



National Report 2014



ACKNOWLEDGEMENTS

ePPOC wishes to acknowledge the NSW Ministry of Health for funding the establishment of this initiative, and the many staff from pain management services who have spent considerable time collecting, collating and correcting the data without whose effort this report would not be possible.

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 asked to resubmit information where relevant. We would advise readers to use their professional judgement in considering the information contained in this report.

COPYRIGHT

This work is copyright. It may be produced in whole or in part for study or training purposes subject to the inclusion of an acknowledgement of the source. It is not for commercial use or sale. Reproduction for purposes other than those above requires the written permission of ePPOC.

SUGGESTED CITATION

Tardif H, Blanchard M, Fenwick N, Blissett C and Eagar K (2015) *Electronic Persistent Pain Outcomes Collaboration National Report 2014*. Australian Health Services Research Institute, University of Wollongong.

About the electronic Persistent Pain Outcomes Collaboration (ePPOC)

ePPOC is a program which aims to improve services and outcomes for people experiencing chronic pain. It involves specialist pain services collecting a standard set of information to measure outcomes for their patients as a result of treatment. Deidentified information is sent to ePPOC for analysis, and results are fed back to participating services every six months. The information collected by services will also be used to develop a national benchmarking system to set goals and identify best practice within the sector, and will allow a coordinated approach to research into the management of chronic pain in Australasia.

ePPOC is an initiative of the Faculty of Pain Medicine, supported by the Australian Pain Society, PainAustralia and the wider pain sector. It was launched in 2013 with a small number of pain management services trialling the measures and processes, and is being progressively rolled out to other services throughout Australia and New Zealand.

PaedePPOC addresses the differing needs of the paediatric pain management sector. This program allows collection of data items and assessment tools specific to the needs of children, adolescents and their carers.

This report

Each year, ePPOC will provide a national report summarising the data submitted by all participating services. This is the first of these reports, presenting data received to December 2014. Twenty-one specialist adult pain management services contributed data for this report. A list of these services is provided in Appendix A. Paediatric pain services joined PaedePPOC towards the latter part of 2014 and their data are not presented this year due to small numbers.

At the end of 2014, the 21 adult pain services had been participating in ePPOC for nine months on average, with a range of 1 to 16 months. All data collected by these services are included in this report, regardless of the time period of their participation. Information on over 6000 patients is included, describing demographic and clinical characteristics of the patients, along with information about the care they received. Details of outcomes for these patients following discharge from the pain management services is limited at this stage due to the relatively recent introduction of ePPOC, combined with often long episodes of care. As a result, this report will focus on the characteristics of the patients referred to specialist pain management services and the care they received. National Reports in future years will present detailed information regarding patient outcomes as a result of treatment at specialist pain management services.



ePPOC 2014

MEN REPORTED SIGNIFICANTLY HIGHER LEVELS OF DEPRESSION STRESS AND PAIN CATASTROPHISING

WOMEN REPORTED MORE INTENSE PAIN

PATIENTS REPORTING EXTREMELY SEVERE OR SEVERE LEVELS OF

DEPRESSION	50%
ANXIETY	40%
STRESS	40%

OVER 70% OF PATIENTS REPORTED THAT PAIN SEVERELY INTERFERED WITH THEIR SLEEP | ACTIVITIES | WORK ENJOYMENT OF LIFE

89% OF PATIENTS REPORTED THEIR PAIN WAS ALWAYS PRESENT

50% RATED THEIR AVERAGE PAIN AS SEVERE

62 DAYS THE MEDIAN TIME FROM RECEIVING A REFERRAL TO STARTING THE EPISODE OF CARE

MORE THAN HALF OF THE PATIENTS REPORTED SEVERELY IMPAIRED PAIN-RELATED COPING AND SELF-EFFICACY

MULTIPLE SITES OF PAIN AND COMORBIDITIES DEMONSTRATE THE COMPLEXITY OF PATIENTS REFERRED TO SPECIALIST PAIN SERVICES



61% OF PATIENTS WERE TAKING OPIOID MEDICATION ON MORE THAN 2 DAYS A WEEK

OVER 1 IN 3 PATIENTS WERE UNEMPLOYED DUE TO THEIR PAIN

2 IN 3 PATIENTS WERE AGED BETWEEN 35 AND 64

Participating services

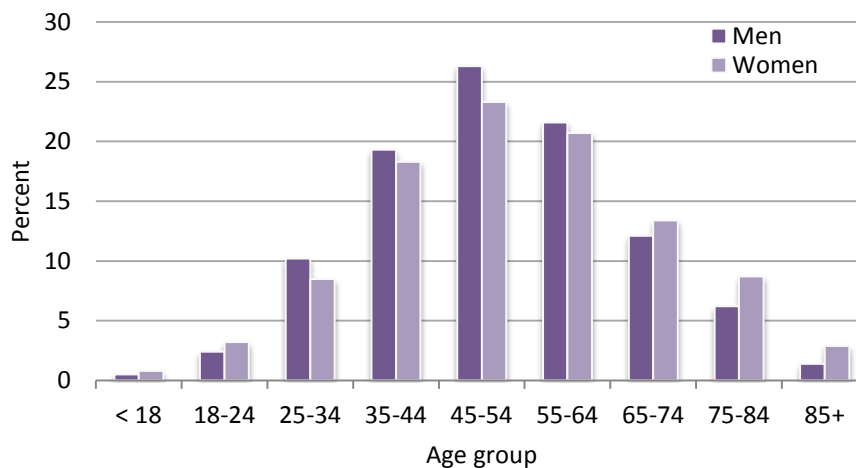
Twenty-one pain management services contributed data for this report. These services were located throughout New South Wales (14), Victoria (6) and Western Australia (1). Fourteen were in capital cities and seven in regional areas. All were publically funded multidisciplinary specialist pain management units.

