

# Patient Outcomes in Pain Management

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## Enterprise One Pain Management Service

### 2017 Mid Year Report

1 July 2016 – 30 June 2017



# About the electronic Persistent Pain Outcomes Collaboration (ePPOC)

ePPOC is a program which aims to help improve services and outcomes for patients experiencing chronic pain through benchmarking of care and treatment. ePPOC is an initiative of the Faculty of Pain Medicine, and has been further developed in recent years by the Faculty and the wider pain sector.

ePPOC involves the collection of a standard set of data items and assessment tools by specialist pain services throughout Australia and New Zealand to measure outcomes for their patients as a result of treatment. This information is being used to develop an Australasian benchmarking system for the pain sector, facilitating better outcomes and best practice interventions for patients experiencing chronic pain. The information will also enable development of a coordinated approach to research into the management of pain in Australasia.

Participation in ePPOC is voluntary and aims to assist pain management service providers to improve practice. epiCentre (the software purpose-built for ePPOC) helps to achieve this by;

- providing clinicians with an approach to systematically assess individual patient experience
- defining a common clinical language to streamline communication between pain management providers
- facilitating the routine collection of Australasian pain management data to drive quality improvement through reporting and benchmarking

The ePPOC dataset includes the following assessment tools: Brief Pain Inventory (BPI)<sup>i</sup>, Depression, Anxiety and Stress Scale (DASS)<sup>ii</sup>, Pain Self-Efficacy Questionnaire (PSEQ)<sup>iii</sup> and Pain Catastrophising Scale (PCS)<sup>iv</sup>.

The ePPOC team is located within the Australian Health Services Research Institute at the University of Wollongong. If you would like more information about ePPOC please visit our website at <http://ahsri.uow.edu/eppoc/index.html>, email us at [eppoc@uow.edu.au](mailto:eppoc@uow.edu.au) or phone (02) 4221 4411.

## Executive Summary for Enterprise One Pain Management Service

### Demographic information

|                                   | Enterprise One | All services |
|-----------------------------------|----------------|--------------|
| Active patients                   | 582            | 21433        |
| Gender (female)                   | 61.7%          | 57.3%        |
| Average age (years)               | 53.8           | 50.5         |
| Interpreter required              | 0.6%           | 5.1%         |
| Communication assistance required | 5.5%           | 9.2%         |
| Indigenous status                 | 6.3%           | 3.9%         |

### Service provision

|   | Enterprise One | All services |
|---|----------------|--------------|
| Days from referral to start of episode (median) | 29.0           | 55.0         |
| Treatment pathways provided (%)                 |                |              |
| Group program                                   | 21.0           | 23.2         |
| Individual                                      | 75.9           | 66.1         |
| Concurrent                                      | 2.1            | 9.4          |
| One-off   | 1.0            | 1.3          |

### Patient profile at referral

Enterprise One received 475 completed referral questionnaires in this period

| Assessment tool scores | Enterprise One | All services |
|------------------------|----------------|--------------|
| Pain Severity          | 6.2            | 6.2          |
| Pain Interference      | 6.9            | 6.9          |
| Depression             | 19.5           | 19.7         |
| Anxiety                | 13.1           | 13.8         |
| Stress                 | 20.1           | 20.9         |
| Pain Catastrophising   | 27.7           | 28.5         |
| Pain Self-Efficacy     | 21.3           | 21.2         |

|  | Enterprise One | All services |
|--|----------------|--------------|
| Average number of pain sites             | 3.7            | 3.8          |
| Average number of comorbidities          | 2.4            | 2.2          |
| % of patient using opioids > 2 days/week | 55.7           | 57.9         |
| Average daily morphine equivalent (mg)   | 74.2           | 69.1         |
| Average number of drug groups used       | 2.3            | 2.5          |
| % of patients unemployed due to pain     | 24.4           | 34.3         |
| % of patients experiencing pain >5 years | 45.9           | 41.2         |

■ Ext. severe  
 ■ Severe  
 ■ Moderate/High  
 ■ Mild  
  Normal/Minimal

### Patient outcomes

| Number of outcomes reported | Enterprise One |             |            | All services |             |            |
|-----------------------------|----------------|-------------|------------|--------------|-------------|------------|
|                             | This period    | Last report | % increase | This period  | Last report | % increase |
| Pathway outcomes            | 51             | 33          | 54.5       | 3588         | 2481        | 44.6       |
| Episode outcomes            | 47             | 33          | 42.4       | 2801         | 1810        | 54.8       |
| Post-episode follow-up      | 10             | 3           | 233.3      | 1289         | 747         | 72.6       |

### Percent of patients making clinically significant improvements from referral to episode end

| Enterprise One | Domain               | All services |
|----------------|----------------------|--------------|
| 46.5           | Average pain rating  | 26.4         |
| 71.8           | Pain interference    | 58.1         |
| 60.0           | Depression           | 53.6         |
| 18.2           | Anxiety              | 41.8         |
| 63.2           | Stress               | 54.5         |
| 63.0           | Pain catastrophising | 52.6         |
| 57.1           | Pain self-efficacy   | 48.6         |

Note: reported for patients experiencing at least moderate symptoms. If there are less than 10 episode outcomes please interpret this table with caution.

## Benchmark and Indicator Summary for Enterprise One Pain Management Service

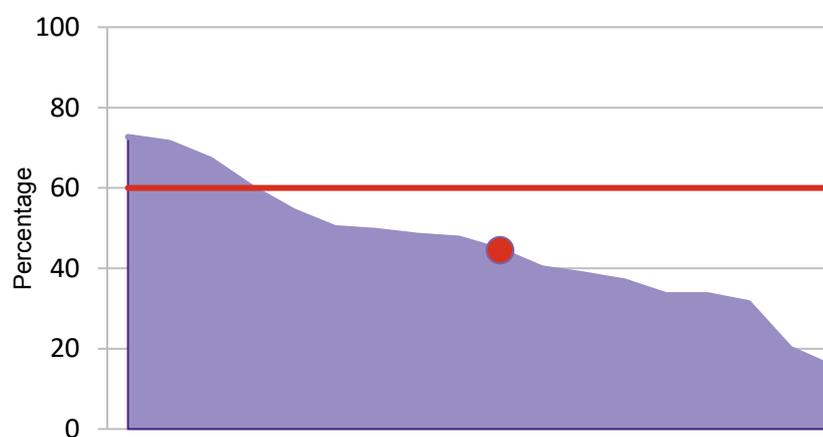
| Benchmark (BM) Description   | BM  | BM met? | Your service | All services | See page |
|--|-----|---------|--------------|--------------|----------|
| <b>1. Average pain</b><br><i>Patients with moderate or severe average pain at referral have made clinically significant improvement at episode end</i>                   | 30% | Yes     | 46.5%        | 26.4%        | 14       |
| <b>2. Pain interference</b><br><i>Patients with moderate or severe pain interference at referral have made clinically significant improvement at episode end</i>         | 50% | Yes     | 71.8%        | 58.1%        | 15       |
| <b>3. Depression</b><br><i>Patients with moderate, severe or extremely severe depression at referral have made clinically significant improvement at episode end</i>     | 60% | Yes     | 60.0%        | 53.6%        | 16       |
| <b>4. Anxiety</b><br><i>Patients with moderate, severe or extremely severe anxiety at referral have made clinically significant improvement at episode end</i>           | 50% | No      | 18.2%        | 41.8%        | 17       |
| <b>5. Stress</b><br><i>Patients with moderate, severe or extremely severe stress at referral have made clinically significant improvement at episode end</i>             | 60% | Yes     | 63.2%        | 54.5%        | 18       |
| <b>6. Pain catastrophising</b><br><i>Patients with high or severe pain catastrophising at referral have made clinically significant improvement at episode end</i>       | 60% | Yes     | 63.0%        | 52.6%        | 19       |
| <b>7. Pain self-efficacy</b><br><i>Patients with impaired self-efficacy (moderate or severe) at referral have made clinically significant improvement at episode end</i> | 60% | No      | 57.1%        | 48.6%        | 20       |
| <b>8. Waiting time</b><br><i>Episodes start within 3 months of the referral being received</i>   | 80% | Yes     | 82.5%        | 68.2%        | 30       |

| Opioid Use Indicators   | Your service | All services | See page |
|---|--------------|--------------|----------|
| 1. oMEDD <sup>†</sup> is reduced by 50% or more for patients taking 40mg+ at referral                 | na           | 38.3%        | 31       |
| 2. oMEDD <sup>†</sup> is reduced by 50% or more for all patients taking opioid medication at referral | 45.2%        | 44.0%        | 32       |

<sup>†</sup>oMEDD= oral morphine equivalent daily dose

'na' is shown for the benchmarks and indicators where less than 10 referral to episode end outcomes are reported

### Tips for interpreting benchmark graphs



- The red line indicates the level at which the benchmark is set
- The vertical axis shows the percentage of patients who met the benchmark
- The purple region shows the national profile for this benchmark. It contains all services that contributed to this benchmark, ordered from the highest score to the lowest score
- The dot indicates your position relative to the benchmark and the other contributing services
- If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

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# Introduction

ePPOC aims to assist services to improve the quality of the pain management they provide through the analysis and benchmarking of patient outcomes. In this report, data submitted for patients active during the period 1 July 2016 to 30 June 2017 are summarised to enable participating services to assess their performance and compare this with outcomes achieved by other services.

This report is broken into three sections:

- Section 1 provides a summary of the data and outcomes included in this report
- Section 2 presents detailed analyses of the outcome measures and benchmark comparisons
- Section 3 provides descriptive analysis at each of the patient, episode and pathway data levels

The figures reflect all pain management services who submitted data during the reporting period. Data from 60 adult services are included in this report.

In each of the sections, data and analysis for Enterprise One Pain Management Service is presented alongside those for all services for comparative purposes. This process of reporting and benchmarking against other services provides opportunities to understand the services that are provided to patients, the outcomes patients experience and to demonstrate and address variations in practice and outcomes.

Data in the tables in this report are determined by a data scoping method. This defines what data are included and can vary from table to table. Patients in each of the time points are not necessarily the same. More information about data scoping can be found in Appendix A.

# Section 1 – Summary of data and outcomes included in this report

## 1.1 Data summary

Sixty services provided information on 21433 patients. In total, these patients had 16575 episodes of care and 10933 pain management pathways in this reporting period.

The services providing data for this report are shown in Appendix D.

The following table includes data based on activity during the reporting period.

**Table 1 Number and percentage of patients, episodes, pathways and questionnaires**

|   | Enterprise One | All Services |
|---|----------------|--------------|
| Number of active patients               | 582            | 21433        |
| Number of episodes                      | 497            | 16575        |
| Number of pathways                      | 286            | 10933        |
| Number of questionnaires returned       | 588            | 25018        |
| Average number of pathways per episode* | 0.8            | 0.9          |
| Response rate to questionnaires (%)†    | 81.2           | 83.4         |

\* Average number of pathways per episode is only calculated for closed episodes that ended within the reporting period.

† The number of questionnaires completed as a percentage of the number sent

The relationship between the different levels of information collected under ePPOC (patient, episode, pathway, service event and questionnaires) is shown in Appendix B.

The number and type of questionnaires received by Enterprise One is shown in the following table.

**Table 2 Number of questionnaires completed in the reporting period by questionnaire type**

|  | Enterprise One | All Services |
|--|----------------|--------------|
| Referral                                       | 475            | 14904        |
| Pathway start                                  | 41             | 2678         |
| Group program start (concurrent pathways only) | 0              | 215          |
| Pathway review                                 | 0              | 823          |
| Group program end (concurrent pathways only)   | 3              | 243          |
| Pathway end                                    | 53             | 3267         |
| Post episode follow-up                         | 13             | 1230         |
| Ad hoc   | 3              | 1658         |

## 1.2 Patient reported outcome measure summary at referral

Patients' average scores across the assessment tools for referral questionnaires received in the reporting period are shown in Table 3. Non-valid scales and subscales have been excluded from this table.

**Table 3 Average outcome measure scores at referral**

| Outcome measure       | Enterprise One | All Services |
|-----------------------|----------------|--------------|
|                       | n=475          | n=14904      |
| <b>BPI</b>            |                |              |
| Severity <sup>§</sup> | 6.2            | 6.2          |
| Interference          | 6.9            | 6.9          |
| <b>DASS</b>           |                |              |
| Depression            | 19.5           | 19.7         |
| Anxiety               | 13.1           | 13.8         |
| Stress                | 20.1           | 20.9         |
| <b>PCS</b>            |                |              |
| Total                 | 27.7           | 28.5         |
| <b>PSEQ*</b>          |                |              |
| Total                 | 21.3           | 21.2         |

<sup>§</sup> The severity score is an average of the four severity items

\* Note: For the PSEQ assessment tool, higher scores reflect greater confidence in ability to perform activities despite the pain.

See Supplementary Data 1 for more information on the volume and proportion of missing responses. See Supplementary Data 2 for more information on changes in outcome scores for patients who have completed both a referral and pathway start questionnaire. Further information on assessment tools and subscales can be found in Appendix C.

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## Section 2 – Patient outcomes

Four standardised assessment tools have been chosen to measure patient outcomes (see Appendix C for more information). In addition, pain frequency, the patients' ability to work, health service use and time from referral to first contact have also been included as outcomes. Patients must have valid start and end scores for the outcome measure to be included in the tables below – therefore where the response is not stated they have been excluded from the calculation of percentages in this section. See Supplementary Data 1 for information on the proportion of missing responses.

### 2.1 Standard assessment tools

The assessment tools used in ePPOC are:

- Brief Pain Inventory (BPI)
- Depression, Anxiety, Stress Scale (DASS)
- Pain Catastrophising Scale (PCS)
- Pain Self-Efficacy Questionnaire (PSEQ).

Change in these assessment tools is reported for completed pathways, completed episodes and at 3-6 months following a completed episode.

#### 2.1.1 Change from pathway start to pathway end

This section examines changes from the beginning to the end of the patient's treatment pathway. Enterprise One Pain Management Service reported data for 51 patients who completed a questionnaire at both the start and end of a pathway.

The average change in scores on the assessment tools is shown in Table 4. Note that the number of patients may differ from those in Table 2, as other questionnaire types may be used in place of Pathway Start and End questionnaires. For example, if a pathway has ended and a Pathway End questionnaire has not been received, a recent, related questionnaire may be used instead.

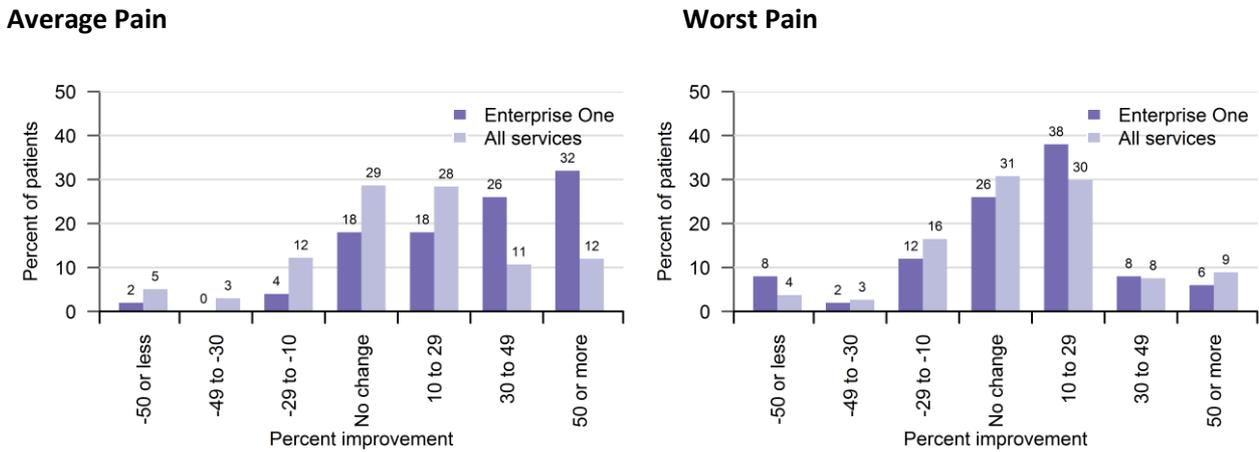
As patients do not always complete all items within an assessment tool, this table also reports the number of validly completed assessment tools. This is calculated by dividing the number of validly completed tools by the number of patients. Please see Appendix C for further information regarding the number of responses required for each outcome measure.

**Table 4 Assessment tools – Change from pathway start to pathway end**

| Assessment tool | Enterprise One<br>n=51 |                |                         |                    | All Services<br>n=3588 |                |                         |                    |
|-----------------|------------------------|----------------|-------------------------|--------------------|------------------------|----------------|-------------------------|--------------------|
|                 | Score at pathway start | Average change | Valid outcomes (number) | Valid outcomes (%) | Score at pathway start | Average change | Valid outcomes (number) | Valid outcomes (%) |
| <b>BPI</b>      |                        |                |                         |                    |                        |                |                         |                    |
| Worst pain      | 7.8                    | -0.5           | 50                      | 98.0               | 7.7                    | -0.7           | 3483                    | 97.1               |
| Least pain      | 3.9                    | -1.0           | 50                      | 98.0               | 4.1                    | -0.6           | 3447                    | 96.1               |
| Average pain    | 7.1                    | -2.5           | 51                      | 100.0              | 5.9                    | -0.7           | 3454                    | 96.3               |
| Pain now        | 6.3                    | -2.5           | 51                      | 100.0              | 5.8                    | -0.8           | 3459                    | 96.4               |
| Interference    | 6.5                    | -2.1           | 51                      | 100.0              | 6.6                    | -1.2           | 3489                    | 97.2               |
| <b>DASS</b>     |                        |                |                         |                    |                        |                |                         |                    |
| Depression      | 15.9                   | -4.4           | 49                      | 96.1               | 18.2                   | -3.7           | 3444                    | 96.0               |
| Anxiety         | 11.6                   | -0.7           | 48                      | 94.1               | 12.7                   | -1.5           | 3428                    | 95.5               |
| Stress          | 17.4                   | -2.5           | 48                      | 94.1               | 20.0                   | -2.9           | 3425                    | 95.5               |
| <b>PCS</b>      |                        |                |                         |                    |                        |                |                         |                    |
| Rumination      | 8.6                    | -3.0           | 49                      | 96.1               | 8.6                    | -2.0           | 3314                    | 92.4               |
| Magnification   | 4.4                    | -1.5           | 51                      | 100.0              | 5.1                    | -1.1           | 3343                    | 93.2               |
| Helplessness    | 10.9                   | -3.0           | 48                      | 94.1               | 11.9                   | -2.8           | 3273                    | 91.2               |
| Total           | 23.7                   | -7.7           | 51                      | 100.0              | 25.7                   | -5.9           | 3380                    | 94.2               |
| <b>PSEQ*</b>    |                        |                |                         |                    |                        |                |                         |                    |
| Total           | 27.6                   | 8.0            | 49                      | 96.1               | 23.5                   | 6.2            | 3452                    | 96.2               |

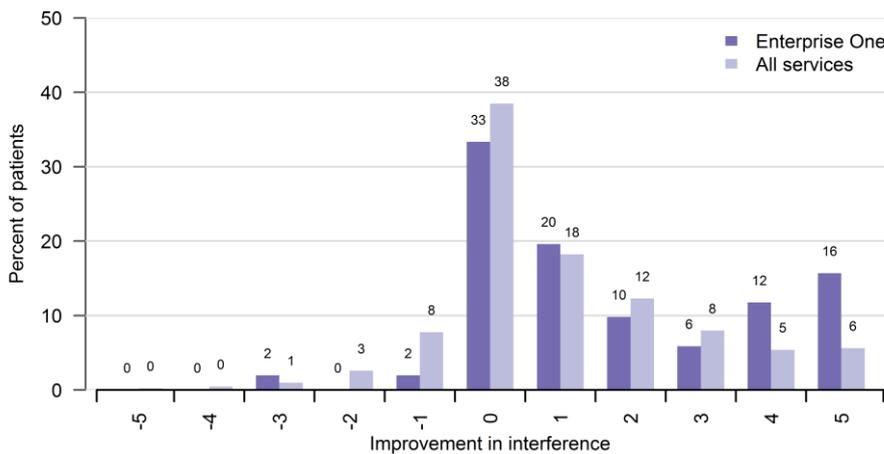
\* Note: For the PSEQ assessment tool, a positive movement in score is an improvement in how confident patients are in their ability to perform activities despite the pain.

