

## **Appendix 4: A detailed analysis of SpRP data collected within the MTCs**

In Appendix 4 we present a detailed analysis of the content of the tools collected within the MTCs and their added value to the standard RP.

## Appendix 4: Understanding rehabilitation needs – the data captured in the NCASRI tools

### 1.1 Complex Needs Checklist (CNC)

Prior to NCASRI, the TARN minimum data set for the RP includes d four questions:

- Does the patient have rehabilitation needs requiring an RP?
- Do they have a) Physical, b) Cognitive/Mood or c) Psychosocial problems?

The CNC provides further sub-types within each of the three TARN types of ‘complex needs’.

Table A1 shows the breakdown of these different types and sub-types to further characterise of those needs. Data were available for this part of the CNC in 1018 patients, of whom many had needs in more than one type and sub-type. Amongst the patients with category A/B needs:

- 87% had **complex physical needs** of which the commonest were a requirement for complex neurological (65%) or musculoskeletal (36%) rehabilitation
- 70 %had **complex cognitive or emotional needs**, including cognitive assessment (57%) and mood evaluation (31%). A quarter of patient required complex communication support and a fifth had challenging behaviours
- 51 %had **complex psychosocial needs**, including complex discharge planning (39%) or major family support (21%).

**Table A1: Breakdown of different types of needs within the CNC**

|             |                                                      | Category C/D needs |            | Category A/B needs |            |
|-------------|------------------------------------------------------|--------------------|------------|--------------------|------------|
|             | <b>Total patients with CNC data: 1018</b>            | <b>n</b>           | <b>%</b>   | <b>n</b>           | <b>%</b>   |
| <b>Type</b> | <b>Complex physical needs</b>                        | <b>269</b>         | <b>62%</b> | <b>503</b>         | <b>87%</b> |
| Sub-types   | Complex musculoskeletal management                   | 198                | 46%        | 210                | 36%        |
|             | Complex neuro-rehabilitation                         | 63                 | 14%        | 376                | 65%        |
|             | Complex amputee rehabilitation needs                 | 4                  | 1%         | 20                 | 3%         |
|             | Profound disability / neuropalliative rehabilitation | 30                 | 7%         | 76                 | 13%        |
|             | Complex pain rehabilitation                          | 22                 | 5%         | 69                 | 12%        |
|             | Re-conditioning / cardiopulmonary rehab              | 0                  | 0%         | 19                 | 3%         |
| <b>Type</b> | <b>Complex cognitive / emotional needs</b>           | <b>99</b>          | <b>23%</b> | <b>408</b>         | <b>70%</b> |
| Sub-types   | Complex communication support                        | 7                  | 2%         | 147                | 25%        |
|             | Cognitive assessment/management                      | 43                 | 10%        | 328                | 57%        |
|             | Complex mood evaluation / support                    | 59                 | 14%        | 179                | 31%        |
|             | Challenging behaviour management                     | 18                 | 4%         | 115                | 20%        |
|             | Evaluation of low awareness state                    | 0                  | 0%         | 66                 | 11%        |
| <b>Type</b> | <b>Complex psychosocial needs</b>                    | <b>89</b>          | <b>20%</b> | <b>298</b>         | <b>51%</b> |
| Sub-types   | Complex discharge planning                           | 74                 | 17%        | 226                | 39%        |
|             | Major family distress / support                      | 29                 | 7%         | 122                | 21%        |
|             | Emotional load on staff                              | 2                  | 0%         | 49                 | 8%         |

The CNC itself is designed as a screening tool, or aid to clinical decision-making, to assist teams to identify patients with complex needs who may require referral for further specialist in-patient rehabilitation. It includes six items, each with a sub-item checklist detailing the types of needs that patients may have under each heading. Once again more than one sub-item may be selected.

Table A2 gives a breakdown of the frequency of the six principal items in the CNC checked to indicate a requirement for further inpatient rehabilitation. The commonest requirements were for:

- On-going specialist medical/psychiatric intervention (62%)
- Coordinated inter-disciplinary input ((74%)
- Longer stay in rehabilitation - 3 months or more (47%)

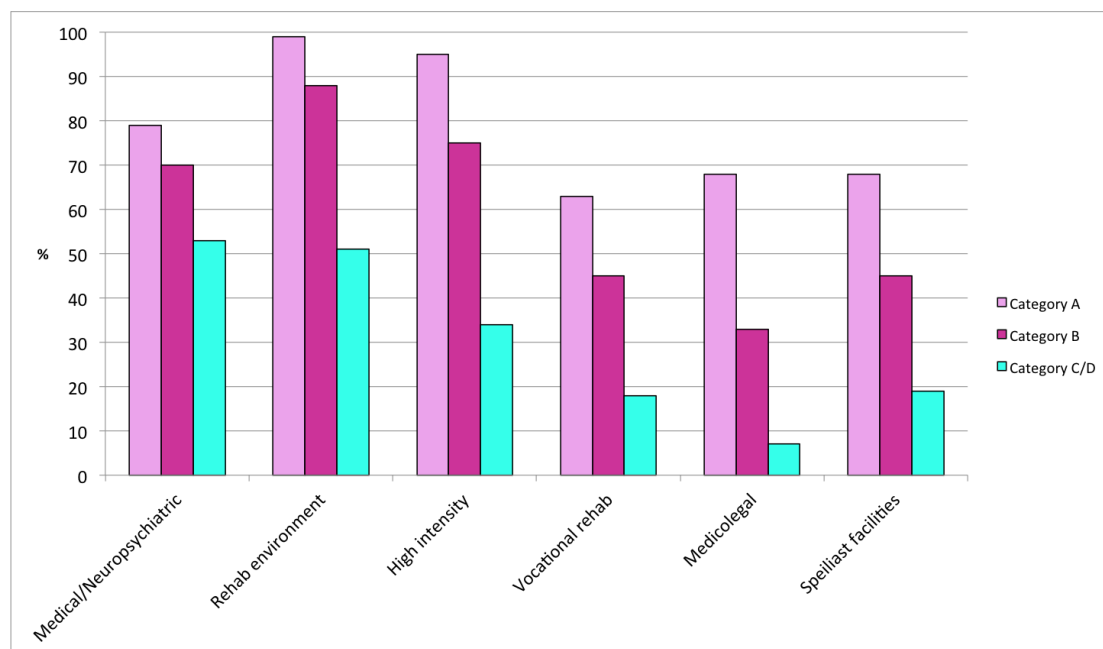
**Table A2: A breakdown of the frequency of the six principal items in the CNC checked (N=1018)**

| Item     | Description                                                    | N          | % within item | % of whole |
|----------|----------------------------------------------------------------|------------|---------------|------------|
| <b>1</b> | <b>Specialist rehab medical (RM) or neuropsychiatric needs</b> | <b>751</b> | <b>100%</b>   | <b>74%</b> |
| Details  | On-going specialist investigation/ intervention                | 634        | 84%           | 62%        |
|          | Complex / unstable medical/surgical condition                  | 312        | 42%           | 31%        |
|          | Complex psychiatric needs                                      | 54         | 7%            | 5%         |
|          | Risk management or treatment under section of the MHA          | 32         | 4%            | 3%         |
| <b>2</b> | <b>Specialist rehabilitation environment</b>                   | <b>854</b> | <b>100%</b>   | <b>84%</b> |
| Details  | Co-ordinated inter-disciplinary input                          | 757        | 89%           | 74%        |
|          | Structured 24 hour rehabilitation environment                  | 338        | 40%           | 33%        |
|          | Highly specialist therapy /rehab nursing skills                | 353        | 41%           | 35%        |
| <b>3</b> | <b>High intensity</b>                                          | <b>700</b> | <b>100%</b>   | <b>69%</b> |
| Details  | 1:1 supervision                                                | 197        | 28%           | 19%        |
|          | 4 or more therapy disciplines required                         | 315        | 45%           | 31%        |
|          | High intensive programme (>20 hours per week)                  | 238        | 34%           | 23%        |
|          | Length of rehabilitation 3 months or more                      | 478        | 68%           | 47%        |
| <b>4</b> | <b>Specialist Vocational Rehabilitation</b>                    | <b>422</b> | <b>100%</b>   | <b>41%</b> |
| Details  | Specialist vocational assessment                               | 205        | 49%           | 20%        |
|          | Multi-agency vocational support (for return to work/etc)       | 251        | 59%           | 25%        |
|          | Complex support for other roles (eg single parenting)          | 59         | 14%           | 6%         |
| <b>5</b> | <b>Medico-legal issues</b>                                     | <b>333</b> | <b>100%</b>   | <b>33%</b> |
| Details  | Complex mental capacity / consent issues                       | 141        | 42%           | 14%        |
|          | Complex Best interests decisions                               | 128        | 38%           | 13%        |
|          | DoLs / PoVA applications                                       | 141        | 42%           | 14%        |
|          | Litigation issues                                              | 68         | 20%           | 7%         |
| <b>6</b> | <b>Specialist facilities and equipment</b>                     | <b>431</b> | <b>100%</b>   | <b>42%</b> |
| Details  | Customised / bespoke personal equipment needs                  | 217        | 50%           | 21%        |
|          | Specialist rehabilitation facilities                           | 261        | 61%           | 26%        |

Figure A.1 shows the percentage of each of the six principal CNC items ticked in patients within each category of need from the TARN data. As expected the proportions are highest in patients with category A and B needs.

It is important to note that a significant number of patients with category C or D needs also have requirements under one or more principal item of the checklist – especially needs for medical / psychiatric input or a dedicated rehabilitation environment, emphasising the requirement for provision of suitable Level 3 services in addition to specialist rehabilitation units

**Figure A1: The percentage of each principal CNC item ticked within each category of need**



## 1.2 Resource requirements – data from the RCS-ET

The Rehabilitation Complexity Scale (RCS-ET) measures resource requirements in terms of medical, nursing and therapy inputs and can also be used to identify the TR point. In addition it offers a description of the resource needs that can be used to plan rehabilitation inputs as shown in [Table A3](#).

As expected category A patients had substantially higher needs for these clinical inputs across all disciplines.

Some teams reported that they record the RCS-ET to reflect the level of rehabilitation received, rather than the needs for rehabilitation. In this audit, it should be collected on the basis of rehabilitation needs. Once again this difference in approach may account for some of the observed variation during the first round.

**Table A3: Breakdown of RCS-ET scores across the different categories of need**

| Score                                             | Description                                                  | Category A<br>n=518 | Category B<br>n=539 | Category<br>C/D<br>n=926 | Total<br>n=1983 |
|---------------------------------------------------|--------------------------------------------------------------|---------------------|---------------------|--------------------------|-----------------|
| <b>RCS-Medical scores – Medical environment</b>   |                                                              |                     |                     |                          |                 |
| 0                                                 | No medical needs                                             | 8                   | 27                  | 290                      | 325             |
| 1                                                 | Low level monitoring only                                    | 47                  | 107                 | 205                      | 359             |
| 2                                                 | Active investigation or treatment                            | 104                 | 107                 | 36                       | 247             |
| 3                                                 | Medically unstable – emergency out of hours are available    | 64                  | 37                  | 53                       | 154             |
| 4                                                 | Medically / surgically unwell - emergency out of hours treat | 61                  | 47                  | 92                       | 200             |
| 5                                                 | Requires on-going care in a trauma unit setting              | 62                  | 57                  | 116                      | 235             |
| 6                                                 | Requires full medical facilities of an MTC                   | 172                 | 157                 | 134                      | 463             |
| <b>RCS-Care scores – Care needs</b>               |                                                              |                     |                     |                          |                 |
| 0                                                 | No care needs                                                | 10                  | 26                  | 17                       | 53              |
| 1                                                 | 1 carer for most tasks                                       | 58                  | 150                 | 49                       | 257             |
| 2                                                 | 2 carers for most tasks                                      | 132                 | 144                 | 35                       | 311             |
| 3                                                 | >= 3 carers or high risk                                     | 42                  | 14                  | 0                        | 56              |
| 4                                                 | 1: 1 care                                                    | 134                 | 37                  | 3                        | 174             |
| <b>RCS-Risk scores</b>                            |                                                              |                     |                     |                          |                 |
| R 0                                               | No risk                                                      | 54                  | 96                  | 52                       | 202             |
| R 1                                               | Low risk                                                     | 85                  | 143                 | 42                       | 270             |
| R 2                                               | Medium risk                                                  | 80                  | 81                  | 12                       | 173             |
| R 3                                               | High risk                                                    | 29                  | 18                  | 5                        | 52              |
| R 4                                               | Very high risk                                               | 131                 | 37                  | 4                        | 172             |
| <b>RCS-Nursing scores – special nursing needs</b> |                                                              |                     |                     |                          |                 |
| 0                                                 | No special nursing needs                                     | 11                  | 25                  | 256                      | 292             |
| 1                                                 | Care from a qualified nurse                                  | 47                  | 198                 | 406                      | 651             |
| 2                                                 | Care from a rehabilitation nurse                             | 153                 | 159                 | 72                       | 384             |
| 3                                                 | Specialist nursing care (tracheostomy, behavioural)          | 147                 | 89                  | 125                      | 361             |
| 4                                                 | High acuity nursing setting (eg HDU)                         | 159                 | 68                  | 66                       | 293             |
| <b>RCS-Therapy Disciplines</b>                    |                                                              |                     |                     |                          |                 |
| 0                                                 | No therapy required                                          | 1                   | 7                   | 99                       | 107             |
| 1                                                 | 1 therapy discipline only                                    | 11                  | 31                  | 244                      | 286             |
| 2                                                 | 2-3 therapy disciplines                                      | 141                 | 267                 | 481                      | 889             |
| 3                                                 | 4-5 therapy disciplines                                      | 232                 | 202                 | 94                       | 528             |
| 4                                                 | >=6 therapy disciplines                                      | 132                 | 32                  | 7                        | 171             |
| <b>RCS-Therapy Intensity</b>                      |                                                              |                     |                     |                          |                 |
| 0                                                 | No therapy required                                          | 1                   | 7                   | 98                       | 106             |
| 1                                                 | Low level – less than daily – or group therapy only          | 25                  | 50                  | 261                      | 336             |
| 2                                                 | Daily intervention with one therapist at a time              | 176                 | 310                 | 350                      | 836             |
| 3                                                 | Daily plus assistant / additional group sessions             | 183                 | 144                 | 208                      | 535             |
| 4                                                 | Highly intensive – 2 trained therapists to treat             | 133                 | 28                  | 8                        | 169             |
| <b>RCS-E Equipment needs</b>                      |                                                              |                     |                     |                          |                 |
| 0                                                 | No equipment required                                        | 76                  | 118                 | 163                      | 357             |
| 1                                                 | Basic off the shelf equipment only                           | 247                 | 341                 | 695                      | 1283            |
| 2                                                 | Specialist equipment - customised                            | 157                 | 66                  | 62                       | 285             |
| 3                                                 | Highly specialist equipment only available in MTC            | 38                  | 14                  | 5                        | 57              |

A further noteworthy finding in Table A3 is that 23% of RCS-M scores were rated at 6 ('Requires full medical facilities of an MTC'), reflecting the fact that these patients had not yet reached the TR point. This almost certainly reflects the large number of scores recorded by Bristol who elected to record the CNC and RCS-ET at 72 hours post admission, rather than at the TR point. This once again emphasises the need for agreement and consistency regarding the time point at which data are collected in future rounds of the audit.

The median and inter-quartile ranges for the different components of the RCS-ET were again higher in the Category A and B needs (Table A4)

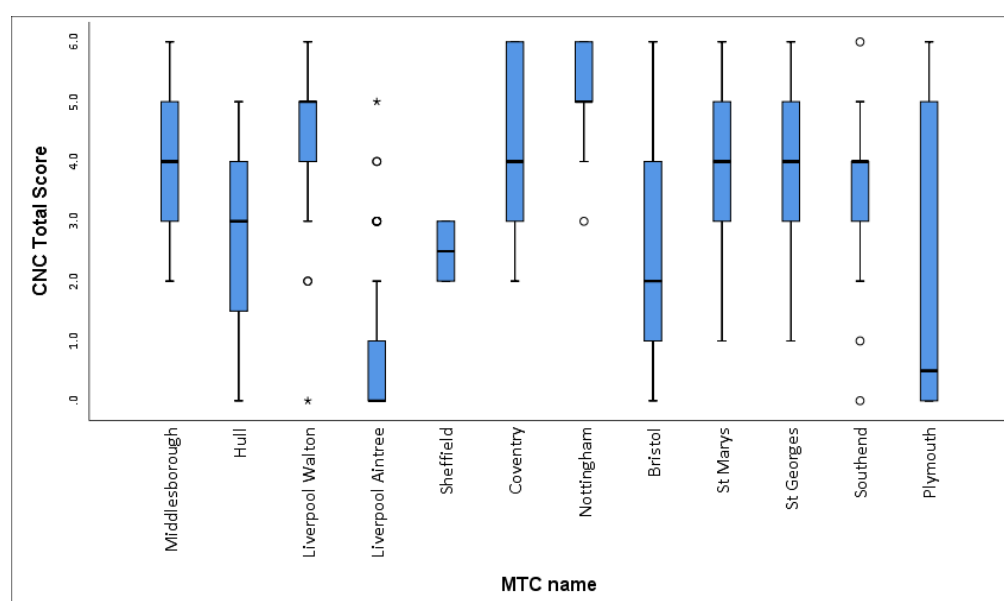
**Table A4: Median and IQR for different components of the RCS-ET across the different categories of need**

|                                            |       |                              |                               |                 | Cat A<br>(n=516) | Cat B<br>(n=536) | Cat C<br>(n=910) |
|--------------------------------------------|-------|------------------------------|-------------------------------|-----------------|------------------|------------------|------------------|
| Descriptor                                 | Total | % within<br>item<br>(n=2561) | % within<br>whole<br>(n=3096) | Median<br>(IQR) | Median<br>(IQR)  | Median<br>(IQR)  | Median<br>(IQR)  |
| RCS-Medical scores – Medical environment   | 2197  | 86%                          | 71%                           | 4<br>(1-6)      | 4<br>(2-6)       | 3<br>(2-6)       | 1<br>(0-5)       |
| RCS-Care scores – Care needs               | 1085  | 42%                          | 35%                           | 2<br>(1-2)      | 2<br>(2-4)       | 2<br>(1-2)       | 1<br>(1-2)       |
| RCS-Risk scores                            | 842   | 33%                          | 27%                           | 1<br>(0-2)      | 2<br>(1-4)       | 1<br>(1-2)       | 1<br>(0-1)       |
| RCS-Nursing scores – special nursing needs | 2226  | 87%                          | 72%                           | 1<br>(1-3)      | 3<br>(2-4)       | 2<br>(1-3)       | 1<br>(0-2)       |
| RCS-Therapy Disciplines                    | 2405  | 94%                          | 78%                           | 2<br>(2-3)      | 3<br>(2-4)       | 2<br>(2-3)       | 2<br>(1-2)       |
| RCS-Therapy Intensity                      | 2404  | 94%                          | 78%                           | 2<br>(1-3)      | 3<br>(2-4)       | 2<br>(2-3)       | 2<br>(1-2)       |
| RCS-E Equipment needs                      | 2039  | 80%                          | 66%                           | 1<br>(1-1)      | 1<br>(1-2)       | 1<br>(1-1)       | 1<br>(1-1)       |

Figure A2 illustrates box and whisker plots of the total CNC and RCS-ET scores. Considerable variation is seen across the centres, but with some consistency between the various tools. This suggests that the variation is not simply the result of inaccurate scoring, but possibly different thresholds for the identification of category A / B needs, or the different timing of assessments between centres.

**Figure A2. Box and Whisker plots of the total Complex Needs Checklist Scores**

#### a) Complex need checklist scores



b) RCS-ET scores

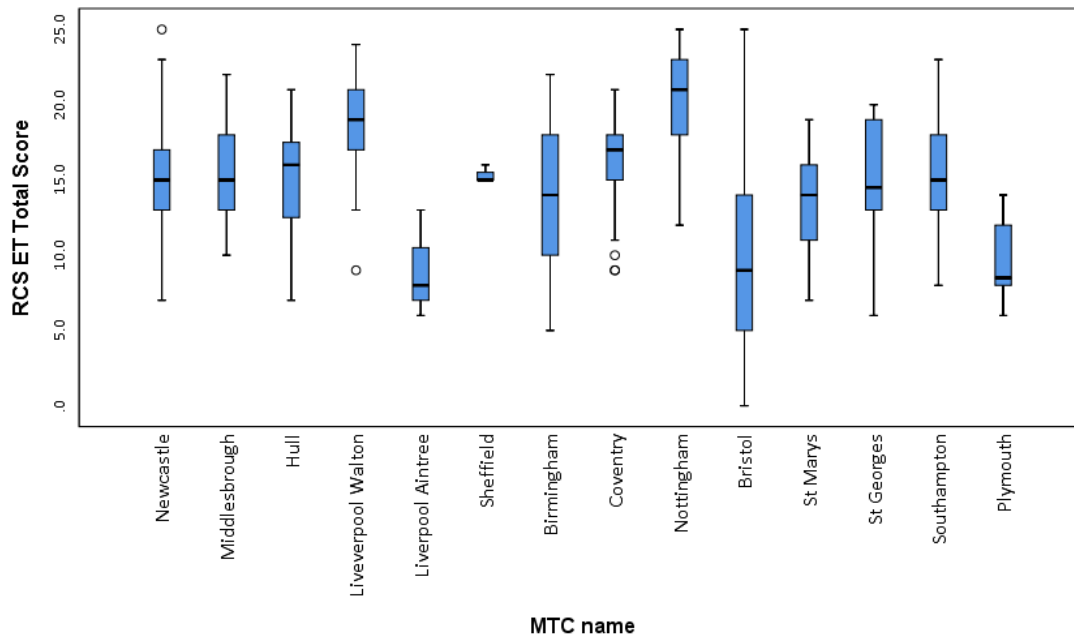


Table A5 demonstrates that there is a significant difference between groups for all items on the RCS-ET. Post hoc analysis using the Bonferroni Correction continues to demonstrate significant differences in the needs between Category A, B and C patients (Table A6).