Patient demographics

Information about 6361 patients was provided by the specialist pain services participating in ePPOC at 31 December 2014.

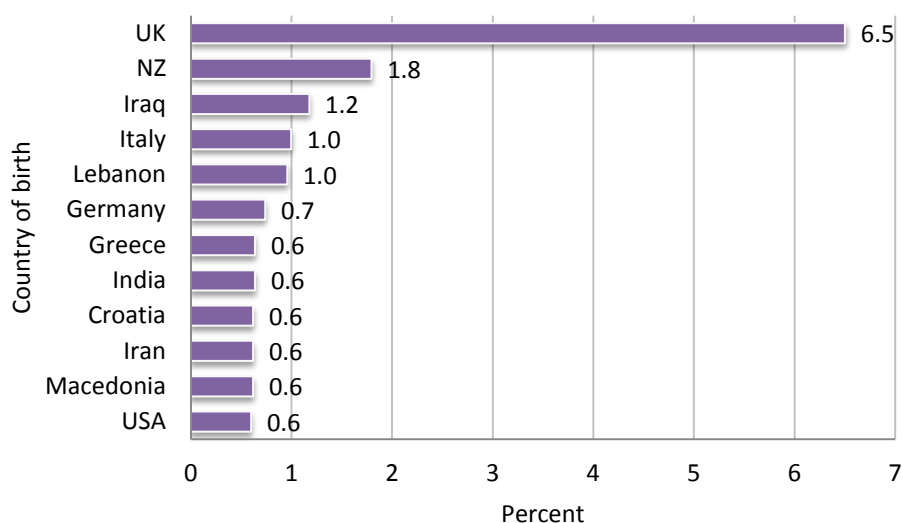
Of these patients, 57.3% were female with an average age of 53.2 years at the time of referral. Males were slightly younger (average age 51.6 years). Figure 1 shows that nearly two-thirds (65%) of patients were aged between 35 and 64 years.

Figure 1 - Distribution of age by gender



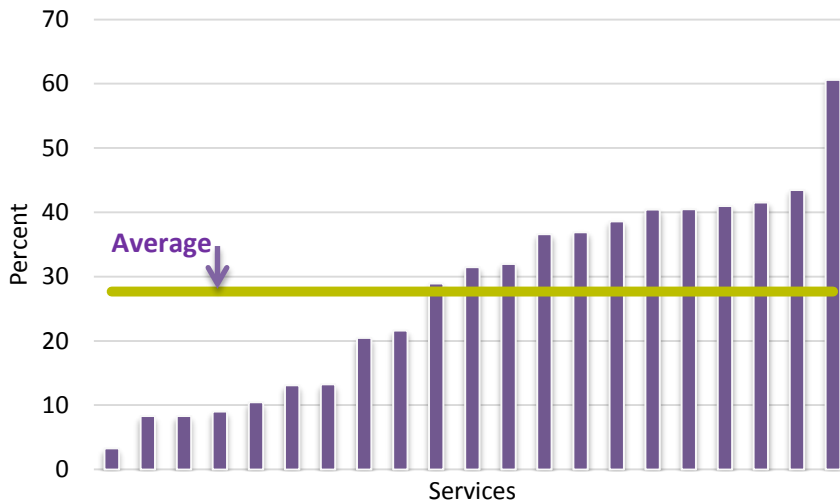
4.2% of patients identified as being of Aboriginal and/or Torres Strait Islander origin. Most patients were born in Australia (72.3%), with the remainder born in over 100 other countries. For the 5013 patients reporting their country of birth, the 12 most common (excluding Australia) are shown in Figure 2.

Figure 2 - Patient country of birth



Across all services, the average number of patients born in countries other than Australia was 27.7%, however this number varied greatly across individual pain management services, as illustrated in Figure 3. As would be expected with this variability, the number of patients requiring an interpreter also differed across services, ranging from 0 to 34.6% of patients.

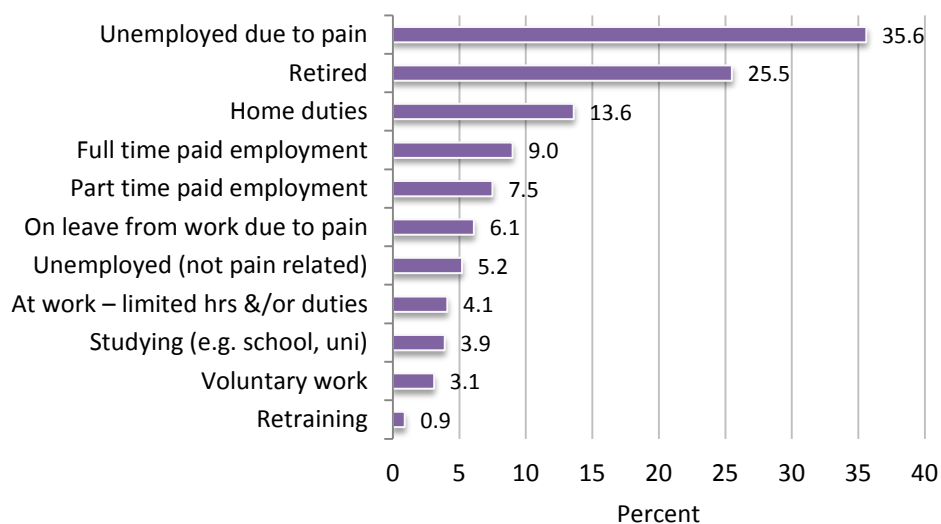
Figure 3 - Patients born in countries other than Australia, by service



Most patients were referred to the pain management service by a general practitioner or nurse practitioner (77.5%).