**Figure 1 BPI Pain Severity - Change from pathway start to pathway end**



As noted in Appendix C, a change of  $\geq 10\%$  represents minimally important change,  $\geq 30\%$  moderate clinically important change and  $\geq 50\%$  represents substantial clinically important change.

**Figure 2 BPI Pain Interference - Change from pathway start to pathway end**



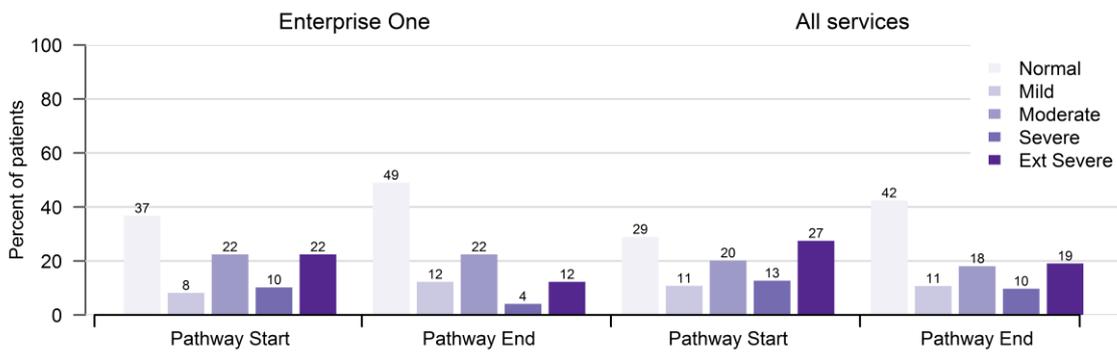
The IMMPACT recommendation for assessment of clinically significant change on the BPI interference scale is a change of 1 point over the average of the 7 items.

| Clinically significant change for patients with moderate or worse interference | Enterprise One | All Services |
|--|----------------|--------------|
| Improvement (%)  | 68.3           | 52.7         |
| No improvement (%)   | 31.7           | 47.3         |

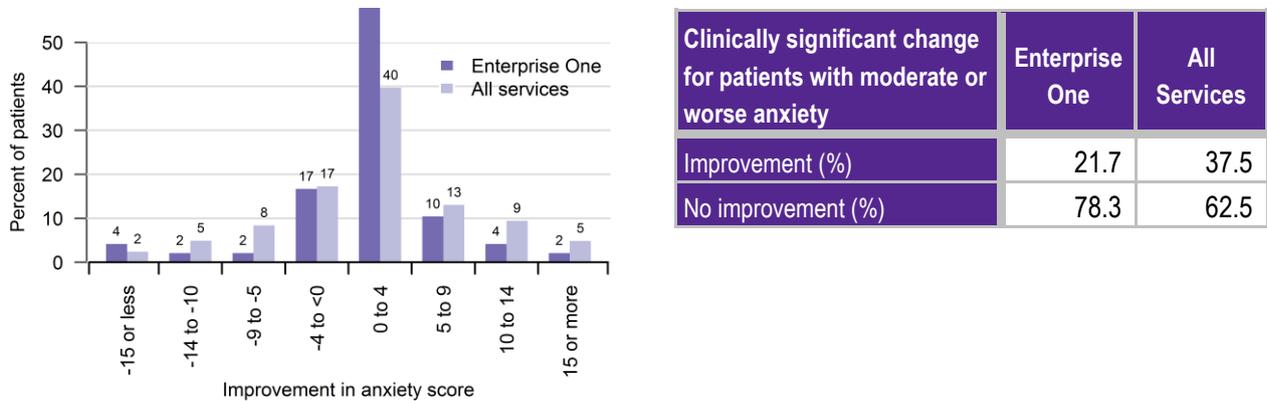
**Figure 3 DASS Depression - Change from pathway start to pathway end**



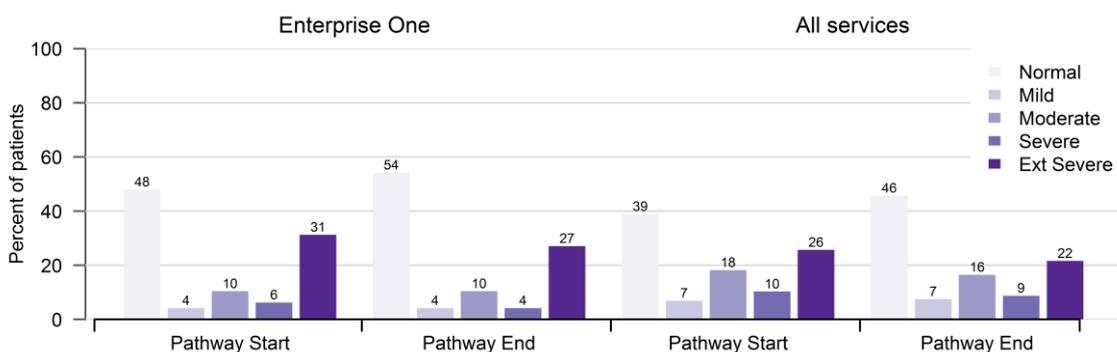
**Figure 4 DASS Depression – Severity at pathway start and pathway end**



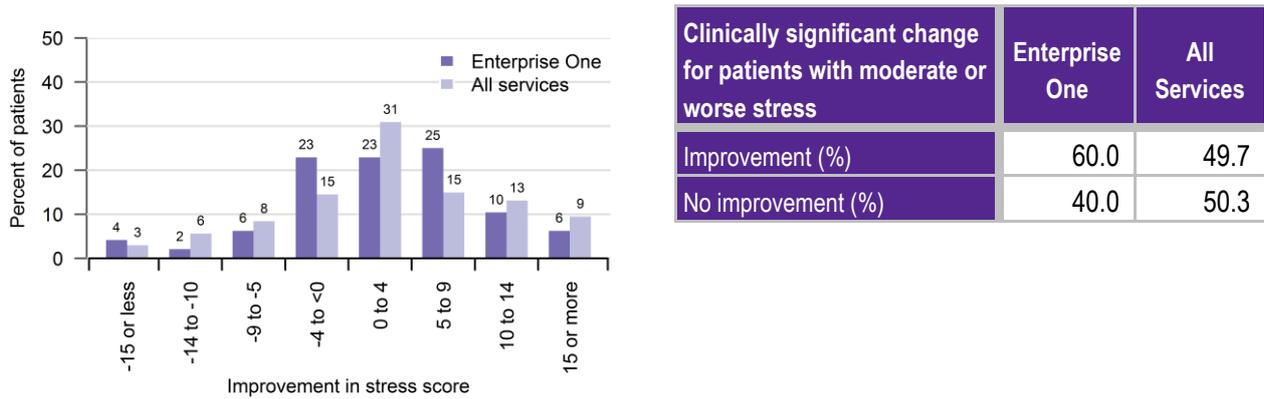
**Figure 5 DASS Anxiety - Change from pathway start to pathway end**



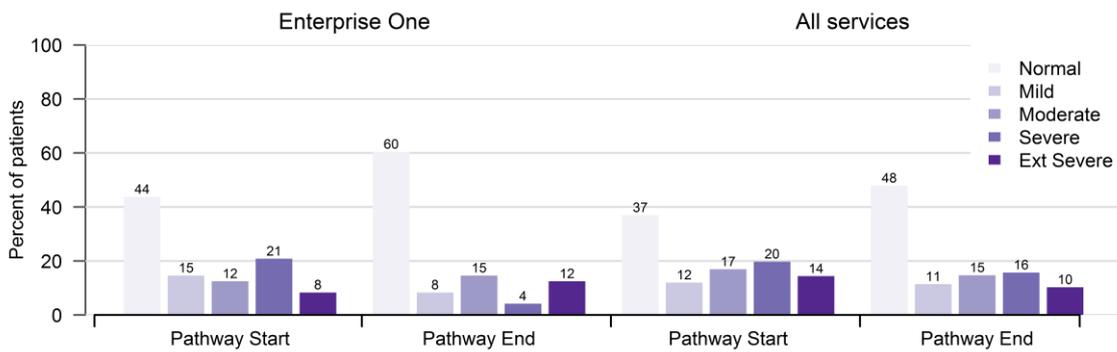
**Figure 6 DASS Anxiety – Severity at pathway start and pathway end**



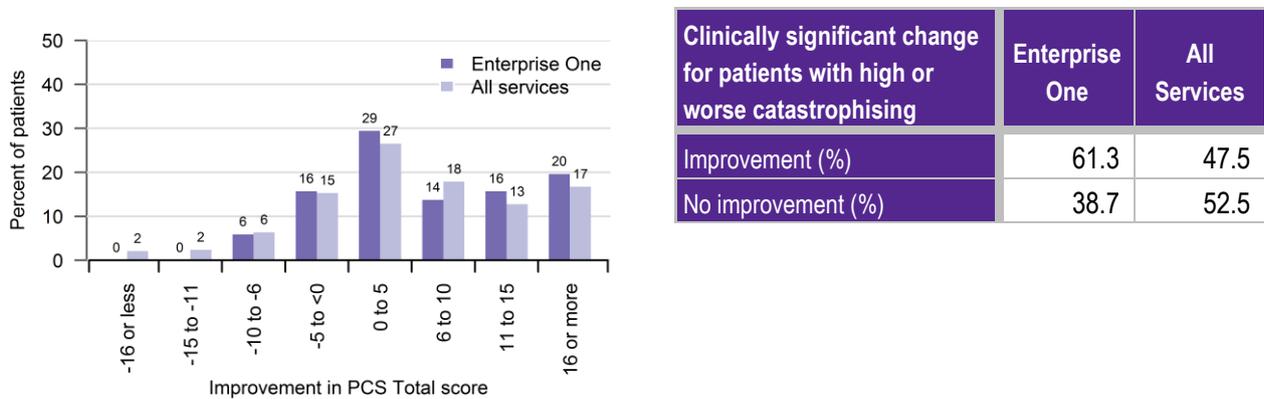
**Figure 7 DASS Stress - Change from pathway start to pathway end**



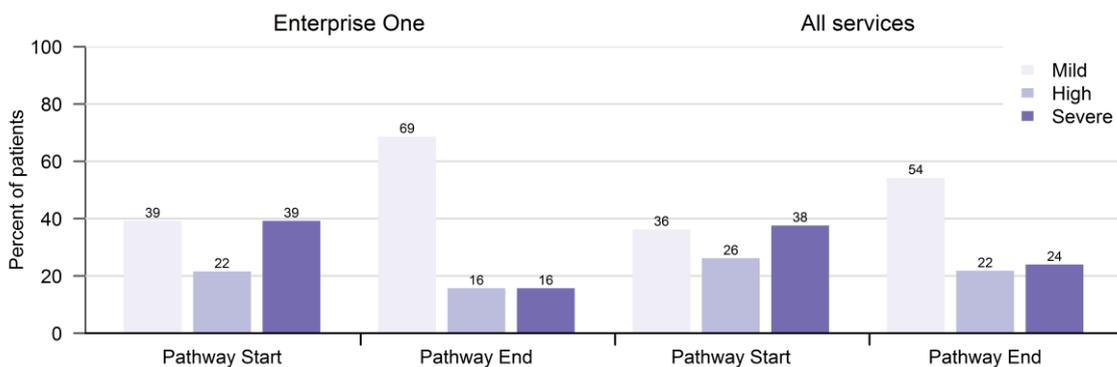
**Figure 8 DASS Stress – Severity at pathway start and pathway end**



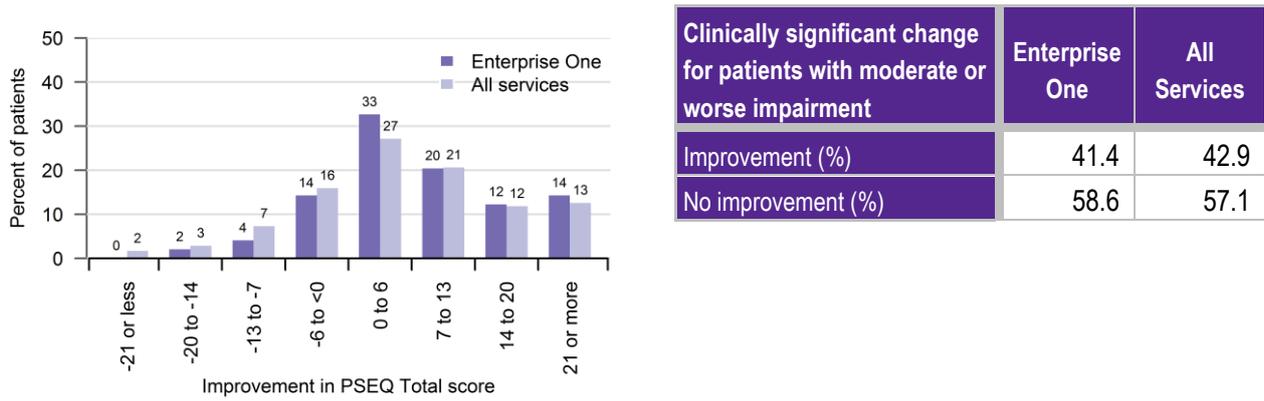
**Figure 9 PCS Total - Change from pathway start to pathway end**



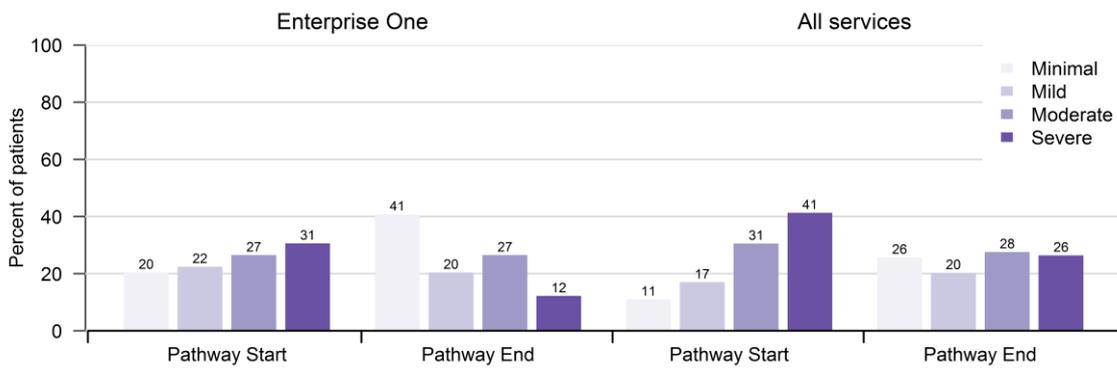
**Figure 10 PCS Total – Severity at pathway start and pathway end**



**Figure 11 PSEQ Total - Change from pathway start to pathway end**



**Figure 12 PSEQ Total – Severity at pathway start and pathway end**



The start and change scores for the assessment tools by pathway type is shown in Table 5 – this allows for comparison between outcomes for different types of pathways. Data are only included where the same patient responded to questions in both the pathway start and end questionnaires.

**Table 5 Assessment tools – Pathway start score and change from pathway start to end by pathway type**

| Assessment tool | Enterprise One |        |            |        |            |        |         |        | All Services |        |            |        |            |        |         |        |
|-----------------|----------------|--------|------------|--------|------------|--------|---------|--------|--------------|--------|------------|--------|------------|--------|---------|--------|
|                 | Group          |        | Individual |        | Concurrent |        | One-off |        | Group        |        | Individual |        | Concurrent |        | One-off |        |
|                 | n=42           |        | n=8        |        | n=1        |        | n=0     |        | n=1494       |        | n=1541     |        | n=499      |        | n=54    |        |
|                 | Start          | Change | Start      | Change | Start      | Change | Start   | Change | Start        | Change | Start      | Change | Start      | Change | Start   | Change |
| <b>BPI</b>      |                |        |            |        |            |        |         |        |              |        |            |        |            |        |         |        |
| Worst pain      | 7.5            | -0.2   | 9.0        | -1.9   | 10.0       | -3.0   | .       | .      | 7.7          | -0.4   | 7.6        | -0.8   | 7.8        | -0.8   | 8.2     | -1.2   |
| Least pain      | 3.6            | -1.0   | 4.8        | -0.3   | 10.0       | -3.0   | .       | .      | 4.1          | -0.5   | 4.1        | -0.6   | 4.3        | -0.5   | 4.8     | -1.6   |
| Average pain    | 7.0            | -2.6   | 7.3        | -1.5   | 10.0       | -3.0   | .       | .      | 5.8          | -0.6   | 5.8        | -0.8   | 5.9        | -0.8   | 6.4     | -1.6   |
| Pain now        | 6.0            | -2.4   | 7.4        | -2.8   | 10.0       | -5.0   | .       | .      | 5.8          | -0.7   | 5.6        | -0.8   | 6.0        | -0.8   | 6.1     | -1.5   |
| Interference    | 6.1            | -2.0   | 8.4        | -2.2   | 7.3        | -5.4   | .       | .      | 6.5          | -1.2   | 6.4        | -1.2   | 6.9        | -1.3   | 7.1     | -1.7   |
| <b>DASS</b>     |                |        |            |        |            |        |         |        |              |        |            |        |            |        |         |        |
| Depression      | 13.5           | -3.9   | 31.4       | -10.1  | 7.0        | 11.0   | .       | .      | 18.5         | -4.1   | 17.0       | -3.1   | 20.8       | -4.6   | 17.6    | -1.7   |
| Anxiety         | 10.0           | -0.9   | 20.6       | -2.3   | 20.0       | 17.3   | .       | .      | 13.0         | -1.8   | 11.9       | -1.4   | 14.2       | -1.1   | 9.4     | 0.3    |
| Stress          | 15.6           | -2.7   | 28.3       | -4.7   | 18.0       | 18.0   | .       | .      | 20.2         | -3.0   | 19.0       | -2.6   | 22.4       | -3.3   | 18.0    | -0.6   |
| <b>PCS</b>      |                |        |            |        |            |        |         |        |              |        |            |        |            |        |         |        |
| Rumination      | 7.8            | -3.1   | 11.5       | -2.9   | 16.0       | -4.0   | .       | .      | 8.5          | -2.0   | 8.4        | -1.9   | 9.4        | -2.1   | 9.2     | -2.4   |
| Magnification   | 3.8            | -1.5   | 7.3        | -1.5   | 5.0        | -3.0   | .       | .      | 5.1          | -1.2   | 5.0        | -1.1   | 5.6        | -1.1   | 4.3     | -0.4   |
| Helplessness    | 9.9            | -3.3   | 15.9       | -1.3   | 13.0       | .      | .       | .      | 11.9         | -2.9   | 11.6       | -2.7   | 13.2       | -3.1   | 12.5    | -2.2   |
| Total           | 21.4           | -7.7   | 34.6       | -7.8   | 34.0       | -8.0   | .       | .      | 25.5         | -6.0   | 25.0       | -5.7   | 28.2       | -6.3   | 25.9    | -4.9   |
| <b>PSEQ*</b>    |                |        |            |        |            |        |         |        |              |        |            |        |            |        |         |        |
| Total           | 30.4           | 7.2    | 10.6       | 11.1   | 30.0       | 20.0   | .       | .      | 23.9         | 6.7    | 24.2       | 5.8    | 20.4       | 6.2    | 22.0    | 3.7    |

\* Note: For the PSEQ assessment tool, a positive movement in score is an improvement in how confident patients are in their ability to perform activities despite the pain.

Table 6 shows the start and change assessment tool scores for patients who completed group programs by the program intensity. This allows for comparison of outcomes for differing intensity of programs. Data are only included where the same patient completed both the pathway start and end questionnaires.

