)   | 27.0 (18.2 - 35.8) | 2.0               | 16                          | 85.1 (61.4 - 108.7) | 23.3 (11.1 - 35.6) | 1.9               | 39                  | 91.9 (76.5 - 107.2)   | 25.5 (18.3 - 32.7) | 1.9               |
| 4AZ2                          | 7                       | 111.4 (84.1 - 138.7)  | 35.4 (17.5 - 53.4) | 2.2               | 4                           | n.a                 | n.a                | n.a               | 11                  | 101.1 (73.9 - 128.2)  | 33.6 (18.3 - 49.0) | 2.3               |
| 4AD1                          | 33                      | 41.6 (32.4 - 50.8)    | 14.8 (10.4 - 19.2) | 2.5               | 123                         | 23.7 (19.1 - 28.2)  | 19.0 (17.2 - 20.8) | 5.6               | 156                 | 27.5 (23.3 - 31.7)    | 18.1 (16.4 - 19.8) | 4.6               |
| 4AD2                          | 71                      | 81.6 (70.9 - 92.3)    | 33.1 (28.8 - 37.4) | 2.8               | 94                          | 48.6 (40.2 - 57.0)  | 27.8 (24.1 - 31.6) | 4.0               | 165                 | 62.8 (55.7 - 69.9)    | 30.1 (27.2 - 33.0) | 3.4               |
| 4AD3                          | 27                      | 32.8 (20.4 - 45.2)    | 25.2 (20.2 - 30.2) | 5.4               | 40                          | 21.7 (16.2 - 27.1)  | 21.6 (18.0 - 25.1) | 7.0               | 67                  | 26.2 (20.1 - 32.2)    | 23.0 (20.1 - 26.0) | 6.2               |
| 4AD4                          | 18                      | 85.2 (65.0 - 105.4)   | 38.6 (30.9 - 46.2) | 3.2               | 16                          | 39.6 (30.2 - 49.1)  | 32.4 (22.0 - 42.9) | 5.7               | 34                  | 63.8 (49.9 - 77.6)    | 35.7 (29.3 - 42.1) | 3.9               |
| <b>Total episodes</b>         | <b>179</b>              |                       |                    |                   | <b>293</b>                  |                     |                    |                   | <b>472</b>          |                       |                    |                   |

NOTE 1: Where the number of episodes < 5 details are not given for reasons of privacy and accuracy.

NOTE 2: Analysis includes first admission, complete episodes only

## AN-SNAP V4 classes for Spinal Cord Dysfunction

| Class | Description of AN-SNAP class                                |
|-------|---|
| 4AZ1  | Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≥ 49 |
| 4AZ2  | Weighted FIM motor score 13-18, Brain, Spine, MMT, Age ≤ 48 |
| 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 |
| 4API  | Major Multiple Trauma, weighted FIM motor 19-91             |