Figure 4 shows the work status of patients following referral to the pain management service. Over one third of patients were unemployed due to their pain condition. 77% of patients stated that their pain affected the number of hours they were able to work or study, and 80% the type of work they were able to do. 9.0% of episodes involved a compensation claim.

Figure 4 - Work status of patients



Clinical characteristics

Most patients referred to the pain management services completed a questionnaire prior to their first appointment with the service. These questionnaires asked patients about their pain, medication and health care utilisation, and included standard assessment tools which examined mood, cognition, physical function and pain interference. More detailed information regarding these tools is provided in Appendix B.

5116 of these initial questionnaires were completed, providing a picture of the health and clinical characteristics of patients following their referral to a specialist pain management service. All information in this section is based on patient self-report.

Pain

Table 1 – Event precipitating patients’ pain

How main pain began	Percentage
Injury at work/school	21.9
No obvious cause	18.1
Related to another illness	10.8
After surgery	10.8
Motor vehicle crash	9.6
Injury in another setting	7.6
Injury at home	6.9
Related to cancer	2.1
Other	12.3
Total	100.0

48% of patients had experienced their pain for more than five years, and most (89.0%) described their pain as ‘always present’. The events considered responsible for causing the pain are shown in Table 1.

The most common site of patients’ main pain was the back, with the other regions shown in Figure 5. 17.1% of patients had pain in one region only, with the remainder identifying multiple regions, as shown in Figure 6.

Figure 5 - Site of patients’ main pain

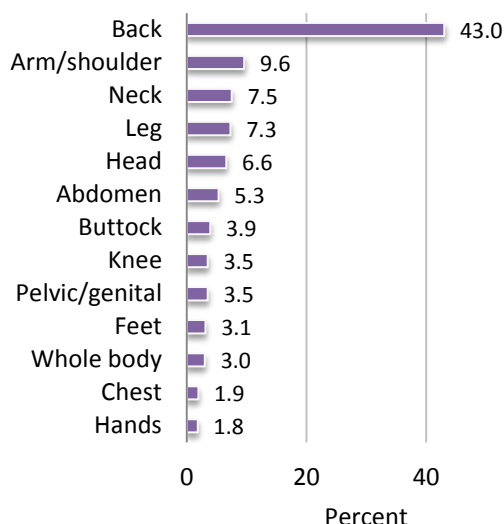
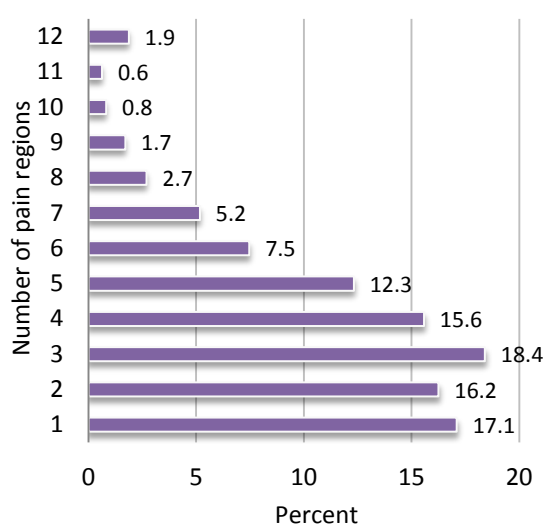