**Table 6 Assessment tools, group programs – Pathway start score and change from pathway start to end by program intensity**

| Assessment tool | Enterprise One                  |        |                                  |        |                             |        | All Services                   |        |                                  |        |                             |        |
|-----------------|---------------------------------|--------|----------------------------------|--------|-----------------------------|--------|--------------------------------|--------|----------------------------------|--------|-----------------------------|--------|
|                 | Low Intensity<br>(6 to <24 hrs) |        | Mod Intensity<br>(24 to <60 hrs) |        | High Intensity<br>(60+ hrs) |        | Low Intensity<br>(6 to <24hrs) |        | Mod Intensity<br>(24 to <60 hrs) |        | High Intensity<br>(60+ hrs) |        |
|                 | n=17                            |        | n=24                             |        | n=0                         |        | n=255                          |        | n=422                            |        | n=267                       |        |
|                 | Start                           | Change | Start                            | Change | Start                       | Change | Start                          | Change | Start                            | Change | Start                       | Change |
| <b>BPI</b>      |                                 |        |                                  |        |                             |        |                                |        |                                  |        |                             |        |
| Worst pain      | 7.5                             | -0.5   | 7.4                              | -0.0   | .                           | .      | 7.7                            | -0.4   | 7.5                              | -0.4   | 7.7                         | -0.5   |
| Least pain      | 2.8                             | 0.2    | 4.3                              | -1.9   | .                           | .      | 4.1                            | -0.3   | 3.9                              | -0.7   | 4.2                         | -0.5   |
| Average pain    | 6.2                             | -1.9   | 7.4                              | -3.0   | .                           | .      | 5.9                            | -0.5   | 5.7                              | -0.8   | 5.9                         | -0.6   |
| Pain now        | 5.7                             | -1.9   | 6.1                              | -2.5   | .                           | .      | 5.9                            | -0.6   | 5.5                              | -0.7   | 5.9                         | -0.7   |
| Interference    | 5.9                             | -2.0   | 6.3                              | -1.9   | .                           | .      | 6.5                            | -0.8   | 6.3                              | -1.2   | 6.7                         | -1.5   |
| <b>DASS</b>     |                                 |        |                                  |        |                             |        |                                |        |                                  |        |                             |        |
| Depression      | 13.4                            | -2.0   | 13.8                             | -5.0   | .                           | .      | 18.5                           | -1.9   | 16.4                             | -4.1   | 20.9                        | -5.9   |
| Anxiety         | 11.6                            | -2.5   | 9.0                              | 0.2    | .                           | .      | 13.4                           | -1.2   | 11.4                             | -1.7   | 14.0                        | -2.1   |
| Stress          | 17.5                            | -3.6   | 14.3                             | -1.7   | .                           | .      | 19.6                           | -0.7   | 18.3                             | -2.7   | 22.7                        | -4.3   |
| <b>PCS</b>      |                                 |        |                                  |        |                             |        |                                |        |                                  |        |                             |        |
| Rumination      | 6.9                             | -1.6   | 8.6                              | -4.2   | .                           | .      | 8.6                            | -1.4   | 7.7                              | -1.8   | 9.4                         | -2.5   |
| Magnification   | 3.9                             | -1.3   | 3.9                              | -1.6   | .                           | .      | 5.3                            | -0.9   | 4.4                              | -1.1   | 5.8                         | -1.4   |
| Helplessness    | 8.9                             | -2.4   | 10.5                             | -3.7   | .                           | .      | 12.1                           | -2.0   | 10.5                             | -2.6   | 13.3                        | -4.1   |
| Total           | 19.7                            | -5.3   | 22.8                             | -9.2   | .                           | .      | 26.0                           | -4.3   | 22.7                             | -5.4   | 28.5                        | -7.9   |
| <b>PSEQ*</b>    |                                 |        |                                  |        |                             |        |                                |        |                                  |        |                             |        |
| Total           | 30.7                            | 6.9    | 29.8                             | 7.1    | .                           | .      | 24.4                           | 4.0    | 25.5                             | 6.5    | 20.8                        | 10.6   |

\* Note: For the PSEQ assessment tool, a positive movement in score is an improvement in how confident patients are in their ability to perform activities despite the pain.

Table 7 shows change following completion of the group program component of concurrent pathways. This table includes all concurrent pathways active in the period where a patient completed a group start and end questionnaire.

**Table 7 Assessment tools – Group program change within concurrent pathways**

| Assessment tool | Enterprise One<br>n=0 |        | All Services<br>n=178 |        |
|-----------------|-----------------------|--------|-----------------------|--------|
|                 | Group start           | Change | Group start           | Change |
| <b>BPI</b>      |                       |        |                       |        |
| Worst pain      | .                     | .      | 7.8                   | -0.4   |
| Least pain      | .                     | .      | 3.7                   | -0.2   |
| Average pain    | .                     | .      | 5.5                   | -0.4   |
| Pain now        | .                     | .      | 5.6                   | -0.3   |
| Interference    | .                     | .      | 6.3                   | -1.0   |
| <b>DASS</b>     |                       |        |                       |        |
| Depression      | .                     | .      | 17.9                  | -4.1   |
| Anxiety         | .                     | .      | 13.7                  | -1.1   |
| Stress          | .                     | .      | 20.4                  | -2.8   |
| <b>PCS</b>      |                       |        |                       |        |
| Rumination      | .                     | .      | 8.4                   | -1.9   |
| Magnification   | .                     | .      | 4.8                   | -0.8   |
| Helplessness    | .                     | .      | 11.8                  | -2.7   |
| Total           | .                     | .      | 25.1                  | -5.5   |
| <b>PSEQ*</b>    |                       |        |                       |        |
| Total           | .                     | .      | 24.1                  | 4.8    |

\* Note: For the PSEQ assessment tool, a positive movement in score is an improvement in how confident patients are in their ability to perform activities despite the pain.

### 2.1.2 Change from referral to episode end

Measurement of change from referral to the end of the episode (end of the final pathway in an episode) allows evaluation of change for patients who complete an episode of care at a pain management service. Instances where an episode has ended but the 3 to 6 month post-episode follow-up has not yet occurred will also be included in this outcome measure.

Enterprise One Pain Management Service reported referral and episode end questionnaires for 47 episodes. Table 8 shows the average change for patients completing the assessment tools at referral and episode end. Responses have only been included if the same patient returned a referral questionnaire and another at the end of their episode.

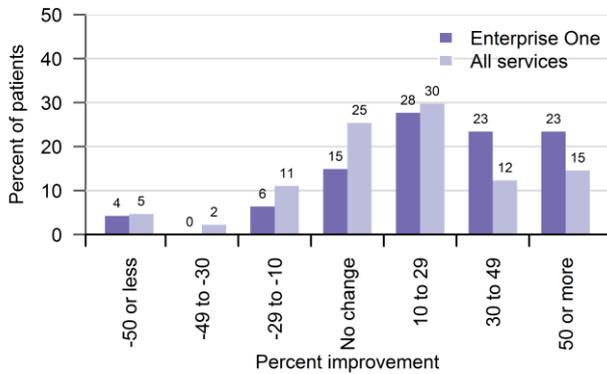
**Table 8 Assessment tools – Change from referral to episode end**

| Assessment tool | Enterprise One<br>n=47 |                |                         |                    | All Services<br>n=2801 |                |                         |                    |
|-----------------|------------------------|----------------|-------------------------|--------------------|------------------------|----------------|-------------------------|--------------------|
|                 | Score at referral      | Average change | Valid outcomes (number) | Valid outcomes (%) | Score at referral      | Average change | Valid outcomes (number) | Valid outcomes (%) |
| <b>BPI</b>      |                        |                |                         |                    |                        |                |                         |                    |
| Worst pain      | 8.0                    | -0.8           | 46                      | 97.9               | 7.8                    | -0.8           | 2704                    | 96.5               |
| Least pain      | 4.0                    | -0.8           | 46                      | 97.9               | 4.2                    | -0.7           | 2679                    | 95.6               |
| Average pain    | 6.4                    | -1.7           | 47                      | 100.0              | 6.0                    | -0.9           | 2677                    | 95.6               |
| Pain now        | 6.6                    | -2.4           | 47                      | 100.0              | 5.9                    | -0.9           | 2680                    | 95.7               |
| Interference    | 6.6                    | -2.2           | 47                      | 100.0              | 6.7                    | -1.5           | 2707                    | 96.6               |
| <b>DASS</b>     |                        |                |                         |                    |                        |                |                         |                    |
| Depression      | 17.4                   | -6.3           | 46                      | 97.9               | 18.7                   | -4.8           | 2669                    | 95.3               |
| Anxiety         | 11.0                   | 0.2            | 46                      | 97.9               | 12.5                   | -1.7           | 2653                    | 94.7               |
| Stress          | 17.7                   | -2.4           | 46                      | 97.9               | 20.2                   | -3.6           | 2651                    | 94.6               |
| <b>PCS</b>      |                        |                |                         |                    |                        |                |                         |                    |
| Rumination      | 8.6                    | -3.1           | 45                      | 95.7               | 8.9                    | -2.5           | 2567                    | 91.6               |
| Magnification   | 4.2                    | -1.3           | 46                      | 97.9               | 5.2                    | -1.4           | 2587                    | 92.4               |
| Helplessness    | 11.4                   | -4.0           | 43                      | 91.5               | 12.4                   | -3.7           | 2528                    | 90.3               |
| Total           | 24.2                   | -8.6           | 46                      | 97.9               | 26.5                   | -7.5           | 2614                    | 93.3               |
| <b>PSEQ*</b>    |                        |                |                         |                    |                        |                |                         |                    |
| Total           | 25.5                   | 10.2           | 45                      | 95.7               | 22.5                   | 7.8            | 2672                    | 95.4               |

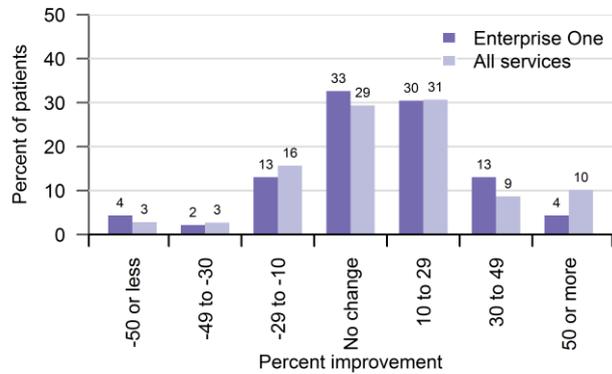
\* Note: For the PSEQ assessment tool, a positive movement in score is an improvement in how confident patients are in their ability to perform activities despite the pain.

**Figure 13 BPI Pain Severity - Change from referral to episode end**

**Average Pain**

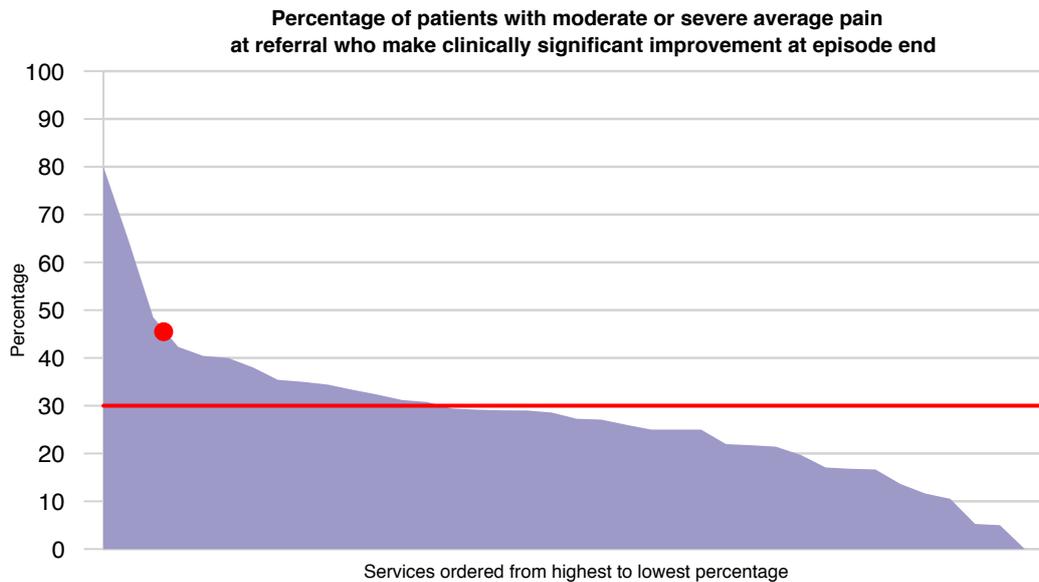


**Worst Pain**



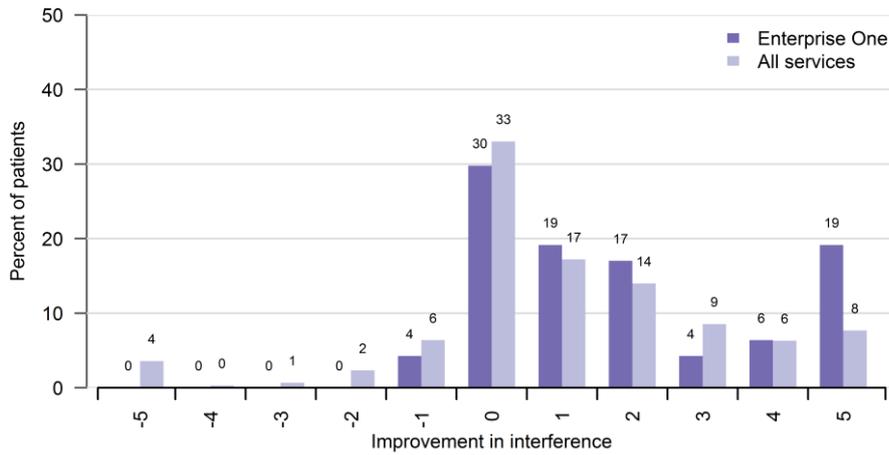
As noted in Appendix C, a change of  $\geq 10\%$  represents minimally important change,  $\geq 30\%$  moderate clinically important change and  $\geq 50\%$  represents substantial clinically important change.

**Figure 14 Benchmark 1 - Average Pain**



Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

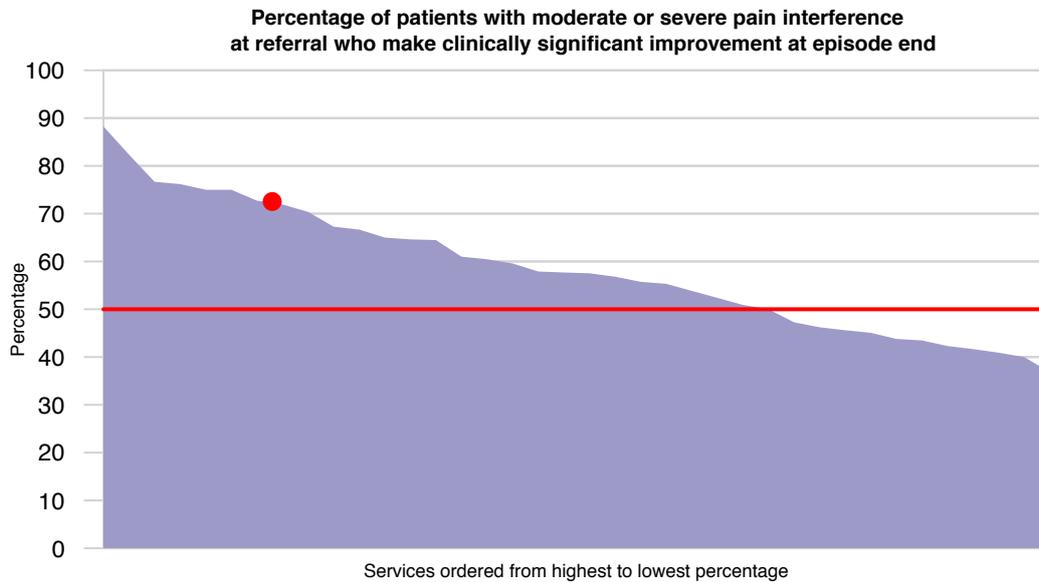
**Figure 15 BPI Pain Interference - Change from referral to episode end**



The IMMPACT recommendation for assessment of clinically significant change on the BPI interference scale is a change of 1 point over the average of the 7 items.

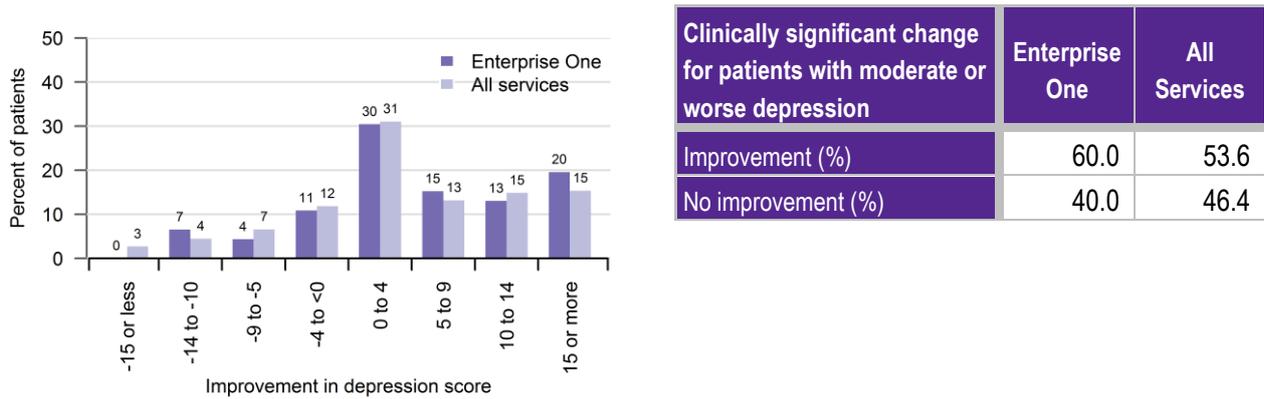
| Clinically significant change for patients with moderate or worse interference | Enterprise One | All Services |
|--|----------------|--------------|
| Improvement (%)  | 71.8           | 58.1         |
| No improvement (%)   | 28.2           | 41.9         |

**Figure 16 Benchmark 2 – Pain interference**

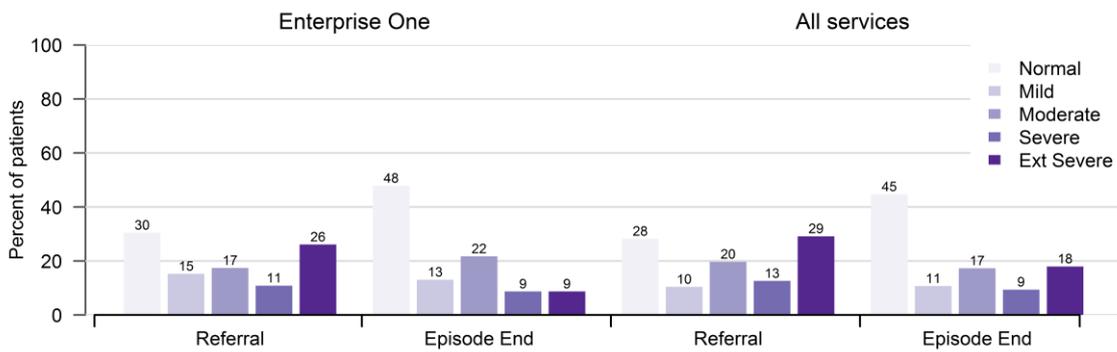


Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

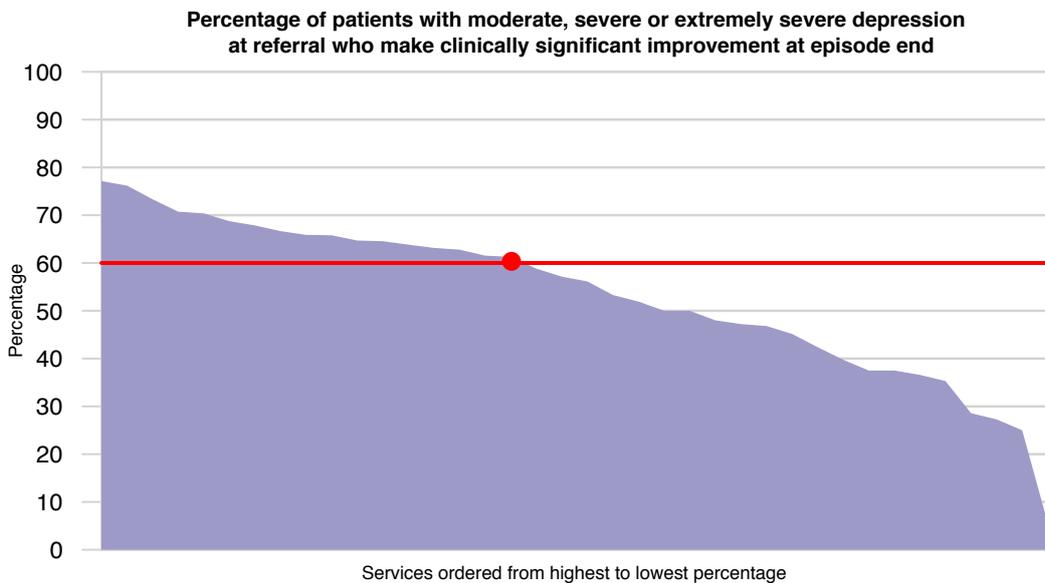
**Figure 17 DASS Depression - Change from referral to episode end**