**Table A5: ANOVA One way analysis of variance for RCS-ET**

| ANOVA                                      |                | Sum of Squares | df   | Mean Square | F       | Sig.  |
|--------------------------------------------|----------------|----------------|------|-------------|---------|-------|
| RCS-Medical scores – Medical environment   | Between Groups | 912.244        | 2    | 456.122     | 100.399 | 0.000 |
|                                            | Within Groups  | 8999.856       | 1981 | 4.543       |         |       |
|                                            | Total          | 9912.100       | 1983 |             |         |       |
| RCS-Care scores – Care needs               | Between Groups | 235.831        | 2    | 117.916     | 101.390 | 0.000 |
|                                            | Within Groups  | 987.383        | 849  | 1.163       |         |       |
|                                            | Total          | 1223.215       | 851  |             |         |       |
| RCS-Risk scores                            | Between Groups | 249.801        | 2    | 124.901     | 73.065  | 0.000 |
|                                            | Within Groups  | 1482.084       | 867  | 1.709       |         |       |
|                                            | Total          | 1731.885       | 869  |             |         |       |
| RCS-Nursing scores – special nursing needs | Between Groups | 735.426        | 2    | 367.713     | 282.556 | 0.000 |
|                                            | Within Groups  | 2575.434       | 1979 | 1.301       |         |       |
|                                            | Total          | 3310.860       | 1981 |             |         |       |
| RCS-Therapy Disciplines                    | Between Groups | 593.249        | 2    | 296.625     | 464.533 | 0.000 |
|                                            | Within Groups  | 1263.679       | 1979 | 0.639       |         |       |
|                                            | Total          | 1856.928       | 1981 |             |         |       |
| RCS-Therapy Intensity                      | Between Groups | 384.301        | 2    | 192.150     | 247.894 | 0.000 |
|                                            | Within Groups  | 1534.761       | 1980 | 0.775       |         |       |
|                                            | Total          | 1919.062       | 1982 |             |         |       |
| RCS-E Equipment needs                      | Between Groups | 56.707         | 2    | 28.353      | 69.103  | 0.000 |
|                                            | Within Groups  | 812.404        | 1980 | 0.410       |         |       |
|                                            | Total          | 869.110        | 1982 |             |         |       |
| Total                                      | Between Groups | 17718.554      | 2    | 8859.277    | 418.120 | 0.000 |
|                                            | Within Groups  | 41529.162      | 1960 | 21.188      |         |       |
|                                            | Total          | 59247.717      | 1962 |             |         |       |

**Table A6: Bonferroni Correction for Multiple comparisons: RCS-ET**

| Dependent Variable                         |     |     | Mean Difference (I-J) | Std. Error | Sig.  | Interval    |             |
|--------------------------------------------|-----|-----|-----------------------|------------|-------|-------------|-------------|
|                                            |     |     |                       |            |       | Lower Bound | Upper Bound |
| RCS-Medical scores – Medical environment   | A   | B   | .498*                 | 0.131      | 0.000 | 0.18        | 0.81        |
|                                            |     | C/D | 1.563*                | 0.117      | 0.000 | 1.28        | 1.84        |
|                                            | B   | A   | -.498*                | 0.131      | 0.000 | -0.81       | -0.18       |
|                                            |     | C/D | 1.065*                | 0.115      | 0.000 | 0.79        | 1.34        |
|                                            | C/D | A   | -1.563*               | 0.117      | 0.000 | -1.84       | -1.28       |
|                                            |     | B   | -1.065*               | 0.115      | 0.000 | -1.34       | -0.79       |
| RCS-Care scores – Care needs               | A   | B   | .924*                 | 0.079      | 0.000 | 0.73        | 1.11        |
|                                            |     | C/D | 1.369*                | 0.119      | 0.000 | 1.08        | 1.65        |
|                                            | B   | A   | -.924*                | 0.079      | 0.000 | -1.11       | -0.73       |
|                                            |     | C/D | .445*                 | 0.119      | 0.001 | 0.16        | 0.73        |
|                                            | C/D | A   | -1.369*               | 0.119      | 0.000 | -1.65       | -1.08       |
|                                            |     | B   | -.445*                | 0.119      | 0.001 | -0.73       | -0.16       |
| RCS-Risk scores                            | A   | B   | .907*                 | 0.095      | 0.000 | 0.68        | 1.13        |
|                                            |     | C/D | 1.422*                | 0.139      | 0.000 | 1.09        | 1.76        |
|                                            | B   | A   | -.907*                | 0.095      | 0.000 | -1.13       | -0.68       |
|                                            |     | C/D | .516*                 | 0.139      | 0.001 | 0.18        | 0.85        |
|                                            | C/D | A   | -1.422*               | 0.139      | 0.000 | -1.76       | -1.09       |
|                                            |     | B   | -.516*                | 0.139      | 0.001 | -0.85       | -0.18       |
| RCS-Nursing scores – special nursing needs | A   | B   | .809*                 | 0.070      | 0.000 | 0.64        | 0.98        |
|                                            |     | C/D | 1.481*                | 0.063      | 0.000 | 1.33        | 1.63        |
|                                            | B   | A   | -.809*                | 0.070      | 0.000 | -0.98       | -0.64       |
|                                            |     | C/D | .672*                 | 0.062      | 0.000 | 0.52        | 0.82        |
|                                            | C/D | A   | -1.481*               | 0.063      | 0.000 | -1.63       | -1.33       |
|                                            |     | B   | -.672*                | 0.062      | 0.000 | -0.82       | -0.52       |
| RCS-Therapy Disciplines                    | A   | B   | .524*                 | 0.049      | 0.000 | 0.41        | 0.64        |
|                                            |     | C/D | 1.295*                | 0.044      | 0.000 | 1.19        | 1.40        |
|                                            | B   | A   | -.524*                | 0.049      | 0.000 | -0.64       | -0.41       |
|                                            |     | C/D | .771*                 | 0.043      | 0.000 | 0.67        | 0.87        |
|                                            | C/D | A   | -1.295*               | 0.044      | 0.000 | -1.40       | -1.19       |
|                                            |     | B   | -.771*                | 0.043      | 0.000 | -0.87       | -0.67       |
| RCS-Therapy Intensity                      | A   | B   | .562*                 | 0.054      | 0.000 | 0.43        | 0.69        |
|                                            |     | C/D | 1.067*                | 0.048      | 0.000 | 0.95        | 1.18        |
|                                            | B   | A   | -.562*                | 0.054      | 0.000 | -0.69       | -0.43       |
|                                            |     | C/D | .505*                 | 0.048      | 0.000 | 0.39        | 0.62        |
|                                            | C/D | A   | -1.067*               | 0.048      | 0.000 | -1.18       | -0.95       |
|                                            |     | B   | -.505*                | 0.048      | 0.000 | -0.62       | -0.39       |
| RCS-E Equipment needs                      | A   | B   | .348*                 | 0.039      | 0.000 | 0.25        | 0.44        |
|                                            |     | C/D | .401*                 | 0.035      | 0.000 | 0.32        | 0.49        |
|                                            | B   | A   | -.348*                | 0.039      | 0.000 | -0.44       | -0.25       |
|                                            |     | C/D | 0.054                 | 0.035      | 0.365 | -0.03       | 0.14        |
|                                            | C/D | A   | -.401*                | 0.035      | 0.000 | -0.49       | -0.32       |
|                                            |     | B   | -0.054                | 0.035      | 0.365 | -0.14       | 0.03        |
| Total                                      | A   | B   | 3.581*                | 0.284      | 0.000 | 2.90        | 4.26        |
|                                            |     | C/D | 7.245*                | 0.254      | 0.000 | 6.64        | 7.85        |
|                                            | B   | A   | -3.581*               | 0.284      | 0.000 | -4.26       | -2.90       |
|                                            |     | C/D | 3.665*                | 0.251      | 0.000 | 3.06        | 4.27        |
|                                            | C/D | A   | -7.245*               | 0.254      | 0.000 | -7.85       | -6.64       |
|                                            |     | B   | -3.665*               | 0.251      | 0.000 | -4.27       | -3.06       |



### 1.3 Categorisation of rehabilitation needs – data from the PCAT

The following tables capture data collected with the PCAT. Table A7 compared the PCAT scores for patients between category A-C. It is evident that patients with Category A needs have higher scores of '3' for the majority of items confirming that the PCAT can accurately identify what rehabilitation category patients require. This is further supported by Table A9 and A10 that indicates the statistically significant difference between different categories of patients.

**Table A7: Comparison between categories of rehabilitation need as measured with the PCAT with overall sections of the PCAT presented**

|                                             | Category A (n=462) |     |     |              |  | Category B (n=382) |     |     |              |  | Category C (n=20) |    |   |              |
|---------------------------------------------|--------------------|-----|-----|--------------|--|--------------------|-----|-----|--------------|--|-------------------|----|---|--------------|
|                                             | Score low to high  |     |     | Median (IQR) |  | Score low to high  |     |     | Median (IQR) |  | Score low to high |    |   | Median (IQR) |
|                                             | 1                  | 2   | 3   |              |  | 1                  | 2   | 3   |              |  | 1                 | 2  | 3 |              |
| Specialist medical / neuropsychiatric needs |                    |     |     |              |  | 382                |     |     |              |  |                   |    |   |              |
| Medical/Surgical                            | 51                 | 203 | 212 | 2            |  | 81                 | 229 | 74  | 2            |  | 5                 | 14 | 2 | 2            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (2-2)        |  |                   |    |   | (2-2)        |
| Neuropsychiatric                            | 282                | 112 | 72  | 1            |  | 293                | 86  | 5   | 1            |  | 16                | 3  | 1 | 1            |
|                                             |                    |     |     | (1-2)        |  |                    |     |     | (1-1)        |  |                   |    |   | (1-1)        |
| Intensity                                   | 36                 | 99  | 331 | 3            |  | 99                 | 179 | 107 | 2            |  | 15                | 4  | 2 | 1            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (1-3)        |  |                   |    |   | (1-2)        |
| Clinical needs                              |                    |     |     |              |  |                    |     |     |              |  |                   |    |   |              |
| Physical                                    | 22                 | 106 | 339 | 3            |  | 34                 | 218 | 133 | 2            |  | 8                 | 8  | 5 | 2            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (2-2)        |  |                   |    |   | (1-3)        |
| Tracheostomy/ ventilatory                   | 293                | 26  | 146 | 1            |  | 372                | 5   | 7   | 1            |  | 20                | 0  | 0 | 1            |
|                                             |                    |     |     | (1-3)        |  |                    |     |     | (1-1)        |  |                   |    |   | (1-1)        |
| Swallowing / nutrition                      | 114                | 202 | 151 | 2            |  | 229                | 132 | 23  | 1            |  | 18                | 1  | 1 | 1            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (1-1)        |  |                   |    |   | (1-1)        |
| Communication                               | 107                | 99  | 261 | 3            |  | 191                | 121 | 72  | 2            |  | 15                | 4  | 2 | 1            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (1-2)        |  |                   |    |   | (1-2)        |
| Cognitive                                   | 56                 | 85  | 325 | 3            |  | 82                 | 154 | 149 | 2            |  | 8                 | 12 | 1 | 2            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (2-3)        |  |                   |    |   | (1-2)        |
| Behavioural                                 | 237                | 165 | 65  | 1            |  | 242                | 136 | 7   | 1            |  | 16                | 3  | 1 | 1            |
|                                             |                    |     |     | (1-2)        |  |                    |     |     | (1-1)        |  |                   |    |   | (1-1)        |
| Mood/emotion                                | 236                | 68  | 162 | 1            |  | 268                | 60  | 55  | 1            |  | 15                | 4  | 1 | 1            |
|                                             |                    |     |     | (1-3)        |  |                    |     |     | (1-1)        |  |                   |    |   | (1-2)        |
| Complex disability management               | 53                 | 312 | 101 | 2            |  | 127                | 255 | 2   | 2            |  | 9                 | 11 | 0 | 2            |
|                                             |                    |     |     | (2-2)        |  |                    |     |     | (1-2)        |  |                   |    |   | (1-2)        |
| Social / discharge planning                 | 56                 | 237 | 172 | 2            |  | 68                 | 272 | 45  | 2            |  | 13                | 5  | 2 | 1            |
|                                             |                    |     |     | (2-3)        |  |                    |     |     | (2-2)        |  |                   |    |   | (1-2)        |
| Family support                              | 65                 | 328 | 72  | 2            |  | 101                | 268 | 14  | 2            |  | 10                | 9  | 1 | 2            |
|                                             |                    |     |     | (2-2)        |  |                    |     |     | (1-2)        |  |                   |    |   | (1-2)        |
| Emotional load on staff                     | 180                | 209 | 77  | 2            |  | 231                | 144 | 8   | 1            |  | 18                | 2  | 0 | 1            |
|                                             |                    |     |     | (1-2)        |  |                    |     |     | (1-2)        |  |                   |    |   | (1-1)        |
| Vocational rehabilitation                   | 185                | 69  | 210 | 2            |  | 184                | 87  | 112 | 2            |  | 9                 | 9  | 2 | 2            |
|                                             |                    |     |     | (1-3)        |  |                    |     |     | (1-3)        |  |                   |    |   | (1-2)        |
| Medico-legal issues                         | 135                | 68  | 263 | 3            |  | 176                | 85  | 122 | 2            |  | 12                | 6  | 2 | 1            |
|                                             |                    |     |     | (1-3)        |  |                    |     |     | (1-3)        |  |                   |    |   | (1-2)        |
| Specialist equipment / facilities           | 184                | 144 | 136 | 2            |  | 301                | 61  | 21  | 1            |  | 18                | 1  | 1 | 1            |
|                                             |                    |     |     | (1-3)        |  |                    |     |     | (1-1)        |  |                   |    |   | (1-1)        |

Table A8 presents the detailed item level data for each item within the PCAT including the medians and inter quartile range (IQR). Therapy intensity was high for at least 25% of patients where as 34% required specialist communication assessment and 36% of patients required DoLS assessments. Only a small proportion of patients (6%) had unstable tracheostomies.

**Table A8: Median and IQR for all components within the PCAT**

| PCAT                                              | Total    | % within item (n=868) | Median (IQR) |
|---------------------------------------------------|----------|-----------------------|--------------|
| <b>Medical/Surgical</b>                           | <b>n</b> |                       |              |
| Complex specialist investigation/ intervention    | 150      | 17%                   | 0<br>(0-0)   |
| Medically /surgically unstable                    | 131      | 15%                   | 0<br>(0-0)   |
| Complex on-going needs for coordinated trauma     | 161      | 19%                   | 0<br>(0-0)   |
| Routine investigation/ intervention               | 330      | 38%                   | 0<br>(0-1)   |
| Currently well but potentially unstable           | 301      | 35%                   | 0<br>(0-1)   |
| Active on-going trauma care management            | 145      | 17%                   | 0<br>(0-0)   |
| No investigation/ intervention                    | 54       | 6%                    | 0<br>(0-0)   |
| Medically stable                                  | 149      | 17%                   | 0<br>(0-0)   |
| Trauma care largely complete – review only        | 168      | 19%                   | 0<br>(0-0)   |
| <b>Neuropsychiatric</b>                           |          |                       |              |
| Complex/unstable psychiatric needs                | 50       | 6%                    | 0<br>(0-0)   |
| High Risk management                              | 52       | 6%                    | 0<br>(0-0)   |
| Treatment under section of the MHA                | 9        | 1%                    | 0<br>(0-0)   |
| Psychiatric condition stable but requires monitor | 101      | 12%                   | 0<br>(0-0)   |
| Medium Risk management                            | 138      | 16%                   | 0<br>(0-0)   |
| No psychiatric condition                          | 446      | 51%                   | 1<br>(0-1)   |
| Low or no risk                                    | 335      | 39%                   | 0<br>(0-1)   |
| <b>Intensity</b>                                  |          |                       |              |
| ≥5 therapy disciplines                            | 268      | 31%                   | 0<br>(0-1)   |
| >25 hours total therapy time per week             | 215      | 25%                   | 0<br>(0-0)   |
| requires 1:1 supervision                          | 195      | 22%                   | 0<br>(0-0)   |
| ≥2 trained therapists to treat at one time        | 239      | 28%                   | 0<br>(0-1)   |
| 4 therapy disciplines                             | 315      | 36%                   | 0<br>(0-1)   |
| 20-25 hours total therapy time per week           | 223      | 26%                   | 0<br>(0-1)   |
| 1-3 therapy disciplines                           | 204      | 24%                   | 0<br>(0-0)   |
| <20 hours total therapy time per week             | 43       | 5%                    | 0<br>(0-0)   |

| PCAT                                                                              | Total | % within item (n=868) | Median (IQR) |
|-----------------------------------------------------------------------------------|-------|-----------------------|--------------|
| <b>Physical</b>                                                                   |       |                       |              |
| Complex postural tone /contracture management                                     | 187   | 22%                   | 0<br>(0-0)   |
| ≥ 2 to handle                                                                     | 413   | 48%                   | 0<br>(0-0)   |
| Highly complex musculoskeletal/trauma/pain management issues                      | 56    | 6%                    | 0<br>(0-0)   |
| Complex amputee needs (Multi-limb, hi tech etc)                                   | 10    | 1%                    | 0<br>(0-0)   |
| Routine physical issues                                                           | 296   | 34%                   | 0<br>(0-1)   |
| 1 to handle                                                                       | 212   | 24%                   | 0<br>(0-0)   |
| Moderately complex musculoskeletal/trauma/pain management issues                  | 214   | 25%                   | 0<br>(0-0)   |
| Standard specialist amputee needs                                                 | 9     | 1%                    | 0<br>(0-0)   |
| Higher function problems only (e.g high level coordination/mild deconditioning)   | 22    | 3%                    | 0<br>(0-0)   |
| Standard musculoskeletal/trauma/pain management/neurological issues               | 101   | 12%                   | 0<br>(0-0)   |
| No physical issues                                                                | 27    | 3%                    | 0<br>(0-0)   |
| <b>Tracheostomy/ ventilatory</b>                                                  |       |                       |              |
| Unstable tracheostomy requiring intensive suction                                 | 49    | 6%                    | 0<br>(0-0)   |
| O <sub>2</sub> sats monitoring programme                                          | 68    | 8%                    | 0<br>(0-0)   |
| Active weaning programme                                                          | 95    | 11%                   | 0<br>(0-0)   |
| Assisted ventilation                                                              | 19    | 2%                    | 0<br>(0-0)   |
| Tracheostomy in situ but stable                                                   | 58    | 7%                    | 0<br>(0-0)   |
| No tracheostomy                                                                   | 684   | 79%                   | 1<br>(1-1)   |
| <b>Swallowing / nutrition</b>                                                     |       |                       |              |
| Complex swallowing evaluation ( eg FEES)                                          | 127   | 15%                   | 0<br>(0-0)   |
| Complex nutritional requirements requiring intensive dietary support/intervention | 115   | 13%                   | 0<br>(0-0)   |
| Enteral feeding programme                                                         | 263   | 30%                   | 0<br>(0-1)   |
| Moderate monitoring – eg progressive consistency, dietary content                 | 189   | 22%                   | 0<br>(0-0)   |
| Dietary education (eg healthy eating, weight reduction)                           | 58    | 7%                    | 0<br>(0-0)   |
| Normal or stable modified diet                                                    | 248   | 29%                   | 0<br>(0-1)   |
| Able to eat independently or with supervision from care staff only                | 120   | 14%                   | 0<br>(0-0)   |
| Standard dietary / Weight monitoring only                                         | 168   | 19%                   | 0<br>(0-0)   |

| PCAT                                                                                                                 | Total | % within item (n=868) | Median (IQR) |
|----------------------------------------------------------------------------------------------------------------------|-------|-----------------------|--------------|
| <b>Communication</b>                                                                                                 |       |                       |              |
| Specialist evaluation                                                                                                | 296   | 34%                   | 0<br>(0-1)   |
| Complex communication aid set/up provision                                                                           | 83    | 10%                   | 0<br>(0-0)   |
| Moderate communication issues with some listener burden, but able to communicate basic needs and ideas               | 229   | 26%                   | 0<br>(0-1)   |
| Higher function problems only                                                                                        | 130   | 15%                   | 0<br>(0-0)   |
| No problems with communication                                                                                       | 180   | 21%                   | 0<br>(0-0)   |
| <b>Cognitive</b>                                                                                                     |       |                       |              |
| Intensive support for carryover / orientation etc                                                                    | 221   | 25%                   | 0<br>(0-1)   |
| Complex cognitive / neuropsychological assessment                                                                    | 362   | 42%                   | 0<br>(0-1)   |
| Structured environment, strategies                                                                                   | 173   | 20%                   | 0<br>(0-0)   |
| Routine cognitive assessment eg by O/T                                                                               | 145   | 17%                   | 0<br>(0-0)   |
| Higher function problems only                                                                                        | 29    | 3%                    | 0<br>(0-0)   |
| No cognitive problems                                                                                                | 115   | 13%                   | 0<br>(0-0)   |
| <b>Behavioural</b>                                                                                                   |       |                       |              |
| Highly challenging behaviours (eg physical/verbal aggression) requiring interactive behavioural management programme | 73    | 8%                    | 0<br>(0-0)   |
| Mild/moderate behavioural issues controlled in structured environment                                                | 305   | 35%                   | 0<br>(0-1)   |
| No significant behavioural problems                                                                                  | 480   | 55%                   | 1<br>(0-1)   |
| <b>Mood/emotion</b>                                                                                                  |       |                       |              |
| Specialist evaluation                                                                                                | 82    | 9%                    | 0<br>(0-0)   |
| Active management and frequent crisis intervent                                                                      | 148   | 17%                   | 0<br>(0-0)   |
| Mood disorder/adjustment issues under active management with planned programme                                       | 135   | 16%                   | 0<br>(0-0)   |
| No significant mood / adjustment issues                                                                              | 496   | 57%                   | 1<br>(0-1)   |

| PCAT                                                                                           | Total | % within item (n=868) | Median (IQR) | PCAT                                                                   | Total | % within item (n=868) | Median (IQR) | PCAT                                                                    | Total | % within item (n=868) | Median (IQR) |
|------------------------------------------------------------------------------------------------|-------|-----------------------|--------------|------------------------------------------------------------------------|-------|-----------------------|--------------|-------------------------------------------------------------------------|-------|-----------------------|--------------|
| <b>Complex disability management</b>                                                           |       |                       |              | <b>Vocational rehabilitation</b>                                       |       |                       |              | <b>Specialist equipment / facilities</b>                                |       |                       |              |
| Evaluation of low awareness state                                                              | 102   | 12%                   | 0<br>(0-0)   | Multi-disciplinary vocational assessment                               | 234   | 27%                   | 0<br>(0-0)   | Bespoke Assistive technology                                            | 28    | 3%                    | 0<br>(0-0)   |
| Neuro-palliative rehabilitation / end of life care                                             | 2     | 0%                    | 0<br>(0-0)   | Multi-agency support for return to work, retraining or work withdrawal | 149   | 17%                   | 0<br>(0-0)   | Highly specialist seating/wheelchair needs                              | 88    | 10%                   | 0<br>(0-0)   |
| Standard disability management eg set-up of care programme, care booklet, carer training etc   | 584   | 67%                   | 1<br>(0-1)   | Complex support in other roles (eg single-parenting)                   | 52    | 6%                    | 0<br>(0-0)   | Bespoke orthotics                                                       | 64    | 7%                    | 0<br>(0-0)   |
| None required                                                                                  | 163   | 19%                   | 0<br>(0-0)   | Work visits or employer liaison                                        | 98    | 11%                   | 0<br>(0-0)   | Electronic assistive technology                                         | 23    | 3%                    | 0<br>(0-0)   |
| <b>Social / discharge planning</b>                                                             |       |                       |              | Support for other roles, eg home-maker / parent                        | 86    | 10%                   | 0<br>(0-0)   | Assisted ventilation                                                    | 7     | 1%                    | 0<br>(0-0)   |
| Complex placement / housing /funding issues requiring extensive multi-agency negotiation       | 220   | 25%                   | 0<br>(0-1)   | Not of working age                                                     | 157   | 18%                   | 0<br>(0-0)   | Adapted Wheelchair / seating                                            | 188   | 22%                   | 0<br>(0-0)   |
| Active discharge planning requiring liaison with community SW/DN/OT eg to arrange care package | 518   | 60%                   | 1<br>(0-1)   | No significant needs for vocational support                            | 192   | 22%                   | 0<br>(0-0)   | Electric standing frame                                                 | 38    | 4%                    | 0<br>(0-0)   |
| No major discharge issues, taken care of by family / allocated social worker                   | 104   | 12%                   | 0<br>(0-0)   | <b>Medico-legal issues</b>                                             |       |                       |              | Treadmill/harness training                                              | 22    | 3%                    | 0<br>(0-0)   |
| <b>Family support</b>                                                                          |       |                       |              | Complex Best interests decisions                                       | 94    | 11%                   | 0<br>(0-0)   | Assisted cycling (eg motor-med)                                         | 22    | 3%                    | 0<br>(0-0)   |
| Major family distress issues require frequent support or crisis intervention                   | 88    | 10%                   | 0<br>(0-0)   | Court of protection applications                                       | 17    | 2%                    | 0<br>(0-0)   | Splinting / casting                                                     | 58    | 7%                    | 0<br>(0-0)   |
| Routine family support needs (met by planned meetings)                                         | 608   | 70%                   | 1<br>(0-1)   | DoLs / PoVA applications                                               | 312   | 36%                   | 0<br>(0-1)   | No equipment needs                                                      | 159   | 18%                   | 0<br>(0-0)   |
| No significant family problems                                                                 | 143   | 16%                   | 0<br>(0-0)   | Litigation issues                                                      | 45    | 5%                    | 0<br>(0-0)   | Basic off the shelf equipment only                                      | 268   | 31%                   | 0<br>(0-1)   |
| <b>Emotional load on staff</b>                                                                 |       |                       |              | Complex mental capacity / consent issues                               | 97    | 11%                   | 0<br>(0-0)   | Standard exercise facilities, eg plinth, bike tilt-table, parallel bars | 137   | 16%                   | 0<br>(0-0)   |
| Demanding situation requiring highly experienced staff / extra support for staff               | 85    | 10%                   | 0<br>(0-0)   | Mental capacity evaluation                                             | 209   | 24%                   | 0<br>(0-0)   |                                                                         |       |                       |              |
| Somewhat challenging situation but manageable                                                  | 358   | 41%                   | 0<br>(0-0)   | Standard consent / best interests decisions                            | 176   | 20%                   | 0<br>(0-0)   |                                                                         |       |                       |              |
| Minimal or no emotional load on staff                                                          | 392   | 45%                   | 0<br>(0-0)   | LPoA, advance care planning                                            | 3     | 0%                    | 0<br>(0-0)   |                                                                         |       |                       |              |
|                                                                                                |       |                       |              | No significant medico-legal issues                                     | 298   | 34%                   | 0<br>(0-1)   |                                                                         |       |                       |              |