Figure 6 - Number of pain sites



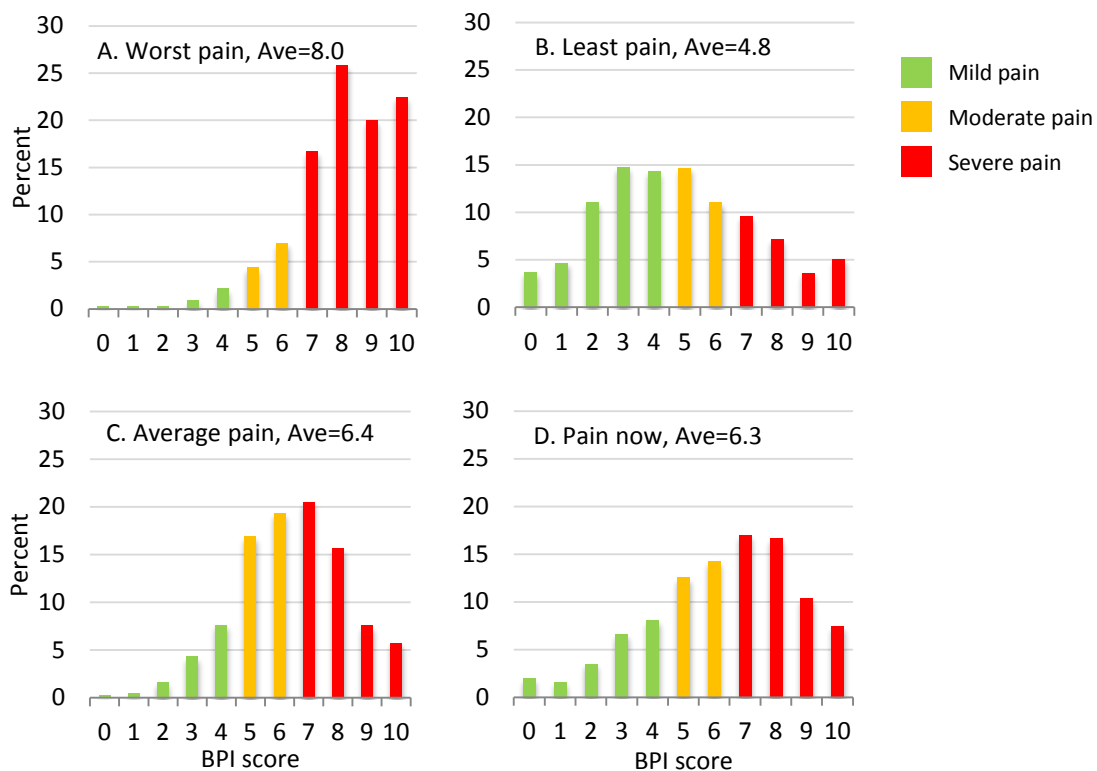
The Brief Pain Inventory (BPI) was used to assess the intensity of the patient’s pain and its interference in activities of daily living over the past week. Average scores by gender for the intensity items and the interference scale are shown in Table 2. Men and women differed significantly in their scores for worst and average pain and ‘pain now’, with women experiencing more intense pain than men (p values <0.05). Average pain interference over the 7 items did not differ significantly with gender.

Table 2 - Average scores on the BPI by gender

BPI	Items	Mean	SD	Interpretation
Pain Intensity	Worst Pain	8.0	1.7	Severe
	Females	8.1	1.7	Severe
	Males	8.0	1.7	Severe
	Least Pain	4.8	2.5	Mild
	Females	4.8	2.6	Mild
	Males	4.7	2.5	Mild
	Average Pain	6.4	1.9	Moderate
	Females	6.5	1.9	Moderate
	Males	6.3	1.8	Moderate
	Pain Now	6.3	2.4	Moderate
Females	6.4	2.4	Moderate	
Males	6.1	2.4	Moderate	
Pain Interference	Average Interference	7.1	2.1	Severe
	Females	7.0	2.1	Severe
	Males	7.1	2.1	Severe

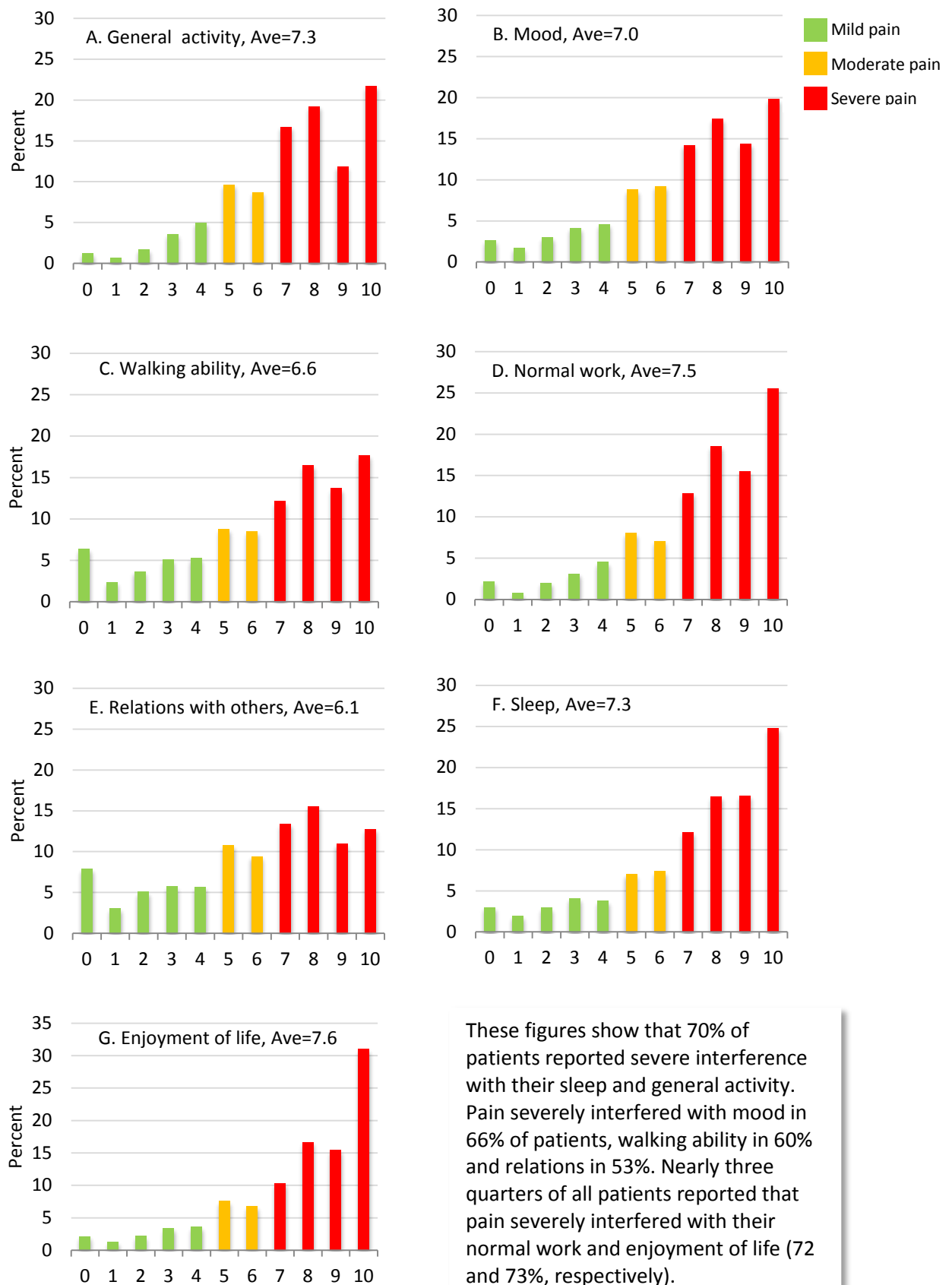
The figures below show the distribution of patient ratings for the worst, least, average and 'pain now' items. Average pain intensity (Figure 7C) measured over the past week was severe for 49.5% of patients, moderate for 36.2% and mild for 14.3%.