**Figure 18 DASS Depression – Severity at referral and episode end**

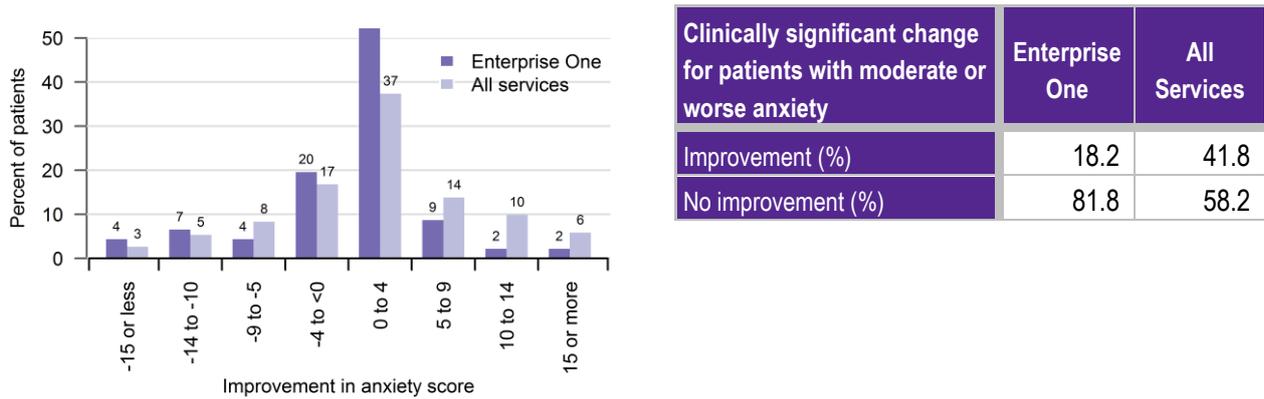


**Figure 19 Benchmark 3 – Depression**

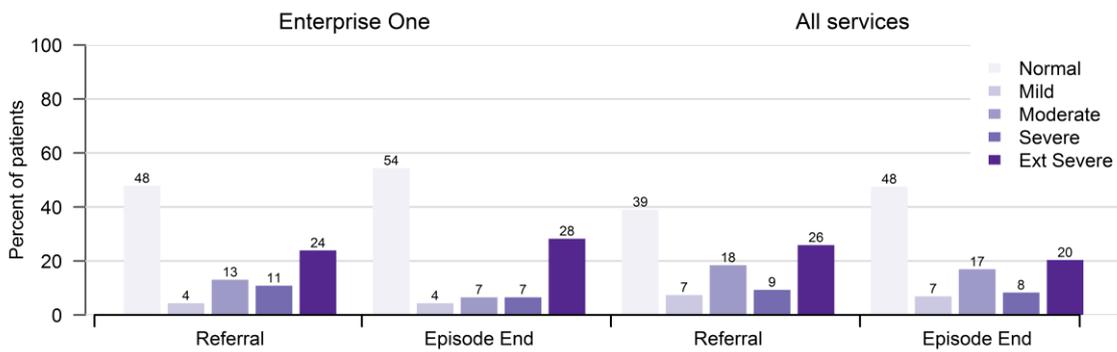


Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

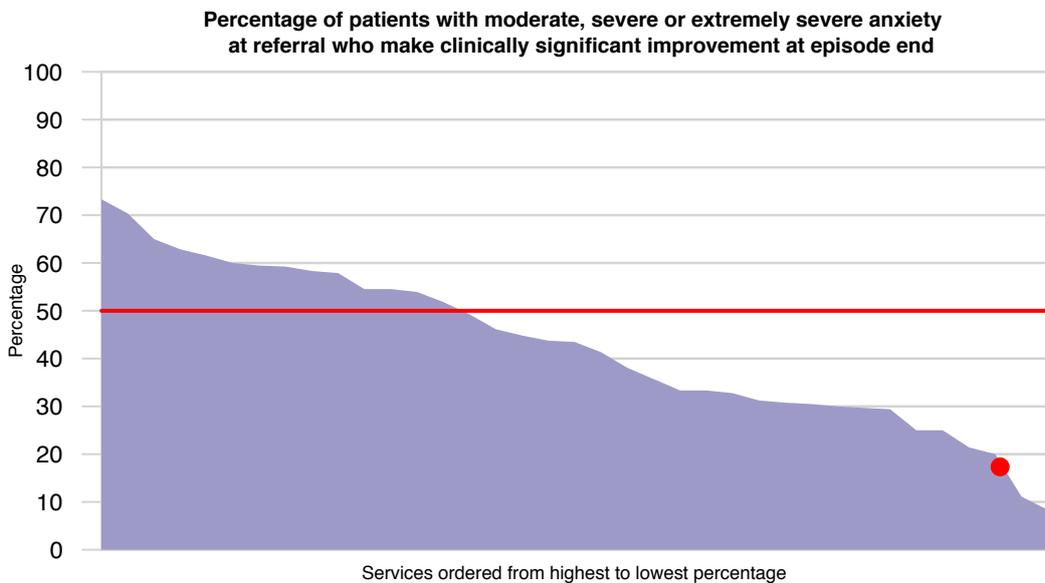
**Figure 20 DASS Anxiety - Change from referral to episode end**



**Figure 21 DASS Anxiety – Severity at referral and episode end**

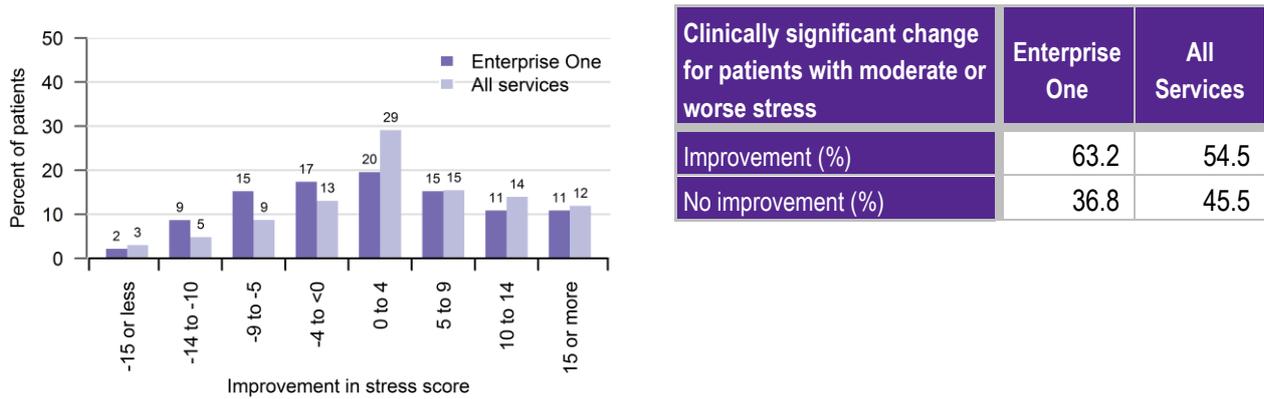


**Figure 22 Benchmark 4 – Anxiety**

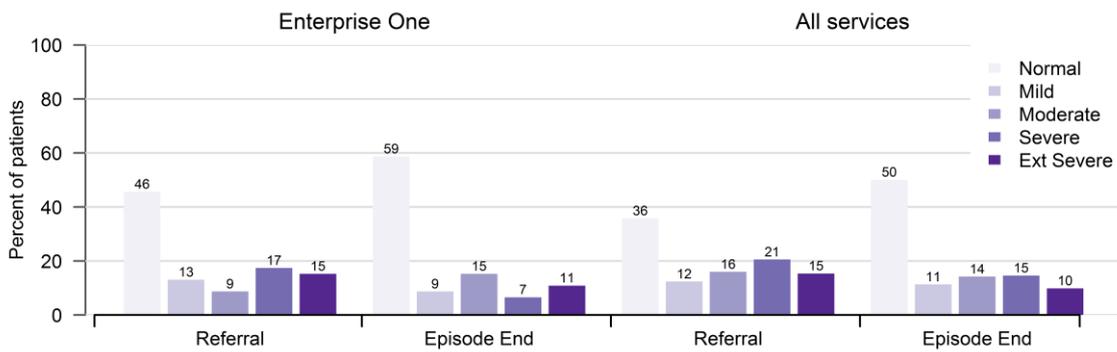


Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

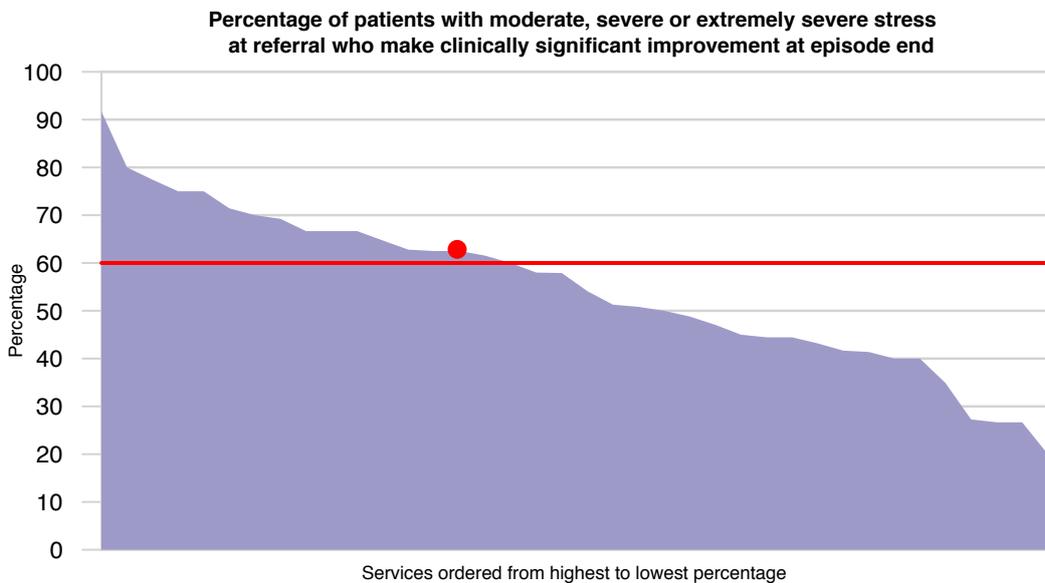
**Figure 23 DASS Stress - Change from referral to episode end**



**Figure 24 DASS Stress – Severity at referral and episode end**

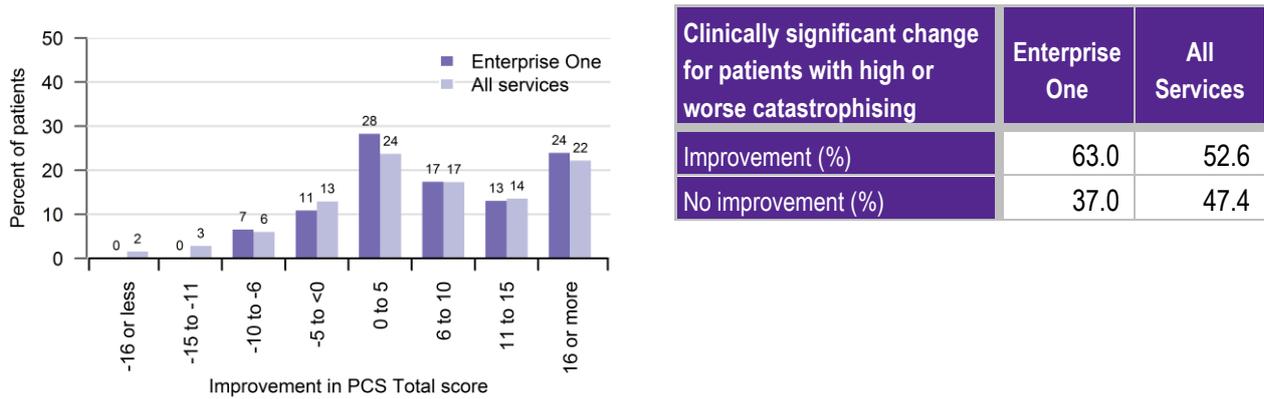


**Figure 25 Benchmark 5 – Stress**

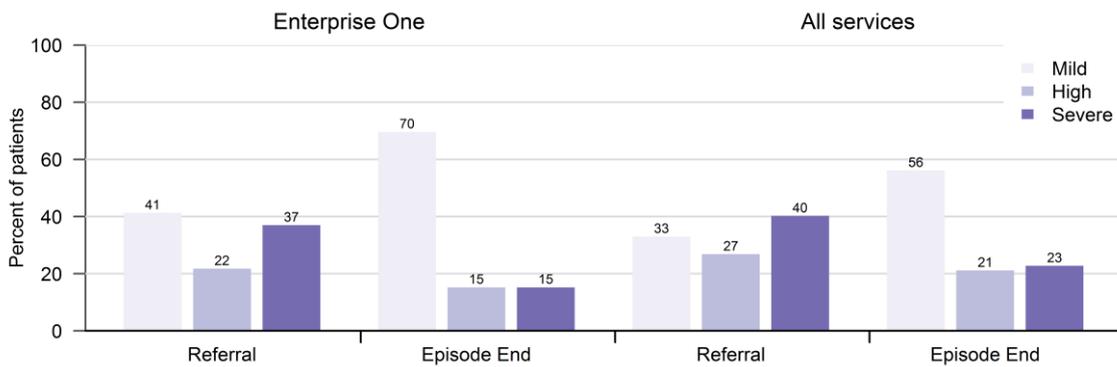


Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

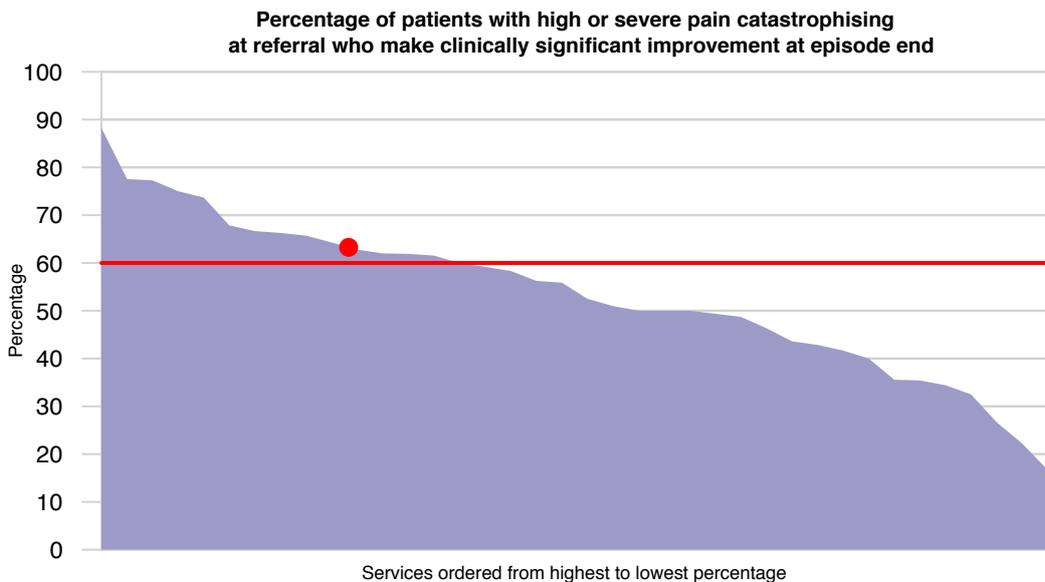
**Figure 26 PCS Total - Change from referral to episode end**



**Figure 27 PCS Total – Severity at referral and episode end**

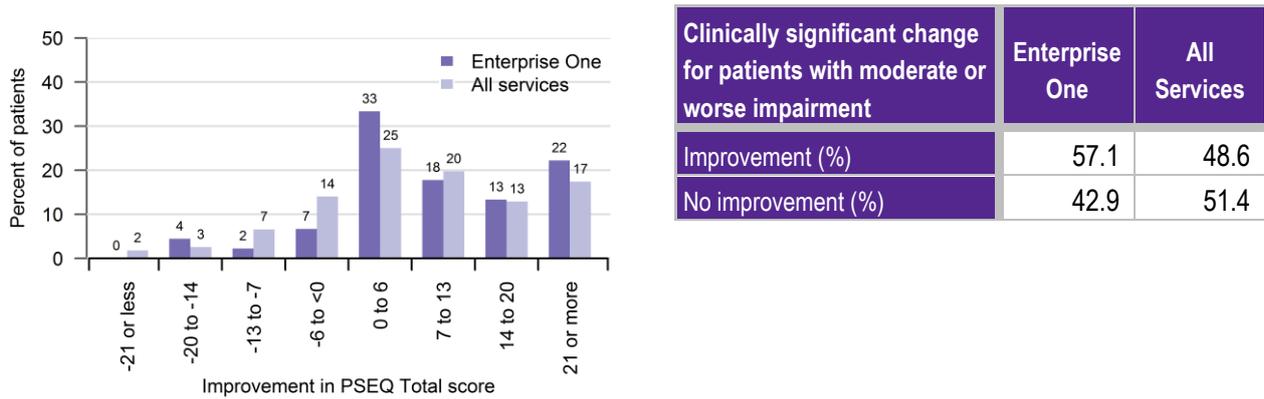


**Figure 28 Benchmark 6 - Pain Catastrophising**

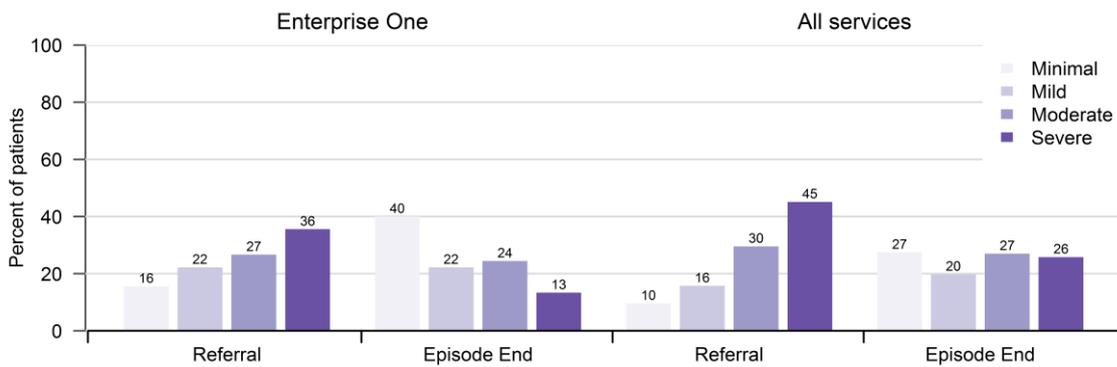


Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

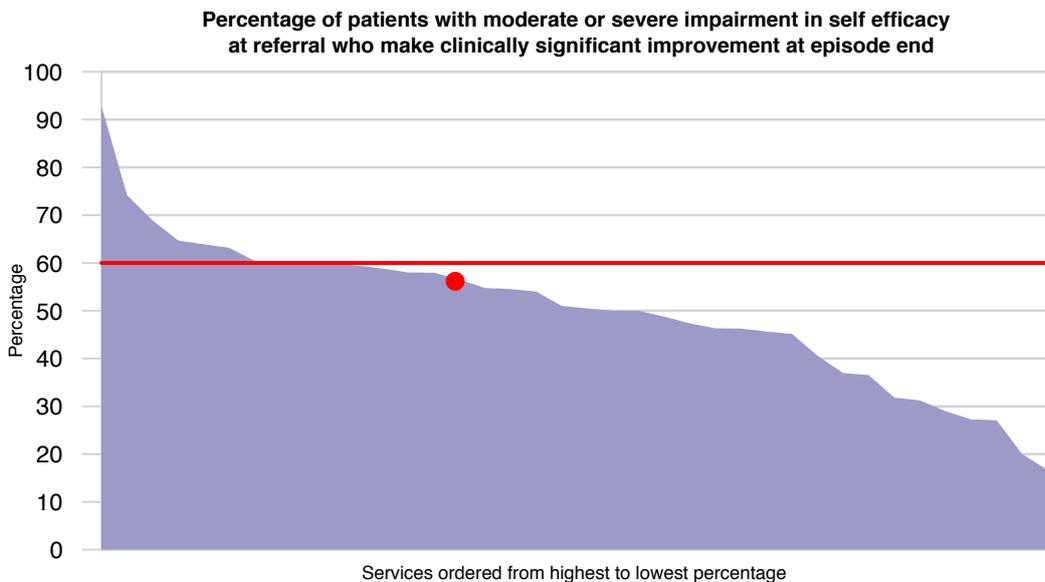
**Figure 29 PSEQ Total - Change from referral to episode end**



**Figure 30 PSEQ Total – Severity at referral and episode end**



**Figure 31 Benchmark 7 - Pain self-efficacy**



Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

### 2.1.3 Change from referral to post-episode follow-up

This section describes change occurring from referral to a pain management service to a point three to six months after the patients' episode has ended. This allows evaluation of the changes made as a result of the treatment received, and if these changes have been maintained.