**Table A9: ANOVA One way analysis of variance for PCAT categories**

|                                       |                | Sum of Squares | df  | Mean Square | F       | Sig.  |
|---------------------------------------|----------------|----------------|-----|-------------|---------|-------|
| <b>Medical/Surgical</b>               | Between Groups | 30.963         | 2   | 15.482      | 36.450  | 0.000 |
|                                       | Within Groups  | 369.948        | 871 | 0.425       |         |       |
|                                       | Total          | 400.912        | 873 |             |         |       |
| <b>Neuropsychiatric</b>               | Between Groups | 19.472         | 2   | 9.736       | 24.373  | 0.000 |
|                                       | Within Groups  | 347.538        | 870 | 0.399       |         |       |
|                                       | Total          | 367.010        | 872 |             |         |       |
| <b>Intensity</b>                      | Between Groups | 99.971         | 2   | 49.986      | 110.187 | 0.000 |
|                                       | Within Groups  | 395.576        | 872 | 0.454       |         |       |
|                                       | Total          | 495.547        | 874 |             |         |       |
| <b>Physical</b>                       | Between Groups | 47.482         | 2   | 23.741      | 68.901  | 0.000 |
|                                       | Within Groups  | 300.805        | 873 | 0.345       |         |       |
|                                       | Total          | 348.287        | 875 |             |         |       |
| <b>Tracheostomy/ ventilatory</b>      | Between Groups | 88.295         | 2   | 44.148      | 90.334  | 0.000 |
|                                       | Within Groups  | 424.691        | 869 | 0.489       |         |       |
|                                       | Total          | 512.986        | 871 |             |         |       |
| <b>Swallowing / nutrition</b>         | Between Groups | 88.567         | 2   | 44.283      | 94.439  | 0.000 |
|                                       | Within Groups  | 408.423        | 871 | 0.469       |         |       |
|                                       | Total          | 496.990        | 873 |             |         |       |
| <b>Communication</b>                  | Between Groups | 96.473         | 2   | 48.237      | 76.066  | 0.000 |
|                                       | Within Groups  | 552.974        | 872 | 0.634       |         |       |
|                                       | Total          | 649.447        | 874 |             |         |       |
| <b>Cognitive</b>                      | Between Groups | 46.937         | 2   | 23.469      | 45.240  | 0.000 |
|                                       | Within Groups  | 452.359        | 872 | 0.519       |         |       |
|                                       | Total          | 499.296        | 874 |             |         |       |
| <b>Behavioural</b>                    | Between Groups | 13.753         | 2   | 6.876       | 17.094  | 0.000 |
|                                       | Within Groups  | 350.789        | 872 | 0.402       |         |       |
|                                       | Total          | 364.542        | 874 |             |         |       |
| <b>Mood/emotion</b>                   | Between Groups | 36.038         | 2   | 18.019      | 26.186  | 0.000 |
|                                       | Within Groups  | 597.980        | 869 | 0.688       |         |       |
|                                       | Total          | 634.018        | 871 |             |         |       |
| <b>Complex disability managem</b>     | Between Groups | 41.307         | 2   | 20.653      | 73.818  | 0.000 |
|                                       | Within Groups  | 243.417        | 870 | 0.280       |         |       |
|                                       | Total          | 284.724        | 872 |             |         |       |
| <b>Social / discharge planning</b>    | Between Groups | 28.617         | 2   | 14.308      | 38.841  | 0.000 |
|                                       | Within Groups  | 320.492        | 870 | 0.368       |         |       |
|                                       | Total          | 349.109        | 872 |             |         |       |
| <b>Family support</b>                 | Between Groups | 14.814         | 2   | 7.407       | 26.757  | 0.000 |
|                                       | Within Groups  | 240.295        | 868 | 0.277       |         |       |
|                                       | Total          | 255.109        | 870 |             |         |       |
| <b>Emotional load on staff</b>        | Between Groups | 31.942         | 2   | 15.971      | 40.072  | 0.000 |
|                                       | Within Groups  | 346.351        | 869 | 0.399       |         |       |
|                                       | Total          | 378.294        | 871 |             |         |       |
| <b>Vocational rehabilitation</b>      | Between Groups | 13.937         | 2   | 6.968       | 8.787   | 0.000 |
|                                       | Within Groups  | 687.586        | 867 | 0.793       |         |       |
|                                       | Total          | 701.523        | 869 |             |         |       |
| <b>Medico-legal issues</b>            | Between Groups | 43.866         | 2   | 21.933      | 28.692  | 0.000 |
|                                       | Within Groups  | 664.289        | 869 | 0.764       |         |       |
|                                       | Total          | 708.155        | 871 |             |         |       |
| <b>Specialist equipment / facilit</b> | Between Groups | 87.610         | 2   | 43.805      | 86.910  | 0.000 |
|                                       | Within Groups  | 436.989        | 867 | 0.504       |         |       |
|                                       | Total          | 524.599        | 869 |             |         |       |

**Table A10: Bonferroni Correction for Multiple comparisons between categories for the PCAT**

| Dependent Variable   |     |     | Mean Difference (I-J) | Std. Error | Sig.  | Interval    |             |
|----------------------|-----|-----|-----------------------|------------|-------|-------------|-------------|
|                      |     |     |                       |            |       | Lower Bound | Upper Bound |
| pcat_medical_score   | A   | B   | .3651*                | 0.0449     | 0.000 | 0.257       | 0.473       |
|                      |     | C/D | .5287*                | 0.1422     | 0.001 | 0.188       | 0.870       |
|                      | B   | A   | -.3651*               | 0.0449     | 0.000 | -0.473      | -0.257      |
|                      |     | C/D | 0.1636                | 0.1429     | 0.757 | -0.179      | 0.506       |
|                      | C/D | A   | -.5287*               | 0.1422     | 0.001 | -0.870      | -0.188      |
|                      |     | B   | -0.1636               | 0.1429     | 0.757 | -0.506      | 0.179       |
| pcat_psych_score     | A   | B   | .2988*                | 0.0435     | 0.000 | 0.194       | 0.403       |
|                      |     | C/D | 0.3101                | 0.1410     | 0.084 | -0.028      | 0.648       |
|                      | B   | A   | -.2988*               | 0.0435     | 0.000 | -0.403      | -0.194      |
|                      |     | C/D | 0.0113                | 0.1416     | 1.000 | -0.328      | 0.351       |
|                      | C/D | A   | -0.3101               | 0.1410     | 0.084 | -0.648      | 0.028       |
|                      |     | B   | -0.0113               | 0.1416     | 1.000 | -0.351      | 0.328       |
| pcat_intensity_score | A   | B   | .6110*                | 0.0463     | 0.000 | 0.500       | 0.722       |
|                      |     | C/D | 1.2681*               | 0.1469     | 0.000 | 0.916       | 1.621       |
|                      | B   | A   | -.6110*               | 0.0463     | 0.000 | -0.722      | -0.500      |
|                      |     | C/D | .6571*                | 0.1476     | 0.000 | 0.303       | 1.011       |
|                      | C/D | A   | -1.2681*              | 0.1469     | 0.000 | -1.621      | -0.916      |
|                      |     | B   | -.6571*               | 0.1476     | 0.000 | -1.011      | -0.303      |
| pcat_physical_score  | A   | B   | .4230*                | 0.0404     | 0.000 | 0.326       | 0.520       |
|                      |     | C/D | .8613*                | 0.1281     | 0.000 | 0.554       | 1.168       |
|                      | B   | A   | -.4230*               | 0.0404     | 0.000 | -0.520      | -0.326      |
|                      |     | C/D | .4383*                | 0.1287     | 0.002 | 0.130       | 0.747       |
|                      | C/D | A   | -.8613*               | 0.1281     | 0.000 | -1.168      | -0.554      |
|                      |     | B   | -.4383*               | 0.1287     | 0.002 | -0.747      | -0.130      |
| pcat_trach_score     | A   | B   | .6352*                | 0.0481     | 0.000 | 0.520       | 0.751       |
|                      |     | C/D | .6845*                | 0.1560     | 0.000 | 0.310       | 1.059       |
|                      | B   | A   | -.6352*               | 0.0481     | 0.000 | -0.751      | -0.520      |
|                      |     | C/D | 0.0494                | 0.1567     | 1.000 | -0.326      | 0.425       |
|                      | C/D | A   | -.6845*               | 0.1560     | 0.000 | -1.059      | -0.310      |
|                      |     | B   | -0.0494               | 0.1567     | 1.000 | -0.425      | 0.326       |
| pcat_swallow_score   | A   | B   | .6141*                | 0.0471     | 0.000 | 0.501       | 0.727       |
|                      |     | C/D | .9362*                | 0.1527     | 0.000 | 0.570       | 1.303       |
|                      | B   | A   | -.6141*               | 0.0471     | 0.000 | -0.727      | -0.501      |
|                      |     | C/D | 0.3221                | 0.1535     | 0.108 | -0.046      | 0.690       |
|                      | C/D | A   | -.9362*               | 0.1527     | 0.000 | -1.303      | -0.570      |
|                      |     | B   | -0.3221               | 0.1535     | 0.108 | -0.690      | 0.046       |
| pcat_comms_score     | A   | B   | .6403*                | 0.0548     | 0.000 | 0.509       | 0.772       |
|                      |     | C/D | .9676*                | 0.1737     | 0.000 | 0.551       | 1.384       |
|                      | B   | A   | -.6403*               | 0.0548     | 0.000 | -0.772      | -0.509      |
|                      |     | C/D | 0.3273                | 0.1746     | 0.183 | -0.091      | 0.746       |
|                      | C/D | A   | -.9676*               | 0.1737     | 0.000 | -1.384      | -0.551      |
|                      |     | B   | -0.3273               | 0.1746     | 0.183 | -0.746      | 0.091       |
| pcat_cognitive_score | A   | B   | .4046*                | 0.0495     | 0.000 | 0.286       | 0.523       |
|                      |     | C/D | .9418*                | 0.1571     | 0.000 | 0.565       | 1.319       |
|                      | B   | A   | -.4046*               | 0.0495     | 0.000 | -0.523      | -0.286      |
|                      |     | C/D | .5372*                | 0.1579     | 0.002 | 0.159       | 0.916       |
|                      | C/D | A   | -.9418*               | 0.1571     | 0.000 | -1.319      | -0.565      |
|                      |     | B   | -.5372*               | 0.1579     | 0.002 | -0.916      | -0.159      |
| pcat_behaviour_score | A   | B   | .2392*                | 0.0436     | 0.000 | 0.135       | 0.344       |
|                      |     | C/D | .3922*                | 0.1415     | 0.017 | 0.053       | 0.732       |
|                      | B   | A   | -.2392*               | 0.0436     | 0.000 | -0.344      | -0.135      |
|                      |     | C/D | 0.1531                | 0.1421     | 0.845 | -0.188      | 0.494       |
|                      | C/D | A   | -.3922*               | 0.1415     | 0.017 | -0.732      | -0.053      |
|                      |     | B   | -0.1531               | 0.1421     | 0.845 | -0.494      | 0.188       |

| Dependent Variable     |     |     | Mean Difference (I-J) | Std. Error | Sig.  | Interval    |             |
|------------------------|-----|-----|-----------------------|------------|-------|-------------|-------------|
|                        |     |     |                       |            |       | Lower Bound | Upper Bound |
| pcat_mood_score        | A   | B   | .3967*                | 0.0571     | 0.000 | 0.260       | 0.534       |
|                        |     | C/D | .5537*                | 0.1850     | 0.009 | 0.110       | 0.998       |
|                        | B   | A   | -.3967*               | 0.0571     | 0.000 | -0.534      | -0.260      |
|                        |     | C/D | 0.1570                | 0.1859     | 1.000 | -0.289      | 0.603       |
|                        | C/D | A   | -.5537*               | 0.1850     | 0.009 | -0.998      | -0.110      |
|                        |     | B   | -0.1570               | 0.1859     | 1.000 | -0.603      | 0.289       |
| pcat_disability_score  | A   | B   | .4296*                | 0.0364     | 0.000 | 0.342       | 0.517       |
|                        |     | C/D | .5335*                | 0.1180     | 0.000 | 0.250       | 0.817       |
|                        | B   | A   | -.4296*               | 0.0364     | 0.000 | -0.517      | -0.342      |
|                        |     | C/D | 0.1039                | 0.1185     | 1.000 | -0.180      | 0.388       |
|                        | C/D | A   | -.5335*               | 0.1180     | 0.000 | -0.817      | -0.250      |
|                        |     | B   | -0.1039               | 0.1185     | 1.000 | -0.388      | 0.180       |
| pcat_planning_score    | A   | B   | .3107*                | 0.0418     | 0.000 | 0.210       | 0.411       |
|                        |     | C/D | .7749*                | 0.1354     | 0.000 | 0.450       | 1.100       |
|                        | B   | A   | -.3107*               | 0.0418     | 0.000 | -0.411      | -0.210      |
|                        |     | C/D | .4642*                | 0.1360     | 0.002 | 0.138       | 0.790       |
|                        | C/D | A   | -.7749*               | 0.1354     | 0.000 | -1.100      | -0.450      |
|                        |     | B   | -.4642*               | 0.1360     | 0.002 | -0.790      | -0.138      |
| pcat_family_score      | A   | B   | .2437*                | 0.0363     | 0.000 | 0.157       | 0.331       |
|                        |     | C/D | .4457*                | 0.1174     | 0.000 | 0.164       | 0.727       |
|                        | B   | A   | -.2437*               | 0.0363     | 0.000 | -0.331      | -0.157      |
|                        |     | C/D | 0.2020                | 0.1179     | 0.261 | -0.081      | 0.485       |
|                        | C/D | A   | -.4457*               | 0.1174     | 0.000 | -0.727      | -0.164      |
|                        |     | B   | -0.2020               | 0.1179     | 0.261 | -0.485      | 0.081       |
| pcat_staff_score       | A   | B   | .3602*                | 0.0435     | 0.000 | 0.256       | 0.464       |
|                        |     | C/D | .6366*                | 0.1408     | 0.000 | 0.299       | 0.974       |
|                        | B   | A   | -.3602*               | 0.0435     | 0.000 | -0.464      | -0.256      |
|                        |     | C/D | 0.2764                | 0.1415     | 0.153 | -0.063      | 0.616       |
|                        | C/D | A   | -.6366*               | 0.1408     | 0.000 | -0.974      | -0.299      |
|                        |     | B   | -0.2764               | 0.1415     | 0.153 | -0.616      | 0.063       |
| pcat_vocation_score    | A   | B   | .2365*                | 0.0614     | 0.000 | 0.089       | 0.384       |
|                        |     | C/D | 0.4326                | 0.1987     | 0.089 | -0.044      | 0.909       |
|                        | B   | A   | -.2365*               | 0.0614     | 0.000 | -0.384      | -0.089      |
|                        |     | C/D | 0.1961                | 0.1996     | 0.979 | -0.283      | 0.675       |
|                        | C/D | A   | -0.4326               | 0.1987     | 0.089 | -0.909      | 0.044       |
|                        |     | B   | -0.1961               | 0.1996     | 0.979 | -0.675      | 0.283       |
| pcat_medicolegal_score | A   | B   | .4143*                | 0.0602     | 0.000 | 0.270       | 0.559       |
|                        |     | C/D | .8000*                | 0.1950     | 0.000 | 0.332       | 1.268       |
|                        | B   | A   | -.4143*               | 0.0602     | 0.000 | -0.559      | -0.270      |
|                        |     | C/D | 0.3858                | 0.1959     | 0.148 | -0.084      | 0.856       |
|                        | C/D | A   | -.8000*               | 0.1950     | 0.000 | -1.268      | -0.332      |
|                        |     | B   | -0.3858               | 0.1959     | 0.148 | -0.856      | 0.084       |
| pcat_facilities_score  | A   | B   | .6285*                | 0.0490     | 0.000 | 0.511       | 0.746       |
|                        |     | C/D | .7539*                | 0.1584     | 0.000 | 0.374       | 1.134       |
|                        | B   | A   | -.6285*               | 0.0490     | 0.000 | -0.746      | -0.511      |
|                        |     | C/D | 0.1254                | 0.1591     | 1.000 | -0.256      | 0.507       |
|                        | C/D | A   | -.7539*               | 0.1584     | 0.000 | -1.134      | -0.374      |
|                        |     | B   | -0.1254               | 0.1591     | 1.000 | -0.507      | 0.256       |
| pcat_duration_score    | A   | B   | .7357*                | 0.0447     | 0.000 | 0.628       | 0.843       |
|                        |     | C/D | 1.1725*               | 0.1444     | 0.000 | 0.826       | 1.519       |
|                        | B   | A   | -.7357*               | 0.0447     | 0.000 | -0.843      | -0.628      |
|                        |     | C/D | .4368*                | 0.1450     | 0.008 | 0.089       | 0.785       |
|                        | C/D | A   | -1.1725*              | 0.1444     | 0.000 | -1.519      | -0.826      |
|                        |     | B   | -.4368*               | 0.1450     | 0.008 | -0.785      | -0.089      |

\*. The mean difference is significant at the 0.05 level

Within the general neurorehabilitation population, a PCAT score of  $\geq 30$  is generally indicative of category A needs, and scores of 24-29 indicative of category B needs.

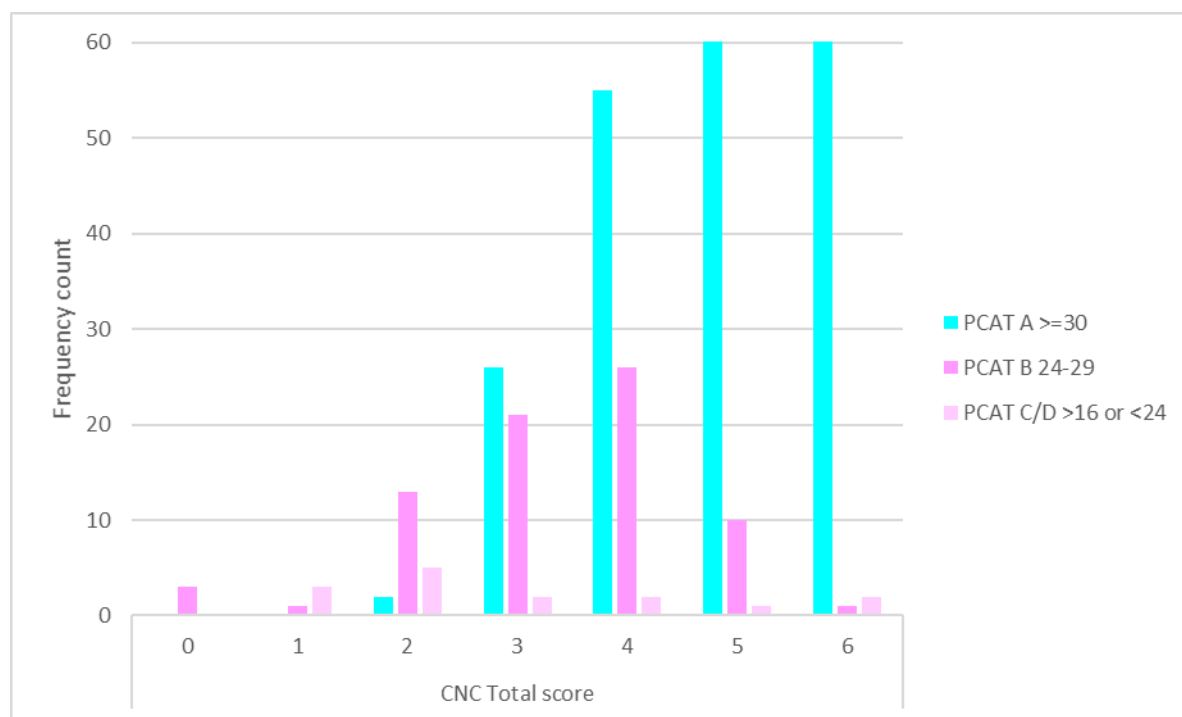
## 1.4 Comparison of PCAT and CNC

It is possible that inclusion of patients on the basis of the **CN Checklist** alone may lower the threshold for inclusion in comparison to centres recruiting on the basis of the **PCAT** tool.

In order to explore this, where both tools were completed for the same patients, we examined agreement between them in terms of the % of patients thought to have complex needs (using the CN Checklist) who were subsequently confirmed as category A/B using the PCAT tool.

Both scores were recorded in just 306 patients. Figure A3 shows the frequency distribution of CNC total scores within the three categories of need as defined by the total PCAT score. In a receiver operating characteristic (ROC) plot. The area under the curve was 0.71. A total CNC score of 4 or more identified category A needs with a sensitivity of 87% and a specificity of 56%. Category B patients more commonly had CNC scores of 2-4.

**Figure A3. Frequency distribution of CNC scores across the PCAT categories of need**



## 1.5 Northwick Park Dependency Scale

The Northwick Park Dependency scale provides detailed information on the number of carers and time required to meet personal care needs and psychosocial support , with higher scores indicating greater dependence (Table A11)

**Table A11: Summary sores for all items in the NPDS including medians and IQRs**

|                              | Total | % within item<br>(n=750) | Median<br>(IQR) |
|------------------------------|-------|--------------------------|-----------------|
|                              |       | 750                      |                 |
| Mobility                     | 620   | 83%                      | 3<br>(2-4)      |
| Bed transfers                | 457   | 61%                      | 1<br>(0-3)      |
| Toileting and Bladder        | 541   | 72%                      | 1<br>(0-1)      |
| Urinary accidents            | 111   | 15%                      | 0<br>(0-0)      |
| Bowels (need for assistance) | 534   | 71%                      | 3<br>(0-4)      |
| Faecal accidents             | 383   | 51%                      | 1<br>(0-2)      |
| Washing and grooming         | 663   | 88%                      | 3<br>(2-4)      |
| Bathing / showering          | 685   | 91%                      | 4<br>(2-4)      |
| Dressing                     | 654   | 87%                      | 3<br>(2-4)      |
| Eating                       | 281   | 37%                      | 0<br>(0-1)      |
| Drinking                     | 304   | 41%                      | 0<br>(0-1)      |
| Enteral feeding              | 258   | 34%                      | 0<br>(0-2)      |
| Skin pressure relief         | 424   | 57%                      | 1<br>(0-3)      |
| Safety awareness             | 586   | 78%                      | 2<br>(1-3)      |
| Communication                | 423   | 56%                      | 1<br>(0-3)      |
| Behaviour                    | 414   | 55%                      | 1<br>(0-2)      |
| Tracheostomy                 | 131   | 17%                      | 0<br>(0-0)      |
| Wound dressing (? Pressure)  | 109   | 15%                      | 0<br>(0-0)      |
| Night                        | 358   | 48%                      | 0<br>(0-5)      |
| Psychological support        | 171   | 23%                      | 0<br>(0-0)      |
| MRSA                         | 33    | 4%                       | 0<br>(0-0)      |
| Medial                       | 137   | 18%                      | 0<br>(0-0)      |
| Specialing                   | 218   | 29%                      | 0<br>(0-5)      |

Dependence on help for personal care needs including bowel management was greater in patients with Category A needs (Table A12). Statistically significant differences were found between Category of need for most nursing dependency items (Table A13 & A14).