Figure 7 - Distribution of patient scores on the BPI severity items



The distribution of patient ratings over each of the inference items is shown in Figure 8.

Figure 8 - Distribution of patient scores on the BPI interference items



These figures show that 70% of patients reported severe interference with their sleep and general activity. Pain severely interfered with mood in 66% of patients, walking ability in 60% and relations in 53%. Nearly three quarters of all patients reported that pain severely interfered with their normal work and enjoyment of life (72 and 73%, respectively).

Comorbidities

The patient questionnaires included a list of 12 medical conditions, and asked patients to indicate which (if any) they experienced in addition to their pain. The percent of patients with each of these conditions is shown in Table 3 below.

Table 3 – Patient comorbidities

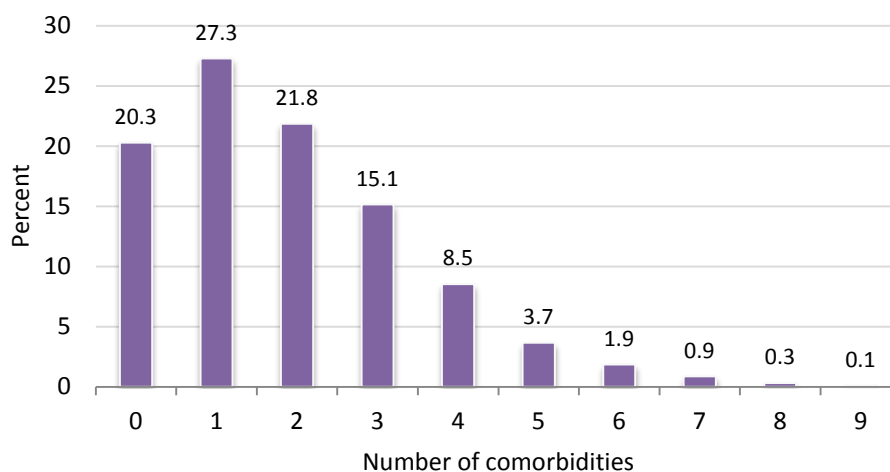
Medical condition	Percentage
Depression/Anxiety	34.1
Osteoarthritis, degenerative arthritis	23.6
High blood pressure	20.7
Diabetes	9.6
Heart disease	7.3
Ulcer or stomach disease	6.9
Rheumatoid arthritis	6.0
Lung disease	4.8
Stroke or neurological condition	4.7
Cancer	3.7
Anaemia or other blood disease	3.7
Kidney disease	2.4
Other medical problems	26.0

Over one third of patients reported that they experienced depression and/or anxiety.

The most common 'other medical problems' were asthma, fibromyalgia and high cholesterol.

The clinical complexity of patients referred to pain management services is further illustrated in Figure 9, which shows the proportion of people experiencing one or more of the 12 listed medical conditions.

Figure 9 - Distribution of patients by number of comorbidities



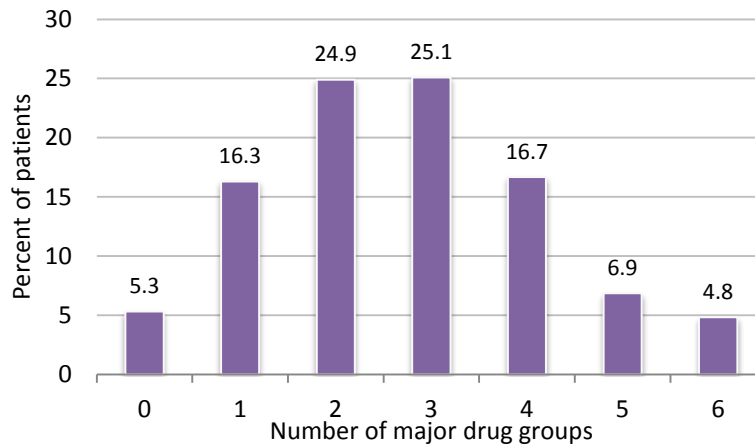
Medication use

Patients provided information regarding all the medications they used – the strength, how many and how frequently they were taken. Pain service staff transformed this information into three variables: the daily oral morphine equivalent, whether the patient was using opioid medication on more than two days per week, and how many drug types the patient was using¹.