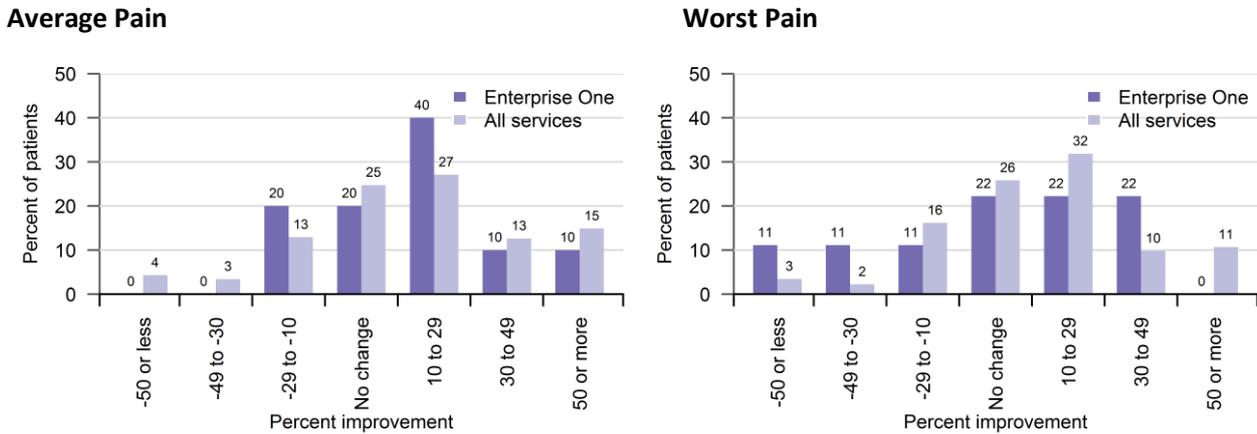
The average change in the outcome measures for patients who completed both a referral and 3 to 6 month post episode follow-up questionnaire (and where the follow-up questionnaire was returned within the reporting period) is shown in Table 9. Enterprise One Pain Management Service received referral and post-episode follow-up questionnaires from 10 patients.

**Table 9 Assessment tools – Change from referral to post-episode follow-up**

| Assessment tool | Enterprise One<br>n=10 |                |                        |                   | All Services<br>n=1289 |                |                        |                   |
|-----------------|------------------------|----------------|------------------------|-------------------|------------------------|----------------|------------------------|-------------------|
|                 | Score at referral      | Average change | Valid outcome (number) | Valid outcome (%) | Score at referral      | Average change | Valid outcome (number) | Valid outcome (%) |
| <b>BPI</b>      |                        |                |                        |                   |                        |                |                        |                   |
| Worst pain      | 7.3                    | 0.8            | 10                     | 100.0             | 7.8                    | -0.9           | 1260                   | 97.8              |
| Least pain      | 4.8                    | 0.2            | 10                     | 100.0             | 4.3                    | -0.6           | 1242                   | 96.4              |
| Average pain    | 6.5                    | -0.8           | 10                     | 100.0             | 6.1                    | -0.9           | 1246                   | 96.7              |
| Pain now        | 6.2                    | -0.2           | 10                     | 100.0             | 5.9                    | -0.8           | 1245                   | 96.6              |
| Interference    | 6.9                    | -0.7           | 10                     | 100.0             | 6.7                    | -1.3           | 1256                   | 97.4              |
| <b>DASS</b>     |                        |                |                        |                   |                        |                |                        |                   |
| Depression      | 17.7                   | 1.5            | 10                     | 100.0             | 18.9                   | -3.8           | 1233                   | 95.7              |
| Anxiety         | 14.2                   | 5.8            | 10                     | 100.0             | 12.5                   | -1.2           | 1226                   | 95.1              |
| Stress          | 21.8                   | 2.0            | 10                     | 100.0             | 20.0                   | -3.2           | 1221                   | 94.7              |
| <b>PCS</b>      |                        |                |                        |                   |                        |                |                        |                   |
| Rumination      | 9.7                    | -2.9           | 10                     | 100.0             | 9.2                    | -2.6           | 1195                   | 92.7              |
| Magnification   | 4.9                    | -1.3           | 10                     | 100.0             | 5.4                    | -1.4           | 1195                   | 92.7              |
| Helplessness    | 12.3                   | -4.0           | 9                      | 90.0              | 13.0                   | -3.9           | 1181                   | 91.6              |
| Total           | 26.9                   | -7.8           | 10                     | 100.0             | 27.6                   | -7.9           | 1216                   | 94.3              |
| <b>PSEQ*</b>    |                        |                |                        |                   |                        |                |                        |                   |
| Total           | 21.6                   | 10.3           | 10                     | 100.0             | 22.5                   | 7.1            | 1243                   | 96.4              |

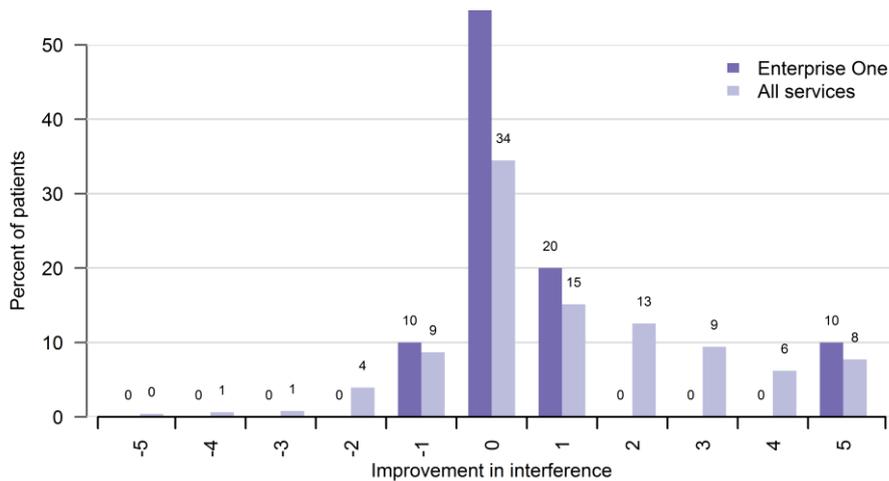
\* Note: For the PSEQ assessment tool, a positive movement in score is an improvement in how confident patients are in their ability to perform activities despite the pain.

**Figure 32 BPI Pain Severity - Change from referral to post-episode follow-up**



As noted in Appendix C, a change of  $\geq 10\%$  represents minimally important change,  $\geq 30\%$  moderate clinically important change and  $\geq 50\%$  represents substantial clinically important change.

**Figure 33 BPI Pain Interference - Change from referral to post-episode follow-up**



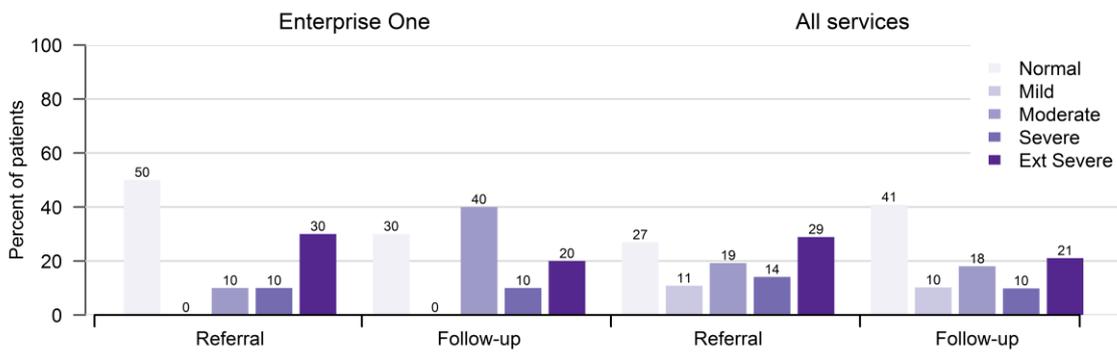
The IMMPACT recommendation for assessment of clinically significant change on the BPI interference scale is a change of 1 point over the average of the 7 items.

| Clinically significant change for patients with moderate or worse interference | Enterprise One | All Services |
|--|----------------|--------------|
| Improvement (%)  | 33.3           | 54.2         |
| No improvement (%)   | 66.7           | 45.8         |

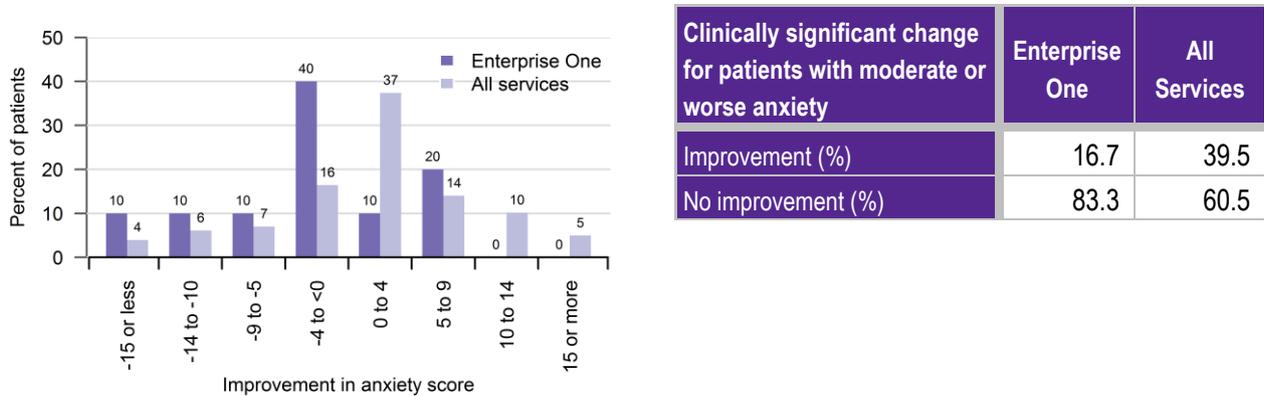
**Figure 34 DASS Depression - Change from referral to post-episode follow-up**



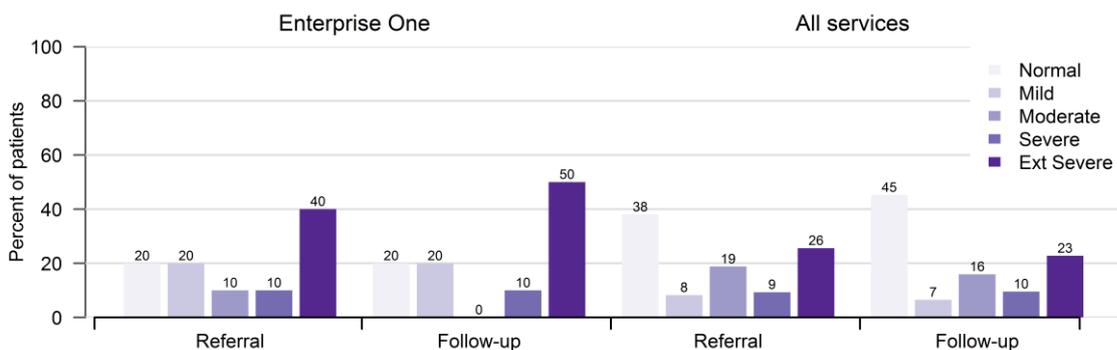
**Figure 35 DASS Depression – Severity at referral and post-episode follow-up**



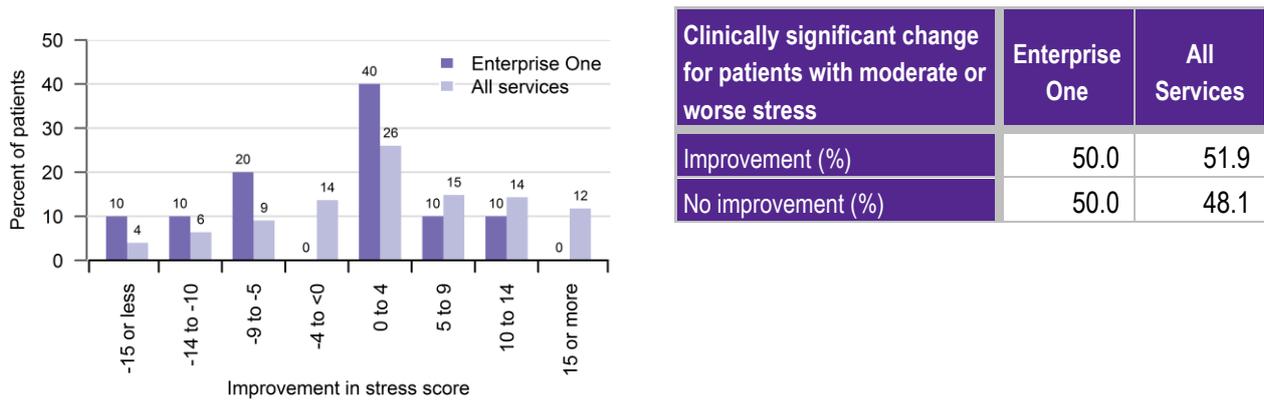
**Figure 36 DASS Anxiety - Change from referral to post-episode follow-up**



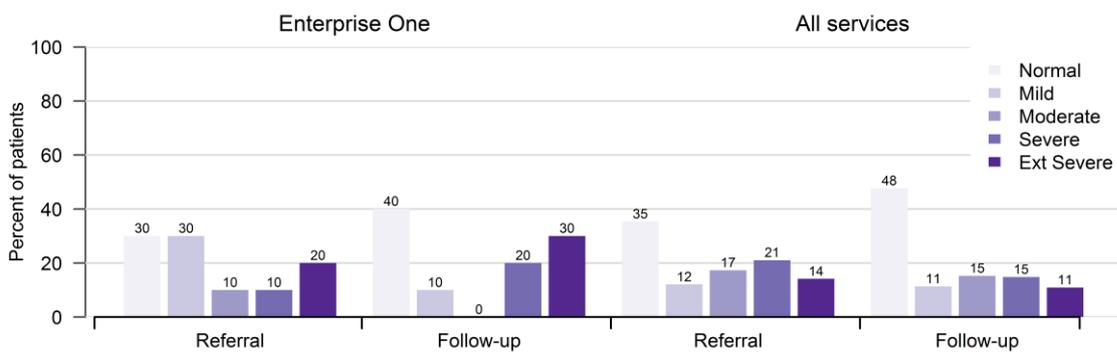
**Figure 37 DASS Anxiety – Severity at referral and post-episode follow-up**



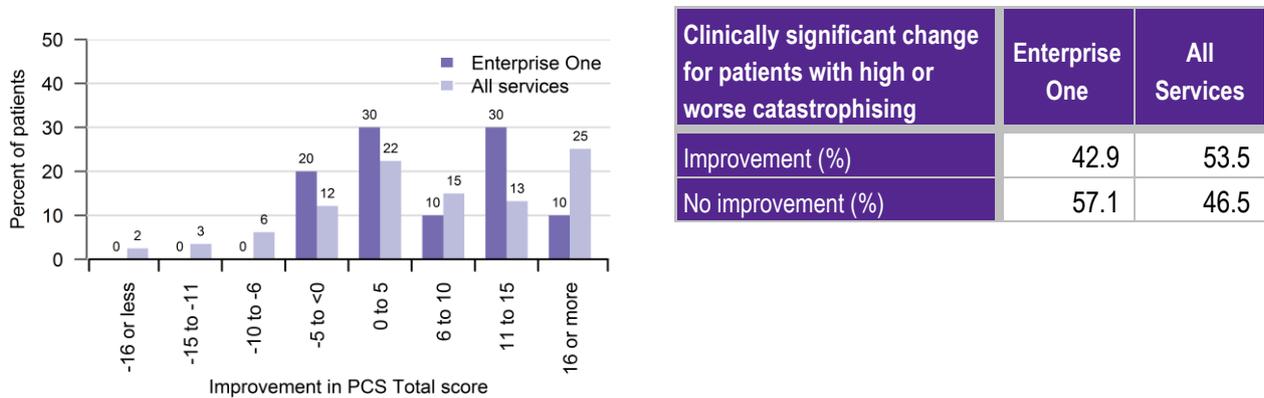
**Figure 38 DASS Stress - Change from referral to post-episode follow-up**



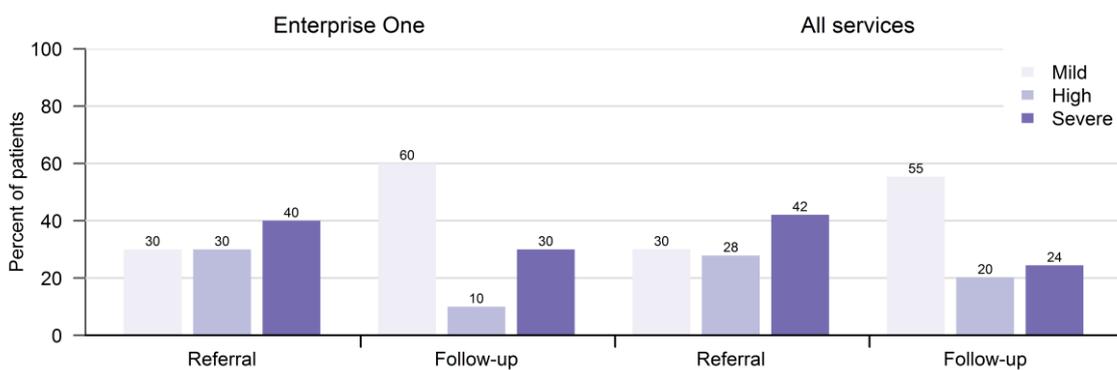
**Figure 39 DASS Stress – Severity at referral and post-episode follow-up**



**Figure 40 PCS Total - Change from referral to post-episode follow-up**



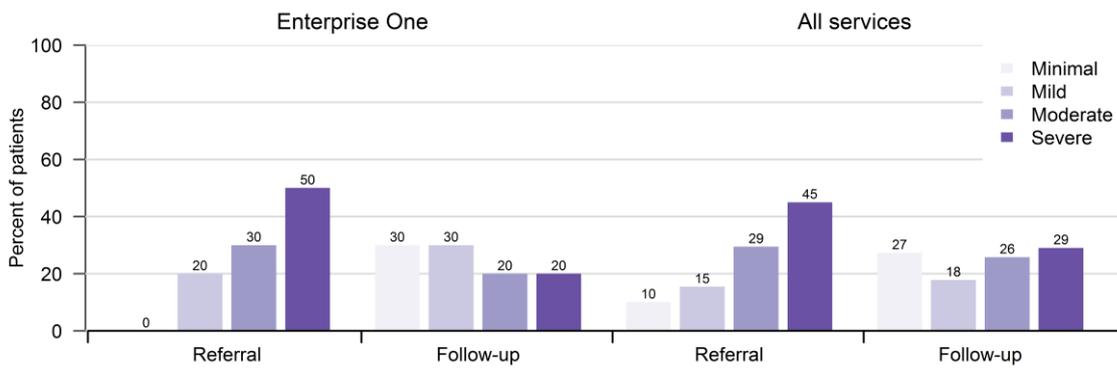
**Figure 41 PCS Total – Severity at referral and post-episode follow-up**



**Figure 42 PSEQ Total - Change from referral to post-episode follow-up**



**Figure 43 PSEQ Total – Severity at referral and post-episode follow-up**



## 2.2 Outcome measure 2 – Ability to work

The work status of patients who returned questionnaires in the reporting period is shown in Table 10.