**Table A12: Comparison of dependency between different categories of patients as measured with the NPDS**

|                              | Category A (n=404) |     |              | Category B (n=269) |      |              | Category C (n=19) |     |              |
|------------------------------|--------------------|-----|--------------|--------------------|------|--------------|-------------------|-----|--------------|
|                              |                    | 404 | Median (IQR) |                    | 269  | Median (IQR) |                   | 19  | Median (IQR) |
|                              | n                  | %   |              | n                  | %    |              | n                 | %   |              |
| Mobility                     | 358                | 89% | 3<br>(2-4)   | 236                | 88%  | 2<br>(1-3)   | 8                 | 42% | 0<br>(0-2)   |
| Bed transfers                | 245                | 61% | 1<br>(0-3)   | 189                | 70%  | 1<br>(0-2)   | 7                 | 37% | 0<br>(0-1)   |
| Toileting and Bladder        | 320                | 79% | 1<br>(1-1)   | 201                | 75%  | 1<br>(0-1)   | 7                 | 37% | 0<br>(0-1)   |
| Urinary accidents            | 64                 | 16% | 0<br>(0-0)   | 36                 | 13%  | 0<br>(0-0)   | 4                 | 21% | 0<br>(0-0)   |
| Bowels (need for assistance) | 306                | 76% | 4<br>(1-5)   | 203                | 75%  | 2<br>(0-4)   | 8                 | 42% | 0<br>(0-3)   |
| Faecal accidents             | 262                | 65% | 2<br>(0-3)   | 103                | 38%  | 2<br>(0-2)   | 6                 | 32% | 0<br>(0-1)   |
| Washing and grooming         | 376                | 93% | 3<br>(2-5)   | 257                | 96%  | 2<br>(1-3)   | 10                | 53% | 1<br>(0-3)   |
| Bathing / showering          | 383                | 95% | 4<br>(2-5)   | 270                | 100% | 0<br>(2-4)   | 11                | 58% | 1<br>(0-4)   |
| Dressing                     | 363                | 90% | 4<br>(2-5)   | 262                | 97%  | 0<br>(1-4)   | 9                 | 47% | 0<br>(0-2)   |
| Eating                       | 129                | 32% | 0<br>(0-1)   | 139                | 52%  | 0<br>(0-1)   | 2                 | 11% | 0<br>(0-0)   |
| Drinking                     | 145                | 36% | 0<br>(0-1)   | 144                | 54%  | 0<br>(0-1)   | 3                 | 16% | 0<br>(0-0)   |
| Enteral feeding              | 211                | 52% | 1<br>(0-4)   | 41                 | 15%  | 2<br>(0-0)   | 2                 | 11% | 0<br>(0-0)   |
| Skin pressure relief         | 263                | 65% | 3<br>(0-3)   | 142                | 53%  | 0<br>(0-2)   | 5                 | 26% | 0<br>(0-1)   |
| Safety awareness             | 347                | 86% | 3<br>(2-3)   | 215                | 80%  | 1<br>(0-3)   | 7                 | 37% | 0<br>(0-1)   |
| Communication                | 276                | 68% | 2<br>(0-4)   | 133                | 49%  | 0<br>(0-1)   | 3                 | 16% | 0<br>(0-0)   |
| Behaviour                    | 244                | 60% | 1<br>(0-3)   | 154                | 57%  | 0<br>(0-2)   | 4                 | 21% | 0<br>(0-0)   |
| Tracheostomy                 | 123                | 30% | 0<br>(0-5)   | 6                  | 2%   | 0<br>(0-0)   | 1                 | 5%  | 0<br>(0-0)   |
| Wound dressing (? Pressure)  | 65                 | 16% | 0<br>(0-0)   | 43                 | 16%  | 0<br>(0-0)   | 1                 | 5%  | 0<br>(0-0)   |
| Night                        | 236                | 58% | 5<br>(0-5)   | 94                 | 35%  | 0<br>(0-5)   | 10                | 53% | 5<br>(0-5)   |
| Psychological support        | 109                | 27% | 0<br>(0-5)   | 54                 | 20%  | 0<br>(0-0)   | 5                 | 26% | 0<br>(0-5)   |
| MRSA                         | 28                 | 7%  | 0<br>(0-0)   | 5                  | 2%   | 0<br>(0-0)   | 0                 | 0%  | 0<br>(0-0)   |
| Medial                       | 87                 | 22% | 0<br>(0-0)   | 36                 | 13%  | 0<br>(0-0)   | 9                 | 47% | 0<br>(0-5)   |
| Specialing                   | 159                | 39% | 0<br>(0-5)   | 55                 | 20%  | 0<br>(0-0)   | 3                 | 16% | 0<br>(0-0)   |

**Table A13: ANOVA One way analysis of variance for NPDS**

|                          |                | Sum of Squares | df  | Mean Square | F      | Sig.  |
|--------------------------|----------------|----------------|-----|-------------|--------|-------|
| npds_mobility_score      | Between Groups | 140.648        | 2   | 70.324      | 39.169 | 0.000 |
|                          | Within Groups  | 1301.669       | 725 | 1.795       |        |       |
|                          | Total          | 1442.317       | 727 |             |        |       |
| npds_transfer_score      | Between Groups | 18.098         | 2   | 9.049       | 6.244  | 0.002 |
|                          | Within Groups  | 1023.206       | 706 | 1.449       |        |       |
|                          | Total          | 1041.303       | 708 |             |        |       |
| npds_bladder_score       | Between Groups | 8.163          | 2   | 4.082       | 3.636  | 0.027 |
|                          | Within Groups  | 809.355        | 721 | 1.123       |        |       |
|                          | Total          | 817.518        | 723 |             |        |       |
| npds_urinary_score       | Between Groups | 0.879          | 2   | 0.440       | 0.813  | 0.444 |
|                          | Within Groups  | 391.889        | 725 | 0.541       |        |       |
|                          | Total          | 392.768        | 727 |             |        |       |
| npds_bowels_score        | Between Groups | 142.745        | 2   | 71.372      | 19.583 | 0.000 |
|                          | Within Groups  | 2638.716       | 724 | 3.645       |        |       |
|                          | Total          | 2781.461       | 726 |             |        |       |
| npds_faecal_score        | Between Groups | 104.492        | 2   | 52.246      | 35.948 | 0.000 |
|                          | Within Groups  | 1052.254       | 724 | 1.453       |        |       |
|                          | Total          | 1156.746       | 726 |             |        |       |
| npds_washing_score       | Between Groups | 131.243        | 2   | 65.621      | 25.459 | 0.000 |
|                          | Within Groups  | 1866.103       | 724 | 2.577       |        |       |
|                          | Total          | 1997.345       | 726 |             |        |       |
| npds_bathing_score       | Between Groups | 176.258        | 2   | 88.129      | 36.990 | 0.000 |
|                          | Within Groups  | 1724.930       | 724 | 2.383       |        |       |
|                          | Total          | 1901.188       | 726 |             |        |       |
| npds_dressing_score      | Between Groups | 164.850        | 2   | 82.425      | 30.828 | 0.000 |
|                          | Within Groups  | 1935.739       | 724 | 2.674       |        |       |
|                          | Total          | 2100.589       | 726 |             |        |       |
| npds_eating_score        | Between Groups | 9.463          | 2   | 4.732       | 6.541  | 0.002 |
|                          | Within Groups  | 523.739        | 724 | 0.723       |        |       |
|                          | Total          | 533.202        | 726 |             |        |       |
| npds_drinking_score      | Between Groups | 7.451          | 2   | 3.726       | 5.615  | 0.004 |
|                          | Within Groups  | 480.398        | 724 | 0.664       |        |       |
|                          | Total          | 487.849        | 726 |             |        |       |
| npds_ental_score         | Between Groups | 273.825        | 2   | 136.913     | 55.049 | 0.000 |
|                          | Within Groups  | 1803.162       | 725 | 2.487       |        |       |
|                          | Total          | 2076.988       | 727 |             |        |       |
| npds_skin_pressure_score | Between Groups | 166.478        | 2   | 83.239      | 35.088 | 0.000 |
|                          | Within Groups  | 1717.538       | 724 | 2.372       |        |       |
|                          | Total          | 1884.017       | 726 |             |        |       |
| npds_safety_score        | Between Groups | 100.015        | 2   | 50.007      | 36.762 | 0.000 |
|                          | Within Groups  | 986.204        | 725 | 1.360       |        |       |
|                          | Total          | 1086.218       | 727 |             |        |       |
| npds_communication_score | Between Groups | 320.431        | 2   | 160.215     | 51.891 | 0.000 |
|                          | Within Groups  | 2238.448       | 725 | 3.088       |        |       |
|                          | Total          | 2558.879       | 727 |             |        |       |
| npds_behaviour_score     | Between Groups | 36.137         | 2   | 18.068      | 7.962  | 0.000 |
|                          | Within Groups  | 1645.358       | 725 | 2.269       |        |       |
|                          | Total          | 1681.495       | 727 |             |        |       |
| npds_tracheostomy_score  | Between Groups | 356.229        | 2   | 178.114     | 55.704 | 0.000 |
|                          | Within Groups  | 2311.815       | 723 | 3.198       |        |       |
|                          | Total          | 2668.044       | 725 |             |        |       |
| npds_pressure_score      | Between Groups | 6.056          | 2   | 3.028       | 0.948  | 0.388 |
|                          | Within Groups  | 2309.819       | 723 | 3.195       |        |       |
|                          | Total          | 2315.875       | 725 |             |        |       |
| npds_night_score         | Between Groups | 320.344        | 2   | 160.172     | 27.579 | 0.000 |
|                          | Within Groups  | 4198.939       | 723 | 5.808       |        |       |
|                          | Total          | 4519.284       | 725 |             |        |       |
| npds_psychological_score | Between Groups | 33.198         | 2   | 16.599      | 3.741  | 0.024 |
|                          | Within Groups  | 3208.296       | 723 | 4.437       |        |       |
|                          | Total          | 3241.494       | 725 |             |        |       |
| npds_mrsa_score          | Between Groups | 12.965         | 2   | 6.482       | 6.051  | 0.002 |
|                          | Within Groups  | 774.535        | 723 | 1.071       |        |       |
|                          | Total          | 787.500        | 725 |             |        |       |
| npds_medical_score       | Between Groups | 81.086         | 2   | 40.543      | 11.193 | 0.000 |
|                          | Within Groups  | 2618.914       | 723 | 3.622       |        |       |
|                          | Total          | 2700.000       | 725 |             |        |       |
| npds_specialing_score    | Between Groups | 201.290        | 2   | 100.645     | 20.201 | 0.000 |
|                          | Within Groups  | 3602.188       | 723 | 4.982       |        |       |
|                          | Total          | 3803.478       | 725 |             |        |       |

**Table A14. Bonferroni Correction for Multiple comparisons: NPDS**

| Dependent Variable  |     |     | Mean Difference (I-J) | Std. Error | Sig.  | 95% Confidence Interval |             |
|---------------------|-----|-----|-----------------------|------------|-------|-------------------------|-------------|
|                     |     |     |                       |            |       | Lower Bound             | Upper Bound |
| npds_mobility_score | A   | B   | .7475*                | 0.1017     | 0.000 | 0.503                   | 0.991       |
|                     |     | C/D | 1.8560*               | 0.3145     | 0.000 | 1.101                   | 2.611       |
|                     | B   | A   | -.7475*               | 0.1017     | 0.000 | -0.991                  | -0.503      |
|                     |     | C/D | 1.1086*               | 0.3169     | 0.001 | 0.348                   | 1.869       |
|                     | C/D | A   | -1.8560*              | 0.3145     | 0.000 | -2.611                  | -1.101      |
| npds_transfer_score | A   | B   | .2558*                | 0.0929     | 0.018 | 0.033                   | 0.479       |
|                     |     | C/D | .7273*                | 0.2827     | 0.031 | 0.049                   | 1.406       |
|                     | B   | A   | -.2558*               | 0.0929     | 0.018 | -0.479                  | -0.033      |
|                     |     | C/D | 0.4715                | 0.2851     | 0.296 | -0.213                  | 1.156       |
|                     | C/D | A   | -.7273*               | 0.2827     | 0.031 | -1.406                  | -0.049      |
| npds_bladder_score  | A   | B   | 0.1347                | 0.0807     | 0.287 | -0.059                  | 0.328       |
|                     |     | C/D | 0.5791                | 0.2487     | 0.061 | -0.018                  | 1.176       |
|                     | B   | A   | -0.1347               | 0.0807     | 0.287 | -0.328                  | 0.059       |
|                     |     | C/D | 0.4444                | 0.2506     | 0.230 | -0.157                  | 1.046       |
|                     | C/D | A   | -0.5791               | 0.2487     | 0.061 | -1.176                  | 0.018       |
| npds_urinary_score  | A   | B   | 0.0693                | 0.0558     | 0.643 | -0.065                  | 0.203       |
|                     |     | C/D | -0.0195               | 0.1726     | 1.000 | -0.434                  | 0.395       |
|                     | B   | A   | -0.0693               | 0.0558     | 0.643 | -0.203                  | 0.065       |
|                     |     | C/D | -0.0888               | 0.1739     | 1.000 | -0.506                  | 0.328       |
|                     | C/D | A   | 0.0195                | 0.1726     | 1.000 | -0.395                  | 0.434       |
| npds_bowels_score   | A   | B   | .8369*                | 0.1450     | 0.000 | 0.489                   | 1.185       |
|                     |     | C/D | 1.4325*               | 0.4481     | 0.004 | 0.357                   | 2.508       |
|                     | B   | A   | -.8369*               | 0.1450     | 0.000 | -1.185                  | -0.489      |
|                     |     | C/D | 0.5956                | 0.4515     | 0.563 | -0.488                  | 1.679       |
|                     | C/D | A   | -1.4325*              | 0.4481     | 0.004 | -2.508                  | -0.357      |
| npds_faecal_score   | A   | B   | .7521*                | 0.0916     | 0.000 | 0.532                   | 0.972       |
|                     |     | C/D | .9124*                | 0.2830     | 0.004 | 0.233                   | 1.591       |
|                     | B   | A   | -.7521*               | 0.0916     | 0.000 | -0.972                  | -0.532      |
|                     |     | C/D | 0.1603                | 0.2851     | 1.000 | -0.524                  | 0.844       |
|                     | C/D | A   | -.9124*               | 0.2830     | 0.004 | -1.591                  | -0.233      |
| npds_washing_score  | A   | B   | .7620*                | 0.1219     | 0.000 | 0.469                   | 1.055       |
|                     |     | C/D | 1.6120*               | 0.3769     | 0.000 | 0.708                   | 2.516       |
|                     | B   | A   | -.7620*               | 0.1219     | 0.000 | -1.055                  | -0.469      |
|                     |     | C/D | 0.8499                | 0.3797     | 0.076 | -0.061                  | 1.761       |
|                     | C/D | A   | -1.6120*              | 0.3769     | 0.000 | -2.516                  | -0.708      |
| npds_bathing_score  | A   | B   | .9006*                | 0.1172     | 0.000 | 0.619                   | 1.182       |
|                     |     | C/D | 1.7743*               | 0.3623     | 0.000 | 0.905                   | 2.644       |
|                     | B   | A   | -.9006*               | 0.1172     | 0.000 | -1.182                  | -0.619      |
|                     |     | C/D | 0.8737                | 0.3650     | 0.051 | -0.002                  | 1.750       |
|                     | C/D | A   | -1.7743*              | 0.3623     | 0.000 | -2.644                  | -0.905      |
| npds_dressing_score | A   | B   | .8219*                | 0.1242     | 0.000 | 0.524                   | 1.120       |
|                     |     | C/D | 1.9583*               | 0.3838     | 0.000 | 1.037                   | 2.879       |
|                     | B   | A   | -.8219*               | 0.1242     | 0.000 | -1.120                  | -0.524      |
|                     |     | C/D | 1.1364*               | 0.3867     | 0.010 | 0.208                   | 2.064       |
|                     | C/D | A   | -1.9583*              | 0.3838     | 0.000 | -2.879                  | -1.037      |
| npds_eating_score   | A   | B   | -.1713*               | 0.0646     | 0.025 | -0.326                  | -0.016      |
|                     |     | C/D | 0.4133                | 0.1996     | 0.116 | -0.066                  | 0.892       |
|                     | B   | A   | .1713*                | 0.0646     | 0.025 | 0.016                   | 0.326       |
|                     |     | C/D | .5845*                | 0.2011     | 0.011 | 0.102                   | 1.067       |
|                     | C/D | A   | -0.4133               | 0.1996     | 0.116 | -0.892                  | 0.066       |
| npds_drinking_score | A   | B   | -0.1482               | 0.0619     | 0.051 | -0.297                  | 0.000       |
|                     |     | C/D | 0.3804                | 0.1912     | 0.141 | -0.078                  | 0.839       |
|                     | B   | A   | 0.1482                | 0.0619     | 0.051 | 0.000                   | 0.297       |
|                     |     | C/D | .5286*                | 0.1926     | 0.019 | 0.066                   | 0.991       |
|                     | C/D | A   | -0.3804               | 0.1912     | 0.141 | -0.839                  | 0.078       |
| npds_ental_score    | A   | B   | -1.2325*              | 0.1197     | 0.000 | -1.520                  | -0.945      |
|                     |     | C/D | 0.0329                | 0.3729     | 1.000 | -0.862                  | 0.928       |
|                     | B   | A   | 1.2325*               | 0.1197     | 0.000 | -1.520                  | -0.945      |
|                     |     | C/D | -0.0329               | 0.3729     | 1.000 | -0.928                  | 0.862       |

| Dependent Variable           |     |     | Mean Difference (I-J) | Std. Error | Sig.  | 95% Confidence Interval |             |
|------------------------------|-----|-----|-----------------------|------------|-------|-------------------------|-------------|
|                              |     |     |                       |            |       | Lower Bound             | Upper Bound |
| npds_skin_pre<br>ssure_score | A   | B   | .9177*                | 0.1169     | 0.000 | 0.637                   | 1.198       |
|                              |     | C/D | 1.4440*               | 0.3616     | 0.000 | 0.576                   | 2.312       |
|                              | B   | A   | -.9177*               | 0.1169     | 0.000 | -1.198                  | -0.637      |
|                              |     | C/D | 0.5263                | 0.3642     | 0.447 | -0.348                  | 1.400       |
|                              | C/D | A   | -1.4440*              | 0.3616     | 0.000 | -2.312                  | -0.576      |
| npds_safety_sc<br>ore        | A   | B   | .6540*                | 0.0885     | 0.000 | 0.442                   | 0.866       |
|                              |     | C/D | 1.4599*               | 0.2738     | 0.000 | 0.803                   | 2.117       |
|                              | B   | A   | -.6540*               | 0.0885     | 0.000 | -0.866                  | -0.442      |
|                              |     | C/D | .8059*                | 0.2758     | 0.011 | 0.144                   | 1.468       |
|                              | C/D | A   | -1.4599*              | 0.2738     | 0.000 | -2.117                  | -0.803      |
| npds_commun<br>ication_score | A   | B   | 1.2864*               | 0.1333     | 0.000 | 0.966                   | 1.606       |
|                              |     | C/D | 1.8884*               | 0.4125     | 0.000 | 0.899                   | 2.878       |
|                              | B   | A   | -1.2864*              | 0.1333     | 0.000 | -1.606                  | -0.966      |
|                              |     | C/D | 0.6020                | 0.4155     | 0.444 | -0.395                  | 1.599       |
|                              | C/D | A   | -1.8884*              | 0.4125     | 0.000 | -2.878                  | -0.899      |
| npds_behavio<br>ur_score     | A   | B   | .3927*                | 0.1143     | 0.002 | 0.118                   | 0.667       |
|                              |     | C/D | .8795*                | 0.3536     | 0.039 | 0.031                   | 1.728       |
|                              | B   | A   | -.3927*               | 0.1143     | 0.002 | -0.667                  | -0.118      |
|                              |     | C/D | 0.4868                | 0.3562     | 0.517 | -0.368                  | 1.342       |
|                              | C/D | A   | -.8795*               | 0.3536     | 0.039 | -1.728                  | -0.031      |
| npds_tracheos<br>tomy_score  | A   | B   | 1.4192*               | 0.1360     | 0.000 | 1.093                   | 1.745       |
|                              |     | C/D | 1.2554*               | 0.4197     | 0.009 | 0.248                   | 2.263       |
|                              | B   | A   | -1.4192*              | 0.1360     | 0.000 | -1.745                  | -1.093      |
|                              |     | C/D | -0.1638               | 0.4229     | 1.000 | -1.179                  | 0.851       |
|                              | C/D | A   | -1.2554*              | 0.4197     | 0.009 | -2.263                  | -0.248      |
| npds_pressure<br>_score      | A   | B   | 0.0905                | 0.1359     | 1.000 | -0.236                  | 0.417       |
|                              |     | C/D | 0.5393                | 0.4196     | 0.597 | -0.467                  | 1.546       |
|                              | B   | A   | -0.0905               | 0.1359     | 1.000 | -0.417                  | 0.236       |
|                              |     | C/D | 0.4488                | 0.4228     | 0.866 | -0.566                  | 1.463       |
|                              | C/D | A   | -0.5393               | 0.4196     | 0.597 | -1.546                  | 0.467       |
| npds_night_sc<br>ore         | A   | B   | 1.3573*               | 0.1832     | 0.000 | 0.918                   | 1.797       |
|                              |     | C/D | 0.2820                | 0.5657     | 1.000 | -1.075                  | 1.639       |
|                              | B   | A   | -1.3573*              | 0.1832     | 0.000 | -1.797                  | -0.918      |
|                              |     | C/D | -1.0753               | 0.5700     | 0.179 | -2.443                  | 0.292       |
|                              | C/D | A   | -0.2820               | 0.5657     | 1.000 | -1.639                  | 1.075       |
| npds_pyscholo<br>gical_score | A   | B   | .4351*                | 0.1602     | 0.020 | 0.051                   | 0.819       |
|                              |     | C/D | 0.0299                | 0.4945     | 1.000 | -1.157                  | 1.216       |
|                              | B   | A   | -.4351*               | 0.1602     | 0.020 | -0.819                  | -0.051      |
|                              |     | C/D | -0.4052               | 0.4982     | 1.000 | -1.601                  | 0.790       |
|                              | C/D | A   | -0.0299               | 0.4945     | 1.000 | -1.216                  | 1.157       |
| npds_mrnsa_sc<br>ore         | A   | B   | .2629*                | 0.0787     | 0.003 | 0.074                   | 0.452       |
|                              |     | C/D | 0.3457                | 0.2430     | 0.466 | -0.237                  | 0.929       |
|                              | B   | A   | -.2629*               | 0.0787     | 0.003 | -0.452                  | -0.074      |
|                              |     | C/D | 0.0828                | 0.2448     | 1.000 | -0.505                  | 0.670       |
|                              | C/D | A   | -0.3457               | 0.2430     | 0.466 | -0.929                  | 0.237       |
| npds_medical_<br>score       | A   | B   | .4780*                | 0.1447     | 0.003 | 0.131                   | 0.825       |
|                              |     | C/D | -1.2943*              | 0.4468     | 0.012 | -2.366                  | -0.222      |
|                              | B   | A   | -.4780*               | 0.1447     | 0.003 | -0.825                  | -0.131      |
|                              |     | C/D | -1.7724*              | 0.4502     | 0.000 | -2.853                  | -0.692      |
|                              | C/D | A   | 1.2943*               | 0.4468     | 0.012 | 0.222                   | 2.366       |
| npds_specialin<br>g_score    | A   | B   | 1.0524*               | 0.1697     | 0.000 | 0.645                   | 1.460       |
|                              |     | C/D | 1.1735                | 0.5240     | 0.076 | -0.084                  | 2.431       |
|                              | B   | A   | -1.0524*              | 0.1697     | 0.000 | -1.460                  | -0.645      |
|                              |     | C/D | 0.1211                | 0.5279     | 1.000 | -1.146                  | 1.388       |
|                              | C/D | A   | -1.1735               | 0.5240     | 0.076 | -2.431                  | 0.084       |

\*. The mean difference is significant at the 0.05 level

## 1.6 Neurological Impairment Scale – Trauma

The Neurological impairment scale provides information on the level of impairment following injury, with higher scores indicating greater impairment affecting rehabilitation. Cognitive function and speech were severely impaired (Table A15), with Category A patients showing greater impairment (Table A16) which was statistically significant (Table A17 & A18).

**Table A15. Median and IQR for all components within the NIST**

| Item                     | Total | % within item (n=668) | Median (IQR) | Item                         | Total | % within item (n=668) | Median (IQR) |
|--------------------------|-------|-----------------------|--------------|------------------------------|-------|-----------------------|--------------|
| Motor                    |       |                       |              | Motor                        |       |                       |              |
| Left upper limb (neuro)  | 276   | 46%                   | 0<br>(0-2)   | Bladder dysfunction          | 260   | 43%                   | 0<br>(0-3)   |
| Right upper limb (neuro) | 251   | 41%                   | 0<br>(0-2)   | Bowel dysfunction            | 293   | 49%                   | 0<br>(0-3)   |
| Left lower limb (neuro)  | 309   | 51%                   | 1<br>(0-2)   | Nutritional status           | 193   | 32%                   | 0<br>(0-1)   |
| Right lower limb (neuro) | 291   | 48%                   | 1<br>(0-2)   | Substance abuse              | 146   | 24%                   | 0<br>(0-0)   |
| Trunk (neuro)            | 283   | 49%                   | 1<br>(0-2)   | Left upper limb (fractures)  | 87    | 15%                   | 0<br>(0-0)   |
| Tone/joint range         | 165   | 26%                   | 0<br>(0-1)   | Right upper limb (fractures) | 75    | 13%                   | 0<br>(0-0)   |
| Sensation                | 307   | 48%                   | 0<br>(0-3)   | Left lower limb (fractures)  | 82    | 14%                   | 0<br>(0-0)   |
| Perceptual function      | 264   | 41%                   | 0<br>(0-3)   | Right lower limb (fractures) | 81    | 14%                   | 0<br>(0-0)   |
| Speech and language      | 400   | 63%                   | 2<br>(0-3)   | Pelvis (fractures)           | 75    | 13%                   | 0<br>(0-0)   |
| Cognitive function       | 533   | 84%                   | 2<br>(0-3)   | Spine (fractures)            | 178   | 30%                   | 0<br>(0-1)   |
| Behaviour                | 258   | 40%                   | 0<br>(0-1)   | Skull/facial (fractures)     | 218   | 37%                   | 0<br>(0-1)   |
| Mood                     | 274   | 43%                   | 0<br>(0-1)   | Ribs (fractures)             | 147   | 25%                   | 0<br>(0-1)   |
| Seeing and Vision        | 246   | 38%                   | 0<br>(0-3)   | Limb loss                    |       |                       |              |
| Hearing                  | 174   | 27%                   | 0<br>(0-2)   | Left upper limb              | 3     | 1%                    | 0<br>(0-0)   |
| Skin integrity           | 139   | 24%                   | 0<br>(0-0)   | Right upper limb             | 2     | 0%                    | 0<br>(0-0)   |
| Pain                     | 398   | 62%                   | 1<br>(0-2)   | Left lower limb              | 10    | 2%                    | 0<br>(0-0)   |
| Fatigue                  | 498   | 78%                   | 2<br>(1-3)   | Right lower limb             | 13    | 2%                    | 0<br>(0-0)   |
| Other                    | 9     | 27%                   | 0<br>(0-2)   | Vascular Injury              | 26    | 4%                    | 0<br>(0-0)   |
| Seizures                 | 41    | 7%                    | 0<br>(0-0)   | Chest/abdo Injury            | 161   | 27%                   | 0<br>(0-1)   |
|                          |       |                       |              | Comorbidid conditions        | 181   | 30%                   | 0<br>(0-1)   |
|                          |       |                       |              | Other                        | 51    | 9%                    | 0<br>(0-0)   |
|                          |       |                       |              |                              |       |                       |              |
|                          |       |                       |              |                              |       |                       |              |