¹ The Faculty of Pain Medicine determined that the six major drug groups of particular interest in the management of pain are opioids, paracetamol, NSAIDs, antidepressants, anticonvulsants and benzodiazepines.

61.0% of patients were taking opioid medication on more than two days per week. The average daily oral morphine equivalent for patients using opioid medication was 86.9 mg (SD=106.7). On average, patients were using medications from three of each of the six major drug groups (mean 2.9, SD=2.3)². Figure 10 shows the proportion of patients using one or more of these drug types.

Figure 10 - Proportion of patients using one or more of the six drug groups



Body Mass Index

The average Body Mass Index (BMI) of patients was 28.9 (SD = 7.4) which lies in the “Overweight” category. The percentage of patients in each BMI category is shown in Figure 11

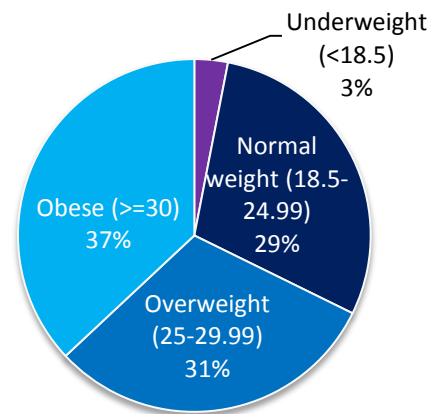


Figure 11 – Patient Body Mass Index

Health service utilisation

Patients were asked how many times in the past three months they used various health services and had diagnostic tests performed because of their pain (see Table 4).

Table 4 – Patient use of health services

Health service	Median	Mean	SD
General practitioner	4	5.5	5.8
Medical specialist	1	1.3	2.1
Health professionals other than doctors	1	3.4	6.4
Hospital emergency department	0	0.7	2.0
Hospital admission	0	0.3	0.9
Diagnostic tests	1	1.6	2.7

² Note: not all services performed these calculations on all patients. For the average daily morphine equivalent reported here, n=1862 patients, for weekly frequency of opioid use, n=3468 and the number of major drug groups, n=3559.

Mood

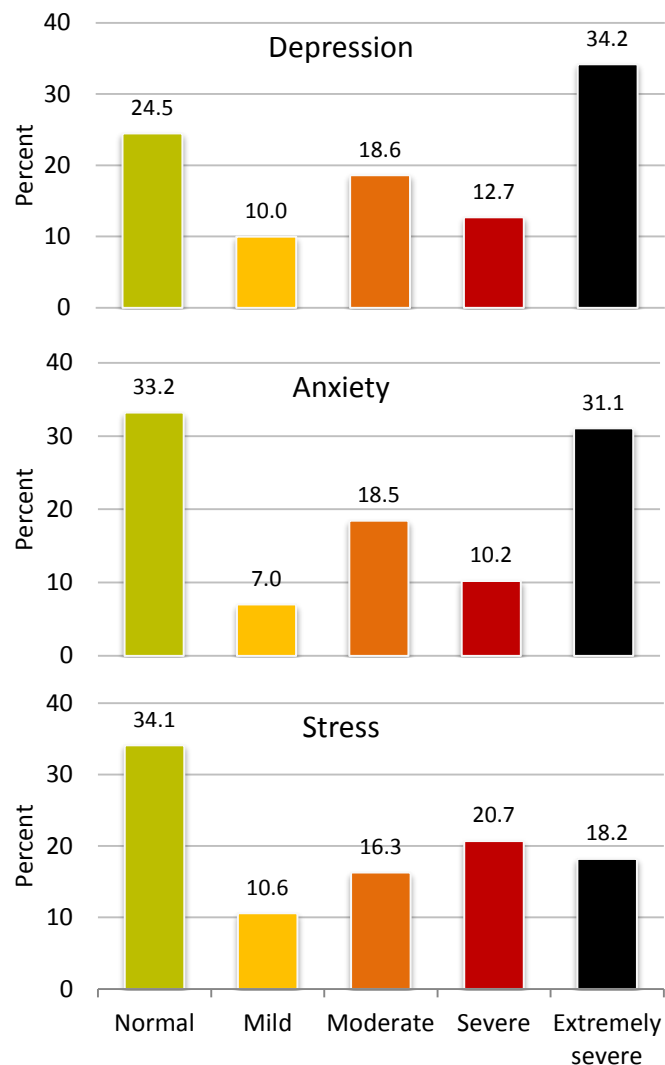
Table 5 shows patients' average scores on the depression, anxiety and stress scales of the DASS21 following referral to the pain services. The interpretation of the severity of the average score is also shown. There was a significant difference between males and females in their depression and stress scores, with males reporting higher levels (p values < 0.05).