**Table 10 Work status**

| Work status (percentage*)         | Enterprise One |             |              | All Services |             |              |
|-----------------------------------|----------------|-------------|--------------|--------------|-------------|--------------|
|                                   | Referral       | Episode end | Post episode | Referral     | Episode end | Post episode |
|                                   | n=434          | n=50        | n=6          | n=14305      | n=2838      | n=1298       |
| Full time paid employment         | 14.7           | 14.0        | 0.0          | 13.0         | 15.5        | 15.8         |
| Part time paid employment         | 7.4            | 12.0        | 16.7         | 8.5          | 9.9         | 11.6         |
| Retired                           | 30.4           | 32.0        | 16.7         | 19.8         | 17.5        | 25.7         |
| Unemployed due to pain            | 24.4           | 30.0        | 50.0         | 34.3         | 34.2        | 31.7         |
| Unemployed (not pain related)     | 6.7            | 2.0         | 0.0          | 5.2          | 3.4         | 3.5          |
| Home duties                       | 15.9           | 12.0        | 16.7         | 12.1         | 9.8         | 10.6         |
| On leave from work due to pain    | 4.1            | 2.0         | 0.0          | 9.7          | 10.7        | 5.9          |
| Studying (e.g. school, uni)       | 4.6            | 2.0         | 0.0          | 4.3          | 4.2         | 4.4          |
| Voluntary work                    | 4.1            | 6.0         | 0.0          | 2.9          | 3.7         | 4.3          |
| Retraining                        | 0.5            | 0.0         | 0.0          | 1.2          | 1.9         | 2.2          |
| At work – limited hrs &/or duties | 4.1            | 4.0         | 0.0          | 6.0          | 6.4         | 6.2          |

\* Note percentages in this table will not sum to 100% as more than one work status may be chosen

Table 11 shows the percentage of patients whose pain affects the number of hours they are able to work or study, and the percentage of patients whose pain affects the type of work they are able to do. All patients who returned a questionnaire in the reporting period are included in these results.

**Table 11 Pain affects work or study**

| Pain affects work or study (percentage)            | Enterprise One |             |              | All Services |             |              |
|--|----------------|-------------|--------------|--------------|-------------|--------------|
|  | Referral       | Episode end | Post episode | Referral     | Episode end | Post episode |
| Pain affects number of hours able to work or study | n=408          | n=58        | n=6          | n=13483      | n=3200      | n=1332       |
|  | 83.6           | 75.9        | 100.0        | 88.2         | 84.0        | 80.7         |
| Pain affects type of work                          | n=409          | n=56        | n=6          | n=13467      | n=3187      | n=1334       |
|  | 88.3           | 82.1        | 100.0        | 92.2         | 89.7        | 86.9         |

## 2.3 Outcome measure 3 – Health service use

Information about health service use is collected from patients as an outcome measure. At first glance, a reduction in health service use may appear to be a positive outcome, however increased health service use may in fact reflect more appropriate use of services, for example a patient seeking regular sessions with allied health providers to assist in managing their pain. Caution should therefore be used in interpreting the information in the following table.

Table 12 shows the median and mean number of times Enterprise One patients used each service in the last 3 months compared to all services for patients who returned a referral, episode end, and/or post-episode follow-up questionnaire in the reporting period.

**Table 12 Health service use (number of times used in the last 3 months due to pain)**

| Health service use (median / mean) | Enterprise One |             |              | All Services |             |              |
|------------------------------------|----------------|-------------|--------------|--------------|-------------|--------------|
|                                    | Referral       | Episode end | Post episode | Referral     | Episode end | Post episode |
|                                    | n=449          | n=51        | n=12         | n=14373      | n=2833      | n=1313       |
| General practitioner               | 4.0 / 5.2      | 2.0 / 3.1   | 3.0 / 3.0    | 3.0 / 5.2    | 3.0 / 3.4   | 3.0 / 6.3    |
| Medical specialist                 | 1.0 / 1.5      | 0.0 / 1.0   | 0.0 / 0.4    | 1.0 / 1.4    | 1.0 / 1.2   | 0.0 / 0.9    |
| Allied health professionals        | 1.0 / 3.7      | 2.0 / 3.1   | 1.5 / 1.9    | 1.0 / 4.2    | 3.0 / 7.1   | 1.0 / 3.0    |
| Hospital emergency department      | 0.0 / 0.5      | 0.0 / 0.3   | 0.0 / 0.2    | 0.0 / 0.5    | 0.0 / 0.3   | 0.0 / 0.2    |
| Admitted to hospital               | 0.0 / 0.3      | 0.0 / 0.1   | 0.0 / 0.0    | 0.0 / 0.3    | 0.0 / 0.1   | 0.0 / 0.1    |
| Diagnostic tests                   | 1.0 / 1.7      | 0.0 / 0.8   | 0.0 / 0.4    | 1.0 / 1.5    | 0.0 / 0.8   | 0.0 / 0.6    |

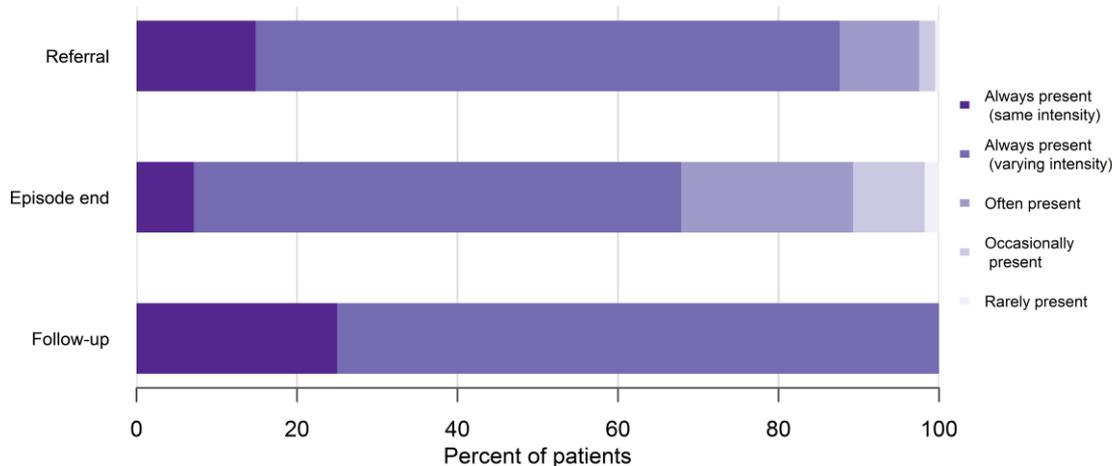
## 2.4 Outcome measure 4 – Pain frequency

A reduction in the frequency of pain is a positive outcome for a patient. Table 13 and Figure 44 show the percentage of patients at each level of pain frequency for patients who returned a referral, episode end, and/or post episode follow-up questionnaire in the reporting period.

**Table 13 Pain frequency item (percentage of patients in each group)**

| Pain frequency                     | Enterprise One |              |              | All Services |              |              |
|------------------------------------|----------------|--------------|--------------|--------------|--------------|--------------|
|                                    | Referral       | Episode end  | Post episode | Referral     | Episode end  | Post episode |
|                                    | n=404          | n=56         | n=4          | n=14339      | n=3239       | n=1332       |
| Always present (same intensity)    | 14.9           | 7.1          | 25.0         | 16.3         | 9.8          | 9.5          |
| Always present (varying intensity) | 72.8           | 60.7         | 75.0         | 70.8         | 64.2         | 62.1         |
| Often present                      | 9.9            | 21.4         | 0.0          | 9.0          | 13.1         | 14.2         |
| Occasionally present               | 2.0            | 8.9          | 0.0          | 3.0          | 8.2          | 7.7          |
| Rarely present                     | 0.5            | 1.8          | 0.0          | 0.9          | 4.6          | 6.5          |
| <b>Total</b>                       | <b>100.0</b>   | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> |

**Figure 44 Pain frequency - Change through episode**



## 2.5 Outcome measure 5 – Time from referral to first contact

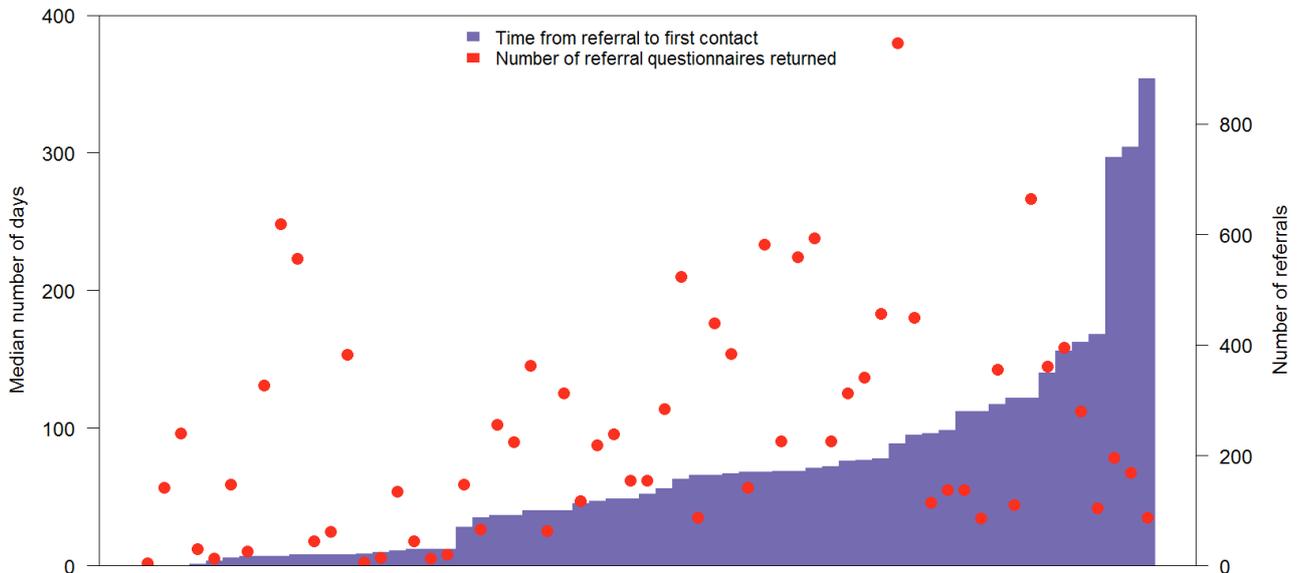
Time from referral to first contact can indicate responsiveness of pain management services to patient needs, and availability of resources within the pain management service. Table 14 shows the distribution of time from referral to first contact for Enterprise One compared to all services for episodes that start within the reporting period. The time from referral to first contact is calculated as the date the referral is received to the episode start date (defined as the first clinical contact).

**Table 14 Time from referral to first contact**

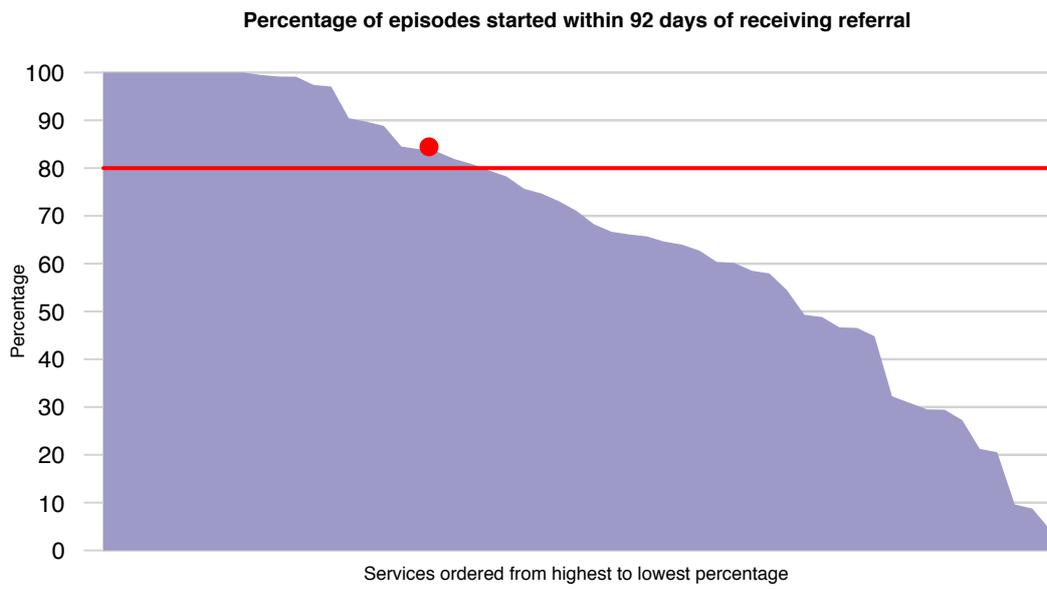
| Time from referral to first contact | Enterprise One |            | All Services |            |
|-------------------------------------|----------------|------------|--------------|------------|
|                                     | Number         | Percentage | Number       | Percentage |
| <1 month                            | 223            | 52.0       | 3978         | 34.0       |
| 1-3 months                          | 131            | 30.5       | 3949         | 33.8       |
| 3-6 months                          | 40             | 9.3        | 2472         | 21.1       |
| 6-12 months                         | 28             | 6.5        | 1015         | 8.7        |
| >12 months                          | 7              | 1.6        | 279          | 2.4        |
| Average (days)                      | 60.3           | na         | 85.6         | na         |
| Median (days)                       | 29.0           | na         | 55.0         | na         |

Figure 45 shows the position of Enterprise One in comparison to other services based on the time from referral to first contact. The horizontal axis shows pain management services ordered from lowest to highest by number of days. This figure also displays the number of referral questionnaires returned in the reporting period as a proxy for the number of referrals the service received.

**Figure 45 Median number of days from referral to first contact (episode start)**



**Figure 46 Benchmark 8 - Time from referral to episode start**



Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this benchmark

## 2.6 Outcome measure 6 – Medication use

Pain management services collect information about the medications their patients take and the frequency of their use. This information is provided to ePPOC as three variables, describing:

- whether or not a patient uses opioid medication on more than two days per week
- the patient’s daily oral morphine equivalent (using a standardised conversion table)
- the number of major drug groups the patient’s medications fall within. The major drug groups are opioids, paracetamol, NSAIDs, antidepressants, anticonvulsants and benzodiazepines.

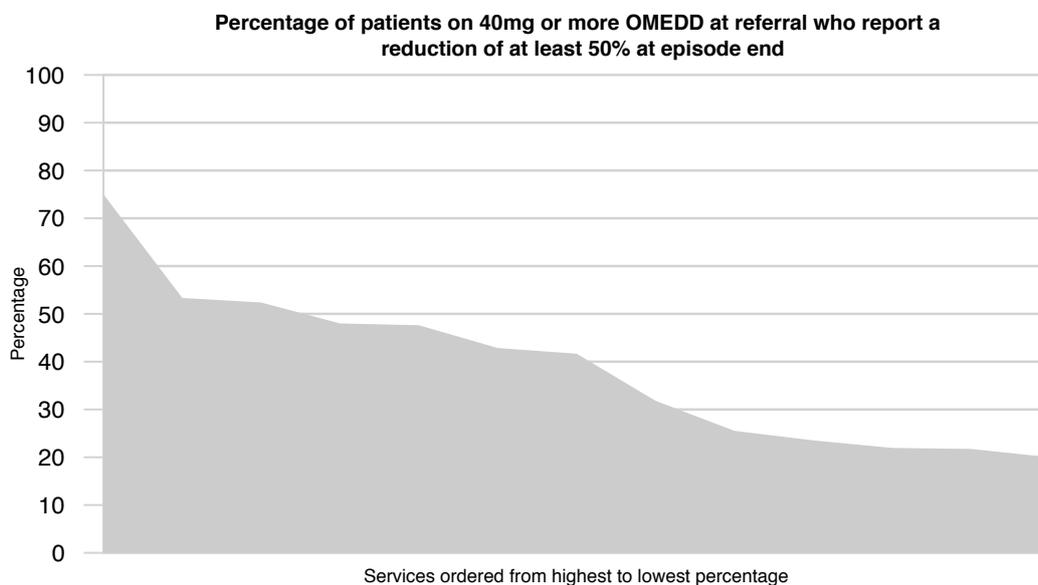
Table 15 shows medication use for Enterprise One patients compared to patients for all services for questionnaires returned during the reporting period.

**Table 15 Medication use**

| Medication use                       | Enterprise One |             |              | All Services |             |              |
|--------------------------------------|----------------|-------------|--------------|--------------|-------------|--------------|
|                                      | Referral       | Episode end | Post episode | Referral     | Episode end | Post episode |
|                                      | n=436          | n=51        | n=12         | n=9697       | n=1877      | n=1148       |
| Percent using opioids >2 days/week   | 55.7           | 31.4        | 41.7         | 57.9         | 41.0        | 37.7         |
| Ave daily morphine equivalent (mg) * | 74.2           | 38.9        | 68.8         | 69.1         | 62.0        | 59.6         |
| Ave number of major drug groups      | 2.3            | 1.8         | 2.5          | 2.5          | 2.1         | 2.0          |

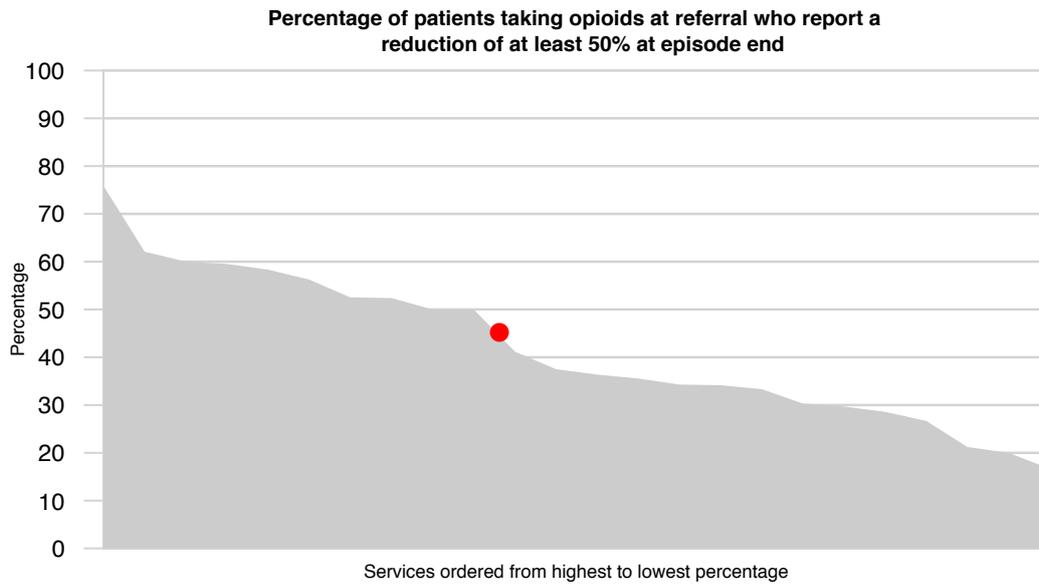
\* For those patients taking opioid medication

**Figure 47 Opioid Use - Indicator 1**



Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this indicator

**Figure 48 Opioid Use - Indicator 2**



Note: If there is no red dot on your graph this indicates that your service reported less than 10 outcomes for this indicator

## Section 3 - Descriptive analysis

There are four levels of ePPOC data items – patient, episode, pathway and service events. The broad detail is found at the **patient level**, where the data items describe patient demographics.

The items at the **episode level** describe the way that pain management episodes start and end and include information about the patient’s pain and comorbidities at the start of the episode. The items at the **pathway level** categorise the type of treatment(s) the patient received, while the **service event** data items detail this treatment and allow evaluation of the intensity of the treatment provided.

This section provides an overview of the data submitted by Enterprise One at each level for the current reporting period. Summaries of the data for all services are included for comparative purposes. See Supplementary Data 1 for information on item completion.

### 3.1 Summary of service events during this reporting period

Table 16 describes the service event activity for Enterprise One between 1 July 2016 and 30 June 2017.

**Table 16 Service event activity this reporting period**

| Service intensity (total hours)                      | Enterprise One |            |
|--|----------------|------------|
|  | Total          | Telehealth |
| Individual appointment with medical practitioner     | 198.2          | 0.0        |
| Individual appointment with physiotherapist          | 105.8          | 0.0        |
| Individual appointment with psychologist             | 150.9          | 0.0        |
| Individual appointment with occupational therapist   | 14.5           | 0.0        |
| Individual appointment with nurse                    | 0.8            | 0.0        |
| Individual appointment with more than one clinician  | 283.0          | 0.0        |
| Individual appointment – other                       | 0.0            | 0.0        |
| Multidisciplinary team assessment                    | 137.0          | 0.0        |
| Multidisciplinary panel discussion                   | 42.5           | 0.0        |
| Telephone consultation with patient                  | 5.8            | 0.0        |
| Telephone consultation with patient’s doctor         | 0.0            | 0.0        |
| Pain management program – group                      | 1,407.0        | 0.0        |
| Pain management program – individual                 | 3.5            | 0.0        |
| Procedural intervention – implant (drug delivery)    | 0.0            | 0.0        |
| Procedural intervention – implant (neurostimulation) | 0.0            | 0.0        |
| Procedural intervention – non-implant                | 0.0            | 0.0        |
| Procedural intervention – cancer block               | 0.0            | 0.0        |
| Procedural intervention – other                      | 20.3           | 0.0        |
| Education/orientation program                        | 213.0          | 0.0        |
| Other  | 14.5           | 0.0        |
| <b>Total</b>   | <b>2,596.6</b> | <b>.</b>   |

## 3.2 Profile of pain management patients

The information collected about each patient includes sex, indigenous status, country of birth, whether an interpreter is required and if a patient requires help with communication.