## All Spinal Cord Dysfunction impairment codes

### 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

### 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

### Major Multiple Trauma

- 14.1 Brain + spinal cord injury
- 14.3 Spinal cord + multi fracture/amputation

# Spinal Cord Dysfunction LOS and FIM Change Benchmarks in Australia & New Zealand by AN-SNAP V3, Calendar Year 2022



| AN-SNAP class                 | Specialist Spinal Units |                       |                    |                   | Non Specialist Spinal Units |                    |                    |                   | All AROC Facilities |                       |                    |                   |
|-------------------------------|-------------------------|-----------------------|--------------------|-------------------|-----------------------------|--------------------|--------------------|-------------------|---------------------|-----------------------|--------------------|-------------------|
|                               | No.                     | Length of stay        | FIM change         | FIM gain per week | No.                         | Length of stay     | FIM change         | FIM gain per week | No.                 | Length of stay        | FIM change         | FIM gain per week |
|                               |                         | Mean (95%CI)          | Mean (95%CI)       |                   |                             | Mean (95%CI)       | Mean (95%CI)       |                   |                     |                       |                    |                   |
| <b>Traumatic episodes</b>     |                         |                       |                    |                   |                             |                    |                    |                   |                     |                       |                    |                   |
| 3-202                         | 60                      | 123.3 (109.6 - 137.1) | 23.4 (17.9 - 28.9) | 1.3               | 10                          | 70.5 (49.2 - 91.8) | 43.7 (26.6 - 60.9) | 4.3               | 70                  | 115.8 (103.0 - 128.5) | 26.3 (20.8 - 31.8) | 1.6               |
| 3-220                         | 2                       | na                    | na                 | na                | 0                           | na                 | na                 | na                | 2                   | na                    | na                 | na                |
| 3-221                         | 31                      | 46.9 (36.9 - 57.0)    | 24.3 (21.0 - 27.6) | 3.6               | 31                          | 27.6 (15.9 - 39.4) | 20.0 (17.0 - 23.0) | 5.1               | 62                  | 37.3 (29.2 - 45.4)    | 22.1 (19.8 - 24.5) | 4.2               |
| 3-222                         | 76                      | 78.5 (68.4 - 88.6)    | 34.5 (30.2 - 38.9) | 3.1               | 32                          | 69.9 (47.0 - 92.8) | 27.3 (20.4 - 34.3) | 2.7               | 108                 | 76.0 (66.2 - 85.7)    | 32.4 (28.7 - 36.1) | 3.0               |
| 3-223                         | 23                      | 91.3 (75.9 - 106.8)   | 41.5 (35.1 - 48.0) | 3.2               | 5                           | 49.0 (4.1 - 93.9)  | 44.6 (37.8 - 51.4) | 6.4               | 28                  | 83.8 (68.0 - 99.5)    | 42.1 (36.7 - 47.5) | 3.5               |
| 3-238                         | 2                       | na                    | na                 | na                | 12                          | 14.2 (9.6 - 18.7)  | 8.9 (5.6 - 12.2)   | 4.4               | 14                  | 19.1 (11.3 - 26.9)    | 8.9 (5.9 - 11.9)   | 3.3               |
| 3-239                         | 4                       | na                    | na                 | na                | 26                          | 20.2 (15.2 - 25.3) | 25.6 (21.4 - 29.7) | 8.8               | 30                  | 31.0 (19.2 - 42.8)    | 24.3 (20.4 - 28.1) | 5.5               |
| 3-240                         | 3                       | na                    | na                 | na                | 12                          | 34.8 (25.9 - 43.8) | 50.7 (40.9 - 60.4) | 10.2              | 15                  | 62.0 (28.2 - 95.8)    | 42.6 (31.1 - 54.1) | 4.8               |
| 3-241                         | 2                       | na                    | na                 | na                | 1                           | na                 | na                 | na                | 3                   | na                    | na                 | na                |
| <b>Total episodes</b>         | <b>203</b>              |                       |                    |                   | <b>129</b>                  |                    |                    |                   | <b>332</b>          |                       |                    |                   |
| <b>Non-Traumatic episodes</b> |                         |                       |                    |                   |                             |                    |                    |                   |                     |                       |                    |                   |
| 3-202                         | 18                      | 108.6 (80.3 - 136.8)  | 25.8 (15.1 - 36.4) | 1.7               | 4                           | na                 | na                 | na                | 22                  | 102.1 (77.4 - 126.9)  | 23.7 (14.5 - 33.0) | 1.6               |
| 3-220                         | 3                       | na                    | na                 | na                | 4                           | na                 | na                 | na                | 7                   | 8.4 (5.7 - 11.1)      | 4.3 (2.9 - 5.7)    | 3.6               |
| 3-221                         | 47                      | 38.4 (30.0 - 46.9)    | 16.3 (12.9 - 19.6) | 3.0               | 141                         | 22.5 (18.5 - 26.5) | 18.0 (16.5 - 19.5) | 5.6               | 188                 | 26.5 (22.7 - 30.3)    | 17.6 (16.2 - 18.9) | 4.6               |
| 3-222                         | 101                     | 82.0 (73.2 - 90.8)    | 33.8 (30.3 - 37.3) | 2.9               | 135                         | 50.8 (43.7 - 57.8) | 28.3 (25.1 - 31.5) | 3.9               | 236                 | 64.1 (58.3 - 70.0)    | 30.7 (28.3 - 33.0) | 3.3               |
| 3-223                         | 11                      | 64.5 (45.8 - 83.3)    | 42.3 (34.1 - 50.4) | 4.6               | 9                           | 36.6 (24.5 - 48.6) | 43.8 (34.7 - 52.9) | 8.4               | 20                  | 52.0 (39.1 - 64.8)    | 43.0 (37.1 - 48.8) | 5.8               |
| <b>Total episodes</b>         | <b>180</b>              |                       |                    |                   | <b>293</b>                  |                    |                    |                   | <b>473</b>          |                       |                    |                   |

NOTE 1: Where the number of episodes < 5 details are not given for reasons of privacy and accuracy.

NOTE 2: Analysis includes first admission, complete episodes only

## AN-SNAP V3 classes for Spinal Cord Dysfunction

| Class | Description of AN-SNAP class                                |
|-------|---|
| 3-202 | Brain, Neurological, Spinal & Major Multiple Trauma, FIM 13 |
| 3-220 | Spinal Cord Dysfunction, FIM motor 81-91                    |
| 3-221 | Spinal Cord Dysfunction, FIM motor 47-80                    |
| 3-222 | Spinal Cord Dysfunction, FIM motor 14-46, age>=33           |
| 3-223 | Spinal Cord Dysfunction, FIM motor 14-46, age<=32           |
| 3-238 | Major Multiple Trauma, FIM total 101-126                    |
| 3-239 | Major Multiple Trauma, FIM total 74-100 or Burns            |
| 3-240 | Major Multiple Trauma, FIM total 44-73                      |
| 3-241 | Major Multiple Trauma, FIM total 19-43                      |

## All Spinal Cord Dysfunction impairment codes

| Traumatic spinal cord dysfunction            | Non traumatic spinal cord dysfunction            |
|--|--|
| 4.211 Paraplegia, incomplete                 | 4.111 Paraplegia, incomplete                     |
| 4.212 Paraplegia, complete                   | 4.112 Paraplegia, complete                       |
| 4.2211 Quadriplegia, incomplete C1-4         | 4.1211 Quadriplegia, incomplete C1-4             |
| 4.2212 Quadriplegia, incomplete C5-8         | 4.1212 Quadriplegia, incomplete C5-8             |
| 4.2221 Quadriplegia, complete C1-4           | 4.1221 Quadriplegia, complete C1-4               |
| 4.2222 Quadriplegia, complete C5-8           | 4.1222 Quadriplegia, complete C5-8               |
| 4.23 Other traumatic spinal cord dysfunction | 4.13 Other non-traumatic spinal cord dysfunction |
| <b>Major Multiple Trauma</b>                 |  |
| 14.1 Brain + spinal cord injury              |  |
| 14.3 Spinal cord + multi fracture/amputation |  |