Table 5 – DASS scores by gender

DASS subscale	Mean	SD	Interpretation
Depression	20.3	12.9	Moderate
Females	19.4	12.9	Moderate
Males	21.6	12.8	Severe
Anxiety	14.2	10.9	Moderate
Females	14.2	11.1	Moderate
Males	14.1	10.7	Moderate
Stress	21.0	11.6	Moderate
Females	20.1	11.7	Moderate
Males	22.0	11.4	Moderate

While the average scores in Table 5 suggest that most patients fell into the moderate category for depression, anxiety and stress, the large standard deviations indicate considerable variability between patients. Figure 12 illustrates this variability, which is particularly evident for depression and anxiety. For example, over one third of patients referred to a specialist pain service were severely depressed, while another third reported normal or mild levels of depression. Similarly, approximately one third of patients reported severe anxiety, with another third reporting normal levels of this emotional state.

Figure 12 - Severity distribution on the DASS subscales



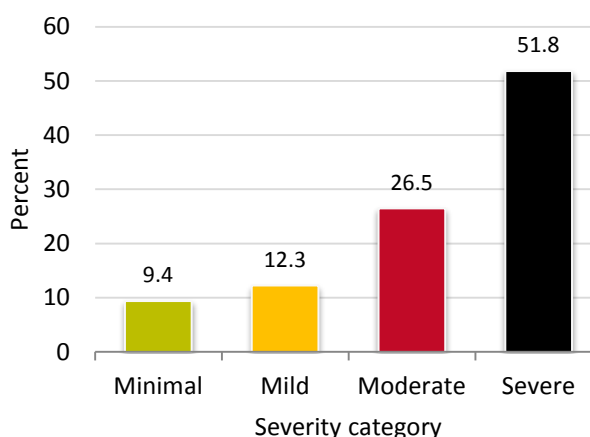
Cognition

Self-efficacy refers to a person’s beliefs about their ability to accomplish outcomes, activities or goals. The self-efficacy of patients referred to pain management services was assessed using the Pain Self-Efficacy Questionnaire (PSEQ). This tool assesses a patient’s belief that he or she can perform a range of activities despite their pain, with scores shown to predict treatment outcome and long term disability.

The average score on the PSEQ following referral to the pain services was 20.6 (SD=13.4), a score classified as ‘Moderate’. Males and females did not differ in their average self-efficacy scores (males =20.4, SD=13.5; females =20.8, SD=13.3).

Figure 13 shows the variability between patients on this assessment tool. Over one half of the patients reported severely impaired pain-related self-efficacy.

Figure 13 - PSEQ scores by severity category

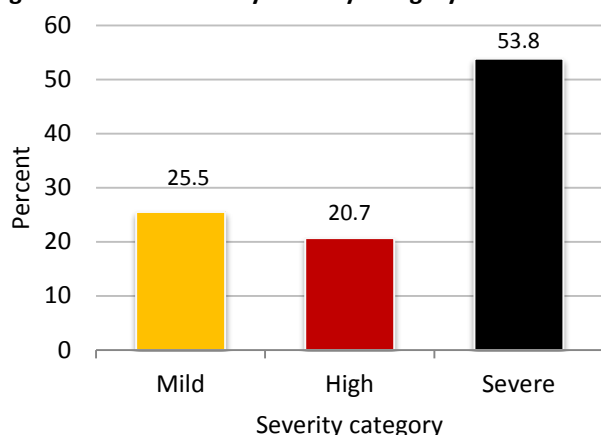


Patients also completed the Pain Catastrophising Scale (PCS), which measures thoughts and feelings related to pain. The PCS includes three subscales measuring rumination, magnification and helplessness. Patients’ average scores by gender and for each subscale are shown in Table 6.

Table 6 – PCS scores by gender

PCS	Mean	SD
Rumination	10.0	4.9
Females	9.6	5.1
Males	10.6	4.7
Magnification	5.9	3.6
Females	5.7	3.6
Males	6.3	3.6
Helplessness	14.2	6.6
Females	14.0	6.7
Males	14.5	6.4
Total score	30.0	14.0
Females	29.1	14.2
Males	31.2	13.5

Figure 14 - PCS scores by severity category



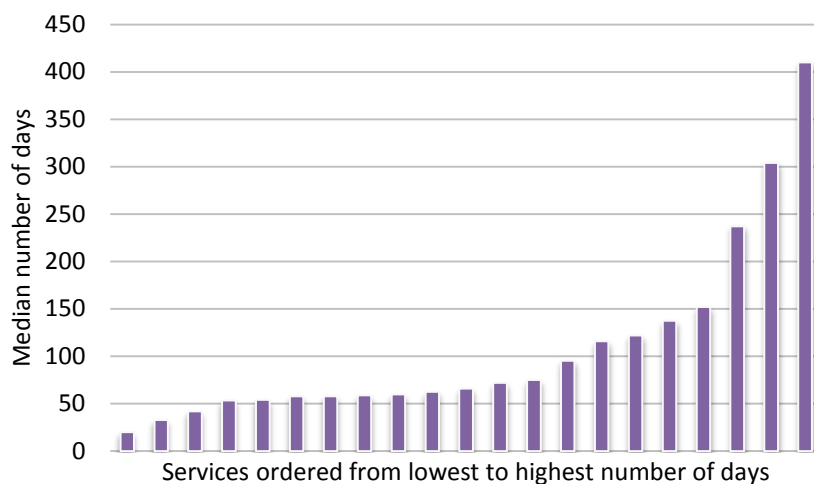
Men scored significantly higher than women on the total score and on all subscales (p values <0.05), revealing higher levels of pain-related catastrophising. The variability between patients is shown in Figure 14.