**Table A16. Comparison of impairments between different categories of patients as measured with the NIST**

| Item                     | Category A (n=300) |     |        | Category B (n=268) |     |         | Category C (n=16) |     |         |  | Item                         | Category A (n=300) |     |                 | Category B (n=268) |     |         | Category C (n=16) |     |        |
|--------------------------|--------------------|-----|--------|--------------------|-----|---------|-------------------|-----|---------|--|------------------------------|--------------------|-----|-----------------|--------------------|-----|---------|-------------------|-----|--------|
|                          |                    |     | Median |                    |     | Media   |                   |     | Media   |  |                              |                    |     |                 |                    |     |         |                   |     | Median |
|                          | n                  | %   | (IQR)  | n                  | %   | n (IQR) | n                 | %   | n (IQR) |  |                              | n                  | %   | n (IQR)         | n                  | %   | n (IQR) | n                 | %   | (IQR)  |
| Left upper limb (neuro)  | 191                | 64% | 1      | 106                | 21% | 0       | 3                 | 19% | 0       |  | Bladder dysfunction          | 179                | 60% | 2               | 72                 | 6%  | 0       | 3                 | 19% | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | dysfunction     |                    |     | (0-3)   |                   |     | (0-1)  |
| Right upper limb (neuro) | 184                | 61% | 1      | 91                 | 18% | 0       | 2                 | 13% | 0       |  | Bowel dysfunction            | 199                | 66% | 2               | 85                 | 12% | 0       | 3                 | 19% | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | dysfunction     |                    |     | (0-3)   |                   |     | (0-1)  |
| Left lower limb (neuro)  | 209                | 70% | 2      | 117                | 24% | 0       | 5                 | 31% | 0       |  | Nutritional status           | 124                | 41% | 0               | 61                 | 15% | 0       | 1                 | 6%  | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-1)   |                   |     | (0-1)   |  |                              |                    |     | status          |                    |     | (0-1)   |                   |     | (0-0)  |
| Right lower limb (neuro) | 199                | 66% | 1      | 111                | 23% | 0       | 3                 | 19% | 0       |  | Substance abuse              | 81                 | 27% | 0               | 51                 | 7%  | 0       | 6                 | 38% | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | Substance abuse |                    |     | (0-1)   |                   |     | (0-0)  |
| Trunk (neuro)            | 206                | 69% | 1      | 117                | 28% | 0       | 2                 | 13% | 0       |  | Left upper limb (fractures)  | 47                 | 16% | 0               | 35                 | 4%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (0-2)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | (fractures)     |                    |     | (0-0)   |                   |     | (0-0)  |
| Tone/joint range         | 117                | 39% | 0      | 39                 | 7%  | 0       | 1                 | 6%  | 0       |  | Right upper limb (fractures) | 43                 | 14% | 0               | 28                 | 1%  | 0       | 1                 | 6%  | 0      |
|                          |                    |     | (0-1)  |                    |     | (0-0)   |                   |     | (0-0)   |  |                              |                    |     | (fractures)     |                    |     | (0-0)   |                   |     | (0-0)  |
| Sensation                | 217                | 72% | 3      | 80                 | 6%  | 0       | 3                 | 19% | 0       |  | Left lower limb (fractures)  | 34                 | 11% | 0               | 43                 | 3%  | 0       | 1                 | 6%  | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | (fractures)     |                    |     | (0-0)   |                   |     | (0-0)  |
| Perceptual function      | 177                | 59% | 1      | 83                 | 7%  | 0       | 1                 | 6%  | 0       |  | Right lower limb (fractures) | 35                 | 12% | 0               | 38                 | 1%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | (fractures)     |                    |     | (0-0)   |                   |     | (0-0)  |
| Speech and language      | 241                | 80% | 2      | 150                | 14% | 1       | 2                 | 13% | 0       |  | Pelvis (fractures)           | 44                 | 15% | 0               | 30                 | 1%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (1-3)  |                    |     | (0-2)   |                   |     | (0-0)   |  |                              |                    |     | (fractures)     |                    |     | (0-0)   |                   |     | (0-0)  |
| Cognitive function       | 276                | 92% | 3      | 233                | 15% | 2       | 12                | 75% | 1       |  | Spine (fractures)            | 99                 | 33% | 0               | 68                 | 10% | 0       | 5                 | 31% | 0      |
|                          |                    |     | (2-3)  |                    |     | (1-3)   |                   |     | (0-2)   |  |                              |                    |     | (fractures)     |                    |     | (0-1)   |                   |     | (0-1)  |
| Behaviour                | 141                | 47% | 0      | 107                | 25% | 0       | 2                 | 13% | 0       |  | Skull/facial (fractures)     | 127                | 42% | 0               | 78                 | 16% | 0       | 6                 | 38% | 0      |
|                          |                    |     | (0-2)  |                    |     | (0-1)   |                   |     | (0-0)   |  |                              |                    |     | (fractures)     |                    |     | (0-2)   |                   |     | (0-1)  |
| Mood                     | 152                | 51% | 0      | 105                | 23% | 0       | 5                 | 31% | 0       |  | Ribs (fractures)             | 11                 | 4%  | 0               | 59                 | 9%  | 0       | 1                 | 6%  | 0      |
|                          |                    |     | (0-2)  |                    |     | (0-1)   |                   |     | (0-1)   |  |                              |                    |     | (fractures)     |                    |     | (0-1)   |                   |     | (0-0)  |
| Seeing and Vision        | 154                | 51% | 0      | 86                 | 4%  | 0       | 1                 | 6%  | 0       |  | Limb loss                    |                    |     |                 |                    |     |         |                   |     |        |
|                          |                    |     | (0-3)  |                    |     | (0-2)   |                   |     | (0-0)   |  |                              |                    |     |                 |                    |     |         |                   |     |        |
| Hearing                  | 113                | 38% | 0      | 58                 | 1%  | 0       | 2                 | 13% | 0       |  | Left upper limb              | 2                  | 1%  | 0               | 1                  | 0%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-0)   |                   |     | (0-0)   |  |                              |                    |     |                 |                    |     |         |                   |     |        |
| Skin integrity           | 76                 | 0%  | 0      | 51                 | 0%  | 0       | 5                 | 31% | 0       |  | Right upper limb             | 2                  | 1%  | 0               | 0                  | 0%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (0-1)  |                    |     | (0-0)   |                   |     | (0-1)   |  |                              |                    |     |                 |                    |     |         |                   |     |        |
| Pain                     | 226                | 75% | 1      | 147                | 23% | 1       | 10                | 63% | 1       |  | Left lower limb              | 4                  | 1%  | 0               | 6                  | 0%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (0-3)  |                    |     | (0-2)   |                   |     | (0-1)   |  |                              |                    |     |                 |                    |     |         |                   |     |        |
| Fatigue                  | 273                | 91% | 2      | 197                | 26% | 1       | 10                | 63% | 1       |  | Right lower limb             | 7                  | 2%  | 0               | 6                  | 0%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (1-3)  |                    |     | (0-2)   |                   |     | (0-1)   |  |                              |                    |     |                 |                    |     |         |                   |     |        |
| Seizures                 | 28                 | 9%  | 0      | 9                  | 2%  | 0       | 2                 | 13% | 0       |  | Vascular Injury              | 16                 | 5%  | 0               | 8                  | 0%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     | (0-0)  |                    |     | (0-0)   |                   |     | (0-0)   |  |                              |                    |     |                 |                    |     |         |                   |     |        |
|                          |                    |     |        |                    |     |         |                   |     |         |  | Chest/abdo Injury            | 101                | 34% | 0               | 56                 | 12% | 0       |                   | 0%  | 0      |
|                          |                    |     |        |                    |     |         |                   |     |         |  | Injury                       |                    |     | (0-1)           |                    |     | (0-0)   |                   |     | (0-0)  |
|                          |                    |     |        |                    |     |         |                   |     |         |  | Comorbidid conditions        | 97                 | 32% | 0               | 77                 | 13% | 0       | 3                 | 19% | 0      |
|                          |                    |     |        |                    |     |         |                   |     |         |  | (0-1)                        |                    |     | (0-1)           |                    |     | (0-0)   |                   |     |        |
|                          |                    |     |        |                    |     |         |                   |     |         |  | Other                        | 30                 | 10% | 0               | 20                 | 3%  | 0       | 0                 | 0%  | 0      |
|                          |                    |     |        |                    |     |         |                   |     |         |  | (0-0)                        |                    |     | (0-0)           |                    |     | (0-0)   |                   |     |        |

**Table A17. ANOVA One way analysis of variance for NIST**

|                           |                | Sum of Squares | df  | Mean Square | F      | Sig.  |                           |                | Sum of Squares | df  | Mean Square | F      | Sig.  |
|---------------------------|----------------|----------------|-----|-------------|--------|-------|---------------------------|----------------|----------------|-----|-------------|--------|-------|
| nis_motor_subtotal        | Between Groups | 2013.116       | 2   | 1006.558    | 47.739 | 0.000 | tis_fractures_left_upper  | Between Groups | 2.633          | 2   | 1.316       | 2.149  | 0.118 |
|                           | Within Groups  | 12608.484      | 598 | 21.084      |        |       |                           | Within Groups  | 341.852        | 558 | 0.613       |        |       |
|                           | Total          | 14621.601      | 600 |             |        |       |                           | Total          | 344.485        | 560 |             |        |       |
| nis_tone_score            | Between Groups | 27.424         | 2   | 13.712      | 21.475 | 0.000 | tis_fractures_right_lower | Between Groups | 1.507          | 2   | 0.753       | 1.331  | 0.265 |
|                           | Within Groups  | 392.035        | 614 | 0.638       |        |       |                           | Within Groups  | 317.529        | 561 | 0.566       |        |       |
|                           | Total          | 419.459        | 616 |             |        |       |                           | Total          | 319.035        | 563 |             |        |       |
| nis_sensation_score       | Between Groups | 213.825        | 2   | 106.913     | 69.229 | 0.000 | tis_fractures_left_lower  | Between Groups | 2.441          | 2   | 1.220       | 1.652  | 0.193 |
|                           | Within Groups  | 951.309        | 616 | 1.544       |        |       |                           | Within Groups  | 413.769        | 560 | 0.739       |        |       |
|                           | Total          | 1165.134       | 618 |             |        |       |                           | Total          | 416.210        | 562 |             |        |       |
| nis_perceptual_score      | Between Groups | 98.856         | 2   | 49.428      | 28.940 | 0.000 | tis_fractures_right_lower | Between Groups | 1.833          | 2   | 0.916       | 1.181  | 0.308 |
|                           | Within Groups  | 1052.078       | 616 | 1.708       |        |       |                           | Within Groups  | 433.925        | 559 | 0.776       |        |       |
|                           | Total          | 1150.934       | 618 |             |        |       |                           | Total          | 435.758        | 561 |             |        |       |
| nis_speech_score          | Between Groups | 109.437        | 2   | 54.719      | 38.498 | 0.000 | tis_fractures_pelvis      | Between Groups | 2.992          | 2   | 1.496       | 2.022  | 0.133 |
|                           | Within Groups  | 874.131        | 615 | 1.421       |        |       |                           | Within Groups  | 412.894        | 558 | 0.740       |        |       |
|                           | Total          | 983.568        | 617 |             |        |       |                           | Total          | 415.886        | 560 |             |        |       |
| nis_cognitive_score       | Between Groups | 47.476         | 2   | 23.738      | 21.785 | 0.000 | tis_fractures_spine       | Between Groups | 11.929         | 2   | 5.964       | 5.847  | 0.003 |
|                           | Within Groups  | 667.963        | 613 | 1.090       |        |       |                           | Within Groups  | 576.351        | 565 | 1.020       |        |       |
|                           | Total          | 715.440        | 615 |             |        |       |                           | Total          | 588.280        | 567 |             |        |       |
| nis_behaviour_score       | Between Groups | 21.997         | 2   | 10.998      | 11.467 | 0.000 | tis_fractures_skull       | Between Groups | 17.679         | 2   | 8.840       | 10.295 | 0.000 |
|                           | Within Groups  | 589.880        | 615 | 0.959       |        |       |                           | Within Groups  | 484.282        | 564 | 0.859       |        |       |
|                           | Total          | 611.877        | 617 |             |        |       |                           | Total          | 501.961        | 566 |             |        |       |
| nis_mood_score            | Between Groups | 16.690         | 2   | 8.345       | 9.291  | 0.000 | tis_fractures_ribs        | Between Groups | 8.785          | 2   | 4.393       | 5.139  | 0.006 |
|                           | Within Groups  | 550.595        | 613 | 0.898       |        |       |                           | Within Groups  | 480.365        | 562 | 0.855       |        |       |
|                           | Total          | 567.284        | 615 |             |        |       |                           | Total          | 489.150        | 564 |             |        |       |
| nis_seeing_score          | Between Groups | 49.864         | 2   | 24.932      | 13.546 | 0.000 | tis_fractures_subtotal    | Between Groups | 183.294        | 2   | 91.647      | 7.380  | 0.001 |
|                           | Within Groups  | 1133.803       | 616 | 1.841       |        |       |                           | Within Groups  | 6829.845       | 550 | 12.418      |        |       |
|                           | Total          | 1183.667       | 618 |             |        |       |                           | Total          | 7013.139       | 552 |             |        |       |
| nis_hearing_score         | Between Groups | 30.696         | 2   | 15.348      | 9.507  | 0.000 | tis_limblloss_left_upper  | Between Groups | 0.003          | 2   | 0.002       | 0.052  | 0.949 |
|                           | Within Groups  | 996.032        | 617 | 1.614       |        |       |                           | Within Groups  | 18.911         | 567 | 0.033       |        |       |
|                           | Total          | 1026.727       | 619 |             |        |       |                           | Total          | 18.914         | 569 |             |        |       |
| nis_pain_score            | Between Groups | 47.949         | 2   | 23.975      | 18.892 | 0.000 | tis_limblloss_right_upper | Between Groups | 0.043          | 2   | 0.022       | 0.946  | 0.389 |
|                           | Within Groups  | 779.185        | 614 | 1.269       |        |       |                           | Within Groups  | 12.913         | 568 | 0.023       |        |       |
|                           | Total          | 827.135        | 616 |             |        |       |                           | Total          | 12.956         | 570 |             |        |       |
| nis_fatigue_score         | Between Groups | 75.111         | 2   | 37.555      | 33.870 | 0.000 | tis_limblloss_left_lower  | Between Groups | 0.059          | 2   | 0.030       | 0.263  | 0.769 |
|                           | Within Groups  | 681.907        | 615 | 1.109       |        |       |                           | Within Groups  | 63.844         | 567 | 0.113       |        |       |
|                           | Total          | 757.018        | 617 |             |        |       |                           | Total          | 63.904         | 569 |             |        |       |
| tis_seizures_score        | Between Groups | 1.471          | 2   | 0.736       | 4.292  | 0.014 | tis_limblloss_right_lower | Between Groups | 0.077          | 2   | 0.038       | 0.220  | 0.803 |
|                           | Within Groups  | 99.568         | 581 | 0.171       |        |       |                           | Within Groups  | 99.665         | 571 | 0.175       |        |       |
|                           | Total          | 101.039        | 583 |             |        |       |                           | Total          | 99.742         | 573 |             |        |       |
| tis_bladder_score         | Between Groups | 129.899        | 2   | 64.950      | 40.974 | 0.000 | tis_vascular_score        | Between Groups | 0.409          | 2   | 0.205       | 0.940  | 0.391 |
|                           | Within Groups  | 909.862        | 574 | 1.585       |        |       |                           | Within Groups  | 124.905        | 574 | 0.218       |        |       |
|                           | Total          | 1039.761       | 576 |             |        |       |                           | Total          | 125.314        | 576 |             |        |       |
| tis_bowel_score           | Between Groups | 147.961        | 2   | 73.980      | 51.628 | 0.000 | tis_chest_score           | Between Groups | 19.540         | 2   | 9.770       | 11.744 | 0.000 |
|                           | Within Groups  | 823.944        | 575 | 1.433       |        |       |                           | Within Groups  | 479.206        | 576 | 0.832       |        |       |
|                           | Total          | 971.905        | 577 |             |        |       |                           | Total          | 498.746        | 578 |             |        |       |
| tis_skin_integrity_score  | Between Groups | 2.720          | 2   | 1.360       | 1.959  | 0.142 | tis_comorbid_score        | Between Groups | 2.666          | 2   | 1.333       | 1.724  | 0.179 |
|                           | Within Groups  | 389.486        | 561 | 0.694       |        |       |                           | Within Groups  | 446.195        | 577 | 0.773       |        |       |
|                           | Total          | 392.206        | 563 |             |        |       |                           | Total          | 448.860        | 579 |             |        |       |
| tis_nutrition_score       | Between Groups | 20.713         | 2   | 10.357      | 17.274 | 0.000 | tis_other_score           | Between Groups | 1.946          | 2   | 0.973       | 2.187  | 0.113 |
|                           | Within Groups  | 342.939        | 572 | 0.600       |        |       |                           | Within Groups  | 232.692        | 523 | 0.445       |        |       |
|                           | Total          | 363.652        | 574 |             |        |       |                           | Total          | 234.639        | 525 |             |        |       |
| tis_substance_abuse_score | Between Groups | 4.453          | 2   | 2.226       | 2.868  | 0.058 |                           |                |                |     |             |        |       |
|                           | Within Groups  | 446.276        | 575 | 0.776       |        |       |                           |                |                |     |             |        |       |
|                           | Total          | 450.728        | 577 |             |        |       |                           |                |                |     |             |        |       |