Table 17 to Table 21 describe patients at Enterprise One compared to those at all services for patients active in the reporting period.

**Table 17 Sex**

| Sex           | Enterprise One |              | All Services |              |
|---------------|----------------|--------------|--------------|--------------|
|               | Number         | Percentage   | Number       | Percentage   |
| Male          | 223            | 38.3         | 9127         | 42.6         |
| Female        | 359            | 61.7         | 12287        | 57.3         |
| Indeterminate | 0              | 0.0          | 19           | 0.1          |
| <b>Total</b>  | <b>582</b>     | <b>100.0</b> | <b>21433</b> | <b>100.0</b> |

**Table 18 Indigenous status**

| Indigenous status                                    | Enterprise One |              | All Services |              |
|--|----------------|--------------|--------------|--------------|
|  | Number         | Percentage   | Number       | Percentage   |
| Aboriginal but not Torres Strait Islander origin     | 24             | 5.8          | 564          | 3.6          |
| Torres Strait Islander but not Aboriginal origin     | 2              | 0.5          | 30           | 0.2          |
| Both Aboriginal & Torres Strait Islander origin      | 0              | 0.0          | 17           | 0.1          |
| Neither Aboriginal nor Torres Strait Islander origin | 385            | 93.7         | 15252        | 96.1         |
| <b>Total</b>   | <b>411</b>     | <b>100.0</b> | <b>15863</b> | <b>100.0</b> |

**Table 19 Country of birth**

| Country of birth | Enterprise One |              | All Services |              |
|------------------|----------------|--------------|--------------|--------------|
|                  | Number         | Percentage   | Number       | Percentage   |
| Australia        | 375            | 78.1         | 11653        | 58.8         |
| New Zealand      | 13             | 2.7          | 2755         | 13.9         |
| Other            | 92             | 19.2         | 5426         | 27.4         |
| <b>Total</b>     | <b>480</b>     | <b>100.0</b> | <b>19834</b> | <b>100.0</b> |

**Table 20 Interpreter required**

| Interpreter required | Enterprise One |              | All Services |              |
|----------------------|----------------|--------------|--------------|--------------|
|                      | Number         | Percentage   | Number       | Percentage   |
| Yes                  | 3              | 0.6          | 1007         | 5.1          |
| No                   | 490            | 99.4         | 18725        | 94.9         |
| <b>Total</b>         | <b>493</b>     | <b>100.0</b> | <b>19732</b> | <b>100.0</b> |

**Table 21 Communication assistance**

| Assistance required with communication | Enterprise One |              | All Services |              |
|--|----------------|--------------|--------------|--------------|
|  | Number         | Percentage   | Number       | Percentage   |
| Yes                                    | 26             | 5.5          | 1767         | 9.2          |
| No                                     | 447            | 94.5         | 17445        | 90.8         |
| <b>Total</b>                           | <b>473</b>     | <b>100.0</b> | <b>19212</b> | <b>100.0</b> |

### 3.3 Profile of pain management episodes

An episode of care is a period of contact between a patient and a pain management service. An episode of pain management begins with the first clinical contact with the patient and ends when:

- the pain management treatment is completed (including those where the patient will return for periodic reviews only)
- the patient is referred to another pain management service
- the patient decides not to complete treatment, or
- the patient dies.

Episodes at Enterprise One are described in comparison to those at all services in the following tables for active episodes in the reporting period.

**Table 22 Episode start mode**

| Episode start mode                     | Enterprise One |              | All Services |              |
|--|----------------|--------------|--------------|--------------|
|  | Number         | Percentage   | Number       | Percentage   |
| Single or multidisciplinary assessment | 447            | 89.9         | 9309         | 56.2         |
| Treatment start                        | 50             | 10.1         | 7266         | 43.8         |
| <b>Total</b>                           | <b>497</b>     | <b>100.0</b> | <b>16575</b> | <b>100.0</b> |

**Table 23 Episode end mode**

| Episode end mode                             | Enterprise One |              | All Services |              |
|--|----------------|--------------|--------------|--------------|
|  | Number         | Percentage   | Number       | Percentage   |
| Pain management service treatment completed  | 57             | 35.4         | 3594         | 54.9         |
| Referral to another pain management service  | 7              | 4.3          | 110          | 1.7          |
| Did not complete treatment                   | 36             | 22.4         | 1126         | 17.2         |
| Died   | 0              | 0.0          | 18           | 0.3          |
| Primary treatment completed (ongoing review) | 42             | 26.1         | 1297         | 19.8         |
| Other  | 19             | 11.8         | 396          | 6.1          |
| <b>Total</b>                                 | <b>161</b>     | <b>100.0</b> | <b>6541</b>  | <b>100.0</b> |

**Table 24 Length of episode - summary**

| Length of episode                | Enterprise One | All Services |
|----------------------------------|----------------|--------------|
| Average length of episode (days) | 129.2          | 190.0        |
| Median length of episode (days)  | 113.0          | 122.0        |

**Table 25 Length of episode - distribution**

| Length of episode | Enterprise One |              | All Services |              |
|-------------------|----------------|--------------|--------------|--------------|
|                   | Number         | Percentage   | Number       | Percentage   |
| <1 month          | 8              | 5.0          | 1083         | 16.6         |
| 1-2 months        | 45             | 28.0         | 653          | 10.0         |
| 3-6 months        | 58             | 36.0         | 2499         | 38.2         |
| 7-9 months        | 30             | 18.6         | 648          | 9.9          |
| 10-12 months      | 18             | 11.2         | 725          | 11.1         |
| >12 months        | 2              | 1.2          | 933          | 14.3         |
| <b>Total</b>      | <b>161</b>     | <b>100.0</b> | <b>6541</b>  | <b>100.0</b> |

**Table 26 Number of pathways per episode**

| Pathways per episode | Enterprise One |              | All Services |              |
|----------------------|----------------|--------------|--------------|--------------|
|                      | Number         | Percentage   | Number       | Percentage   |
| 1                    | 154            | 95.7         | 5875         | 89.8         |
| 2                    | 7              | 4.3          | 473          | 7.2          |
| 3                    | 0              | 0.0          | 132          | 2.0          |
| 4                    | 0              | 0.0          | 44           | 0.7          |
| 5                    | 0              | 0.0          | 13           | 0.2          |
| 6                    | 0              | 0.0          | 3            | 0.0          |
| 7                    | 0              | 0.0          | 0            | 0.0          |
| 8 or more            | 0              | 0.0          | 1            | 0.0          |
| <b>Total</b>         | <b>161</b>     | <b>100.0</b> | <b>6541</b>  | <b>100.0</b> |

**Table 27 Service intensity - time per episode (for completed episodes)**

| Service intensity (average hours)                    | Enterprise One |            | All Services |            |
|--|----------------|------------|--------------|------------|
|  | Total          | Telehealth | Total        | Telehealth |
| Individual appointment with medical practitioner     | 0.4            | 0.0        | 0.8          | 0.0        |
| Individual appointment with physiotherapist          | 0.4            | 0.0        | 2.5          | 0.0        |
| Individual appointment with psychologist             | 0.6            | 0.0        | 1.1          | 0.0        |
| Individual appointment with occupational therapist   | 0.1            | 0.0        | 0.4          | 0.0        |
| Individual appointment with nurse                    | 0.0            | 0.0        | 0.1          | 0.0        |
| Individual appointment with more than one clinician  | 1.4            | 0.0        | 0.1          | 0.0        |
| Individual appointment – other                       | 0.0            | 0.0        | 0.1          | 0.0        |
| Multidisciplinary team assessment                    | 0.7            | 0.0        | 0.9          | 0.0        |
| Multidisciplinary panel discussion                   | 0.2            | 0.0        | 0.1          | 0.0        |
| Telephone consultation with patient                  | 0.0            | 0.0        | 0.1          | 0.0        |
| Telephone consultation with patient's doctor         | 0.0            | 0.0        | 0.0          | 0.0        |
| Pain management program – group                      | 11.2           | 0.0        | 17.3         | 0.0        |
| Pain management program – individual                 | 0.0            | 0.0        | 0.4          | 0.0        |
| Procedural intervention – implant (drug delivery)    | 0.0            | 0.0        | 0.0          | 0.0        |
| Procedural intervention – implant (neurostimulation) | 0.0            | 0.0        | 0.0          | 0.0        |
| Procedural intervention – non-implant                | 0.0            | 0.0        | 0.1          | 0.0        |
| Procedural intervention – cancer block               | 0.0            | 0.0        | 0.0          | 0.0        |
| Procedural intervention – other                      | 0.0            | 0.0        | 0.0          | 0.0        |
| Education/orientation program                        | 0.7            | 0.0        | 0.5          | 0.0        |
| Other  | 0.1            | 0.0        | 0.0          | 0.0        |
| <b>Total</b>   | <b>15.9</b>    | <b>.</b>   | <b>24.5</b>  | <b>0.1</b> |

The following tables show patient information related to the episode of care. This information is included in the section describing episodes as a patient may have subsequent episodes at the same or another pain management service. These subsequent episodes may involve a different pain condition and require a different focus of care.

**Table 28 Age at referral by sex**

| Age at referral     | Enterprise One |        | All Services |        |
|---------------------|----------------|--------|--------------|--------|
|                     | Male           | Female | Male         | Female |
| Average age (years) | 52.0           | 54.9   | 49.7         | 51.1   |
| Median age (years)  | 52.0           | 56.0   | 50.0         | 51.0   |

**Table 29 Age group at referral by sex - distribution**

| Age group at referral | Enterprise One |              |            |              | All Services |              |              |              |
|-----------------------|----------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|
|                       | Male           |              | Female     |              | Male         |              | Female       |              |
|                       | Number         | Percentage   | Number     | Percentage   | Number       | Percentage   | Number       | Percentage   |
| < 18                  | 0              | 0.0          | 4          | 1.1          | 46           | 0.5          | 116          | 0.9          |
| 18-24                 | 6              | 2.6          | 8          | 2.2          | 315          | 3.4          | 542          | 4.4          |
| 25-34                 | 25             | 10.8         | 29         | 7.9          | 1188         | 12.9         | 1355         | 10.9         |
| 35-44                 | 41             | 17.7         | 55         | 15.0         | 1887         | 20.5         | 2206         | 17.8         |
| 45-54                 | 63             | 27.3         | 70         | 19.1         | 2331         | 25.3         | 3092         | 24.9         |
| 55-64                 | 55             | 23.8         | 94         | 25.6         | 1963         | 21.3         | 2573         | 20.7         |
| 65-74                 | 16             | 6.9          | 72         | 19.6         | 907          | 9.9          | 1465         | 11.8         |
| 75-84                 | 18             | 7.8          | 25         | 6.8          | 484          | 5.3          | 841          | 6.8          |
| 85+                   | 7              | 3.0          | 10         | 2.7          | 84           | 0.9          | 213          | 1.7          |
| <b>Total</b>          | <b>231</b>     | <b>100.0</b> | <b>367</b> | <b>100.0</b> | <b>9205</b>  | <b>100.0</b> | <b>12403</b> | <b>100.0</b> |

**Table 30 Main pain area at referral**

| Main pain area*       | Enterprise One |              | All Services |              |
|-----------------------|----------------|--------------|--------------|--------------|
|                       | Number         | Percentage   | Number       | Percentage   |
| Head                  | 27             | 6.4          | 922          | 5.8          |
| Neck                  | 44             | 10.5         | 1237         | 7.8          |
| Chest                 | 14             | 3.3          | 300          | 1.9          |
| Back                  | 131            | 31.2         | 6797         | 43.1         |
| Leg                   | 33             | 7.9          | 887          | 5.6          |
| Arm/shoulder          | 66             | 15.7         | 1996         | 12.7         |
| Abdomen               | 61             | 14.5         | 1695         | 10.7         |
| Hands                 | 5              | 1.2          | 367          | 2.3          |
| Feet                  | 6              | 1.4          | 465          | 2.9          |
| Pelvic and/or genital | 13             | 3.1          | 360          | 2.3          |
| Buttock               | 0              | 0.0          | 10           | 0.1          |
| Knee                  | 20             | 4.8          | 731          | 4.6          |
| Whole body            | 0              | 0.0          | 10           | 0.1          |
| <b>Total</b>          | <b>420</b>     | <b>100.0</b> | <b>15777</b> | <b>100.0</b> |

\* Pain areas converted from the body chart pain sites as follows;

Head – head and face

Neck – neck

Chest – chest

Back – upper back, mid back and low back

Leg – left and right thighs, calves and ankles

Arm/shoulder – left and right shoulders, upper arms, elbows, forearms and wrists

Abdomen – abdomen, left and right hips

Hands – left and right hands

Feet – left and right feet

Pelvic/genital – groin

Knee – left and right knees

**Table 31 Number of pain areas at referral**

| Number of pain sites | Enterprise One |              | All Services |              |
|----------------------|----------------|--------------|--------------|--------------|
|                      | Number         | Percentage   | Number       | Percentage   |
| 1                    | 72             | 14.4         | 3227         | 16.3         |
| 2-3                  | 194            | 38.8         | 6689         | 33.8         |
| 4-6                  | 177            | 35.4         | 7112         | 36.0         |
| 7-9                  | 52             | 10.4         | 2372         | 12.0         |
| 10+                  | 5              | 1.0          | 366          | 1.9          |
| <b>Total</b>         | <b>500</b>     | <b>100.0</b> | <b>19766</b> | <b>100.0</b> |

**Table 32 How main pain began (precipitating event)**

| How main pain began        | Enterprise One |              | All Services |              |
|----------------------------|----------------|--------------|--------------|--------------|
|                            | Number         | Percentage   | Number       | Percentage   |
| Injury at home             | 28             | 5.7          | 1685         | 8.7          |
| Injury at work/school      | 86             | 17.6         | 4912         | 25.2         |
| Injury in another setting  | 32             | 6.5          | 1532         | 7.9          |
| After surgery              | 58             | 11.9         | 1942         | 10.0         |
| Motor vehicle crash        | 57             | 11.7         | 1960         | 10.1         |
| Related to cancer          | 11             | 2.2          | 269          | 1.4          |
| Related to another illness | 45             | 9.2          | 1845         | 9.5          |
| No obvious cause           | 96             | 19.6         | 3032         | 15.6         |
| Other                      | 76             | 15.5         | 2298         | 11.8         |
| <b>Total</b>               | <b>489</b>     | <b>100.0</b> | <b>19475</b> | <b>100.0</b> |

**Table 33 Comorbidities**

| Comorbidities                          | Enterprise One |             | All Services |             |
|--|----------------|-------------|--------------|-------------|
|  | Number         | Percentage* | Number       | Percentage* |
| Depression/Anxiety                     | 208            | 34.8        | 8529         | 39.4        |
| Osteoarthritis, degenerative arthritis | 158            | 26.4        | 5196         | 24.0        |
| High blood pressure                    | 121            | 20.2        | 4670         | 21.6        |
| Diabetes                               | 51             | 8.5         | 2279         | 10.5        |
| Heart disease                          | 35             | 5.9         | 1476         | 6.8         |
| Ulcer or stomach disease               | 26             | 4.3         | 1275         | 5.9         |
| Rheumatoid arthritis                   | 27             | 4.5         | 1257         | 5.8         |
| Lung disease                           | 32             | 5.4         | 938          | 4.3         |
| Stroke or neurological condition       | 32             | 5.4         | 918          | 4.2         |
| Cancer                                 | 27             | 4.5         | 739          | 3.4         |
| Anaemia or other blood disease         | 22             | 3.7         | 875          | 4.0         |
| Kidney disease                         | 12             | 2.0         | 541          | 2.5         |
| Other medical problems                 | 172            | 28.8        | 5730         | 26.5        |

\* Note that the percentages in this table will not sum to 100% as patients may have more than one medical problem.

**Table 34 Pain duration**

| Pain duration        | Enterprise One |              | All Services |              |
|----------------------|----------------|--------------|--------------|--------------|
|                      | Number         | Percentage   | Number       | Percentage   |
| Less than 3 months   | 23             | 5.3          | 516          | 2.7          |
| 3 to 12 months       | 72             | 16.6         | 3070         | 15.9         |
| 12 months to 2 years | 62             | 14.3         | 3230         | 16.8         |
| 2 to 5 years         | 78             | 18.0         | 4513         | 23.4         |
| More than 5 years    | 199            | 45.9         | 7941         | 41.2         |
| <b>Total</b>         | <b>434</b>     | <b>100.0</b> | <b>19270</b> | <b>100.0</b> |

**Table 35 Cancer pain**

| Cancer pain (is this episode of care for the management of cancer pain?) | Enterprise One |              | All Services |              |
|--|----------------|--------------|--------------|--------------|
|  | Number         | Percentage   | Number       | Percentage   |
| Yes  | 1              | 0.2          | 174          | 0.9          |
| No   | 524            | 99.8         | 20225        | 99.1         |
| <b>Total</b>   | <b>525</b>     | <b>100.0</b> | <b>20399</b> | <b>100.0</b> |

**Table 36 Referral source**

| Referral source                         | Enterprise One |              | All Services |              |
|---|----------------|--------------|--------------|--------------|
|   | Number         | Percentage   | Number       | Percentage   |
| General practitioner/nurse practitioner | 495            | 82.8         | 12227        | 56.5         |
| Specialist practitioner                 | 97             | 16.2         | 4304         | 19.9         |
| Other pain management service           | 2              | 0.3          | 582          | 2.7          |
| Public hospital                         | 1              | 0.2          | 1863         | 8.6          |
| Private hospital                        | 0              | 0.0          | 36           | 0.2          |
| Rehabilitation provider/private insurer | 2              | 0.3          | 580          | 2.7          |
| Other                                   | 1              | 0.2          | 2035         | 9.4          |
| <b>Total</b>                            | <b>598</b>     | <b>100.0</b> | <b>21627</b> | <b>100.0</b> |

**Table 37 Compensation case**

| Compensation case | Enterprise One |              | All Services |              |
|-------------------|----------------|--------------|--------------|--------------|
|                   | Number         | Percentage   | Number       | Percentage   |
| Yes               | 52             | 10.6         | 3170         | 19.4         |
| No                | 440            | 89.4         | 13168        | 80.6         |
| <b>Total</b>      | <b>492</b>     | <b>100.0</b> | <b>16338</b> | <b>100.0</b> |

### 3.4 Profile of pain management pathways

The pain management pathway describes the broad type of intervention provided to the patient. There are four pain management pathway types:

- group pain management program(s)
- individual appointment(s)
- concurrent (both group and individual appointments)
- one-off intervention.

Each episode would generally include one or more pathway, and the pathways can occur in any sequence. Information on active pathways within an episode is presented in the following tables.