Pain management services provided

An episode of care at a pain management service is defined as the period from the first face-to-face appointment to discharge from the service. 3418 episodes of care were reported to 31 December 2014.

The median time from receiving a patient referral to the start of the episode was 62 days (mean = 103.7). There was considerable variability across the 21 services on this measure, ranging from an average of 20 to 410 days (see Figure 15). Most episodes (63.0%) began with a single or multidisciplinary assessment of the patient. The remainder would, for the most part, have begun with a group education or pre-assessment program.

Figure 15 - Number of days from referral to episode start by service



2,422 primary treatment ‘pathways’ were reported to 31 December 2014. These pathways were classified as being:

- group pain management programs
- individual appointments with clinicians
- concurrent pathways, where a group program and individual appointments are provided at the same time
- one-off interventions, where it is not expected that any further intervention is necessary or likely in the near future. An example might be a procedural intervention.

Figure 16 illustrates the proportion of each of the pathway types provided to patients.

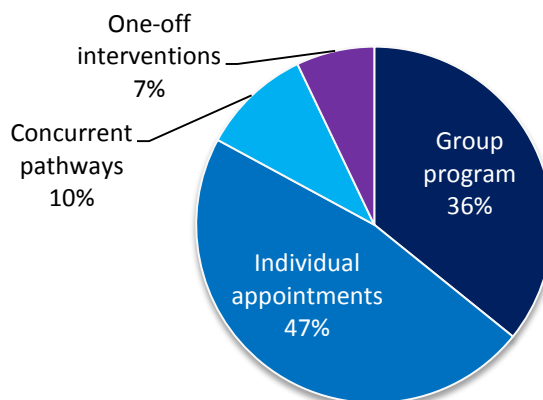


Figure 16 - Proportion of pathway types provided

Pain management units provided information about the service events provided to patients within these pathways. A total of 18,035 hours were recorded.³ A breakdown by service event type is shown in Table 7.

Table 7 – Service events by type

Service event type	Percent
Pain management program – group	66.4
Individual appointment with medical practitioner	11.3
Multidisciplinary team assessment	7.2
Individual appointment with physiotherapist	4.8
Individual appointment with psychologist	2.0
Multidisciplinary panel discussion	1.8
Telephone consultation with patient	1.4
Individual appointment with more than one clinician	0.9
Pain management program – individual	0.8
Individual appointment with nurse	0.7
Procedural intervention – non-implant	0.5
Telephone consultation with patient’s doctor	0.4
Individual appointment – other	0.3
Procedural intervention – implant (drug delivery)	0.1
Individual appointment with occupational therapist	>0.1
Other	1.5

Future directions

This 2014 ePPOC report has analysed data from over 6000 patients to provide a picture of the clinical and demographic characteristics of people referred to pain management services in Australia.

ePPOC continues to grow, and we expect that the 2015 National Report will include data from over 40 pain management services, including Australia’s specialist paediatric services. Future reports will also include information about patient outcomes – how patients’ pain, mood, physical function, cognitions and medication use change as a result of treatment at pain management services. Our annual reports will also allow year-to-year comparisons and evaluation of quality improvement initiatives.

Future ePPOC activities include setting benchmarks for improvement of outcomes and service delivery, and increased use of the ePPOC dataset for research into the management of persistent pain. We look forward to continued collaboration with participating services and stakeholders in the coming year, and welcoming new services to ePPOC.

³ It should be noted that not all pain management services were reporting service event data at 31 December 2014, and for others these data may be incomplete.

Appendix A – Services providing data for this report

New South Wales:

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 Vincent's Hospital Pain Clinic
Tamworth Integrated Pain Service

Victoria:

Barbara Walker Centre for Pain Management, St Vincent's Hospital Melbourne
Caulfield Pain Management and Research Centre
Goulburn Valley Chronic Pain Service
Melbourne Health Pain Management Services
Peninsula Health Chronic Pain Management Service
Western Health Pain Management

Western Australia:

Sir Charles Gairdner Hospital

Appendix B – ePPOC assessment tools

Four standardised assessment tools have been chosen to measure patient outcomes – these are the:

- Brief Pain Inventory (BPI)⁴
- Depression, Anxiety, Stress Scale (DASS21)⁵
- Pain Self-Efficacy Questionnaire (PSEQ)⁶
- Pain Catastrophising Scale (PCS)⁷

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 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.

Depression Anxiety Stress Scales

The DASS measures the negative emotional states of depression, anxiety and stress. The DASS21 comprises 21 questions 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. The following table shows the range of scores associated with severity categories for each subscale.

	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+

⁴ Modified Brief Pain Inventory, Pain Research Group, University of Texas, MD Anderson Cancer Centre, USA

⁵ Lovibond, S. H. and P. F. Lovibond (1995). *Manual for the Depression Anxiety Stress Scales*. Sydney Australia, Psychology Foundation Monograph.

⁶ Nicholas, M. K. (1989). Self-efficacy and chronic pain. *British Psychological Society*. St. Andrews, Scotland

⁷ Sullivan, M. J. L., et al. (1995). "The Pain Catastrophizing Scale: Development and Validation." *Psychological Assessment* 7(4): 524-532

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'. 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

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'.

Severity bands for the PCS are:

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