**Table A18. Bonferroni Correction for Multiple comparisons for NIST**

|                       |     | Mean Difference (I-J) |                      |        |             | Confidence  |                                 |                                |                       | Difference (I-J)    |                    | Interval    |             |        |       |
|-----------------------|-----|-----------------------|----------------------|--------|-------------|-------------|---------------------------------|--------------------------------|-----------------------|---------------------|--------------------|-------------|-------------|--------|-------|
| Dependent Variable    |     | Mean Difference (I-J) | Std. Error           | Sig.   | Lower Bound | Upper Bound | Dependent Variable              |                                | Mean Difference (I-J) | Std. Error          | Sig.               | Lower Bound | Upper Bound |        |       |
| nls_motor_subtotal    | A   | 3.5829                | 0.3805               | 0.000  | 2.670       | 4.496       | tis_substance_abuse_score       | A                              | 0.1781                | 0.0744              | 0.051              | 0.000       | 0.357       |        |       |
|                       | B   | 4.7106 <sup>*</sup>   | 1.1771               | 0.000  | 1.885       | 7.537       |                                 |                                | C/D                   | 0.0935              | 0.2262             | 1.000       | -0.450      | 0.637  |       |
|                       | C   | -3.5829 <sup>*</sup>  | 0.3805               | 0.000  | -4.496      | -2.670      |                                 | B                              | A                     | -0.1781             | 0.0744             | 0.051       | -0.357      | 0.000  |       |
|                       | D   | 1.1277                | 1.1810               | 1.000  | -1.707      | 3.963       |                                 | C/D                            | 0.0846                | 0.2266              | 1.000              | -0.629      | 0.460       |        |       |
|                       | E   | -4.7106 <sup>*</sup>  | 1.1771               | 0.000  | -7.537      | -1.885      |                                 | C/D                            | A                     | -0.0935             | 0.2262             | 1.000       | -0.637      | 0.450  |       |
| nls_tone_score        | B   | -1.1277               | 1.1810               | 1.000  | -3.963      | 1.707       |                                 | B                              | 0.0846                | 0.2266              | 1.000              | -0.460      | 0.629       |        |       |
|                       | A   | .4102 <sup>*</sup>    | 0.0653               | 0.000  | 0.253       | 0.567       | tis_fractures_left_upper_score  | A                              | B                     | 0.0907              | 0.0671             | 0.531       | -0.070      | 0.252  |       |
|                       | C/D | .5719 <sup>*</sup>    | 0.2047               | 0.016  | 0.080       | 1.063       |                                 | C/D                            | 0.3559                | 0.2012              | 0.232              | -0.127      | 0.839       |        |       |
|                       | B   | A                     | -.4102 <sup>*</sup>  | 0.0653 | 0.000       | -0.567      | -0.253                          | B                              | A                     | -0.0907             | 0.0671             | 0.531       | -0.252      | 0.070  |       |
|                       | C/D | 0.1617                | 0.2054               | 1.000  | -0.331      | 0.655       | C/D                             | 0.2652                         | 0.2015                | 0.566               | -0.239             | 0.747       |             |        |       |
| nls_sensation_score   | A   | -5719 <sup>*</sup>    | 0.2047               | 0.016  | -1.063      | -0.080      |                                 | C/D                            | A                     | -0.3559             | 0.2012             | 0.232       | -0.819      | 0.127  |       |
|                       | B   | -0.1617               | 0.2054               | 1.000  | -0.655      | 0.331       | tis_fractures_right_upper_score | A                              | B                     | -0.2652             | 0.2015             | 0.566       | -0.749      | 0.219  |       |
|                       | C/D | 1.1638 <sup>*</sup>   | 0.1014               | 0.000  | 0.920       | 1.407       |                                 | B                              | 0.0765                | 0.0643              | 0.704              | -0.078      | 0.231       |        |       |
|                       | B   | C/D                   | 1.3668 <sup>*</sup>  | 0.3183 | 0.000       | 0.603       | 2.131                           |                                | C/D                   | 0.2498              | 0.1933             | 0.590       | -0.214      | 0.714  |       |
|                       | B   | A                     | -1.1638 <sup>*</sup> | 0.1014 | 0.000       | -1.407      | -0.920                          | B                              | A                     | -0.0765             | 0.0643             | 0.704       | -0.231      | 0.078  |       |
| nls_perceptual_score  | C/D | 0.2031                | 0.3194               | 1.000  | -0.564      | 0.970       |                                 | C/D                            | 0.1732                | 0.1937              | 1.000              | -0.292      | 0.674       |        |       |
|                       | A   | -1.3668 <sup>*</sup>  | 0.3183               | 0.000  | -2.131      | -0.603      | C/D                             | A                              | -0.2498               | 0.1933              | 0.590              | -0.714      | 0.214       |        |       |
|                       | B   | -0.2031               | 0.3194               | 1.000  | -0.970      | 0.564       | B                               | B                              | -0.1732               | 0.1937              | 1.000              | -0.638      | 0.292       |        |       |
|                       | A   | B                     | .7545 <sup>*</sup>   | 0.1067 | 0.000       | 0.498       | 1.011                           | tis_fractures_left_lower_score | A                     | B                   | -0.0966            | 0.0736      | 0.569       | -0.273 | 0.080 |
|                       | C/D | 1.2798 <sup>*</sup>   | 0.3348               | 0.000  | 0.476       | 2.083       |                                 | C/D                            | 0.2273                | 0.2209              | 0.912              | -0.303      | 0.758       |        |       |
| nls_speech_score      | B   | A                     | -.7545 <sup>*</sup>  | 0.1067 | 0.000       | -1.011      | -0.498                          |                                | B                     | A                   | 0.0966             | 0.0736      | 0.569       | -0.080 | 0.273 |
|                       | C/D | 0.5253                | 0.3359               | 0.355  | -0.281      | 1.332       | C/D                             | 0.3239                         | 0.2213                | 0.432               | -0.208             | 0.855       |             |        |       |
|                       | A   | -1.2798 <sup>*</sup>  | 0.3348               | 0.000  | -2.083      | -0.476      | C/D                             | A                              | -0.2273               | 0.2209              | 0.912              | -0.758      | 0.303       |        |       |
|                       | B   | -0.5253               | 0.3359               | 0.355  | -1.332      | 0.281       | B                               | B                              | -0.3239               | 0.2213              | 0.432              | -0.855      | 0.208       |        |       |
|                       | C/D | .7751 <sup>*</sup>    | 0.0974               | 0.000  | 0.541       | 1.009       | tis_fractures_right_lower_score | A                              | B                     | -0.0222             | 0.0755             | 1.000       | -0.203      | 0.159  |       |
| nls_cognitive_score   | A   | C/D                   | 1.4781 <sup>*</sup>  | 0.3054 | 0.000       | 0.745       | 2.211                           |                                | C/D                   | 0.3262              | 0.2264             | 0.451       | -0.217      | 0.870  |       |
|                       | B   | -0.7751 <sup>*</sup>  | 0.0974               | 0.000  | -1.009      | -0.541      | B                               | A                              | 0.0222                | 0.0755              | 1.000              | -0.159      | 0.203       |        |       |
|                       | C/D | 0.7030                | 0.3064               | 0.066  | -0.302      | 1.439       | C/D                             | 0.3485                         | 0.2268                | 0.375               | -0.196             | 0.893       |             |        |       |
|                       | A   | -1.4781 <sup>*</sup>  | 0.3054               | 0.000  | -2.211      | -0.745      | C/D                             | A                              | -0.3262               | 0.2264              | 0.451              | -0.870      | 0.217       |        |       |
|                       | B   | -0.7030               | 0.3064               | 0.066  | -1.439      | 0.032       | B                               | B                              | -0.3485               | 0.2268              | 0.375              | -0.893      | 0.196       |        |       |
| nls_behavioral_score  | A   | B                     | .4588 <sup>*</sup>   | 0.0854 | 0.000       | 0.254       | 0.654                           | tis_fractures_pelvis_score     | A                     | B                   | 0.0983             | 0.0737      | 0.549       | -0.079 | 0.275 |
|                       | B   | C/D                   | 1.2290 <sup>*</sup>  | 0.2674 | 0.000       | 0.587       | 1.871                           |                                | C/D                   | 0.3759              | 0.2211             | 0.269       | -0.155      | 0.907  |       |
|                       | C/D | A                     | -.4588 <sup>*</sup>  | 0.0854 | 0.000       | -0.664      | -0.254                          | B                              | A                     | -0.0983             | 0.0737             | 0.549       | -0.275      | 0.079  |       |
|                       | B   | C/D                   | .7702 <sup>*</sup>   | 0.2683 | 0.013       | 0.126       | 1.414                           |                                | C/D                   | 0.2776              | 0.2215             | 0.632       | -0.254      | 0.809  |       |
|                       | A   | -1.2290 <sup>*</sup>  | 0.2674               | 0.000  | -1.871      | -0.587      | C/D                             | A                              | -0.3759               | 0.2211              | 0.269              | -0.907      | 0.155       |        |       |
| nls_behavioral_score  | B   | -0.7702 <sup>*</sup>  | 0.2683               | 0.013  | -0.144      | -1.126      |                                 | B                              | -0.2776               | 0.2215              | 0.632              | -0.809      | 0.254       |        |       |
|                       | A   | B                     | .3296 <sup>*</sup>   | 0.0800 | 0.000       | 0.138       | 0.522                           | tis_fractures_spine_score      | A                     | B                   | .2921 <sup>*</sup> | 0.0860      | 0.002       | -0.478 | 0.869 |
|                       | B   | C/D                   | .7597 <sup>*</sup>   | 0.2509 | 0.008       | 0.158       | 1.362                           |                                | C/D                   | 0.2456              | 0.2595             | 1.000       | -0.379      | 0.869  |       |
|                       | C/D | A                     | -.3296 <sup>*</sup>  | 0.0800 | 0.000       | -0.522      | -0.138                          | B                              | A                     | -.2921 <sup>*</sup> | 0.0860             | 0.002       | -0.499      | 0.086  |       |
|                       | A   | -0.4302               | 0.2517               | 0.264  | -0.174      | 1.034       | C/D                             | A                              | -0.0465               | 0.2599              | 1.000              | -0.671      | 0.578       |        |       |
| nls_mood_score        | B   | -0.4302               | 0.2517               | 0.264  | -0.174      | 1.034       | C/D                             | A                              | -0.2456               | 0.2595              | 1.000              | -0.869      | 0.378       |        |       |
|                       | A   | B                     | .3064 <sup>*</sup>   | 0.0776 | 0.000       | 0.120       | 0.493                           | tis_fractures_skull_score      | A                     | B                   | 0.0465             | 0.2599      | 1.000       | -0.578 | 0.671 |
|                       | B   | C/D                   | 0.5567               | 0.2428 | 0.067       | -0.026      | 1.139                           |                                | C/D                   | .3521 <sup>*</sup>  | 0.0790             | 0.000       | 0.162       | 0.542  |       |
|                       | A   | -1.3064 <sup>*</sup>  | 0.0776               | 0.000  | -0.493      | -1.120      | B                               | A                              | -.3521 <sup>*</sup>   | 0.0790              | 0.000              | -0.542      | -0.162      |        |       |
|                       | C/D | 0.2502                | 0.2436               | 0.914  | -0.335      | 0.835       | C/D                             | A                              | 0.0174                | 0.2385              | 1.000              | -0.555      | 0.590       |        |       |
| nls_seeing_score      | B   | -0.5567               | 0.2436               | 0.067  | -1.139      | 0.026       | C/D                             | A                              | -0.3695               | 0.2381              | 0.364              | -0.941      | 0.202       |        |       |
|                       | A   | -0.2502               | 0.2436               | 0.914  | -0.835      | 0.335       |                                 | B                              | -0.0174               | 0.2385              | 1.000              | -0.590      | 0.556       |        |       |
|                       | B   | A                     | .4986 <sup>*</sup>   | 0.1107 | 0.000       | 0.233       | 0.764                           | tis_fractures_ribs_score       | A                     | B                   | .2060 <sup>*</sup> | 0.0789      | 0.028       | 0.016  | 0.396 |
|                       | C/D | 1.1303 <sup>*</sup>   | 0.3475               | 0.004  | 0.296       | 1.954       |                                 | C/D                            | 0.5368                | 0.2376              | 0.073              | -0.034      | 1.107       |        |       |
|                       | A   | -.4986 <sup>*</sup>   | 0.1107               | 0.000  | -0.764      | -0.233      | B                               | A                              | -.2060 <sup>*</sup>   | 0.0789              | 0.028              | -0.396      | 0.016       |        |       |
| nls_hearing_score     | C/D | 0.6316                | 0.3487               | 0.212  | -0.205      | 1.469       | C/D                             | C/D                            | 0.3308                | 0.2380              | 0.495              | -0.241      | 0.902       |        |       |
|                       | A   | -1.1303 <sup>*</sup>  | 0.3475               | 0.004  | -1.964      | -0.296      |                                 | C/D                            | A                     | -0.5368             | 0.2376             | 0.073       | -1.107      | 0.304  |       |
|                       | B   | -0.6316               | 0.3487               | 0.212  | -1.469      | 0.205       | B                               | B                              | -0.3308               | 0.2380              | 0.495              | -0.902      | 0.241       |        |       |
|                       | A   | B                     | .4167                | 0.1036 | 0.000       | 0.168       | 0.665                           | tis_fractures_subtotal         | A                     | B                   | .9351 <sup>*</sup> | 0.3043      | 0.007       | 0.204  | 1.666 |
|                       | C/D | 0.7376                | 0.3254               | 0.071  | -0.044      | 1.519       |                                 | C/D                            | 0.25140               | 0.9061              | 0.017              | 0.338       | 0.460       |        |       |
| nls_pain_score        | B   | -0.4167               | 0.1036               | 0.000  | -0.665      | -0.168      | B                               | A                              | -.9351 <sup>*</sup>   | 0.3043              | 0.007              | -1.666      | -0.204      |        |       |
|                       | A   | 0.3209                | 0.3265               | 0.978  | -0.463      | 1.105       | C/D                             | A                              | 1.5788                | 0.9077              | 0.248              | -0.601      | 3.758       |        |       |
|                       | C/D | A                     | -0.7376              | 0.3254 | 0.071       | -1.519      | 0.044                           | B                              | A                     | -2.5140             | 0.9061             | 0.017       | -4.690      | -0.338 |       |
|                       | B   | -0.3209               | 0.3265               | 0.978  | -1.105      | 0.463       |                                 | B                              | -1.5788               | 0.9077              | 0.248              | -3.758      | 0.601       |        |       |
|                       | A   | B                     | .5378 <sup>*</sup>   | 0.0921 | 0.000       | 0.317       | 0.759                           | tis_limbloss_left_upper_score  | A                     | B                   | 0.0027             | 0.0155      | 1.000       | -0.035 | 0.040 |
| nls_fatigue_score     | B   | C/D                   | 0.8001 <sup>*</sup>  | 0.2885 | 0.017       | 0.107       | 1.493                           |                                | C/D                   | 0.0139              | 0.0469             | 1.000       | -0.099      | 0.127  |       |
|                       | C/D | A                     | -5378 <sup>*</sup>   | 0.0921 | 0.000       | -0.759      | -0.317                          | B                              | A                     | -0.0027             | 0.0155             | 1.000       | -0.040      | 0.035  |       |
|                       | A   | 0.2623                | 0.2896               | 1.000  | -0.433      | 0.958       | C/D                             | A                              | 0.0112                | 0.0470              | 1.000              | -0.102      | 0.124       |        |       |
|                       | B   | -0.8001 <sup>*</sup>  | 0.2885               | 0.017  | -0.193      | -1.017      |                                 | C/D                            | A                     | -0.0139             | 0.0469             | 1.000       | -0.127      | 0.099  |       |
|                       | B   | -0.2623               | 0.2896               | 1.000  | -0.958      | 0.433       | B                               | B                              | -0.0112               | 0.0470              | 1.000              | -0.124      | 0.102       |        |       |
| tis_seizures_score    | A   | B                     | .6286 <sup>*</sup>   | 0.0860 | 0.000       | 0.422       | 0.835                           | tis_limbloss_right_upper_score | A                     | B                   | 0.0174             | 0.0128      | 0.528       | -0.013 | 0.048 |
|                       | B   | C/D                   | 1.3036 <sup>*</sup>  | 0.2697 | 0.000       | 0.656       | 1.951                           |                                | C/D                   | 0.0174              | 0.0387             | 1.000       | -0.076      | 0.110  |       |
|                       | C/D | A                     | -.6286 <sup>*</sup>  | 0.0860 | 0.000       | -0.835      | -0.422                          | B                              | A                     | -0.0174             | 0.0128             | 0.528       | -0.048      | 0.013  |       |
|                       | B   | -0.6750 <sup>*</sup>  | 0.2707               | 0.039  | -0.325      | -1.325      | C/D                             | A                              | 0.0000                | 0.0388              | 1.000              | -0.093      | 0.093       |        |       |
|                       | A   | -1.3036 <sup>*</sup>  | 0.2697               | 0.000  | -1.951      | -0.656      | C/D                             | A                              | -0.0174               | 0.0387              | 1.000              | -0.110      | 0.076       |        |       |
| tis_bladder_score     | B   | -0.6750 <sup>*</sup>  | 0.2707               | 0.039  | -1.325      | -0.025      |                                 | B                              | 0.0000                | 0.0388              | 1.000              | -0.093      | 0.093       |        |       |
|                       | A   | B                     | .1015 <sup>*</sup>   | 0.0348 | 0.011       | 0.018       | 0.185                           | tis_limbloss_left_lower_score  | A                     | B                   | -0.0141            | 0.0285      | 1.000       | -0.083 | 0.054 |
|                       | B   | C/D                   | 0.0242               | 0.1063 | 1.000       | -0.231      | 0.279                           |                                | C/D                   | 0.0383              | 0.0862             | 1.000       | -0.169      | 0.245  |       |
|                       | A   | -0.1015               | 0.0348               | 0.011  | -0.185      | -0.018      | B                               | A                              | 0.0141                | 0.0285              | 1.000              | -0.054      | 0.083       |        |       |
|                       | C/D | -0.0774               | 0.1065               | 1.000  | -0.333      | 0.178       | C/D                             | A                              | 0.0524                | 0.0864              | 1.000              | -0.155      | 0.260       |        |       |
| tis_bowel_score       | B   | -0.0774               | 0.1065               | 1.000  | -0.279      | 0.231       |                                 | C/D                            | A                     | -0.0383             | 0.0862             | 1.000       | -0.245      | 0.169  |       |
|                       | A   | B                     | 0.0774               | 0.1065 | 1.000       | -0.178      | 0.333                           | B                              | A                     | -0.0524             | 0.0864             | 1.000       | -0.260      | 0.155  |       |
|                       | B   | C/D                   | .9405 <sup>*</sup>   | 0.1064 | 0.000       | 0.685       | 1.196                           | tis_limbloss_right_lower_score | A                     | B                   | 0.0093             | 0.0354      | 1.000       | -0.076 | 0.094 |
|                       | C/D | A                     | -9405 <sup>*</sup>   | 0.1064 | 0.000       | -1.196      | -0.685                          |                                | C/D                   | 0.0690              | 0.1073             | 1.000       | -0.189      | 0.327  |       |
|                       | A   | -0.1333               | 0.3239               | 1.000  | -0.644      | 0.911       | B                               | A                              | -0.0093               | 0.0354              | 1.000              | -0.094      | 0.076       |        |       |
| tis_chest_score       | B   | -0.1333               | 0.3239               | 1.000  | -1.850      | -0.288      | C/D                             | A                              | 0.0597                | 0.1075              | 1.000              | -0.198      | 0.318       |        |       |
|                       | A   | B                     | 1.0025 <sup>*</sup>  | 0.1011 | 0.000       | 0.760       | 1.245                           |                                | C/D                   | A                   | -0.0690            | 0.1073      | 1.000       | -0.327 | 0.189 |
|                       | B   | C/D                   | 1.1507 <sup>*</sup>  | 0.3074 | 0.001       | 0.413       | 1.899                           | tis_vascular_score             | A                     | B                   | -0.0597            | 0.1075      | 1.000       | -0.318 | 0.198 |
|                       | C/D | A                     | -1.0025 <sup>*</sup> | 0.1011 | 0.000       | -1.245      | -0.760                          |                                | B                     | 0.0443              | 0.0394             | 0.783       | -0.050      | 0.139  |       |
|                       | B   | -0.1481               | 0.3080               | 1.000  | -0.591      | 0.888       | C/D                             | A                              | -0.0443               | 0.0394              | 0.783              | -0.139      | 0.050       |        |       |
| tis_nutrition_score   | A   | -1.1507 <sup>*</sup>  | 0.3074               | 0.001  | -1.899      | -0.413      |                                 | C/D                            | 0.0699                | 0.1200              | 1.000              | -0.218      | 0.358       |        |       |
|                       | B   | C/D                   | 1.1507 <sup>*</sup>  | 0.3074 | 0.001       | 0.413       | 1.899                           | C/D                            | A                     | -0.1142             | 0.1198             | 1.000       | -0.402      | 0.173  |       |
|                       | A   | B                     | .1406 <sup>*</sup>   | 0.0712 | 0.017       | 0.030       | 0.312                           |                                | B                     | -0.0699             | 0.1200             | 1.000       | -0.358      | 0.218  |       |
|                       | B   | C/D                   | 0.0377               | 0.2141 | 1.000       | -0.476      | 0.552                           | tis_chest_score                | A                     | B                   | .3317 <sup>*</sup> | 0.0769      | 0.000       | 0.147  | 0.516 |
|                       | A   | -0.1406               | 0.0712               | 0.017  | -0.312      | 0.030       |                                 | C/D                            | .6712 <sup>*</sup>    | 0.2342              | 0.013              | 0.109       | 1.234       |        |       |
| tis_comorbidity_score | B   | C/D                   | -0.1029              | 0.2145 | 1.000       | -0.618      | 0.412                           | B                              | A                     | -.3317              | 0.0769             | 0.000       | -0.516      | -0.147 |       |
|                       | A   | -0.0377               | 0.2141               | 1.000  | -0.552      | 0.474       | C/D                             | A                              | 0.3395                | 0.2347              | 0.446              | -0.224      | 0.903       |        |       |
|                       | B   | 0.1029                | 0.2145               | 1.000  |             |             |                                 |                                |                       |                     |                    |             |             |        |       |

## **Appendix 5: Reporting rates for the primary outcomes by specialist rehabilitation service provider.**

Appendix 5a and 5b shows the reporting rates for the primary outcomes by service provider, comparing year 1 and year 3 reporting rates.

Appendix 5a shows the reporting rates for year 1.

Appendix 5 b shows the reporting rates for year 3.