**Table 38** *Number of pathways by pathway type*

| Pathway type        | Enterprise One |              | All Services |              |
|---------------------|----------------|--------------|--------------|--------------|
|                     | Number         | Percentage   | Number       | Percentage   |
| Group               | 60             | 21.0         | 2541         | 23.2         |
| Individual          | 217            | 75.9         | 7222         | 66.1         |
| Concurrent          | 6              | 2.1          | 1031         | 9.4          |
| One-off             | 3              | 1.0          | 139          | 1.3          |
| <b>All pathways</b> | <b>286</b>     | <b>100.0</b> | <b>10933</b> | <b>100.0</b> |

**Table 39** *Average pathway length (in days) by pathway type*

| Pathway type | Enterprise One | All Services |
|--------------|----------------|--------------|
| Group        | 44.5           | 46.7         |
| Individual   | 69.1           | 176.8        |
| Concurrent   | 261.0          | 116.1        |
| One-off      | 9.5            | 145.9        |

**Table 40 Service intensity - time per pathway (for completed pathways)**

| Service intensity (average hours)                    | Enterprise One |            | All Services |            |
|--|----------------|------------|--------------|------------|
|  | Total          | Telehealth | Total        | Telehealth |
| Individual appointment with medical practitioner     | 0.3            | 0.0        | 0.7          | 0.0        |
| Individual appointment with physiotherapist          | 0.2            | 0.0        | 2.5          | 0.0        |
| Individual appointment with psychologist             | 0.4            | 0.0        | 1.0          | 0.0        |
| Individual appointment with occupational therapist   | 0.1            | 0.0        | 0.4          | 0.0        |
| Individual appointment with nurse                    | 0.0            | 0.0        | 0.1          | 0.0        |
| Individual appointment with more than one clinician  | 1.6            | 0.0        | 0.1          | 0.0        |
| Individual appointment – other                       | 0.0            | 0.0        | 0.1          | 0.0        |
| Multidisciplinary team assessment                    | 0.1            | 0.0        | 0.3          | 0.0        |
| Multidisciplinary panel discussion                   | 0.1            | 0.0        | 0.0          | 0.0        |
| Telephone consultation with patient                  | 0.0            | 0.0        | 0.0          | 0.0        |
| Telephone consultation with patient's doctor         | 0.0            | 0.0        | 0.0          | 0.0        |
| Pain management program – group                      | 9.9            | 0.0        | 16.5         | 0.0        |
| Pain management program – individual                 | 0.0            | 0.0        | 0.4          | 0.0        |
| Procedural intervention – implant (drug delivery)    | 0.0            | 0.0        | 0.0          | 0.0        |
| Procedural intervention – implant (neurostimulation) | 0.0            | 0.0        | 0.0          | 0.0        |
| Procedural intervention – non-implant                | 0.0            | 0.0        | 0.1          | 0.0        |
| Procedural intervention – cancer block               | 0.0            | 0.0        | 0.0          | 0.0        |
| Procedural intervention – other                      | 0.0            | 0.0        | 0.0          | 0.0        |
| Education/orientation program                        | 0.0            | 0.0        | 0.0          | 0.0        |
| Other  | 0.1            | 0.0        | 0.0          | 0.0        |
| <b>Total</b>   | <b>12.7</b>    | <b>.</b>   | <b>22.2</b>  | <b>0.1</b> |

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## References

- <sup>i</sup> Modified Brief Pain Inventory, reproduced with acknowledgement of the Pain Research Group, University of Texas, MD Anderson Cancer Centre, USA
- <sup>ii</sup> Lovibond, S. H. and P. F. Lovibond (1995). Manual for the Depression Anxiety Stress Scales. Sydney Australia, Psychology Foundation Monograph.
- <sup>iii</sup> Nicholas, M. K. (1989). Self-efficacy and chronic pain. British Psychological Society. St. Andrews, Scotland.
- <sup>iv</sup> Sullivan, M. J. L., et al. (1995). "The Pain Catastrophizing Scale: Development and Validation." Psychological Assessment **7**(4): 524-532.
- <sup>v</sup> Dworkin, R. H., et al. (2008). "Interpreting the Clinical Importance of Treatment Outcomes in Chronic Pain Clinical Trials: IMMPACT Recommendations." The Journal of Pain **9**(2): 105-121.
- <sup>vi</sup> Johnson, J. (2014, June 2). ACI Outcomes and Database Working Group. Meeting Minutes.
- <sup>vii</sup> Sullivan, M J L, (personal communication with Nicholas, M K, July 2014)
- <sup>viii</sup> Nicholas , M K (personal communication, July 2014)

## Supplementary data 1 – Item completion

Many items collected in epiCentre are mandatory. This section contains item completion information on those variables that are not mandatory.

Information on item completion for patients active within the reporting period is presented in the following table.

**Table 41 Item completion (percent complete) - patient level**

| Data item*               | Enterprise One | All Services |
|--------------------------|----------------|--------------|
| Indigenous status        | 78.2           | 78.3         |
| Country of birth         | 91.6           | 97.8         |
| Interpreter required     | 94.1           | 97.7         |
| Communication assistance | 90.3           | 95.1         |

\* Percent of data items complete in referral questionnaires received in the reporting period

The following table contains episode level item completion rates for episodes active in the reporting period.

**Table 42 Item completion (percent complete) - episode level**

| Data item*                                      | Enterprise One | All Services |
|---|----------------|--------------|
| Main pain site                                  | 83.2           | 76.8         |
| Cause of pain                                   | 93.1           | 96.0         |
| Pain duration                                   | 82.7           | 95.0         |
| Work status                                     | 90.4           | 96.0         |
| Pain affects number of hours able to work/study | 85.6           | 90.2         |
| Pain affects type of work                       | 85.4           | 90.2         |
| Health service use                              |                |              |
| General practitioner                            | 93.8           | 93.2         |
| Specialist                                      | 91.3           | 88.6         |
| Allied Health                                   | 92.0           | 88.3         |
| ED  | 89.5           | 85.3         |
| Hospital admission                              | 88.7           | 84.3         |
| Diagnostic tests                                | 90.7           | 87.4         |
| Pain frequency                                  | 84.8           | 95.2         |

\* Percent of data items complete in questionnaires received in the reporting period

The following two tables present assessment tool and questionnaire response rates for questionnaires returned in the reporting period.

**Table 43 Item completion – assessment tools**

| Outcome measure | Validity – Number of completed items required | Enterprise One                    |  | All Services                      |  |
|-----------------|---|-----------------------------------|--|-----------------------------------|--|
|                 |   | Average number of completed items | Percentage of validly completed questionnaires | Average number of completed items | Percentage of validly completed questionnaires |
| <b>BPI</b>      |   |                                   |  |                                   |  |
| Worst pain      | 1/1   |                                   | 97.1   |                                   | 98.5   |
| Least pain      | 1/1   |                                   | 96.8   |                                   | 97.8   |
| Average pain    | 1/1   |                                   | 96.6   |                                   | 97.8   |
| Pain now        | 1/1   |                                   | 97.4   |                                   | 97.9   |
| Severity        | 4/4   | 3.9                               | 95.4   | 3.9                               | 96.4   |
| Interference    | 4/7   | 6.8                               | 98.0   | 6.9                               | 98.5   |
| <b>DASS</b>     |   |                                   |  |                                   |  |
| Depression      | 6/7   | 6.7                               | 95.6   | 6.8                               | 96.8   |
| Anxiety         | 6/7   | 6.7                               | 95.7   | 6.8                               | 96.5   |
| Stress          | 6/7   | 6.7                               | 95.4   | 6.8                               | 96.5   |
| <b>PCS</b>      |   |                                   |  |                                   |  |
| Rumination      | 4/4   | 3.8                               | 91.8   | 3.9                               | 95.0   |
| Magnification   | 3/3   | 2.8                               | 93.4   | 2.9                               | 95.2   |
| Helplessness    | 6/6   | 5.7                               | 91.8   | 5.8                               | 93.9   |
| Total           | 12/13   | 12.3                              | 93.7   | 12.6                              | 95.8   |
| <b>PSEQ</b>     |   |                                   |  |                                   |  |
| Total           | 9/10  | 9.6                               | 95.1   | 9.7                               | 97.1   |

**Table 44 Questionnaire response (percent returned)**

| Questionnaire response*                  | Enterprise One | All Services |
|--|----------------|--------------|
| Referral questionnaire                   | 70.5           | 87.8         |
| Pathway start questionnaire              | 97.6           | 74.4         |
| Group program start (concurrent pathway) | .              | 81.8         |
| Pathway review                           | .              | 57.9         |
| Group program end (concurrent pathway)   | 42.9           | 79.7         |
| Pathway end questionnaire                | 89.4           | 74.3         |
| Post-episode follow-up questionnaire     | 87.5           | 42.1         |
| Ad-hoc questionnaire                     | 33.3           | 71.9         |

\* Number of questionnaires returned in the reporting period as a percentage of the number sent

## Supplementary data 2 – Change in patient reported outcome measures from referral to pathway start

The following table shows changes in outcome scores for patients who have completed both a referral and pathway start questionnaire. This information is included to allow pain management services to assess patient change in the time from referral to when active treatment begins. For example, long wait times may mean a patient's condition deteriorates between referral and treatment start. Alternatively, this information may be used to assess whether interventions delivered prior to treatment pathways (e.g. short education programs and assessment appointments) are having an impact on patient outcomes.

**Table 45** *Change in outcome measure scores between referral and pathway start*

| Outcome measure       | Enterprise One |        | All Services |        |
|-----------------------|----------------|--------|--------------|--------|
|                       | n=29           |        | n=1690       |        |
|                       | Referral       | Change | Referral     | Change |
| <b>BPI</b>            |                |        |              |        |
| Severity <sup>§</sup> | 5.6            | -0.3   | 6.2          | 0.3    |
| Interference          | 5.9            | -0.0   | 6.9          | 0.5    |
| <b>DASS</b>           |                |        |              |        |
| Depression            | 13.8           | 2.5    | 19.4         | 1.6    |
| Anxiety               | 9.7            | -0.3   | 13.4         | 0.2    |
| Stress                | 15.3           | 0.2    | 20.3         | 0.9    |
| <b>PCS</b>            |                |        |              |        |
| Total                 | 21.2           | 1.4    | 28.7         | 3.3    |
| <b>PSEQ*</b>          |                |        |              |        |
| Total                 | 29.5           | 2.4    | 21.8         | 1.9    |

<sup>§</sup> The severity score is an average of the four severity items

\* Note: For the PSEQ assessment tool, an increase in score is an improvement in how patients are able to perform activities despite the pain.

## **Appendix A – Data scoping**

The scope for the information in the ePPOC reports can be split into two types. The first looks at patient-level change over a pathway or episode. The second uses the activity during the reporting period.

### **Change in patient outcomes over a pathway or episode**

Outcomes for episodes or pathways are only included where a patient completes both a start and end questionnaire, and the end questionnaire is completed within the reporting period. The start questionnaire does not necessarily need to be completed in the same reporting period. Section 2.1 (Patient outcomes– Standard assessment tools) uses this method.

### **Activity during the reporting period**

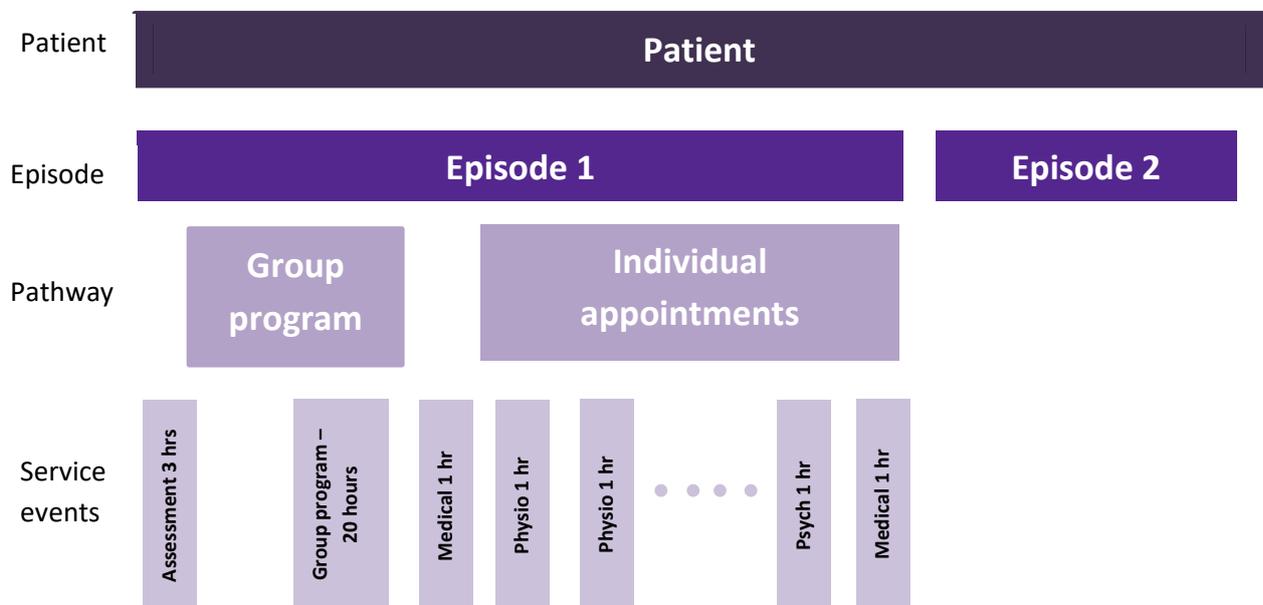
All other information is based on activity in the reporting period. The completion of a questionnaire or the occurrence of a service event determines whether a patient, episode or pathway is ‘active’. Sections 3.2, 3.3 and 3.4 report on completed questionnaires in the reporting period. This means that the data in each column is not necessarily for the same patients.

## Appendix B – Relationship between levels of ePPOC data

Five different levels of information are collected in epiCentre. These are:

1. Patient (e.g. date of birth, country of birth)
2. Episode – relating to the period of care at the pain service (e.g. referral date, comorbidities). A patient may have one or more episode of care at one pain service or at different pain services.
3. Pathway – the type(s) of intervention provided to the patient. These can be group pain programs, individual appointments, one off interventions, or a combination of group pain and individual appointments occurring concurrently. A patient may follow one or more pathways during an episode of care at a pain service.
4. Service event – the services provided to the patient during an episode of care.
5. Questionnaire – including the patient reported outcome measures e.g. DASS21, BPI.

Below is an example of how these levels of information are structured:



Patient reported outcomes are collected at:

- Referral – to record a baseline measure
- Pathway starts and ends – to measure the effectiveness of interventions
- Reviews (if a pathway lasts longer than 3 months) – to monitor change and improvement within an episode
- After the episode ends (i.e. 3-6 months post episode) – to assess outcomes as a result of treatment at a service and whether improvements have been maintained.

## Appendix C – Assessment tools

The assessment tools used in ePPOC are:

- Brief Pain Inventory (BPI)
- Depression, Anxiety, Stress Scale (DASS)
- Pain Catastrophising Scale (PCS)
- Pain Self-Efficacy Questionnaire (PSEQ).

Each of these assessment tools are briefly described below.

### Brief Pain Inventory

The BPI items used in the ePPOC dataset measure the severity of pain and the degree to which the pain interferes with common activities of daily living. Pain severity questions are rated on a scale of 0 to 10, where 0 = 'No pain' and 10 = 'Pain as bad as you can imagine', with patients asked to rate their average, worst and least pain over the last week, and their pain right now.

Severity bands for these items are:

- 0-4 = mild pain
- 5-6 = moderate pain
- 7-10 = severe pain

The IMMPACT group's recommendations for assessing clinical significance for 0-10 numeric pain scales are that a change of:

- ≥ 10% represents minimally important change
- ≥ 30% represents moderate clinically important change
- ≥ 50% represents substantial clinically important change

The interference questions are rated on a scale of 0 to 10, where 0 = 'Does not interfere' and 10 = 'Completely interferes'. The interference subscale is an average of the seven interference questions. At least 4 of 7 questions must be completed for this subscale to be valid. The IMMPACT recommendation for assessment of clinically significant change on the BPI interference scale is a change of 1 point over the average of the 7 items<sup>v</sup>.

### Depression Anxiety Stress Scales

The DASS measures the negative emotional states of depression, anxiety and stress. Due to the large number of questions in the full DASS (42 questions), the DASS21 is administered. This comprises 21 questions which are rated on a scale of 0 to 3, where 0 = 'did not apply to me at all', 1 = 'applied to me to some degree, or some of the time', 2 = 'applied to me to a considerable degree, or a good part of the time', or 3 = 'applied to me very much, or most of the time'. Scores are multiplied by 2 to enable comparison with the full-scale DASS42 for which norms exist.

For each subscale (Depression, Anxiety and Stress), the 7 items are summed and then multiplied by 2. The test developers suggest that at least 6 of 7 items should be complete for each subscale to be considered valid. The following table shows the range of scores associated with severity categories for each subscale.

**Table 46 DASS severity ratings**

|                  | Depression | Anxiety | Stress |
|------------------|------------|---------|--------|
| Normal           | 0-9        | 0-7     | 0-14   |
| Mild             | 10-13      | 8-9     | 15-18  |
| Moderate         | 14-20      | 10-14   | 19-25  |
| Severe           | 21-27      | 15-19   | 26-33  |
| Extremely Severe | 28+        | 20+     | 34+    |

Clinical significance on each of the DASS subscales requires a change of 5 or more points coupled with a move to a different severity category.

**Pain Catastrophising Scale**

The PCS measures a patient’s thoughts and feelings related to their pain. This includes three subscales measuring the dimensions of Rumination, Magnification and Helplessness. The PCS comprises 13 questions (Rumination – 4 items, Magnification – 3 items, Helplessness – 6 items) which are rated on a scale of 0 to 4, where 0 = ‘not at all’, 1 = ‘to a slight degree’, 2 = ‘to a moderate degree’, 3 = ‘to a great degree’ and 4 = ‘all the time’. For each subscale, all items must be completed to be valid. For the total to be valid, at least 12 of 13 items must be completed.

Severity bands for the PCS are:

- <20 = mild
- 20 to 30 = high
- >30 = severe

Clinically significant change requires a change in score of 6 or more points, combined with movement to a different severity category<sup>vii</sup>.

**Pain Self-Efficacy Questionnaire**

The PSEQ measures how confident a patient is that he or she can do a range of activities despite their pain. The PSEQ Total is a sum of scores from 10 questions which are rated on a scale from 0 = ‘Not confident at all’ to 6 = ‘Completely confident’. At least 9 of 10 items must be complete for the PSEQ Total to be valid. Increases in score represent an improvement in self-efficacy.

Severity bands for the PSEQ are:

- <20 = severe
- 20 to 30 = moderate
- 31 to 40 = mild
- >40 = minimal impairment

Clinically significant change requires a change in score of 7 or more points, combined with movement to a different severity category<sup>viii</sup>.

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## Appendix D – Data submitting services

### New South Wales:

- Central Coast Integrated Pain Service
- Concord Repatriation Hospital Pain Clinic
- Greenwich Hospital Pain Management Service
- Hunter Integrated Pain Service
- Illawarra-Shoalhaven Chronic Pain Service
- Lismore Hospital Multidisciplinary Pain Management Clinic
- Liverpool Hospital Chronic Pain Service
- Nepean Hospital Pain Management Unit
- Orange Base Hospital Chronic Pain Clinic
- Port Macquarie Chronic Pain Service
- Prince of Wales Pain Management Department
- Royal North Shore Hospital Pain Service
- Royal Prince Alfred Pain Management Service
- St George Pain Management Unit
- St Vincents Hospital Pain Clinic, Darlinghurst
- Tamworth Integrated Pain Service
- Westmead Hospital Pain Service

### New Zealand

- Active Plus
- Advantage South
- APM Workcare (incorporating Sports and Spinal Physiotherapy)
- Body in Motion
- Canterbury DHB (Burwood Hospital)
- Christchurch Pain Management Services
- EnableWorks Limited
- Fit For Work
- Futureproof Rehab
- Habit Group
- Integrative Pain Care
- Nelson Nursing Service
- Occupational Health Canterbury
- Pain Management and Rehabilitation Services Limited
- Proactive Health
- QE Health
- Southern Rehab
- TBI Health

Queensland:

- Interventus Pain Specialists
- North Queensland Persistent Pain Management Service (Townsville Hospital)
- St Vincent's Private Hospital Brisbane
- Sunshine Coast Persistent Pain Management Services (Nambour Hospital)
- The Wesley Hospital Brisbane

Victoria:

- Advance Healthcare
- Austin Pain Service (Austin Health)
- Barbara Walker Centre for Pain Management, St Vincent's Hospital Melbourne
- Caulfield Pain Management and Research Centre (Alfred Health)
- Dorset Rehabilitation Centre
- Eastern Health Pain Management Service
- Empower Rehab
- Epworth Hospital
- Goulburn Valley Chronic Pain Service
- Latrobe Regional Hospital
- Melbourne Health – Pain Management Services (The Royal Melbourne Hospital)
- Monash Health Pain Management
- Northern Health Pain Assessment and Management Service
- Peninsula Health Chronic Pain Management Service
- Precision Ascend Rehabilitation Centre
- The Victorian Rehabilitation Centre
- Western Health Pain Management

Western Australia:

- Fiona Stanley Hospital
- PainCare
- Sir Charles Gairdner Hospital

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## *Disclaimer*

ePPOC has made every effort to ensure that the data used in this report are accurate. Data submitted to ePPOC are checked for anomalies and services are asked to re-submit data prior to the production of the ePPOC report if necessary. We would advise readers to use their professional judgement in considering all information contained in this report.