| Code                                                                   | Short name               | Proper name                                                                                   | Area team                        | Mean age | Mean LOS | 2.1                                 | 2.2                                               | 2.4                                | 3.4              | 3.4              | Standard            | 3.4                 | 3.4               | 3.4               | 3.5   | 3.5   | Outcome measures recorded * |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------|----------------------------------|----------|----------|-------------------------------------|---------------------------------------------------|------------------------------------|------------------|------------------|---------------------|---------------------|-------------------|-------------------|-------|-------|-----------------------------|------------|------------|------------|--|--|--|--|--|--|---------------------|--------------------------------------|--|--|--|--|
|                                                                        |                          |                                                                                               |                                  |          |          | Wait for<br>assessment<br>≤ 10 days | PCAT tool<br>complete<br>% met<br>(2014-<br>2015) | Wait for<br>admission<br>≤ 6 weeks | RCS<br>admission | RCS<br>discharge | FIMFAM<br>admission | FIMFAM<br>discharge | NPDS<br>admission | NPDS<br>discharge | % met | % met | RCS v12                     | RCS v13    | FIM+FAM    | NPDS       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       | Rates of tool completion    |            |            |            |  |  |  |  |  |  | Evidence of<br>gain | Discharge<br>destination<br>recorded |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| Hyper-acute service                                                    |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  | Mean age | Mean LOS | % met                               |                                                   | % met                              |                  |                  |                     |                     |                   |                   |       |       | % complete                  | % complete | % complete | % complete |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C130                                                                   | Lipton Walton Centre     | Lipton Hyper Acute Rehabilitation Unit, The Walton Centre - Liverpool Network                 | Q44 North West                   | 42.8     | 81.4     | 97%                                 | 100%                                              | 53%                                | 65%              | 68%              | 59%                 | 73%                 | 35%               | 54%               | 86%   | 100%  | 97%                         | 100%       | 100%       | 86%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C182                                                                   | Salford - TRU            | Trauma Rehab Unit, Acute Neuro Rehabilitation, Salford                                        | Q44 North West                   | 49.1     | 27.5     | 33%                                 | 5%                                                | 51%                                | 65%              | 70%              | 63%                 | 78%                 | 26%               | 33%               | 76%   | 100%  | 0%                          | 71%        | 72%        | 36%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C031                                                                   | Northwick Park           | Regional/Hyperacute Rehabilitation Unit, Northwick Park Hospital                              | Q71 London                       | 35.7     | 112.4    | 75%                                 | 100%                                              | 93%                                | 97%              | 24%              | 28%                 | 34%                 | 43%               | 22%               | 94%   | 100%  | 100%                        | 100%       | 97%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| Level 1a Tertiary: Physical Disability                                 |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C029                                                                   | Norfolk                  | Colman Centre for Specialist Rehabilitation, Norfolk                                          | Q56 East Anglia                  | 51.6     | 92.9     | 59%                                 | 72%                                               | 98%                                | 85%              | 75%              | 75%                 | 79%                 | 89%               | 77%               | 91%   | 100%  | 83%                         | 98%        | 91%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C038                                                                   | NOC - Oxford             | Oxford Centre for Enablement                                                                  | Q70 Wessex                       | 44.7     | 83.1     | 59%                                 | 95%                                               | 100%                               | 50%              | 59%              | 91%                 | 100%                | 91%               | 77%               | 96%   | 100%  | 100%                        | 100%       | 100%       | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C181                                                                   | Salford - Ward C2        | Ward C2 - Acute Neuro Rehabilitation, Salford Royal                                           | Q44 North West                   | 48.3     | 117.0    | 33%                                 | 27%                                               | 75%                                | 30%              | 48%              | 77%                 | 52%                 | 59%               | 61%               | 77%   | 100%  | 0%                          | 62%        | 74%        | 75%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C031                                                                   | Northwick Park           | Regional/Hyperacute Rehabilitation Unit, Northwick Park Hospital                              | Q71 London                       | 35.7     | 112.4    | 75%                                 | 100%                                              | 93%                                | 97%              | 24%              | 28%                 | 34%                 | 43%               | 22%               | 94%   | 100%  | 100%                        | 100%       | 97%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C035                                                                   | Walkergate Physical      | Neuro-Rehabilitation Unit, Walkergate Park Centre for Neurorehabilitation and Neuropsychiatry | Q49 North East                   | 39.5     | 105.0    | 62%                                 | 100%                                              | 98%                                | 68%              | 76%              | 3%                  | 71%                 | 32%               | 41%               | 75%   | 100%  | 100%                        | 100%       | 98%        | 54%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C075                                                                   | Leicester BIU            | Brain Injury Unit, Leicester                                                                  | Q59 East Midlands                | 53.0     | 35.0     | 97%                                 | 100%                                              | 98%                                | 98%              | 39%              | 97%                 | 18%                 | 97%               | 33%               | 95%   | 100%  | 100%                        | 100%       | 98%        | 98%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C090                                                                   | Putney                   | The Royal Hospital for Neurodisability, Putney                                                | Q71 London                       | 43.1     | 163.2    | 41%                                 | 83%                                               | 72%                                | 60%              | 53%              | 59%                 | 45%                 | 60%               | 43%               | 75%   | 99%   | 51%                         | 100%       | 100%       | 97%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| Level 1b Tertiary: Mixed (physical disability & cognitive behavioural) |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C023                                                                   | Preston                  | Preston Fell View Neuro-Rehabilitation Unit                                                   | Q44 North West                   | 42.2     | 186.4    | 67%                                 | 100%                                              | 81%                                | 56%              | 61%              | 78%                 | 94%                 | 44%               | 61%               | 94%   | 100%  | 100%                        | 100%       | 100%       | 83%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C088                                                                   | Homerton                 | Regional Neurological Rehabilitation Unit, Homerton                                           | Q71 London                       | 41.7     | 111.7    | 28%                                 | 100%                                              | 68%                                | 92%              | 49%              | 26%                 | 46%                 | 79%               | 33%               | 92%   | 100%  | 87%                         | 95%        | 92%        | 90%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C131                                                                   | CRU Walton Centre        | Walton Centre, Complex Rehab Unit (formerly NRU) - Liverpool Network                          | Q44 North West                   | 45.1     | 78.9     | 90%                                 | 100%                                              | 96%                                | 69%              | 59%              | 69%                 | 61%                 | 61%               | 49%               | 94%   | 100%  | 69%                         | 100%       | 96%        | 92%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C054                                                                   | Birmingham (wards 8 & 9) | Ward 8&9, Moseley Hall Hospital, Birmingham                                                   | Q54 West Midlands                | 49.2     | 70.4     | 61%                                 | 100%                                              | 93%                                | 91%              | 60%              | 55%                 | 84%                 | 91%               | 60%               | 93%   | 100%  | 99%                         | 100%       | 99%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C189                                                                   | RLS - Main Service       | The Royal Leamington Spa Rehabilitation Hospital                                              | Q54 West Midlands                | 42.3     | 124.9    | 48%                                 | 100%                                              | 88%                                | 67%              | 17%              | 17%                 | 28%                 | 51%               | 37%               | 87%   | 100%  | 98%                         | 98%        | 96%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C016                                                                   | Frenchay                 | Frenchay Brain Injury Rehabilitation Centre                                                   | Q65 South West                   | 43.0     | 94.5     | 63%                                 | 95%                                               | 94%                                | 50%              | 55%              | 48%                 | 44%                 | 34%               | 23%               | 86%   | 93%   | 76%                         | 94%        | 88%        | 50%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| Level 1c Tertiary: Cognitive Behavioural                               |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C091                                                                   | Lishman                  | Lishman Brain Injury Unit                                                                     | Q71 London                       | 43.4     | 120.4    | 26%                                 | 93%                                               | 58%                                | 39%              | 78%              | 94%                 | 78%                 | 89%               | 89%               | 72%   | 100%  | 83%                         | 94%        | 89%        | 94%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C122                                                                   | Blackheath - TBIRU       | Neurobehavioural Unit, Walkergate Park Centre for Neurorehabilitation and Neuropsychiatry     | Q49 North East                   | 46.0     | 161.5    | 50%                                 |                                                   | 50%                                | 0%               | 0%               | 0%                  | 0%                  | 50%               | 100%              | 50%   | 100%  | 0%                          | 100%       | 50%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C137                                                                   | Walkergate Cognitive     | Blackheath Brain Injury Rehabilitation Centre - TBIRU unit                                    | Q71 London                       | 47.5     | 128.5    | 38%                                 | 100%                                              | 97%                                | 71%              | 49%              | 9%                  | 37%                 | 34%               | 29%               | 77%   | 100%  | 89%                         | 89%        | 97%        | 49%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| Level 2a Supra District                                                |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C009                                                                   | Manchester Royal         | Intermediate Neuro-rehabilitation Unit, Manchester Royal Infirmary                            | Q44 North West                   | 51.7     | 142.3    | 82%                                 | 100%                                              | 82%                                | 79%              | 87%              | 26%                 | 95%                 | 79%               | 87%               | 97%   | 100%  | 100%                        | 100%       | 100%       | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C069                                                                   | UCLH                     | Neuro-rehabilitation Unit, UCLH                                                               | Q71 London                       | 43.0     | 46.8     | 31%                                 | 100%                                              | 62%                                | 85%              | 62%              | 92%                 | 62%                 | 54%               | 31%               | 85%   | 100%  | 62%                         | 92%        | 85%        | 69%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C076                                                                   | Leicester YDU            | Specialist Neuro-Rehab Unit, Leicester                                                        | Q59 East Midlands                | 51.3     | 50.3     | 97%                                 | 94%                                               | 100%                               | 93%              | 87%              | 90%                 | 90%                 | 87%               | 83%               | 97%   | 100%  | 87%                         | 100%       | 93%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C121                                                                   | Blackheath - HNDU        | Blackheath Brain Injury Rehabilitation Centre - HNDU unit                                     | Q71 London                       | 73.0     | 105.5    | 50%                                 | 100%                                              | 100%                               | 50%              | 0%               | 0%                  | 0%                  | 50%               | 100%              | 100%  | 100%  | 100%                        | 100%       | 50%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C183                                                                   | Salford - Ward B3        | Salford Royal - Ward L7/B3/B4                                                                 | Q44 North West                   | 48.0     | 41.7     | 41%                                 | 100%                                              | 53%                                | 71%              | 86%              | 79%                 | 57%                 | 50%               | 64%               | 71%   | 100%  | 0%                          | 100%       | 64%        | 64%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C040                                                                   | Poole                    | Dorset Brain Injury Unit, Poole                                                               | Q70 Wessex                       | 50.4     | 67.3     | 77%                                 | 100%                                              | 92%                                | 76%              | 66%              | 74%                 | 50%                 | 53%               | 34%               | 95%   | 95%   | 79%                         | 87%        | 84%        | 84%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C041                                                                   | Portsmouth               | Portsmouth Phoenix Rehab Centre                                                               | Q70 Wessex                       | 46.3     | 66.6     | 92%                                 | 100%                                              | 97%                                | 97%              | 58%              | 72%                 | 69%                 | 94%               | 50%               | 92%   | 100%  | 89%                         | 100%       | 72%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C109                                                                   | Plymouth                 | Plym Neuro Rehab Unit                                                                         | Q65 South West                   | 51.5     | 61.3     | 89%                                 | 100%                                              | 99%                                | 99%              | 99%              | 99%                 | 96%                 | 99%               | 97%               | 99%   | 100%  | 100%                        | 100%       | 97%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C134                                                                   | Wolfson Thomas Young     | Thomas Young Ward, Wolfson Neuro-rehabilitation Centre                                        | Q71 London                       | 49.5     | 85.1     | 78%                                 | 96%                                               | 96%                                | 28%              | 93%              | 33%                 | 98%                 | 22%               | 57%               | 94%   | 100%  | 80%                         | 100%       | 98%        | 59%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C059                                                                   | Sussex                   | Sussex Rehabilitation Centre                                                                  | Q68 Surrey & Sussex              | 60.6     | 55.0     | 6%                                  | 9%                                                | 88%                                | 80%              | 79%              | 56%                 | 52%                 | 55%               | 56%               | 82%   | 86%   | 90%                         | 85%        | 77%        | 64%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C071                                                                   | Lincoln Ashby Unit       | Ashby Rehab Unit, Lincoln                                                                     | Q59 East Midlands                | 55.8     | 63.4     | 82%                                 | 100%                                              | 85%                                | 53%              | 25%              | 47%                 | 22%                 | 56%               | 31%               | 97%   | 100%  | 100%                        | 100%       | 97%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C064                                                                   | Stoke on Trent           | North Staffordshire Rehab Centre                                                              | Q54 West Midlands                | 43.6     | 87.5     | 93%                                 | 100%                                              | 96%                                | 99%              | 97%              | 98%                 | 98%                 | 98%               | 93%               | 93%   | 99%   | 88%                         | 99%        | 99%        | 99%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C053                                                                   | Osborn                   | Osborn Unit, Sheffield                                                                        | Q72 North (Yorkshire and Humber) | 48.4     | 47.0     | 31%                                 | 100%                                              | 85%                                | 94%              | 79%              | 87%                 | 87%                 | 75%               | 57%               | 93%   | 100%  | 91%                         | 91%        | 96%        | 79%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
|                                                                        |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| Level 2b Local                                                         |                          |                                                                                               |                                  |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C012                                                                   | Derby                    | Kings Lodge Neuro Rehab Unit, Derby                                                           | Q59 East Midlands                | 58.6     | 81.4     | 67%                                 | 92%                                               | 70%                                | 68%              | 59%              | 61%                 | 46%                 | 17%               | 15%               | 78%   | 93%   | 75%                         | 97%        | 81%        | 44%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C092                                                                   | Airedale                 | Department of Rehabilitation Medicine, Airedale                                               | Q72 North (Yorkshire and Humber) | 65.3     | 41.2     | 18%                                 | 33%                                               | 91%                                | 40%              | 40%              | 0%                  | 0%                  | 0%                | 0%                | 0%    | 100%  | 50%                         | 50%        | 0%         | 0%         |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C102                                                                   | Barnsley                 | Barnsley Neuro Rehab Unit                                                                     | Q72 North (Yorkshire and Humber) | 53.4     | 43.7     | 76%                                 | 0%                                                | 99%                                | 91%              | 23%              | 87%                 | 25%                 | 72%               | 23%               | 90%   | 100%  | 80%                         | 94%        | 96%        | 84%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C132                                                                   | Ward 5 Broadgreen        | Specialist Rehabilitation Unit, Ward 5, Broadgreen Hospital - Liverpool Network               | Q44 North West                   | 56.5     | 66.1     | 98%                                 | 100%                                              | 94%                                | 84%              | 85%              | 84%                 | 77%                 | 82%               | 70%               | 97%   | 100%  | 100%                        | 100%       | 93%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C021                                                                   | WKNRU Sevenoaks          | West Kent Neuro Rehabilitation Unit                                                           | Q68 Surrey & Sussex              | 44.2     | 93.7     | 33%                                 | 83%                                               | 75%                                | 100%             | 67%              | 25%                 | 58%                 | 50%               | 8%                | 92%   | 100%  | 83%                         | 100%       | 92%        | 58%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C010                                                                   | Sunderland               | Hume Neuro Rehabilitation Unit, Sunderland                                                    | Q49 North East                   | 59.0     | 55.2     | 63%                                 | 18%                                               | 89%                                | 96%              | 92%              | 71%                 | 83%                 | 83%               | 67%               | 88%   | 100%  | 92%                         | 92%        | 92%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C036                                                                   | Linden Lodge             | Linden Lodge Neuro-rehabilitation                                                             | Q59 East Midlands                | 52.5     | 59.2     | 88%                                 | 98%                                               | 98%                                | 83%              | 84%              | 83%                 | 84%                 | 82%               | 88%               | 98%   | 99%   | 88%                         | 100%       | 98%        | 99%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C105                                                                   | North Cumbria            | North Cumbria University Hospitals                                                            | Q49 North East                   | 49.6     | 51.2     | 96%                                 | 92%                                               | 96%                                | 74%              | 70%              | 61%                 | 65%                 | 74%               | 74%               | 78%   | 100%  | 74%                         | 91%        | 83%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C018                                                                   | Hillingdon               | Alderbourne Rehabilitation Units, Hillingdon                                                  | Q71 London                       | 55.8     | 74.5     | 93%                                 | 96%                                               | 98%                                | 95%              | 100%             | 77%                 | 84%                 | 97%               | 85%               | 92%   | 100%  | 98%                         | 100%       | 90%        | 98%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C068                                                                   | Floyd Unit               | The Floyd Unit                                                                                | Q44 North West                   | 60.5     | 99.1     | 17%                                 | 86%                                               | 93%                                | 98%              | 90%              | 76%                 | 59%                 | 98%               | 73%               | 81%   | 98%   | 88%                         | 98%        | 63%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C002                                                                   | Cambridge                | Lewin & J2 Neurorehabilitation Service, Cambridge                                             | Q56 East Anglia                  | 44.6     | 59.2     | 80%                                 | 73%                                               | 85%                                | 79%              | 53%              | 68%                 | 58%                 | 53%               | 58%               | 68%   | 100%  | 79%                         | 79%        | 68%        | 84%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C003                                                                   | Robertson Unit           | Robertson Rehabilitation Unit                                                                 | Q71 London                       | 59.1     | 62.3     | 87%                                 | 100%                                              | 96%                                | 74%              | 17%              | 78%                 | 17%                 | 91%               | 30%               | 96%   | 100%  | 83%                         | 100%       | 96%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C025                                                                   | Leeds                    | Leeds RRU                                                                                     | Q72 North (Yorkshire and Humber) | 49.4     | 86.4     | 21%                                 | 47%                                               | 72%                                | 98%              | 86%              | 93%                 | 82%                 | 93%               | 82%               | 93%   | 83%   | 98%                         | 98%        | 93%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C026                                                                   | Pinderfields             | Pinderfields                                                                                  | Q72 North (Yorkshire and Humber) | 50.2     | 61.0     | 71%                                 | 85%                                               | 100%                               | 62%              | 57%              | 29%                 | 19%                 | 48%               | 43%               | 86%   | 100%  | 76%                         | 100%       | 57%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C044                                                                   | Royal Berkshire          | Neurorehabilitation, Royal Berkshire                                                          | Q70 Wessex                       | 46.0     | 75.4     | 9%                                  | 0%                                                | 82%                                | 61%              | 52%              | 73%                 | 36%                 | 0%                | 0%                | 36%   | 100%  | 79%                         | 88%        | 39%        | 0%         |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C049                                                                   | Donald Wilson            | Donald Wilson House                                                                           | Q68 Surrey & Sussex              | 55.7     | 62.5     | 96%                                 | 96%                                               | 100%                               | 89%              | 43%              | 75%                 | 64%                 | 79%               | 57%               | 93%   | 100%  | 93%                         | 100%       | 89%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C057                                                                   | Snowdon Unit             | Snowdon Neurological Rehabilitation Unit, Solent NHS Trust                                    | Q70 Wessex                       | 62.2     | 34.3     | 53%                                 | 46%                                               | 53%                                | 93%              | 75%              | 82%                 | 41%                 | 86%               | 54%               | 95%   | 100%  | 86%                         | 93%        | 80%        | 88%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C063                                                                   | Stockport                | Devonshire Neurorehabilitation Centre, Stockport                                              | Q44 North West                   | 52.7     | 98.5     | 74%                                 | 100%                                              | 96%                                | 96%              | 96%              | 100%                | 96%                 | 91%               | 96%               | 96%   | 100%  | 87%                         | 96%        | 96%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C067                                                                   | Taunton                  | Somerset Neurological Rehabilitation Centre (SNRC), Taunton                                   | Q65 South West                   | 56.0     | 58.4     | 10%                                 | 0%                                                | 14%                                | 49%              | 55%              | 35%                 | 37%                 | 41%               | 49%               | 92%   | 100%  | 84%                         | 84%        | 80%        | 78%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C073                                                                   | UHCW                     | Ward42, Neuro-Rehabilitation Unit, UHCW                                                       | Q54 West Midlands                | 45.0     | 38.7     | 82%                                 | 0%                                                | 91%                                | 55%              | 73%              | 45%                 | 18%                 | 45%               | 41%               | 86%   | 100%  | 95%                         | 95%        | 91%        | 86%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C080                                                                   | Wirral                   | Clatterbridge Rehabilitation Centre                                                           | Q44 North West                   | 51.7     | 90.3     | 73%                                 | 100%                                              | 81%                                | 88%              | 73%              | 46%                 | 50%                 | 38%               | 19%               | 89%   | 100%  | 85%                         | 100%       | 77%        | 65%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C081                                                                   | West Park                | West Park Rehabilitation Medicine                                                             | Q54 West Midlands                | 41.4     | 42.8     | 78%                                 | 0%                                                | 100%                               | 38%              | 50%              | 38%                 | 50%                 | 38%               | 25%               | 50%   | 100%  | 75%                         | 75%        | 63%        | 50%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C082                                                                   | Leigh Infirmary          | Taylor Rehab Services                                                                         | Q44 North West                   | 55.4     | 73.2     | 76%                                 | 56%                                               | 98%                                | 73%              | 20%              | 78%                 | 28%                 | 93%               | 90%               | 97%   | 100%  | 100%                        | 100%       | 95%        | 100%       |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C095                                                                   | Royal Free NRC           | Royal Free Neurological Rehabilitation Centre (formerly Marie Foster Centre)                  | Q71 London                       | 59.5     | 45.3     | 75%                                 | 88%                                               | 100%                               | 96%              | 94%              | 81%                 | 79%                 | 87%               | 71%               | 94%   | 100%  | 90%                         | 98%        | 92%        | 96%        |  |  |  |  |  |  |                     |                                      |  |  |  |  |
| C098                                                                   | James Cook               | James Cook Neurorehabilitation Unit Ward 26                                                   | Q49 North East Ang               |          |          |                                     |                                                   |                                    |                  |                  |                     |                     |                   |                   |       |       |                             |            |            |            |  |  |  |  |  |  |                     |                                      |  |  |  |  |

| Recording rates and meeting standards service by service - Levels 1 2 and Hyperacute |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   | Outcome measures recorded on both admission and discharge for complete episodes |                |                                 |       |                                |            |            |            |            |                               |
|--------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------|-----------|--------------------|-------------------------------|---------------|-----------------|--------------------|------------------------------|--------------------------|----------------|-------------------|-------------------|---------------------------------------------------------------------------------|----------------|---------------------------------|-------|--------------------------------|------------|------------|------------|------------|-------------------------------|
| UKROC De-id Code                                                                     | Short name                     |                                                                                               | Full name of Unit                | Area team | At time of linkage |                               | Mean age      | Mean LOS (days) | 2.1                | 2.2                          | 2.4                      | 3.4            | Standard          |                   | 3.4                                                                             | 3.4            | 3.4                             | 3.5   | 3.5                            | RCS v12    | RCS v13    | FIM+FAM    | NPDS       | Change in care costs recorded |
|                                                                                      | Short name                     | Total admissions                                                                              |                                  |           | Complete episodes  | Wait for assessment ≤ 10 days |               |                 | PCAT tool complete | Wait for admission ≤ 6 weeks | Rates of tool completion |                |                   |                   |                                                                                 |                | Any Evidence of functional gain |       | Discharge destination recorded |            |            |            |            |                               |
|                                                                                      |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              | RCS admission            | RCS discharge  | FIM+FAM admission | FIM+FAM discharge | NPDS admission                                                                  | NPDS discharge | % met                           | % met |                                |            |            |            |            |                               |
|                                                                                      |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| Admitted                                                                             | Complete                       | Mean age (years)                                                                              | Mean LOS (days)                  | % met     | % met (2014-2015)  | % met                         | RCS admission | RCS discharge   | FIM+FAM admission  | FIM+FAM discharge            | NPDS admission           | NPDS discharge | % met             | % met             |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| Hyper-acute service                                                                  |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                | % complete | % complete | % complete | % complete | % complete                    |
| 1 C130                                                                               | Lipton Walton Centre           | Lipton Hyper Acute Rehabilitation Unit, The Walton Centre - Liverpool Network                 | Q44 North West                   | 11        | 11                 | 47.2                          | 100.5         | 100%            | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 91%                                                                             | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 91%        |                               |
| 2 C182                                                                               | Salford - TRU                  | Trauma Rehab Unit, Acute Neuro Rehabilitation, Salford                                        | Q44 North West                   | 133       | 132                | 52.9                          | 37.4          | 2%              | 79%                | 87%                          | 92%                      | 92%            | 77%               | 91%               | 82%                                                                             | 83%            | 91%                             | 100%  | 92%                            | 0%         | 80%        | 70%        | 11%        |                               |
| Level 1a Tertiary: Physical Disability                                               |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| 4 C029                                                                               | Norfolk                        | Colman Centre for Specialist Rehabilitation, Norfolk                                          | Q56 East Anglia                  | 17        | 15                 | 41.1                          | 111.8         | 94%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 7 C031                                                                               | Northwick Park (1a/Hyperacute) | Regional/Hyperacute Rehabilitation Unit, Northwick Park Hospital                              | Q71 London                       | 28        | 22                 | 41.3                          | 103.3         | 57%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 95%               | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 8 C035                                                                               | Walkergate Physical            | Neuro-Rehabilitation Unit, Walkergate Park Centre for Neurorehabilitation and Neuropsychiatry | Q49 North East                   | 15        | 12                 | 44.5                          | 104.4         | 67%             | 100%               | 87%                          | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 9 C075                                                                               | Leicester BIU                  | Brain Injury Unit, Leicester                                                                  | Q59 East Midlands                | 19        | 18                 | 54.9                          | 38.6          | 95%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 10 C090                                                                              | Putney                         | The Royal Hospital for Neurodisability, Putney                                                | Q71 London                       | 29        | 23                 | 43.8                          | 117.4         | 52%             | 97%                | 97%                          | 93%                      | 100%           | 93%               | 100%              | 93%                                                                             | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 6 C181                                                                               | Salford - Ward C2              | Ward C2 - Acute Neuro Rehabilitation, Salford Royal                                           | Q44 North West                   | 32        | 32                 | 50.8                          | 64.2          | 3%              | 97%                | 81%                          | 94%                      | 94%            | 84%               | 97%               | 72%                                                                             | 78%            | 79%                             | 100%  | 94%                            | 0%         | 81%        | 66%        | 3%         |                               |
| 5 C038                                                                               | NOC - Oxford                   | Oxford Centre for Enablement, Nuffield Hospital Oxford                                        | Q70 Wessex                       |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| Level 1b Tertiary: Mixed (physical disability & cognitive behavioural)               |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| 14 C054                                                                              | Birmingham (wards 8 & 9)       | Ward 8&9, Moseley Hall Hospital, Birmingham                                                   | Q54 West Midlands                | 35        | 28                 | 46.9                          | 89.1          | 77%             | 100%               | 80%                          | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 12 C088                                                                              | Homerton                       | Regional Neurological Rehabilitation Unit, Homerton                                           | Q71 London                       | 23        | 17                 | 44.2                          | 99            | 52%             | 100%               | 100%                         | 100%                     | 94%            | 96%               | 94%               | 100%                                                                            | 94%            | 94%                             | 100%  | 94%                            | 94%        | 94%        | 94%        | 94%        |                               |
| 13 C131                                                                              | CRU Walton Centre              | Walton Centre, Complex Rehab Unit (formerly NRU) - Liverpool Network                          | Q44 North West                   | 5         | 4                  | 51.6                          | 104.5         | 60%             | 100%               | 80%                          | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 15 C189                                                                              | RLS - Main Service             | The Royal Leamington Spa Rehabilitation Hospital                                              | Q54 West Midlands                | 45        | 36                 | 42.4                          | 82.9          | 62%             | 98%                | 100%                         | 100%                     | 100%           | 96%               | 92%               | 100%                                                                            | 100%           | 94%                             | 100%  | 100%                           | 100%       | 86%        | 100%       | 100%       |                               |
| 11 C201                                                                              | Preston Fell View              | Preston Fell View Neuro-Rehabilitation Unit                                                   | Q44 North West                   | 16        | 14                 | 41.3                          | 98.8          | 75%             | 100%               | 100%                         | 100%                     | 100%           | 93%               | 100%              | 100%                                                                            | 93%            | 100%                            | 100%  | 100%                           | 100%       | 93%        | 100%       | 100%       |                               |
| 16 C226                                                                              | Frenchay                       | Frenchay Brain Injury Rehabilitation Centre                                                   | Q65 South West                   | 32        | 28                 | 46.4                          | 131.1         | 53%             | 97%                | 94%                          | 100%                     | 100%           | 100%              | 96%               | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 96%        | 100%       | 100%       |                               |
| Level 1c Tertiary: Cognitive Behavioural                                             |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| 17 C091                                                                              | Lishman                        | Lishman Brain Injury Unit                                                                     | Q71 London                       | 5         | 4                  | 49.4                          | 173.5         | 40%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 18 C122                                                                              | Blackheath - TBIRU             | Blackheath Brain Injury Rehabilitation Centre - TBIRU unit                                    | Q71 London                       | 8         | 7                  | 42.6                          | 101           | 50%             | 50%                | 100%                         | 88%                      | 86%            | 88%               | 86%               | 88%                                                                             | 86%            | 86%                             | 100%  | 86%                            | 86%        | 86%        | 86%        | 86%        |                               |
| 19 C137                                                                              | Walkergate Cognitive           | Neurobehavioural Unit, Walkergate Park Centre for Neurorehabilitation and Neuropsychiatry     | Q49 North East                   | 2         | 0                  | 70.5                          | -             | 100%            | 100%               | 100%                         | 100%                     | -              | 100%              | -                 | 100%                                                                            | -              | -                               | 100%  | 100%                           | -          | -          | -          | -          |                               |
| Level 2a Supra District                                                              |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| 20 C009                                                                              | Manchester Royal               | Intermediate Neuro-rehabilitation Unit, Manchester Royal Infirmary                            | Q44 North West                   | 3         | 2                  | 51.7                          | 81.5          | 100%            | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 25 C040                                                                              | Poole                          | Dorset Brain Injury Unit, Poole                                                               | Q70 Wessex                       | 13        | 13                 | 52.6                          | 50.3          | 69%             | 85%                | 100%                         | 100%                     | 100%           | 100%              | 85%               | 85%                                                                             | 69%            | 85%                             | 100%  | 100%                           | 100%       | 85%        | 69%        | 69%        |                               |
| 26 C041                                                                              | Portsmouth                     | Portsmouth Phoenix Rehab Centre                                                               | Q70 Wessex                       | 11        | 9                  | 42.8                          | 72.6          | 100%            | 100%               | 100%                         | 100%                     | 100%           | 82%               | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 78%        | 100%       | 100%       |                               |
| 45 C025                                                                              | Leeds                          | Leeds FRU                                                                                     | Q72 North (Yorkshire and Humber) | 20        | 20                 | 49.8                          | 70.0          | 100%            | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 105%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 32 C053                                                                              | Osborn                         | Osborn Unit, Sheffield                                                                        | Q72 North (Yorkshire and Humber) | 49        | 48                 | 51.3                          | 32.5          | 67%             | 98%                | 94%                          | 98%                      | 90%            | 84%               | 85%               | 8%                                                                              | 0%             | 90%                             | 100%  | 90%                            | 90%        | 79%        | 0          | 0          |                               |
| 29 C059                                                                              | Sussex                         | Sussex Rehabilitation Centre                                                                  | Q68 Surrey & Sussex              | 47        | 45                 | 54.2                          | 49.1          | 100%            | 47%                | 87%                          | 96%                      | 87%            | 85%               | 89%               | 91%                                                                             | 87%            | 96%                             | 100%  | 84%                            | 84%        | 84%        | 87%        | 87%        |                               |
| 31 C064                                                                              | Stoke on Trent                 | North Staffordshire Rehab Centre                                                              | Q54 West Midlands                | 15        | 14                 | 52.2                          | 58.2          | 93%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 21 C069                                                                              | UCLH                           | Neuro-rehabilitation Unit, UCLH                                                               | Q71 London                       | 2         | 2                  | 44.0                          | 99.0          | 50%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 30 C071                                                                              | Lincoln Ashby Unit             | Ashby Rehab Unit, Lincoln                                                                     | Q59 East Midlands                | 15        | 17                 | 50.0                          | 48.9          | 72%             | 100%               | 72%                          | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 94%        | 100%       |                               |
| 22 C076                                                                              | Leicester YDU                  | Specialist Neuro-Rehab Unit, Leicester                                                        | Q59 East Midlands                | 12        | 12                 | 56.4                          | 46.9          | 100%            | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 27 C109                                                                              | Plymouth                       | Plym Neuro Rehab Unit                                                                         | Q65 South West                   | 40        | 37                 | 50.5                          | 52.3          | 88%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 97%               | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 97%        | 100%       | 100%       |                               |
| 23 C121                                                                              | Blackheath - HNDU              | Blackheath Brain Injury Rehabilitation Centre - HNDU unit                                     | Q71 London                       | 6         | 4                  | 58.7                          | 106.8         | 100%            | 100%               | 100%                         | 100%                     | 100%           | 100%              | 50%               | 100%                                                                            | 100%           | 75%                             | 100%  | 100%                           | 100%       | 50%        | 100%       | 100%       |                               |
| 28 C134                                                                              | Wolfson Thomas Young           | Thomas Young Ward, Wolfson Neuro-rehabilitation Centre                                        | Q71 London                       | 29        | 24                 | 48.1                          | 69.6          | 64%             | 62%                | 86%                          | 100%                     | 100%           | 93%               | 92%               | 83%                                                                             | 83%            | 96%                             | 100%  | 100%                           | 100%       | 92%        | 79%        | 79%        |                               |
| 24 C183                                                                              | Salford - Ward B4              | Salford Royal - Ward L7/B3/B4                                                                 | Q44 North West                   | 8         | 8                  | 42.9                          | 15.8          | 100%            | 63%                | 25%                          | 25%                      | 25%            | 50%               | 63%               | 38%                                                                             | 25%            | 25%                             | 100%  | 100%                           | 0%         | 38%        | 25%        | 0          |                               |
| Level 2b Local                                                                       |                                |                                                                                               |                                  |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |
| 43 C002                                                                              | Cambridge                      | Lewin & J2 Neurorehabilitation Service, Cambridge                                             | Q56 East Anglia                  | 10        | 10                 | 41.7                          | 69.8          | 80%             | 90%                | 100%                         | 90%                      | 80%            | 70%               | 60%               | 50%                                                                             | 50%            | 60%                             | 100%  | 70%                            | 70%        | NPDS       | FIM+FAM    | 30%        | 30%                           |
| 44 C003                                                                              | Robertson Unit                 | Robertson Rehabilitation Unit                                                                 | Q71 London                       | 9         | 9                  | 60.3                          | 66.0          | 78%             | 100%               | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 38 C010                                                                              | Sunderland                     | Hume Neuro Rehabilitation Unit, Sunderland                                                    | Q49 North East                   | 10        | 10                 | 49.0                          | 88.2          | 80%             | 70%                | 100%                         | 100%                     | 100%           | 100%              | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 100%       | 100%       |                               |
| 33 C012                                                                              | Derby                          | Kings Lodge Neuro Rehab Unit, Derby                                                           | Q59 East Midlands                | 16        | 14                 | 47.4                          | 59.1          | 75%             | 94%                | 100%                         | 94%                      | 100%           | 94%               | 100%              | 100%                                                                            | 100%           | 100%                            | 100%  | 100%                           | 100%       | 100%       | 93%        | 100%       |                               |
| 64 C014                                                                              | EKNRU                          | East Kent Neuro-Rehab                                                                         | Q68 Surrey & Sussex              | 12        | 11                 | 59.7                          | 44.5          | 92%             | 92%                | 100%                         | 92%                      | 91%            | 92%               | 100%              | 100%                                                                            | 100%           | 109%                            | 100%  | 91%                            | 91%        | 100%       | 100%       | 100%       |                               |
| 63 C015                                                                              | Rakehead                       | Rakehead Rehabilitation Centre                                                                | Q44 North West                   |           |                    |                               |               |                 |                    |                              |                          |                |                   |                   |                                                                                 |                |                                 |       |                                |            |            |            |            |                               |

## **Appendix 6: Performance on process and outcome data by service provider.**

Appendix 6 summarises the actual data by service provider.

| Recording rates and meeting standards service by service - Leve;s 1 2 and Hyperacute |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
|--------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------|--------------------|-------------------|------------------|-----------------|----------------------|--------------------------|-------------------------|-------------------------------|--------------------|------------------------------|----------------------|----------------------|-------------------|---------------------------------------------------|------------------------------|------------------------------|------------------------------|---------------------|--|
| Short name                                                                           |                                          |                                                                                               |                                  | At time of linkage |                   |                  |                 | Mean time site onset | Response times           |                         | Complexity score on admission |                    | Baseline function and change |                      |                      |                   | Cost- efficiency                                  |                              |                              |                              |                     |  |
|                                                                                      | Short name                               | Full name of Unit                                                                             | Area team                        | Total admissions   | Complete episodes | Mean age (years) | Mean LOS (days) |                      | Mean Wait for assessment | Mean Wait for Admission | Mean PCAT score               | Mean RCsv13 scores | Total FIM+FAM admission      | Total FIM+FAM change | Total NPDS admission | Total NPDS change | Mean Episode cost                                 | Mean care costs on admission | Mean care costs on discharge | Reduction in mean care costs | Time to offset cost |  |
|                                                                                      |                                          |                                                                                               |                                  | Admitted           | Complete          |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| Hyper-acute service (n=2)                                                            |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| 1 C130                                                                               | Lipton Walton Centre*                    | Lipton Hyper Acute Rehabilitation Unit, The Walton Centre - Liverpool Network                 | Q44 North West                   | 11                 | 11                | 47.2             | 100.5           | 40                   | 3                        | 10                      | 39                            | 18.0               | 77                           | 71                   | 44                   | -19               | £93,978                                           | £1,981                       | £2,205                       | -£224 Invalid                |                     |  |
| 2 C182                                                                               | Salford - TRU                            | Trauma Rehab Unit, Acute Neuro Rehabilitation, Salford                                        | Q44 North West                   | 133                | 132               | 52.9             | 37.4            | -                    | 0                        | 14                      | 29                            |                    | 93                           | 50                   | 34                   | -5                | £30,514                                           | £1,566                       | £1,397                       | £169                         | 41.6                |  |
| All hyper-acute                                                                      |                                          |                                                                                               |                                  | 144                | 143               | 52.5             | 41.9            | 40                   | 2                        | 11                      | 30                            | 18.0               | 91                           | 52                   | 34                   | -7                | Not calculated - Only one service with valid data |                              |                              |                              |                     |  |
| Level 1a Tertiary: Physical Disability (n=6)                                         |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| 4 C029                                                                               | Norfolk                                  | Colman Centre for Specialist Rehabilitation, Norfolk                                          | Q56 East Anglia                  | 17                 | 15                | 41.1             | 111.8           | 63                   | 5                        | 29                      | 38                            | 14.2               | 94                           | 34                   | 37                   | -13               | £54,643                                           | £2,030                       | £1,485                       | £545                         | 23.1                |  |
| 7 C031                                                                               | Northwick Park (1a/Hyper (1a/Hyperacute) | Regional/Hyperacute Rehabilitation Unit, Northwick Park Hospital                              | Q71 London                       | 28                 | 22                | 41.3             | 103.3           | 66                   | 10                       | 19                      | 38                            | 16.9               | 55                           | 48                   | 43                   | -12               | £78,994                                           | £2,372                       | £1,421                       | £951                         | 19.2                |  |
| 8 C035                                                                               | Walkergate Physical                      | Neuro-Rehabilitation Unit, Walkergate Park Centre for Neurorehabilitation and Neuropsychiatry | Q49 North East                   | 15                 | 12                | 44.5             | 104.4           | 105                  | 10                       | 66                      | 37                            | 14.1               | 123                          | 28                   | 29                   | -8                | £63,632                                           | £1,544                       | £1,068                       | £477                         | 30.8                |  |
| 9 C075                                                                               | Leicester BIU                            | Brain Injury Unit, Leicester                                                                  | Q59 East Midlands                | 19                 | 18                | 54.9             | 38.6            | 28                   | 3                        | 0                       | 31                            | 13.2               | 94                           | 49                   | 48                   | -26               | £22,616                                           | £2,132                       | £1,149                       | £983                         | 5.3                 |  |
| 10 C090                                                                              | Putney                                   | The Royal Hospital for Neurodisability, Putney                                                | Q71 London                       | 29                 | 23                | 43.8             | 117.4           | 101                  | 12                       | 38                      | 38                            | 15.6               | 51                           | 24                   | 50                   | 1                 | £82,430                                           | £2,509                       | £2,697                       | -£188 Invalid                |                     |  |
| 6 C181                                                                               | Salford - Ward C2                        | Ward C2 - Acute Neuro Rehabilitation, Salford Royal (Site C050)                               | Q44 North West                   | 32                 | 32                | 50.8             | 64.2            | -                    | 42                       | -31                     | 30 -                          |                    | 88                           | 58                   | 46                   | -10               | £32,277                                           | £1,612                       | £1,744                       | -£132 Invalid                |                     |  |
| 5 C038                                                                               | NOC - Oxford                             | Oxford Centre for Enablement, Nuffield Hospital Oxford                                        | Q70 Wessex                       |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| All Level 1a                                                                         |                                          |                                                                                               |                                  | 140                | 122               | 47.9             | 79              | 70                   | 9                        | 26                      | 34                            | 14.8               | 83                           | 43                   | 43                   | -13               | £48,806                                           | £2,143                       | £1,554                       | £589                         | 19.1                |  |
| Level 1b Tertiary: Mixed (physical disability & cognitive behavioural) (n=6)         |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| 14 C054                                                                              | Birmingham (wards 8 & 9)                 | Ward 8&9, Moseley Hall Hospital, Birmingham                                                   | Q54 West Midlands                | 35                 | 28                | 46.9             | 89.1            | 85                   | 7                        | 38                      | 32                            | 14.0               | 95                           | 36                   | 35                   | -9                | £42,186                                           | £1,820                       | £1,273                       | £548                         | 17.8                |  |
| 12 C088                                                                              | Homerton                                 | Regional Neurological Rehabilitation Unit, Homerton                                           | Q71 London                       | 23                 | 17                | 44.2             | 99              | 111                  | 13                       | 29                      | 41                            | 14.2               | 96                           | 25                   | 25                   | -7                | £57,324                                           | £1,432                       | £829                         | £603                         | 21.9                |  |
| 13 C131                                                                              | CRU Walton Centre                        | Walton Centre, Complex Rehab Unit (formerly NRU) - Liverpool Network                          | Q44 North West                   | 5                  | 4                 | 51.6             | 104.5           | 50                   | 6                        | 24                      | 32                            | 13.4               | 95                           | 21                   | 47                   | -6                | £50,077                                           | £2,562                       | £2,067                       | £495                         | 23.3                |  |
| 15 C189                                                                              | RLS - Main Service                       | The Royal Leamington Spa Rehabilitation Hospital                                              | Q54 West Midlands                | 45                 | 36                | 42.4             | 82.9            | 67                   | 4                        | 16                      | 33                            | 12.6               | 88                           | 43                   | 33                   | -11               | £47,274                                           | £1,609                       | £920                         | £689                         | 15.8                |  |
| 11 C201                                                                              | Preston Fell View                        | Preston Fell View Neuro-Rehabilitation Unit                                                   | Q44 North West                   | 16                 | 14                | 41.3             | 98.8            | 63                   | 8                        | 43                      | 34                            | 13.1               | 100                          | 55                   | 25                   | -8                | £43,823                                           | £1,300                       | £746                         | £554                         | 18.3                |  |
| 16 C226                                                                              | Frenchay                                 | Frenchay Brain Injury Rehabilitation Centre (site code C016)                                  | Q65 South West                   | 32                 | 28                | 46.4             | 131.1           | 83                   | 11                       | 36                      | 37                            | 12.8               | 99                           | 56                   | 26                   | -14               | £69,899                                           | £1,429                       | £667                         | £763                         | 21.1                |  |
| All Level 1b                                                                         |                                          |                                                                                               |                                  | 156                | 127               | 44.9             | 98.9            | 80                   | 8                        | 31                      | 35                            | 13.3               | 95                           | 43                   | 30                   | -10               | £52,510                                           | £1,590                       | £944                         | £763                         | 15.9                |  |
| Level 1c Tertiary: Cognitive Behavioural (n=3)                                       |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| 17 C091                                                                              | Lishman                                  | Lishman Brain Injury Unit                                                                     | Q71 London                       | 5                  | 4                 | 49.4             | 173.5           | 79                   | 12                       | 59                      | 30                            | 11.4               | 113                          | 19                   | 9                    | 6                 | £204,166                                          | £314                         | £604                         | -£290 Invalid                |                     |  |
| 18 C122                                                                              | Blackheath - TBIRU                       | Blackheath Brain Injury Rehabilitation Centre - TBIRU unit                                    | Q71 London                       | 8                  | 7                 | 42.6             | 101             | 85                   | 13                       | 18                      | 34                            | 12.7               | 121                          | 45                   | 14                   | -4                | £67,809                                           | £1,363                       | £710                         | £653                         | 23.1                |  |
| 19 C137                                                                              | Walkergate Cognitive                     | Neurobehavioural Unit, Walkergate Park Centre for Neurorehabilitation and Neuropsychiatry     | Q49 North East                   | 2                  | 0                 | 70.5 -           |                 | 126                  | 6                        | 28                      | 35                            | 14.5               | 95 -                         |                      | 28 -                 | -                 |                                                   | £1,232 -                     |                              |                              | Missing             |  |
| All Level 1c                                                                         |                                          |                                                                                               |                                  | 15                 | 11                | 48.6             | 127.3           | 88                   | 11                       | 33                      | 32                            | 12.5               | 115                          | 35                   | 14                   | 0                 | Not calculated - Only one service with valid data |                              |                              |                              |                     |  |
| Level 2a Supra District (n=14)                                                       |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| 20 C009                                                                              | Manchester Royal                         | Intermediate Neuro-rehabilitation Unit, Manchester Royal Infirmary                            | Q44 North West                   | 3                  | 2                 | 51.7             | 81.5            | 29                   | 1                        | 8                       | 31                            | 13.7               | 96                           | 25                   | 32                   | -11               | £40,066                                           | £1,924                       | £647                         | £1,277                       | 7.2                 |  |
| C025                                                                                 | Leeds                                    |                                                                                               |                                  | 20                 | 20                | 49.8             | 70.0            | 68 -                 | -                        |                         | 37                            | 15.1               | 97                           | 43                   | 40                   | -20               | £34,791                                           | £1,968                       | £1,058                       | £910                         | 8.8                 |  |
| 25 C040                                                                              | Poole                                    | Dorset Brain Injury Unit, Poole                                                               | Q70 Wessex                       | 13                 | 13                | 52.6             | 50.3            | 39                   | 2                        | 15                      | 31                            | 11.8               | 104                          | 64                   | 28                   | -14               | £24,962                                           | £1,576                       | £1,330                       | £246                         | 23.4                |  |
| 26 C041                                                                              | Portsmouth                               | Portsmouth Phoenix Rehab Centre                                                               | Q70 Wessex                       | 11                 | 9                 | 42.8             | 72.6            | 52                   | 0                        | 27                      | 34                            | 13.9               | 78                           | 71                   | 43                   | -12               | £29,508                                           | £1,912                       | £1,492                       | £420                         | 16.2                |  |
| 32 C053                                                                              | Osborn                                   | Osborn Unit, Sheffield                                                                        | Q72 North (Yorkshire and Humber) | 49                 | 48                | 51.3             | 32.5            | 18                   | 6                        | 1                       | 33                            | 11.2               | 130                          | 53                   | 31                   |                   | £15,982                                           | £1,485                       |                              | £1,485                       | 2.5                 |  |
| 29 C059                                                                              | Sussex                                   | Sussex Rehabilitation Centre                                                                  | Q68 Surrey & Sussex              | 47                 | 45                | 54.2             | 49.1            | 37                   |                          |                         | 28                            | 12.0               | 127                          | 38                   | 23                   | -9                | £20,133                                           | £1,254                       | £852                         | £401                         | 11.6                |  |
| 31 C064                                                                              | Stoke on Trent                           | North Staffordshire Rehab Centre                                                              | Q54 West Midlands                | 15                 | 14                | 52.2             | 58.2            | 58                   | 3                        | 23                      | 28                            | 12.9               | 134                          | 43                   | 32                   | -17               | £27,564                                           | £1,403                       | £562                         | £841                         | 7.6                 |  |
| 21 C069                                                                              | UCLH                                     | Neuro-rehabilitation Unit, UCLH                                                               | Q71 London                       | 2                  | 2                 | 44.0             | 99.0            | 91                   | 10                       | 35                      | 37                            | 13.0               | 106                          | 68                   | 23                   | -9                | £58,209                                           | £1,635                       | £535                         | £1,100                       | 12.2                |  |
| 30 C071                                                                              | Lincoln Ashby Unit                       | Ashby Rehab Unit, Lincoln                                                                     | Q59 East Midlands                | 15                 | 17                | 50.0             | 48.9            | 87                   | 3                        | 28                      | 29                            | 11.7               | 121                          | 38                   | 25                   | -7                | £20,334                                           | £1,204                       | £1,053                       | £151                         | 31.0                |  |
| 22 C076                                                                              | Leicester YDU                            | Specialist Neuro-Rehab Unit, Leicester                                                        | Q59 East Midlands                | 12                 | 12                | 56.4             | 46.9            | 21                   | 2                        | 3                       | 30                            | 12.2               | 131                          | 48                   | 18                   | -15               | £20,438                                           | £646                         | £158                         | £488                         | 9.7                 |  |
| 27 C109                                                                              | Plymouth                                 | Plym Neuro Rehab Unit                                                                         | Q65 South West                   | 40                 | 37                | 50.5             | 52.3            | 36                   | 7                        | 11                      | 31                            | 13.9               | 107                          | 51                   | 44                   | -27               | £27,869                                           | £2,011                       | £881                         | £1,130                       | 5.7                 |  |
| 23 C121                                                                              | Blackheath - HNDU                        | Blackheath Brain Injury Rehabilitation Centre - HNDU unit                                     | Q71 London                       | 6                  | 4                 | 58.7             | 106.8           | 56                   | 2                        | 15                      | 27                            | 9.5                | 138                          | 52                   | 12                   | -10               | £59,804                                           | £767                         | £401                         | £366                         | 37.7                |  |
| 28 C062                                                                              | Wolfson / Thomas Young                   | Thomas Young Ward, Wolfson Neuro-rehabilitation Centre (Ward C228/229)                        | Q71 London                       | 29                 | 24                | 48.1             | 69.6            | 70                   | 13                       | 25                      | 37                            | 15.2               | 128                          | 39                   | 18                   | -8                | £51,655                                           | £1,007                       | £431                         | £575                         | 20.7                |  |
| 24 C183                                                                              | Salford - Ward 4                         | Salford Royal - Ward L7/B3/B4 (Site C050)                                                     | Q44 North West                   | 8                  | 8                 | 42.9             | 15.8            | -                    | -                        | -                       | 30 -                          |                    | 92                           | 6                    | 41                   | 1                 | £7,737 -                                          | -                            | -                            |                              | Missing             |  |
| All Level 2a                                                                         |                                          |                                                                                               |                                  | 270                | 255               | 51.1             | 66              | 44                   | 6                        | 14                      | 32                            | 12.8               | 118                          | 46                   | 30                   | -15               | £26,279                                           | £1,466                       | £820                         | £646                         | 9.4                 |  |
| Level 2b Local (n=36)                                                                |                                          |                                                                                               |                                  |                    |                   |                  |                 |                      |                          |                         |                               |                    |                              |                      |                      |                   |                                                   |                              |                              |                              |                     |  |
| 43 C002                                                                              | Cambridge                                | Lewin & J2 Neurorehabilitation Service, Cambridge                                             | Q56 East Anglia                  | 10                 | 10                | 41.7             | 69.8            | 57                   | 3                        | 11                      | 31                            | 11.4               | 77                           | 28                   | 34                   | -7                | £32,189                                           | £1,313                       | £1,084                       | £229                         | 32.4                |  |
| 44 C003                                                                              | Robertson Unit                           | Robertson Rehabilitation Unit                                                                 | Q71 London                       | 9                  | 9                 | 60.3             | 66.0            | 45                   | 7                        | 5                       | 30                            | 11.6               | 120                          | 54                   | 27                   | -12               | £29,718                                           | £1,792                       | £1,257                       | £535                         | 12.8                |  |
| 38 C010                                                                              | Sunderland                               | Hume Neuro Rehabilitation Unit, Sunderland                                                    | Q49 North East                   | 10                 | 10                | 49.0             | 88.2            | 121                  | 11                       | 9                       | 35                            | 13.6               | 88                           | 38                   | 50                   | -14               | £38,263                                           | £2,287                       | £1,706                       | £581                         | 15.2                |  |
| 33 C012                                                                              | Derby                                    | Kings Lodge Neuro Rehab Unit, Derby                                                           | Q59 East Midlands                | 16                 | 14                | 47.4             | 59.1            | 64                   | 8                        | 24                      | 29                            | 12.8               | 117                          | 50                   | 29                   | -12               | £25,849                                           | £1,903                       | £853                         | £1,050                       | 5.7                 |  |
| 64 C014                                                                              | EKNRU                                    | East Kent Neuro-Rehab                                                                         | Q68 Surrey & Sussex              | 12                 | 11                | 59.7             | 44.5            | 35                   | 4                        | 4                       | 24                            | 10.0               | 143                          | 29                   | 20                   | -5                | £18,751                                           | £990                         | £497                         | £493                         | 8.8                 |  |
| 63 C015                                                                              | Rakehead                                 | Rakehead Rehabilitation Centre                                                                | Q44 North West                   | 23                 | 22                | 53.0             | 66.6            | 38                   | 1                        | 25                      | 29                            | 13.3               | 118                          | 34                   | 32                   | -16               | £31,055                                           | £1,914                       | £1,231                       | £682                         | 10.5                |  |
| 41 C018                                                                              | Hillingdon                               | Alderbourne Rehabilitation Units, Hillingdon                                                  | Q71 London                       | 33                 | 30                | 54.1             | 62.2            | 42                   | -4                       | 17                      | 33                            | 12.2               | 114                          | 36                   | 31                   | -14               | £30,3                                             |                              |                              |                              |                     |  |

## **Appendix 7: Performance against the key standards by region.**

Appendix 7 shows the key standards by region.

|     |                                                                       | Pre-admission                 |                           |                           | % Assessed on admission and discharge |            |            | Outcomes and cost-efficiency      |                     |                       |
|-----|-----------------------------------------------------------------------|-------------------------------|---------------------------|---------------------------|---------------------------------------|------------|------------|-----------------------------------|---------------------|-----------------------|
|     | Rehabilitation service provider                                       | Total completed episodes<br>N | % assessed within 10 days | % admitted within 6 weeks | RCSE-12                               | UK FIM+FAM | NPDS/NPCNA | % cases with some functional gain | Mean length of stay | Mean cost efficiency* |
| ABD |                                                                       | 6                             | 100%                      | 100%                      | 100%                                  | 100%       | 100%       | 100%                              | 117                 | 23.6                  |
| Q44 | Cheshire, Warrington And Wirral Area Team                             | 18                            | 25%                       | 80%                       | 83%                                   | 78%        | 44%        | 83%                               | 63                  | 0.1                   |
| Q45 | Durham, Darlington And Tees Area Team                                 | 23                            | 64%                       | 96%                       | 96%                                   | 100%       | 100%       | 96%                               | 47                  | 1.8                   |
| Q46 | Greater Manchester Area Team                                          | 159                           | 6%                        | 83%                       | 91%                                   | 71%        | 13%        | 1%                                | 42                  | 73.1                  |
| Q47 | Lancashire Area Team                                                  | 46                            | 82%                       | 96%                       | 102%                                  | 98%        | 96%        | 98%                               | 75                  | 36.3                  |
| Q48 | Merseyside Area Team                                                  | 42                            | 98%                       | 100%                      | 98%                                   | 98%        | 95%        | 2%                                | 63                  | 4.7                   |
| Q49 | Cumbria, Northumberland, Tyne And Wear Area Team                      | 27                            | 67%                       | 97%                       | 100%                                  | 100%       | 93%        | 11%                               | 84                  | 61                    |
| Q50 | North Yorkshire And Humber Area Team                                  | 21                            | 36%                       | 76%                       | 90%                                   | 95%        | 81%        | 95%                               | 78                  | 18.6                  |
| Q51 | South Yorkshire And Bassetlaw Area Team                               | 46                            | 67%                       | 92%                       | 89%                                   | 80%        | 20%        | 91%                               | 37                  | 9.1                   |
| Q52 | West Yorkshire Area Team                                              | 35                            | 33%                       | 95%                       | 94%                                   | 69%        | 97%        | 91%                               | 71                  | 48.7                  |
| Q53 | Arden, Herefordshire And Worcestershire Area Team                     | 25                            | 63%                       | 97%                       | 84%                                   | 88%        | 80%        | 84%                               | 79                  | 12.1                  |
| Q54 | Birmingham And The Black Country Area Team                            | 33                            | 61%                       | 78%                       | 100%                                  | 94%        | 97%        | 3%                                | 64                  | 1.7                   |
| Q55 | Derbyshire And Nottinghamshire Area Team                              | 63                            | 77%                       | 100%                      | 98%                                   | 92%        | 78%        | 95%                               | 55                  | 13.9                  |
| Q56 | East Anglia Area Team                                                 | 27                            | 83%                       | 100%                      | 89%                                   | 74%        | 74%        | 85%                               | 90                  | 1.4                   |
| Q57 | Essex Area Team                                                       | 9                             | 71%                       | 100%                      | 89%                                   | 67%        | 89%        | 78%                               | 79                  | 37.9                  |
| Q58 | Hertfordshire And The South Midlands Area Team                        | 23                            | 74%                       | 96%                       | 96%                                   | 91%        | 91%        | 9%                                | 89                  | 49.5                  |
| Q59 | Leicestershire And Lincolnshire Area Team                             | 45                            | 94%                       | 94%                       | 100%                                  | 100%       | 98%        | 2%                                | 52                  | 10.7                  |
| Q60 | Shropshire And Staffordshire Area Team                                | 15                            | 71%                       | 94%                       | 93%                                   | 93%        | 87%        | 93%                               | 79                  | 22.9                  |
| Q64 | Bath, Gloucestershire, Swindon And Wiltshire Area Team                | 12                            | 77%                       | 100%                      | 100%                                  | 100%       | 100%       | 100%                              | 157                 | 106.3                 |
| Q65 | Bristol, North Somerset, Somerset And South Gloucestershire Area Team | 29                            | 39%                       | 73%                       | 100%                                  | 93%        | 100%       | 3%                                | 89                  | 23.1                  |
| Q66 | Devon, Cornwall And Isles Of Scilly Area Team                         | 47                            | 90%                       | 100%                      | 100%                                  | 83%        | 91%        | 96%                               | 57                  | 18                    |
| Q67 | Kent And Medway Area Team                                             | 16                            | 74%                       | 100%                      | 94%                                   | 100%       | 100%       | 20%                               | 71                  | 2.8                   |
| Q68 | Surrey And Sussex Area Team                                           | 62                            | 23%                       | 91%                       | 89%                                   | 87%        | 87%        | 95%                               | 56                  | 17.1                  |
| Q69 | Thames Valley Area Team                                               | 23                            | 52%                       | 63%                       | 100%                                  | 91%        | 43%        | 9%                                | 72                  | 69.9                  |
| Q70 | Wessex Area Team                                                      | 45                            | 66%                       | 84%                       | 98%                                   | 87%        | 87%        | 2%                                | 52                  | 16.4                  |
| Q71 | London Area Team                                                      | 140                           | 68%                       | 95%                       | 99%                                   | 95%        | 96%        | 5%                                | 84                  | 49                    |
| Q99 | Not specified                                                         | 2                             | 50%                       | 100%                      | 100%                                  | 50%        | 100%       | 100%                              | 50                  | 1.3                   |

\*Cost efficiency is measured in terms of the months taken for savings in the cost of ongoing care to offset the initial cost of rehabilitation